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# Table of Contents

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## **PREFACE**

## **ARTICLES**

Recent Changes in U.S. Family Finances: Evidence from the 2001 and 2004 Survey of Consumer Finances.....	A1
<i>Brian K. Bucks, Arthur B. Kennickell, and Kevin B. Moore</i>	
March 22	
Industrial Production and Capacity Utilization: The 2005 Annual Revision .....	A39
<i>Kimberly Bayard and Charles Gilbert</i>	
March 16	
Understanding U.S. Cross-Border Securities Data .....	A59
<i>Carol C. Bertaut, William L. Grier, and Ralph W. Tryon</i>	
May 4	
Profits and Balance Sheet Developments at U.S. Commercial Banks in 2005 .....	A77
<i>Elizabeth C. Klee and Gretchen C. Weinbach</i>	
June 14	
Credit Card Disclosures, Solicitations, and Privacy Notices: Survey Results of Consumer Knowledge and Behavior.....	A109
<i>Thomas A. Durkin</i>	
August 7	
Higher-Priced Home Lending and the 2005 HMDA Data.....	A123
<i>Robert B. Avery, Kenneth P. Brevoort, and Glenn B. Canner</i>	
September 8	
Financial Services Used by Small Businesses: Evidence from the 2003 Survey of Small Business Finances .....	A167
<i>Traci L. Mach and John D. Wolken</i>	
October 24	

## **REPORTS ON THE CONDITION OF THE U.S. BANKING INDUSTRY**

Third Quarter, 2005 .....	B1
May 2	
Fourth Quarter, 2005 .....	B7
October 18	

## **LEGAL DEVELOPMENTS**

Fourth Quarter, 2005 .....	C1
March 22	
First Quarter, 2006 .....	C65
July 13	
Second Quarter, 2006.....	C143
August 21	
Third Quarter, 2006 .....	C159
December 22	

<b>INDEX</b> .....	D1
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# Preface

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The *Federal Reserve Bulletin* was introduced in 1914 as a vehicle to present policy issues developed by the Federal Reserve Board. Throughout the years, the *Bulletin* has been viewed as a journal of record, serving to provide the public with data and research results generated by the Board. Authors from the Board's Research and Statistics, Monetary Affairs, International Finance, Banking Supervision and Regulation, Consumer and Community Affairs, Reserve Bank Operations, and Legal divisions contribute to the *Bulletin*, which includes topical research articles, the Report on the Condition of the U.S. Banking Industry, orders on banking applications, and enforcement actions.

Starting in 2004, the *Bulletin* was published quarterly rather than monthly. In 2006, in response to the increased use of the Internet—and in order to release articles and reports in a more timely fashion—the Board discontinued the quarterly print version of the *Bulletin* and began to publish the contents of the *Bulletin* on its public web site as the information became available. All articles, banking condition reports, orders on banking applications, and enforcement actions that were published in the online *Bulletin* in 2006 are included in this print compilation.

The tables that appeared in the Financial and Business Statistics section of the *Bulletin* from 1914 through 2003 are now published monthly as a separate print publication, the *Statistical Supplement to the Federal Reserve Bulletin*. All statistical series are published with the same frequency as they were in the *Bulletin*, and the numbering system for the tables remains the same.

Online access to the *Bulletin* and the *Statistical Supplement* is free. A free e-mail notification service is available to alert subscribers to the release of articles and reports in the *Bulletin*; the monthly *Statistical Supplement*; and press releases, testimonies, and speeches. The message provides a brief description and a link to the recent posting.

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## *Articles*





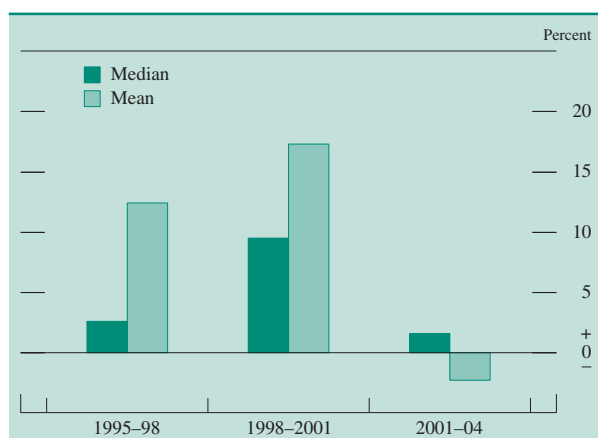
# Recent Changes in U.S. Family Finances: Evidence from the 2001 and 2004 Survey of Consumer Finances

*Brian K. Bucks, Arthur B. Kennickell, and Kevin B. Moore, of the Board's Division of Research and Statistics, prepared this article with assistance from Gerhard Fries and A. Michael Neal.*

The Federal Reserve Board's Survey of Consumer Finances for 2004 provides insights into changes in family income and net worth since the 2001 survey. The survey shows that, over the 2001–04 period, the median value of real (inflation-adjusted) family income before taxes continued to trend up, rising 1.6 percent, whereas the mean value fell 2.3 percent. Patterns of change were mixed across demographic groups. These results stand in contrast to the strong and broad gains seen for the period between the 1998 and 2001 surveys and to the smaller but similarly broad gains between the 1995 and 1998 surveys (figure 1).

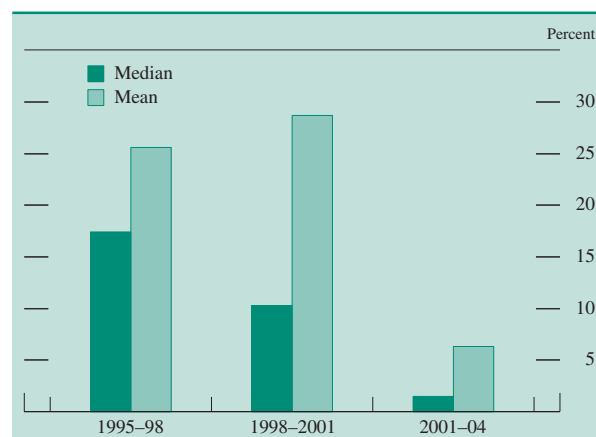
Much like median income, median real family net worth in the 2001–04 period increased 1.5 percent, but mean net worth rose 6.3 percent. The increase in wealth appears to have been clearest in the middle income group. Over many other demographic groups, the data show a complex pattern of mixed increases

1. Change in median and mean incomes, 1995–2004 SCF



SOURCE: Federal Reserve Board, Survey of Consumer Finances.

2. Change in median and mean net worth, 1995–2004 SCF



SOURCE: Federal Reserve Board, Survey of Consumer Finances.

and decreases in wealth; in some instances, median and mean values moved in opposite directions, a pattern that signals distributional changes within groups. In contrast, the growth in wealth between the 1998 and 2001 surveys and between the 1995 and 1998 surveys was stronger both in the mean and in the median, and the growth was shared by most demographic groups (figure 2).

Three key shifts in the 2001–04 period underlie the changes in net worth. First, the strong appreciation of house values and a rise in the rate of homeownership produced a substantial gain in the value of holdings of residential real estate. Second, despite the general recovery of prices in equity markets since 2001, the direct and indirect ownership of stocks declined, as did the typical amount held. Third, the amount of debt relative to total assets increased markedly, and the largest part of that increase was attributable to debt secured by real estate.

As debt rose over the period, families devoted more of their incomes to servicing their debts, despite a general decline in interest rates. Also, the fraction of families with large required debt service payments relative to their incomes rose a small amount, and the

fraction of families that had payments that were late sixty days or more in the year preceding the survey rose more substantially. These increases affected mainly the bottom 80 percent of the income distribution.

This article reviews these and other changes in the financial condition of U.S. families between 2001 and 2004.<sup>1</sup> The discussion draws on data from the Federal Reserve Board's Survey of Consumer Finances (SCF) for those years; it also uses evidence from earlier years of the survey to place the 2001–04 changes in a broader context.

### ECONOMIC BACKGROUND

The U.S. economy was in a mild recession through much of 2001, and real gross domestic product was flat for the year. However, this pause in the growth of real GDP was followed by some pickup in 2002 and sharper gains of 4.1 percent in 2003 and 3.8 percent in 2004. The unemployment rate, which had peaked at 6.5 percent in mid-2003, fell to 5.1 percent in 2004. The rate of inflation, as measured by the consumer price index for all urban consumers (CPI), was moderate by historical standards over the 2001–04 period; for 2004, it was 2.7 percent, nearly the same rate as for 2001.

Developments in financial markets over the three-year period were varied. The major stock market indexes declined before erasing most of the losses with an increase in 2004. Most interest rates had initially declined but began to rise by the end of 2004. For example, the interest rate on a thirty-year fixed-rate mortgage averaged 6.82 percent in September 2001, when about half the interviews for the 2001 SCF had been completed, and was 5.75 percent three years later. Lower interest rates also brought lower yields on liquid deposits, time deposits, and bonds; for example, the rate on a three-month certificate of deposit had dropped from an average of 3.69 percent for 2001 to slightly more than 1 percent in early 2004, although the rate climbed to 2.45 percent by the end of the year.

The national house price index produced by the Office of Federal Housing Enterprise Oversight increased nearly 27 percent from 2001 to 2004. Price increases varied sharply across the country; by area, the largest gains were in the New England, Middle Atlantic, and Pacific sections of the country—all more than 35 percent; average gains were considerably smaller in parts of the South. Homeownership rates continued a gradual climb.

Other institutional factors also affected family finances. Tax cuts enacted by the Jobs and Growth Tax Relief Reconciliation Act of 2003 increased the child tax credit, provided some concessions for married couples, and expanded the proportion of taxpayers covered by the lowest tax-rate bracket. A major element of the 2003 tax act was the decrease in tax rates on capital gains coupled with the change to taxing dividends at the same rate as capital gains. The proportion of families that use the Internet as a source for financial services, tools, or information continued to grow; according to the SCF, it rose from 32.5 percent in 2001 to 46.5 percent in 2004.

Several demographic shifts had important consequences for the structure of the population. The aging of the baby-boom population from 2001 to 2004 drove a 2 percentage point increase in the share of the population aged 55 to 64. Overall population growth was about 3 percent, and, according to figures from the Bureau of the Census, 58 percent of the growth was due to net immigration. Also according to Census estimates, the number of households increased 3.6 percent—a rate slower than the 5.5 percent pace in the 1998–2001 period—and the average number of people per household remained close to two and a half.

### INCOME

The change in real before-tax family income between 2001 and 2004 stands in strong contrast to the change for the preceding three-year period.<sup>2</sup> Over the more

1. See box “The Data Used in This Article” for a general description of the data. The appendix to this article provides a summary of key technical aspects of the survey. For a detailed discussion of the 1998 and 2001 surveys as well as references to earlier surveys, see Ana M. Aizcorbe, Arthur B. Kennickell, and Kevin B. Moore (2003), “Recent Changes in U.S. Family Finances: Evidence from the 1998 and 2001 Survey of Consumer Finances,” *Federal Reserve Bulletin*, vol. 89 (January), pp. 1–32.

2. To measure income, the interviewers request information on the family's cash income, before taxes, for the full calendar year preceding the survey. The components of income in the SCF are wages; self-employment and business income; taxable and tax-exempt interest; dividends; realized capital gains; food stamps and other, related support programs provided by government; pensions and withdrawals from retirement accounts; Social Security; alimony and other support payments; and miscellaneous sources of income for all members of the primary economic unit in the household.

### The Data Used in This Article

Data from the Survey of Consumer Finances (SCF) are the basis of the analysis presented in this article. The SCF is a triennial interview survey of U.S. families sponsored by the Board of Governors of the Federal Reserve System with the cooperation of the U.S. Department of the Treasury. Since 1992, data for the SCF have been collected by NORC, a research organization at the University of Chicago, roughly between May and December of each survey year.

The majority of statistics included in this article are related to characteristics of “families.” As used here, this term is more comparable to the U.S. Bureau of the Census definition of “households” than to its use of “families,” which excludes the possibility of one-person families. The appendix provides full definitions of “family” for the SCF and the associated family “head.” The survey collects information on families’ total income before taxes for the calendar year preceding the survey. But the bulk of the data cover the status of families as of the time of the interview, including detailed information on their balance sheets and use of financial services as well as on their pensions, labor force participation, and demographic characteristics. Except in a small number of instances (see the appendix for details), the survey questionnaire has changed in only minor ways since 1989, and every effort has been made to ensure the maximum degree of comparability of the data over time.

The need to measure financial characteristics imposes special requirements on the sample design for the survey. The SCF is expected to provide reliable information both on attributes that are broadly distributed in the population (such as homeownership) and on those that are highly concentrated in a relatively small part of the population (such as closely held businesses). To address this requirement, the SCF employs a sample design, essentially unchanged since 1989, consisting of two parts: a standard, geographically based random sample and a special oversample of relatively wealthy families. Weights are used to combine information from the two samples to make estimates for the full population. In the 2004 survey, 4,522 families were interviewed, and in the 2001 survey, 4,449 were interviewed.

This article draws principally upon the final data from the 2004 and 2001 surveys. To provide a larger context, some information is also included from the final versions of earlier surveys.<sup>1</sup> Differences between estimates from earlier surveys as reported here and as reported in earlier *Federal*

*Reserve Bulletin* articles are attributable to additional statistical processing, correction of minor data errors, revisions to the survey weights, conceptual changes in the definitions of variables used in the articles, and adjustments for inflation. In this article, all dollar amounts from the SCF are adjusted to 2004 dollars using the “current methods” version of the consumer price index (CPI) for all urban consumers.<sup>2</sup>

The principal detailed tables describing asset and debt holdings focus on the percent of various groups that have such items and the median holding for those that have them.<sup>3</sup> This conditional median is chosen to give a sense of the “typical” holding. Generally, when one deals with data that exhibit very large values for a relatively small part of the population—as is the case for many of the items considered in this article—estimates of the median are often statistically less sensitive to such outliers than are estimates of the mean.

One liability of using the median as a descriptive device is that medians are not “additive”; that is, the sum of the medians of two items for a common population is not generally equal to the median of the sum (for example, median assets less median liabilities does not equal median net worth). In contrast, means for a common population are additive. Where a comparable median and mean are given, the growth of the mean relative to the median may usually be taken as indicative of change at the top of the distribution; for example, when the mean grows more rapidly than the median, it is typically taken to indicate that the values comprised by the top of the distribution rose more rapidly than those in the lower part of the distribution.

To provide a measure of the significance of the developments discussed in this article, standard errors due to sampling and imputation for missing data are given for selected estimates. Space limits prevent the inclusion of the standard errors for all estimates. Although we do not directly address the statistical significance of the results, the article highlights findings that are significant or are interesting in a broader context.

1. Additional tabular information from the survey is available at [www.federalreserve.gov/pubs/oss/oss2/scf2004home.html](http://www.federalreserve.gov/pubs/oss/oss2/scf2004home.html). These tables include data comparable to the figures shown in this article for all of the surveys from 1989 to 2004. For some assets and debts by demographic group, these tables report means as well as medians for each group. The estimates of the means, however, are more likely to be affected by sampling error than are the estimates of the medians. The tables also include some alternative versions of the tables in this article.

2. In an ongoing effort to improve accuracy, the Bureau of Labor Statistics has introduced several revisions to its CPI methodology. The current-methods index attempts to extend these changes to earlier years to obtain a series as consistent as possible with current practices in the official CPI. For technical information about the construction of this index, see Kenneth J. Stewart and Stephen B. Reed (1999), “Consumer Price Index Research Series Using Current Methods, 1978–1998,” *Monthly Labor Review*, vol. 122 (June), pp. 29–38. To adjust assets and liabilities to 2004 dollars, the earlier survey data were multiplied by the following amounts: for 1995, 1.2311; for 1998, 1.1593; and for 2001, 1.0651. To adjust family income for the previous calendar year to 2004 dollars, the following factors were applied: for 1995, 1.2610; for 1998, 1.1757; for 2001, 1.0948; and for 2004, 1.0269.

3. The median of a distribution is defined as the value at which equal parts of the population considered have values larger or smaller.

# 1. Before-tax family income, percentage of families that saved, and distribution of families, by selected characteristics of families, 1995–2004 surveys

Thousands of 2004 dollars except as noted

Family characteristic	1995				1998			
	Income		Percentage of families that saved	Percentage of families	Income		Percentage of families that saved	Percentage of families
	Median	Mean			Median	Mean		
<b>All families</b> .....	<b>37.8</b> (.9)	<b>54.9</b> (.9)	<b>55.2</b>	<b>100</b>	<b>38.8</b> (.9)	<b>61.7</b> (1.3)	<b>55.9</b>	<b>100</b>
<i>Percentile of income</i>								
Less than 20 .....	8.5	8.2	31.6	20.0	9.6	9.2	32.1	20.0
20–39.9 .....	21.7	21.6	43.4	20.0	23.5	23.4	45.5	20.0
40–59.9 .....	37.8	37.1	57.2	20.0	38.8	39.4	56.1	20.0
60–79.9 .....	56.1	57.0	66.8	20.0	61.8	63.0	67.9	20.0
80–89.9 .....	84.5	85.7	69.9	10.0	91.6	92.2	73.7	10.0
90–100 .....	138.6	215.8	84.2	10.0	151.5	254.5	82.0	10.0
<i>Age of head (years)</i>								
Less than 35 .....	31.5	38.4	56.4	24.8	31.8	41.9	53.0	23.3
35–44 .....	47.2	60.0	54.3	23.0	48.8	69.6	57.3	23.3
45–54 .....	49.6	81.4	58.0	17.9	58.8	80.9	57.8	19.2
55–64 .....	41.6	66.4	58.0	12.5	44.7	83.2	61.1	12.8
65–74 .....	23.7	46.1	50.0	12.0	28.2	54.2	56.3	11.2
75 or more .....	19.7	32.7	51.7	9.8	19.4	33.9	48.6	10.2
<i>Education of head</i>								
No high school diploma .....	17.9	25.8	42.8	18.5	18.0	25.2	39.5	16.5
High school diploma .....	32.1	43.0	50.6	31.7	33.9	42.9	53.7	31.9
Some college .....	37.8	49.9	54.1	19.0	41.1	58.9	56.7	18.5
College degree .....	56.3	87.9	68.2	30.7	63.7	99.3	65.6	33.2
<i>Race or ethnicity of respondent</i>								
White non-Hispanic .....	40.7	60.4	59.1	77.6	44.2	68.7	60.0	76.8
Nonwhite or Hispanic .....	24.4	36.0	41.7	22.4	27.0	38.5	42.3	23.2
<i>Current work status of head</i>								
Working for someone else .....	45.4	59.6	60.4	58.3	47.0	62.1	59.8	59.2
Self-employed .....	46.7	98.5	63.4	10.3	61.1	126.8	61.1	11.3
Retired .....	20.7	34.5	46.0	25.1	22.3	38.2	48.7	24.4
Other not working .....	13.9	22.2	30.8	6.4	13.5	25.2	33.3	5.1
<i>Region</i>								
Northeast .....	37.8	60.6	52.6	19.8	41.1	70.7	53.5	19.3
Midwest .....	38.6	56.0	59.2	23.9	38.2	56.8	58.3	23.6
South .....	35.0	50.9	54.6	35.1	36.6	57.3	55.0	35.7
West .....	39.1	55.2	54.0	21.2	42.0	66.2	56.9	21.3
<i>Housing status</i>								
Owner .....	46.7	68.0	61.3	64.7	50.7	77.3	62.2	66.2
Renter or other .....	22.7	30.9	44.0	35.3	23.5	31.0	43.4	33.8
<i>Percentile of net worth</i>								
Less than 25 .....	17.8	22.9	35.7	25.0	18.5	23.6	36.3	25.0
25–49.9 .....	35.3	38.6	51.4	25.0	35.3	39.3	50.3	25.0
50–74.9 .....	43.6	50.1	59.4	25.0	47.0	54.3	61.8	25.0
75–89.9 .....	52.6	65.0	68.8	15.0	65.8	78.4	71.9	15.0
90–100 .....	99.1	172.8	82.4	10.0	102.4	206.3	80.0	10.0

NOTE: For questions on income, respondents were asked to base their answers on the calendar year preceding the interview. For questions on saving, respondents were asked to base their answers on the twelve months preceding the interview. For discussion of racial and ethnic designations, see the appendix.

Percentage distributions may not sum to 100 because of rounding. Dollars have been converted to 2004 values with the current-methods consumer price

index for all urban consumers (see text box “The Data Used in This Article”). See the appendix for details on standard errors (shown in parentheses below the first row of data for the means and medians here and in table 3) and for definitions of family and family head.

recent period, median income rose 1.6 percent, while the mean fell 2.3 percent (table 1).<sup>3</sup> Over the preced-

ing three-year period, the median had increased 9.5 percent, and the mean had increased 17.3 percent.

3. Over the 2001–04 period, estimates of inflation-adjusted household income for the previous year from the Current Population Survey (CPS) of the Bureau of the Census show a decline in both the median (1.5 percent) and the mean (2.6 percent). Typically, the SCF shows a higher level of mean income than does the CPS; for 2004, the SCF yields an estimate of \$70,700, while the CPS yields an estimate of \$62,200. This difference in mean levels is largely the result of the truncation of large values in the CPS data above a certain amount, which is done with the intent of minimizing the possibility that

respondents in that survey might be identifiable. As discussed in more detail in the appendix, the two surveys also differ in their definitions of the units of observation and in other aspects of their methodologies. The national income and product accounts (NIPA) provide aggregate information on the incomes of households. If NIPA estimates of personal income are adjusted for inflation and growth in the number of households over the 2001–04 period, they imply virtually no change in household income.

## 1.—Continued

Thousands of 2004 dollars except as noted

Family characteristic	2001				2004			
	Income		Percentage of families that saved	Percentage of families	Income		Percentage of families that saved	Percentage of families
	Median	Mean			Median	Mean		
<b>All families</b> .....	<b>42.5</b> (.8)	<b>72.4</b> (2.0)	<b>59.2</b>	<b>100</b>	<b>43.2</b> (.8)	<b>70.7</b> (1.2)	<b>56.1</b>	<b>100</b>
<i>Percentile of income</i>								
Less than 20 .....	10.9	10.7	30.0	20.0	11.1	10.8	34.0	20.0
20–39.9 .....	26.0	25.7	53.4	20.0	25.7	26.1	43.5	20.0
40–59.9 .....	42.5	42.9	61.3	20.0	43.2	43.4	54.4	20.0
60–79.9 .....	69.0	69.4	72.0	20.0	68.1	69.1	69.3	20.0
80–89.9 .....	105.1	104.4	74.9	10.0	104.7	106.5	77.8	10.0
90–100 .....	180.6	322.4	84.3	10.0	184.8	302.1	80.6	10.0
<i>Age of head (years)</i>								
Less than 35 .....	35.6	47.1	52.9	22.7	32.9	45.1	55.0	22.2
35–44 .....	54.7	82.1	62.3	22.3	49.8	73.8	58.0	20.6
45–54 .....	58.0	99.3	61.7	20.6	61.1	94.4	58.5	20.8
55–64 .....	48.2	92.6	62.0	13.2	54.4	100.3	58.5	15.2
65–74 .....	29.6	61.9	61.8	10.7	33.3	59.6	57.1	10.5
75 or more .....	23.8	39.1	55.5	10.4	23.7	40.9	45.7	10.7
<i>Education of head</i>								
No high school diploma .....	18.1	26.7	38.7	16.0	19.4	25.9	35.9	14.4
High school diploma .....	36.1	47.7	56.7	31.7	35.6	44.8	54.0	30.6
Some college .....	43.6	59.1	61.7	18.3	41.1	56.0	51.0	18.4
College degree .....	72.3	124.2	70.0	34.0	73.0	117.5	68.3	36.6
<i>Race or ethnicity of respondent</i>								
White non-Hispanic .....	48.2	81.9	63.1	75.4	49.4	80.7	60.1	72.2
Nonwhite or Hispanic .....	27.4	43.3	47.4	24.6	29.8	44.9	45.6	27.8
<i>Current work status of head</i>								
Working for someone else .....	50.4	71.7	61.6	60.9	49.3	70.1	59.2	60.1
Self-employed .....	67.4	147.3	70.4	11.7	66.7	141.5	68.7	11.8
Retired .....	22.4	42.6	50.6	22.9	24.4	43.2	44.0	23.7
Other not working .....	17.6	38.8	42.3	4.5	20.5	37.4	44.9	4.4
<i>Region</i>								
Northeast .....	44.0	82.7	58.1	19.0	50.9	87.5	59.5	18.8
Midwest .....	46.7	68.9	63.0	23.0	45.2	67.4	59.9	22.9
South .....	38.3	65.4	57.3	36.2	37.0	61.9	52.5	36.3
West .....	43.4	78.9	59.5	21.8	46.2	74.5	55.2	22.0
<i>Housing status</i>								
Owner .....	55.5	90.6	66.7	67.7	55.2	87.3	62.3	69.1
Renter or other .....	26.3	34.3	43.6	32.3	24.6	33.7	42.3	30.9
<i>Percentile of net worth</i>								
Less than 25 .....	21.0	25.5	34.5	25.0	20.5	25.1	34.8	25.0
25–49.9 .....	37.2	42.3	54.3	25.0	37.0	42.2	53.6	25.0
50–74.9 .....	54.2	62.2	68.0	25.0	52.4	60.6	62.2	25.0
75–89.9 .....	74.6	83.9	77.7	15.0	77.0	87.8	72.4	15.0
90–100 .....	136.9	273.1	83.9	10.0	143.8	256.0	76.0	10.0

The change over the 2001–04 period was strongly influenced by a 6.2 percent decline in the overall median amount of wages measured in the survey and a 3.6 percent decline in the mean (data not shown in the tables); wages represent the largest share of family income. Investment-related incomes also declined.

Some patterns of income distribution hold generally across the years of SCF data shown in table 1. Across age classes, median and mean incomes show a life-cycle pattern, rising to a peak in the middle age groups and then declining for groups that are older and increasingly more likely to be retired. Income also shows a strong positive association with education; in particular, incomes for families headed by

persons who have a college degree are substantially higher than for those with any lesser amount of schooling. Incomes of white non-Hispanic families are substantially higher than those of other families.<sup>4</sup> Families headed by self-employed workers consistently have the highest median and mean incomes of all work-status groups. Income is also higher for homeowners than for other families, and it is progressively higher for groups with greater net worth. Across the four regions of the country as defined by the Bureau of the Census, the ordering of median

4. See the appendix for a discussion of racial and ethnic identification in the SCF.



incomes over time has varied, but the means generally show higher values for the Northeast and the West than for the Midwest and the South.

### *Income by Demographic Category*

Across the lowest 90 percent of the income distribution between 2001 and 2004, changes in median and mean incomes varied in direction, but all the changes were 2 percent or less in absolute value.<sup>5</sup> For the top 10 percent, changes in the median and mean were more substantial, but changes in the two statistics were in opposite directions; the median rose 2.3 percent, while the mean fell 6.3 percent. The decline in the mean for this group appears to be a result of a decline since 2001 in investment income, which tends to be concentrated among high-income families. The changes throughout the income distribution contrast with the broad and substantial gains in both median and mean incomes that had been seen over the preceding three-year period, when both measures had risen 10 percent or more for most groups.

The income changes across almost all age groups were substantial. For the groups under age 45, both median and mean incomes dropped. For the remaining age groups, median incomes rose strongly except for the 75-or-older group, but the means rose only for the 55–64 group and the 75-or-older group. Over the preceding three-year period, median income had increased for most age groups, particularly for the oldest, while the mean rose for all groups but especially for the 45–54 group.

Across education groups, median incomes rose only for families headed by persons with less than a high school diploma and for families headed by persons with a college degree; growth was particularly strong for the former group—7.2 percent—but that group still has the lowest median income of all education groups.<sup>6</sup> Mean incomes declined for all educa-

tion groups. In the preceding three-year period, mean incomes had increased markedly for all education groups except the some-college group, and median incomes had increased notably for all groups except the no-high-school-diploma group; the median had increased most strongly for the college-degree group.

In the 2001–04 period, the median income of nonwhite or Hispanic families rose 8.8 percent, and the mean rose 3.7 percent. In contrast, the median for white non-Hispanic families rose 2.5 percent, and the mean declined 1.5 percent. However, both the median and the mean for nonwhites or Hispanics were about 60 percent of the corresponding figures for non-Hispanic whites in 2004. Between 1998 and 2001, the median income of nonwhite or Hispanic families had been about unchanged, while the median had increased 9.0 percent for other families; the mean had risen for both groups.<sup>7</sup>

Of the work-status groups, only the retired group had an increase in both median and mean incomes between 2001 and 2004; the median rose 8.9 percent and the mean 1.4 percent.<sup>8</sup> For the other-not-working group, the median rose 16.5 percent, and the mean declined 3.6 percent; since before the 1995 survey, this group has had the lowest measures of income of any of the work-status groups. For the other work-status groups, both median and mean incomes fell from 2001 to 2004. Over the 1998–2001 period, median income had increased most for the self-employed and the other-not-working groups; mean incomes were higher for all groups, especially the other-not-working group.

By region, the only growth in both median and mean incomes between 2001 and 2004 was in the Northeast. In the West, only the median rose, and in the Midwest and South, median and mean incomes both fell. Over the 1998–2001 period, regional median income increased at the highest rate in the Midwest; growth in the mean was similar for all regions except the South, where it was somewhat lower.

5. Here are selected percentiles of the income distribution for the past four surveys, in 2004 dollars:

Percentile of income	1995	1998	2001	2004
20 .....	15,100	16,100	17,900	18,900
40 .....	28,100	30,600	32,800	33,900
60 .....	45,600	49,400	54,700	53,600
80 .....	73,800	79,100	87,600	89,300
90 .....	101,100	108,900	126,600	129,400

6. Over the 2001–04 period, the share of families with a head with less than a high school diploma declined 1.6 percentage points, to 14.4 percent. Compared with 2001, a larger share of the 2004 group was nonwhite or Hispanic, and the share younger than 45 increased slightly (data not shown in the tables).

7. If the information on Hispanic or Latino ethnic identification is used in the classification of the 2004 results, the median income of nonwhites or Hispanics was \$30,000, and the mean was \$45,400; for other families, the median was \$49,900, and the mean was \$81,200. These figures differ only slightly from those given in table 1.

8. To be included in the retired group, the family head must report being retired and not currently working at any job or report being out of the labor force and over the age of 65. The other-not-working group comprises family heads who are unemployed and those who are out of the labor force but who are neither retired nor over age 65; the composition of this group shifted from 2001 to 2004 to include more families with a head who had a college degree. In 2004, 62.1 percent of the group was unemployed, and the remainder was out of the labor force; in 2001, 52.5 percent of the group was unemployed (data not shown in the tables).

By housing status, median and mean incomes fell both for homeowners and for other families from 2001 to 2004. The decline in the median for homeowners was only 0.5 percent, but the decline for other families was 6.5 percent. The fact that the median for these groups dropped while the overall median showed a gain may be explained, in part, by an influx of new homeowners, who tend, on the one hand, to have incomes lower than those of previously existing homeowners and, on the other hand, to have incomes higher than those of remaining renters. Over the preceding three-year period, median and mean incomes had risen both for homeowners and for others.

By percentile of net worth, median income increased from 2001 to 2004 only for families above the 75th percentile of the wealth distribution; it fell or was little changed for other groups.<sup>9</sup> Mean income rose only between the 75th and 90th percentiles of the wealth distribution. From 1998 to 2001, the two income measures had increased for all groups but particularly for the top decile.

## Saving

Because saving out of current income is an important determinant of family net worth, the SCF asks respondents whether, over the preceding year, the family's spending was less than, more than, or about equal to its income. Though only qualitative, the answers are a useful indicator of whether families are saving. Asking instead for a specific dollar amount would require much more time from respondents and would likely lower the rate of response to the survey.

Overall, from 2001 to 2004 the proportion of families that reported that they had saved in the preceding year fell 3.1 percentage points, to 56.1 percent, although the proportion remained higher than in the 1995 and 1998 surveys. Across most of the demographic groups over the recent three-year period, the predominant pattern is also one of a decline in the proportion of families that saved. In contrast, the 2001 survey had predominantly shown increases from 1998.

9. Here are selected percentiles of the distribution of net worth for the past four surveys, in 2004 dollars:

Percentile of net worth	1995	1998	2001	2004
25 .....	12,300	11,500	13,500	13,300
50 .....	70,800	83,100	91,700	93,100
75 .....	197,800	242,100	301,100	328,500
90 .....	469,000	572,100	780,900	831,600

## 2. Reasons respondents gave as most important for their families' saving, distributed by type of reason, 1995–2004 surveys

Percent

Reason	1995	1998	2001	2004
Education .....	10.8	11.0	10.9	11.6
For the family .....	2.7	4.1	5.1	4.7
Buying own home .....	5.1	4.4	4.2	5.0
Purchases .....	12.8	9.7	9.5	7.7
Retirement .....	23.7	33.0	32.1	34.7
Liquidity .....	33.0	29.8	31.2	30.0
Investments .....	4.2	2.0	1.0	1.5
No particular reason .....	.8	1.3	1.1	.7
When asked for a reason, reported do not save .....	6.8	4.9	4.9	4.0
Total .....	100	100	100	100

NOTE: See note to table 1 and text note 10.

In contrast to the SCF measure, estimates of the personal saving rate from the national income and product accounts (NIPA) show no change on an annual basis from 2001 to 2004. However, the SCF and NIPA concepts of saving differ in some important ways. First, the underlying SCF question asks only whether the family's spending has been less than, more than, or about the same as its income over the past year. Thus, fewer families may be saving, but those that are doing so may be saving more. Second, the NIPA measure of saving relies on definitions of income and consumption that may not be the same as those that respondents had in mind when answering the survey questions. For example, the NIPA measure of personal income includes payments employers make to their employees' defined-benefit pension plans but not the payments made from such plans to families, whereas the SCF measure includes only the latter. The SCF measure also includes realized capital gains, whereas the NIPA measure excludes capital gains of all forms, realized and unrealized.

A separate question in the survey asks about families' more typical saving habits. In 2004, 7.0 percent of families reported that their spending usually exceeds their income; 16.1 percent reported that the two are usually about the same; 36.1 percent reported that they typically save income "left over" at the end of the year, income of one family member, or unusual additional income; and 40.8 percent reported that they save regularly (data not shown in the tables). These figures are not much changed over the last three surveys.

The SCF also collects information on families' most important motivations for saving (table 2).<sup>10</sup>

10. Although families were asked to report their motives for saving regardless of whether they were currently saving, some families reported only that they do not save. The analysis here is confined to the first reason reported by families.

## 3. Family net worth, by selected characteristics of families, 1995–2004 surveys

Thousands of 2004 dollars

Family characteristic	1995		1998		2001		2004	
	Median	Mean	Median	Mean	Median	Mean	Median	Mean
<b>All families</b> .....	<b>70.8</b> (2.4)	<b>260.8</b> (6.4)	<b>83.1</b> (3.2)	<b>327.5</b> (10.7)	<b>91.7</b> (3.3)	<b>421.5</b> (7.1)	<b>93.1</b> (4.3)	<b>448.2</b> (9.7)
<i>Percentile of income</i>								
Less than 20 .....	7.4	54.7	6.8	55.4	8.4	56.1	7.5	72.6
20–39.9 .....	41.3	97.4	38.4	111.5	39.6	121.8	34.3	122.0
40–59.9 .....	57.1	126.0	61.9	146.6	66.5	171.4	71.6	193.8
60–79.9 .....	93.6	198.5	130.2	238.3	150.7	311.3	160.0	342.8
80–89.9 .....	157.7	316.8	218.5	377.1	280.3	486.6	311.1	485.0
90–100 .....	436.9	1,338.0	524.4	1,793.9	887.9	2,406.7	924.1	2,534.4
<i>Age of head (years)</i>								
Less than 35 .....	14.8	53.2	10.6	74.0	12.3	96.6	14.2	73.5
35–44 .....	64.2	176.8	73.5	227.6	82.6	276.4	69.4	299.2
45–54 .....	116.8	364.8	122.3	420.2	141.6	517.6	144.7	542.7
55–64 .....	141.9	471.1	148.2	617.0	193.3	775.4	248.7	843.8
65–74 .....	136.6	429.3	169.8	541.1	187.8	717.9	190.1	690.9
75 or more .....	114.5	317.9	145.6	360.3	161.2	496.2	163.1	528.1
<i>Education of head</i>								
No high school diploma .....	27.9	103.7	24.5	91.4	27.2	109.7	20.6	136.5
High school diploma .....	63.9	163.7	62.7	182.9	61.8	192.5	68.7	196.8
Some college .....	57.6	232.3	85.6	275.5	76.3	303.8	69.3	308.6
College degree .....	128.6	473.7	169.7	612.3	227.2	845.7	226.1	851.3
<i>Race or ethnicity of respondent</i>								
White non-Hispanic .....	94.3	308.7	111.0	391.1	129.6	518.7	140.7	561.8
Nonwhite or Hispanic .....	19.5	94.9	19.3	116.5	19.1	123.8	24.8	153.1
<i>Current work status of head</i>								
Working for someone else .....	60.3	168.4	61.2	194.8	69.3	240.1	67.2	268.5
Self-employed .....	191.8	862.8	288.0	1,071.3	375.2	1,340.6	335.6	1,423.2
Retired .....	99.9	277.2	131.0	356.5	120.4	479.2	139.8	469.0
Other not working .....	4.5	70.1	4.1	85.8	9.5	191.7	11.8	162.3
<i>Region</i>								
Northeast .....	102.0	308.9	109.3	351.3	98.3	480.0	161.7	569.1
Midwest .....	80.8	244.7	93.1	288.5	111.3	361.6	115.0	436.1
South .....	54.2	229.5	71.0	309.6	78.6	400.4	63.8	348.0
West .....	67.4	286.1	71.1	379.1	93.3	468.8	94.8	523.7
<i>Housing status</i>								
Owner .....	128.1	373.7	153.2	468.7	182.9	594.8	184.4	624.9
Renter or other .....	6.0	53.8	4.9	50.4	5.1	58.5	4.0	54.1
<i>Percentile of net worth</i>								
Less than 25 .....	1.2	–2	.6	–2.1	1.2	†	1.7	–1.4
25–49.9 .....	34.7	37.6	37.9	41.6	43.4	47.0	43.6	47.1
50–74.9 .....	117.1	122.6	139.7	149.1	166.8	176.6	170.7	185.4
75–89.9 .....	272.3	293.6	357.7	372.6	458.2	478.6	506.8	526.7
90–100 .....	836.7	1,766.7	1,039.1	2,244.2	1,386.6	2,936.1	1,430.1	3,114.2

NOTE: See note to table 1.

† Less than 0.05 (\$50).

In 2004, the most frequently reported motive was retirement-related (34.7 percent of families), and the next most frequently reported was liquidity-related (30.0 percent of families), a response that is generally taken to be indicative of saving for precautionary reasons.<sup>11</sup> At least since 1995, these have been the dominant reported reasons, but saving for retirement has increased notably in importance. The education-related motive also appears to be important; in 2004, 11.6 percent of families reported it as their primary motive. The importance of saving for purchases has fallen over time.

11. Liquidity-related reasons include “emergencies,” the possibilities of unemployment and illness, and the need for ready money.

### NET WORTH

From 2001 to 2004, real net worth (wealth)—the difference between families’ gross assets and their liabilities—rose, though the mean rose notably more strongly than the median (table 3). The median rose 1.5 percent, while the mean rose 6.3 percent; the corresponding values for the period from 1998 to 2001 were 10.3 percent and 28.7 percent.<sup>12</sup>

12. The Federal Reserve’s flow of funds accounts provide an estimate of the total net worth of the household sector, which includes both households and nonprofit institutions. Between year-end 2001 and year-end 2004, the flow of funds estimate of real net worth rose 12.3 percent. Accounting for the 3.6 percent increase in the number of households over this period produces a change in net worth about 2 percentage points higher than the SCF estimate of the increase in the mean.



By age group, median and mean net worth show a “hump” pattern that generally has its peak in the 55–64 age group. This pattern reflects both life-cycle saving behavior and growth in real wages over time. The median and mean values of wealth rise in tandem with income, a relationship reflecting both income earned from assets and a higher likelihood of saving among higher-income families. Wealth shows strong differentials across groups defined in terms of education, racial and ethnic background, work status, and housing status; these differentials generally mirror those for income, but the wealth differences are larger.

### *Net Worth by Demographic Category*

Analysis by demographic group for the 2001–04 period shows a complicated pattern of gains and losses in median and mean net worth, with changes in the median often opposing those in the mean. The patterns suggest correspondingly complex change in the underlying ownership and values of assets and debts and the distribution of wealth within demographic groups; to some degree, movements of families between groups may also explain some of the shifts in wealth.

Median and mean net worth rose or held about steady for all percentile groups of the distribution of net worth except for families in the lowest 25 percent of the distribution of net worth. In that group, the median rose from \$1,200 to \$1,700, up from \$600 in 1998; the mean fell from near zero to negative \$1,400, closer to its 1998 value of negative \$2,100. For the rest of the net worth distribution, growth in the median and mean over the recent three-year period was notable for the groups above the 50th percentile and particularly so for those in the 75–89.9 percentile group; the gains for the groups in the top half of the distribution continued a uniform pattern of gains at least back to 1995.

Over the recent period, median net worth increased for all income groups above the 40th percentile and especially for the 80–89.9 percentile group, for which the median rose 11.0 percent; the mean for this group was little changed. The mean for the lowest quintile had the largest proportional increase—29.4 percent—but the rise appears to be due to an increase in the fraction of the group consisting of relatively wealthy families with incomes that are likely to have been temporarily low. The mean increased or held about steady for the other income groups, and it rose particularly for the 40–59.9 percentile group—a 13.1 percent gain. Over the preceding years shown,

median net worth rose for most income groups; the mean rose for all income groups, but the increases were strongest for the top two income quintiles.

The survey shows some substantial movements of wealth by age group between 2001 and 2004. Median wealth rose most strongly—28.7 percent—for the 55–64 age group, which had also experienced the largest median gain over the previous three-year period. The less-than-35 age group also saw a substantial gain in the median—15.4 percent—over the more recent period; at the same time, median wealth fell 16.0 percent for the 35–44 age group. Mean wealth rose for all age groups except for the less-than-35 group and the 65–74 group.

More than offsetting gains over the 1998 to 2001 period, median net worth fell 24.3 percent from 2001 to 2004 for families headed by persons with less than a high school diploma or equivalent; the median for the group with some college education also fell, by 9.2 percent. The median rose only for families headed by persons with a high school diploma or equivalent. Mean wealth rose or held about steady for all education groups. For the no-high-school-diploma group, mean wealth rose 24.4 percent; given the large decline in the median for this group, this result suggests a shift in the distribution of net worth within the group. The college-degree group, which had experienced the largest gains in the preceding three-year period, saw little change in its median or mean wealth.

The data show gains from 2001 to 2004 in median and mean wealth for white non-Hispanic families and for nonwhite or Hispanic families, but the gains for the latter were much larger in percentage terms.<sup>13</sup> For white non-Hispanics, the median rose 8.6 percent, and the mean rose 8.3 percent; for nonwhites or Hispanics, the median rose 29.8 percent, and the mean rose 23.7 percent. However, as was the case with income, these measures of the wealth of nonwhites or Hispanics are far lower than those for other families, and the differences are even larger than those in the case of family income; in 2004, the median wealth of nonwhite or Hispanic families was only 17.6 percent of that for other families. In contrast to the whole group of nonwhite or Hispanic families, the subgroup of African American families saw virtually no change in their median net worth from 2001 (\$20,300) to 2004 (\$20,400), but their

13. If the information on Hispanic or Latino ethnic identification is used in the classification of the 2004 results, the median net worth of nonwhites or Hispanics was \$27,100, and the mean was \$162,500; for other families, the median was \$142,700, and the mean was \$566,600. These figures are slightly higher than the corresponding values reported in table 3.

mean net worth rose 37.1 percent, from \$80,700 to \$110,600 (data not shown in the tables). Over the 1998–2001 period, the growth of wealth for nonwhites or Hispanics had substantially lagged that for other families.

Among work-status groups, both of the groups in which the family head was currently working saw a decline in median wealth from 2001 to 2004, while the median rose substantially for the other groups. However, the means show the opposite pattern: gains for those working and losses for the other groups. Over the preceding three years, both median and mean wealth had risen for all work-status groups except for the retired group, which had seen a decline in its median wealth.

Between 2001 and 2004, the mean and median wealth of families increased in all regions of the country except for the South, where the median declined 18.8 percent and the mean fell 13.1 percent. The most striking gain is the 64.5 percent rise in median wealth for the Northeast region, where it had declined in the 1998–2001 period.

By housing status, the mean net worth of homeowners rose 5.1 percent from 2001 to 2004. The median for homeowners was little changed; for other families, the median fell 21.6 percent, and the mean fell 7.5 percent. This pattern is likely explained in part by the growth in homeownership over the period, as discussed later in this article. New homeowners tend to have less wealth than previously existing homeowners, having had less time to benefit from appreciation of home prices. At the same time, the wealth of the remaining renters will tend to be depressed by rising homeownership because the renter group will have fewer families with assets sufficient to initiate a home purchase. In the preceding three-year period, median and mean wealth had increased for both groups.

## ASSETS

Movements in the dollar value of families' financial assets (tables 4, 5, and 6) and nonfinancial assets (tables 7 and 8) are, by definition, a result of changes in valuation and in the patterns of ownership. The overall proportion of families with any asset rose 1.2 percentage points, to 97.9 percent, in 2004 (first half of tables 8.A and 8.B, last column); this rise continues a trend, at work at least since 1995, that had been interrupted by a pause in 2001 (data not shown in the tables). The largest increases in the proportion holding any asset were in the following demographic groups: the lowest quintile of the income distribution, families headed by persons aged

less than 35 and by those aged 65 or older, nonwhite or Hispanic families, families with a head who was not working, renters, and families in the bottom quartile of the wealth distribution. The 2001 ownership levels for other groups were already at or near 100 percent.

Over the recent three-year period, the median real value of assets among families having any asset rose 10.3 percent, from \$156,800 to \$172,900 (second half of tables 8.A and 8.B, last column). That gain far exceeds the 1.5 percent rise in median net worth computed for all families regardless of whether they have assets. This divergence suggests that changes in debt holdings, which in some cases appear to have a direct connection to the increased assets of families, are a key factor. Median assets rose substantially for most demographic groups. However, declines were notable for almost all the groups that saw the largest increases in ownership levels—the lowest quintile of the income distribution, the youngest age group, nonwhite or Hispanic families, the other-not-working group, renters, and the lowest quartile of the wealth distribution. One particularly noteworthy increase in the median value of assets was in the 55–64 age group, which saw a rise of 45.7 percent. The prevailing impression from the preceding three years had been one of broad increases in the median. In the recent three-year period, mean assets rose 8.6 percent (second half of tables 8.A and 8.B, memo line).

## Financial Assets

Financial assets as a share of total assets fell 6.3 percentage points from 2001 to 2004, to 35.7 percent (table 4, memo line); the decline is from a level in

### 4. Value of financial assets of all families, distributed by type of asset, 1995–2004 surveys

Percent

Type of financial asset	1995	1998	2001	2004
Transaction accounts .....	13.9	11.4	11.5	13.2
Certificates of deposit .....	5.6	4.3	3.1	3.7
Savings bonds .....	1.3	.7	.7	.5
Bonds .....	6.3	4.3	4.6	5.3
Stocks .....	15.6	22.7	21.7	17.6
Pooled investment funds (excluding money market funds) .....	12.7	12.4	12.2	14.7
Retirement accounts .....	28.1	27.6	28.4	32.0
Cash value life insurance .....	7.2	6.4	5.3	3.0
Other managed assets .....	5.9	8.6	10.6	8.0
Other .....	3.3	1.7	2.0	2.1
Total .....	100	100	100	100
MEMO Financial assets as a share of total assets .....	36.7	40.7	42.0	35.7

NOTE: For this and following tables, see text for definition of asset categories. Also see note to table 1.

## 5. Family holdings of financial assets, by selected characteristics of families and type of asset, 2001 and 2004 surveys

## A. 2001 Survey of Consumer Finances

Family characteristic	Trans- action accounts	Certifi- cates of deposit	Savings bonds	Bonds	Stocks	Pooled invest- ment funds	Retire- ment accounts	Cash value life insurance	Other managed assets	Other	Any financial asset
	Percentage of families holding asset										
<b>All families .....</b>	<b>91.4</b>	<b>15.7</b>	<b>16.7</b>	<b>3.0</b>	<b>21.3</b>	<b>17.7</b>	<b>52.2</b>	<b>28.0</b>	<b>6.6</b>	<b>9.4</b>	<b>93.4</b>
<i>Percentile of income</i>											
Less than 20 .....	71.6	10.0	3.8	*	3.8	3.6	13.2	13.8	2.2	6.2	75.5
20–39.9 .....	90.3	14.7	11.0	*	11.2	9.5	33.3	24.7	3.3	10.2	93.6
40–59.9 .....	96.6	17.4	14.1	1.5	16.4	15.7	52.8	25.6	5.4	9.9	98.3
60–79.9 .....	99.1	16.0	24.4	3.7	26.2	20.6	75.7	35.7	8.5	9.2	99.6
80–89.9 .....	99.7	18.3	30.3	3.9	37.0	29.0	83.7	38.6	10.7	10.8	99.8
90–100 .....	99.2	22.0	29.7	12.7	60.6	48.8	88.3	41.8	16.7	12.5	99.7
<i>Age of head (years)</i>											
Less than 35 .....	87.1	6.3	12.7	*	17.4	11.5	45.1	15.0	2.1	10.5	89.7
35–44 .....	91.1	9.8	22.6	2.1	21.6	17.5	61.4	27.0	3.1	9.7	93.5
45–54 .....	92.7	15.2	21.0	2.8	22.0	20.2	63.4	31.1	6.4	8.5	94.7
55–64 .....	93.8	14.4	14.3	6.1	26.7	21.3	59.1	35.7	13.0	10.6	95.0
65–74 .....	93.8	29.7	11.3	3.9	20.5	19.9	44.0	36.7	11.8	8.5	94.6
75 or more .....	93.7	36.5	12.5	5.7	21.8	19.5	25.7	33.3	11.2	7.7	95.1
<i>Race or ethnicity of respondent</i>											
White non-Hispanic .....	95.3	18.5	19.5	3.8	24.7	21.0	57.1	29.9	8.2	9.4	96.7
Nonwhite or Hispanic .....	79.4	6.8	8.1	.4	11.0	7.4	37.4	22.0	1.8	9.6	83.2
<i>Current work status of head</i>											
Working for someone else .....	92.9	11.3	19.4	2.0	20.9	17.3	61.5	27.4	5.3	9.5	94.9
Self-employed .....	95.9	18.7	16.6	6.1	29.8	22.9	58.9	34.6	6.9	12.4	97.6
Retired .....	89.0	27.1	11.4	4.5	19.6	17.3	29.2	29.0	10.4	8.1	90.9
Other not working .....	72.2	7.8	7.5	*	13.3	10.9	26.8	12.9	5.6	6.5	74.2
<i>Housing status</i>											
Owner .....	96.7	20.0	21.2	4.0	27.0	22.7	62.6	34.5	8.9	8.8	97.8
Renter or other .....	80.3	6.7	7.2	.7	9.3	7.1	30.4	14.3	2.0	10.6	84.1
<i>Percentile of net worth</i>											
Less than 25 .....	73.7	1.8	4.3	*	5.0	2.5	18.9	6.9	*	8.1	78.0
25–49.9 .....	94.2	8.8	12.8	*	9.5	7.2	45.3	26.0	1.3	8.7	96.7
50–74.9 .....	98.2	23.2	23.6	*	20.3	17.5	63.2	34.6	6.2	8.7	98.9
75–89.9 .....	99.6	30.1	25.9	5.3	41.2	36.0	77.6	41.7	13.9	9.6	99.8
90–100 .....	99.6	26.9	26.3	18.4	64.3	54.8	87.4	48.6	26.4	16.2	100.0

2001 that marked the high point observed in the survey. The relative shares of various financial assets also shifted. Declines in the percentage shares of direct holdings of publicly traded stocks, cash value life insurance, and “other managed assets” were approximately balanced by increases in the shares of retirement accounts, pooled investment funds, and transaction accounts.<sup>14</sup> After showing a declining trend in earlier survey years, the share of certificates of deposit edged up.

Overall, the ownership of any financial asset over the recent period edged up only 0.4 percentage point, to 93.8 percent (first half of tables 5.A and 5.B, last column). However, the recent data show some pronounced patterns of change for some demographic groups. By income, the largest changes in ownership were a rise for the lowest quintile and a fall for the second quintile; by age, notable increases appeared only for the groups of those 65 or older; and by work status, ownership rose for families headed by people

who were not working and declined for other work-status groups. Ownership also rose notably for renters and for nonwhite or Hispanic families.

Paralleling the drop in the overall ratio of financial assets to total assets over the recent period, the median holding of financial assets for families having such assets fell 22.8 percent (second half of tables 5.A and 5.B, last column), while the mean fell 6.9 percent (memo line). The change in the median more than offset the increase over the previous three-year period. The picture is one of declines in the medians over the recent period for almost every demographic group; exceptions were the eighth income decile and the 55–64 age group. Mean holdings declined for every group (means of groups not shown in the tables).

## Transaction Accounts and Certificates of Deposit

In 2004, 91.3 percent of families had some type of transaction account—a category comprising checking, savings, and money market deposit

14. The definitions of asset categories in table 4 are given below, in the sections of text devoted to them.

## 5.—Continued

## A. 2001 Survey of Consumer Finances—Continued

Family characteristic	Trans- action accounts	Certi- ficates of deposit	Savings bonds	Bonds	Stocks	Pooled invest- ment funds	Retire- ment accounts	Cash value life insurance	Other managed assets	Other	Any financial asset
Median value of holdings for families holding asset (thousands of 2004 dollars)											
<b>All families .....</b>	<b>4.2</b>	<b>16.0</b>	<b>1.1</b>	<b>46.3</b>	<b>21.3</b>	<b>37.3</b>	<b>30.9</b>	<b>10.7</b>	<b>74.6</b>	<b>4.3</b>	<b>29.8</b>
<i>Percentile of income</i>											
Less than 20 .....	.9	10.7	1.1	*	8.0	22.4	4.8	3.8	25.8	1.8	2.1
20–39.9 .....	1.9	14.9	.6	*	10.7	25.6	8.5	6.6	38.3	3.2	8.4
40–59.9 .....	3.0	13.8	.5	10.7	8.5	25.6	14.5	7.5	74.6	3.2	18.2
60–79.9 .....	5.5	16.0	1.1	42.6	18.1	32.0	32.0	12.8	63.9	3.2	59.1
80–89.9 .....	10.1	13.8	1.1	53.3	21.3	29.8	58.6	10.7	74.6	7.5	103.4
90–100 .....	27.7	26.6	2.1	94.5	53.3	93.2	138.5	25.6	119.3	16.0	387.7
<i>Age of head (years)</i>											
Less than 35 .....	1.9	4.3	.3	*	6.1	9.6	7.0	10.7	42.6	1.7	6.6
35–44 .....	3.6	6.4	1.1	14.5	16.0	18.6	30.4	9.6	53.3	2.1	28.6
45–54 .....	4.8	12.8	1.1	63.9	16.0	41.0	51.1	11.7	63.9	5.3	48.0
55–64 .....	5.9	20.2	2.7	63.9	42.6	63.9	58.6	10.7	58.6	10.7	59.8
65–74 .....	8.5	21.3	2.1	76.1	90.5	74.6	63.9	9.3	127.8	8.5	54.7
75 or more .....	7.8	26.6	3.2	37.3	63.9	74.6	49.0	7.5	106.5	19.2	42.6
<i>Race or ethnicity of respondent</i>											
White non-Hispanic .....	5.1	16.0	1.1	53.3	23.4	42.6	37.3	10.7	74.6	5.3	41.3
Nonwhite or Hispanic .....	1.8	9.6	.7	8.1	8.5	18.6	10.7	9.3	47.9	1.6	7.6
<i>Current work status of head</i>											
Working for someone else .....	3.4	9.6	1.1	27.7	11.7	21.3	26.0	10.1	58.6	2.7	25.7
Self-employed .....	8.5	17.0	2.1	76.5	37.3	104.4	58.2	18.1	116.1	12.8	65.0
Retired .....	5.3	26.6	4.3	53.3	63.9	74.6	57.5	9.6	106.5	10.7	34.4
Other not working .....	1.9	42.6	.3	*	8.5	42.6	21.3	10.7	41.5	2.1	5.6
<i>Housing status</i>											
Owner .....	6.2	16.0	1.3	53.3	24.5	42.6	40.7	10.7	74.6	6.4	53.5
Renter or other .....	1.3	10.7	.4	31.5	6.7	10.7	7.2	8.0	42.6	2.1	4.2
<i>Percentile of net worth</i>											
Less than 25 .....	.7	1.6	.2	*	1.4	2.1	2.1	1.9	*	1.1	1.4
25–49.9 .....	2.3	5.3	.5	*	3.4	5.3	8.0	5.5	10.7	2.4	11.2
50–74.9 .....	5.9	12.2	1.2	*	8.8	16.0	32.0	9.6	23.4	4.8	56.5
75–89.9 .....	14.5	21.3	2.1	21.3	27.6	39.9	81.5	12.8	74.6	10.7	214.8
90–100 .....	38.3	42.6	2.1	95.9	129.9	149.1	202.4	32.0	213.0	35.1	753.5
MEMO Mean value of holdings for families holding asset .....	25.3	39.9	8.4	310.2	204.8	139.3	109.3	38.4	321.5	41.9	215.6

NOTE: See note to table 1.

\* Ten or fewer observations.

accounts, money market mutual funds, and call accounts at brokerages. The ownership rate, essentially unchanged from 2001, was 90.6 in the 1998 survey and notably lower before then. Families that did not have any type of transaction account in 2004 were disproportionately likely to have low incomes, to be headed by a person younger than 35, to be nonwhite or Hispanic, to be headed by a person who was neither working nor retired, to be renters, or to have relatively low levels of wealth. Over the 2001–04 period, ownership rose notably for families at the bottom of the income and wealth distributions, families headed by persons aged 75 or older, families with heads who were not working, nonwhites or Hispanics, and renters.

Underlying the leveling off in the growth of ownership of transaction accounts in the recent three-year period was a larger shift in the types of account families used. The share of families with a checking account rose, and the shares of families with all other

types of transaction account declined, as shown in the following table:

Type of transaction account	Families holding	
	2004 (percent)	Change, 2001–04 (percentage points)
Checking .....	89.4	2.1
Savings .....	47.1	–8.1
Money market .....	21.1	–.6
Call .....	2.5	–.7

Most of the change appears to reflect consolidation of multiple types of account into a checking account; for many such families, the relatively low interest rates on deposits may have been insufficient to compensate for the effort of managing multiple accounts. See box “Families without a Checking Account” for a discussion of reasons that some families do not have a checking account.

Median holdings in transaction accounts for those who had such accounts fell 9.5 percent from 2001 to

## 5. Family holdings of financial assets, by selected characteristics of families and type of asset, 2001 and 2004 surveys—Continued

## B. 2004 Survey of Consumer Finances

Family characteristic	Transaction accounts	Certificates of deposit	Savings bonds	Bonds	Stocks	Pooled investment funds	Retirement accounts	Cash value life insurance	Other managed assets	Other	Any financial asset
	Percentage of families holding asset										
<b>All families</b> .....	<b>91.3</b>	<b>12.7</b>	<b>17.6</b>	<b>1.8</b>	<b>20.7</b>	<b>15.0</b>	<b>49.7</b>	<b>24.2</b>	<b>7.3</b>	<b>10.0</b>	<b>93.8</b>
<i>Percentile of income</i>											
Less than 20 .....	75.5	5.0	6.2	*	5.1	3.6	10.1	14.0	3.1	7.1	80.1
20–39.9 .....	87.3	12.7	8.8	*	8.2	7.6	30.0	19.2	4.9	9.9	91.5
40–59.9 .....	95.9	11.8	15.4	*	16.3	12.7	53.4	24.2	7.9	9.3	98.5
60–79.9 .....	98.4	14.9	26.6	2.2	28.2	18.6	69.7	29.8	7.8	11.2	99.1
80–89.9 .....	99.1	16.3	32.3	2.8	35.8	26.2	81.9	29.5	12.1	11.4	99.8
90–100 .....	100.0	21.5	29.9	8.8	55.0	39.1	88.5	38.1	13.0	13.4	100.0
<i>Age of head (years)</i>											
Less than 35 .....	86.4	5.6	15.3	*	13.3	8.3	40.2	11.0	2.9	11.6	90.1
35–44 .....	90.8	6.7	23.3	.6	18.5	12.3	55.9	20.1	3.7	10.0	93.6
45–54 .....	91.8	11.9	21.0	1.8	23.2	18.2	57.7	26.0	6.2	12.1	93.6
55–64 .....	93.2	18.1	15.2	3.3	29.1	20.6	62.9	32.1	9.4	7.2	95.2
65–74 .....	93.9	19.9	14.9	4.3	25.4	18.6	43.2	34.8	12.8	8.1	96.5
75 or more .....	96.4	25.7	11.0	3.0	18.4	16.6	29.2	34.0	16.7	8.1	97.6
<i>Race or ethnicity of respondent</i>											
White non-Hispanic .....	95.5	15.3	21.1	2.5	25.5	18.9	56.1	26.8	9.2	10.2	97.2
Nonwhite or Hispanic .....	80.6	6.0	8.5	*	8.0	5.0	32.9	17.4	2.1	9.4	85.0
<i>Current work status of head</i>											
Working for someone else .....	92.2	9.8	20.1	.8	19.6	13.5	57.1	21.8	5.4	9.5	94.5
Self-employed .....	94.4	14.2	18.7	4.3	31.6	22.3	54.6	29.8	7.6	15.1	96.1
Retired .....	90.4	20.2	11.4	3.5	19.0	16.2	32.9	29.7	12.8	8.4	93.6
Other not working .....	76.2	7.9	14.5	*	14.3	10.2	24.9	10.7	*	11.5	79.6
<i>Housing status</i>											
Owner .....	96.0	15.9	21.2	2.6	25.8	19.2	60.2	30.1	9.6	9.6	97.5
Renter or other .....	80.9	5.6	9.5	.2	9.1	5.7	26.2	11.0	2.0	10.9	85.5
<i>Percentile of net worth</i>											
Less than 25 .....	75.4	2.2	6.2	*	3.6	2.0	14.3	7.7	*	6.9	79.8
25–49.9 .....	92.0	6.5	13.2	*	9.3	7.2	43.1	19.3	2.3	9.5	96.1
50–74.9 .....	98.0	16.0	22.7	*	21.0	12.5	61.8	30.1	8.8	10.2	99.4
75–89.9 .....	99.7	24.2	28.5	3.2	39.1	32.4	77.6	36.7	15.6	11.2	100.0
90–100 .....	100.0	28.8	28.1	12.7	62.9	47.3	82.5	43.8	21.0	16.4	100.0

2004, while the mean rose 7.1 percent. Across demographic groups, the patterns of change in the median are mainly a mixture of substantial increases and declines. Median balances fell for the lowest two income groups and the lowest three wealth groups but rose or held steady for the other income and wealth groups. Across age groups, the median increased only for the 55–64 group and fell or was unchanged for other families. By work status, median balances rose substantially for the self-employed group. Holdings declined for both of the racial and ethnic groups and for both of the housing-status groups.

Certificates of deposit (CDs)—interest-bearing deposits with a set term—are traditionally viewed as a low-risk saving vehicle, and they are often used by people who desire a safe haven from the volatility of financial markets. Over the 2001–04 period, the attractiveness of CDs declined as the interest rates on them fell. The resulting 3.0 percentage point decline in ownership broke the slow upward movement seen since 1998. Over the more recent period, ownership declined among most demographic groups. At the

same time, the overall real median value fell 6.3 percent. Across income groups, declines in the median were concentrated in the groups below the 60th percentile, whereas the medians for the higher-income groups increased; along with the fact that the overall mean holding rose 37.6 percent, this result suggests that the concentration of CD balances rose among the higher-income groups. The median value of CDs rose for all wealth groups except the third quartile.

### Savings Bonds and Other Bonds

Savings bonds are owned disproportionately by families with incomes in the highest 40 percent of the distribution and by families in the top half of the distribution of net worth. Over the 2001–04 period, the ownership of savings bonds rose 0.9 percentage point overall, and it rose for most demographic groups; these gains partially offset declines in the preceding three-year period. Median holdings fell 9.1 percent, and the mean fell 31.0 percent between 2001 and 2004.



## 5.—Continued

## B. 2004 Survey of Consumer Finances—Continued

Family characteristic	Trans-action accounts	Certifi-cates of deposit	Savings bonds	Bonds	Stocks	Pooled invest-ment funds	Retire-ment accounts	Cash value life insurance	Other managed assets	Other	Any financial asset
Median value of holdings for families holding asset (thousands of 2004 dollars)											
<b>All families</b> .....	<b>3.8</b>	<b>15.0</b>	<b>1.0</b>	<b>65.0</b>	<b>15.0</b>	<b>40.4</b>	<b>35.2</b>	<b>6.0</b>	<b>45.0</b>	<b>4.0</b>	<b>23.0</b>
<i>Percentile of income</i>											
Less than 20 .....	.6	10.0	.4	*	6.0	15.3	5.0	2.8	22.0	2.5	1.3
20–39.9 .....	1.5	14.0	.6	*	8.0	25.0	10.0	3.9	50.0	2.0	4.9
40–59.9 .....	3.0	10.0	.8	*	12.0	23.0	17.2	5.0	36.0	2.5	15.5
60–79.9 .....	6.6	18.0	1.0	80.0	10.0	25.5	32.0	7.0	35.0	4.0	48.5
80–89.9 .....	11.0	20.0	.8	26.7	15.0	33.5	70.0	10.0	50.0	5.0	108.2
90–100 .....	28.0	33.0	2.0	160.0	57.0	125.0	182.7	20.0	100.0	20.0	365.1
<i>Age of head (years)</i>											
Less than 35 .....	1.8	4.0	.5	*	4.4	8.0	11.0	3.0	5.0	1.0	5.2
35–44 .....	3.0	10.0	.5	10.0	10.0	15.9	27.9	5.0	18.3	3.5	19.0
45–54 .....	4.8	11.0	1.0	30.0	14.5	50.0	55.5	8.0	43.0	5.0	38.6
55–64 .....	6.7	29.0	2.5	80.0	25.0	75.0	83.0	10.0	65.0	7.0	78.0
65–74 .....	5.5	20.0	3.0	40.0	42.0	60.0	80.0	8.0	60.0	10.0	36.1
75 or more .....	6.5	22.0	5.0	295.0	50.0	60.0	30.0	5.0	50.0	22.0	38.8
<i>Race or ethnicity of respondent</i>											
White non-Hispanic .....	5.0	16.0	1.0	80.0	18.0	45.0	41.0	7.0	45.0	5.0	36.0
Nonwhite or Hispanic .....	1.5	12.0	.6	*	5.3	18.0	16.0	5.0	40.0	2.5	5.0
<i>Current work status of head</i>											
Working for someone else .....	3.1	10.0	.7	25.0	10.0	25.0	30.0	5.4	50.0	3.0	20.5
Self-employed .....	10.0	20.0	1.9	130.0	25.0	60.0	60.0	10.5	42.0	6.0	53.2
Retired .....	4.2	25.0	3.0	90.0	45.0	75.0	47.0	5.0	45.0	10.0	26.5
Other not working .....	2.0	8.0	2.0	*	5.0	15.9	31.0	8.4	*	3.0	5.0
<i>Housing status</i>											
Owner .....	6.0	20.0	1.0	65.0	20.0	50.0	46.0	7.0	45.0	6.0	47.9
Renter or other .....	1.1	7.0	.7	130.0	4.5	10.0	11.0	3.0	42.0	2.0	3.0
<i>Percentile of net worth</i>											
Less than 25 .....	.5	2.0	.3	*	1.9	2.0	2.9	.8	*	.7	1.0
25–49.9 .....	2.0	5.8	.5	*	3.5	7.4	11.8	4.0	9.4	2.0	9.9
50–74.9 .....	5.8	10.4	1.0	*	8.0	16.0	33.5	5.0	22.0	5.0	47.2
75–89.9 .....	15.8	31.0	2.0	25.0	20.0	50.0	95.7	10.0	50.0	7.0	203.0
90–100 .....	43.0	46.0	2.5	111.1	110.0	160.0	264.0	20.0	135.0	40.0	728.8
MEMO											
Mean value of holdings for families holding asset .....	27.1	54.9	5.8	547.0	160.3	184.0	121.3	23.1	207.0	39.5	200.7

NOTE: See note to table 1.

\* Ten or fewer observations.

Other bond types tend to be very narrowly held, and the ownership rate, which had been flat since 1995, fell to 1.8 percent in 2004, a drop of 1.2 percentage points from 2001.<sup>15</sup> The underlying data in the survey suggest that, among families that owned bonds, the proportion that owned mortgage-backed bonds and corporate or foreign bonds rose in the recent period, while ownership of tax-exempt and other government bills and bonds fell somewhat. Ownership of any type of bond is notably concentrated among the highest tiers of the income and wealth distributions, and these groups saw comparatively large declines in ownership from 2001 to 2004. At the same time, the value of bonds for families

that had them rose substantially; the median went up 40.4 percent and the mean 76.3 percent.

### Publicly Traded Stock

The direct ownership of publicly traded stocks is more widespread than the direct ownership of bonds, but, as with bonds, it is also concentrated among high-income and high-wealth families. The share of families with any such stock holdings declined 0.6 percentage point from 2001 to 2004 after having risen steadily since the 1995 survey. Over demographic groups, the decline was most marked for the highest decile of the income distribution.

Although the major stock price indexes had declined in 2001 to about the levels of 1998 and had recovered by the time of the 2004 survey, the median amount of directly held stock for families with such assets was 29.6 percent lower in 2004 than in 2001;

15. "Other bonds" as reported in the survey are held directly and include corporate and mortgage-backed bonds; federal, state, and local government bonds; and foreign bonds. In the survey, financial assets held indirectly are those held in retirement accounts and in other managed assets.

### Families without a Checking Account

Between 2001 and 2004, the proportion of families with any type of transaction account barely changed (table 5), while the share without a checking account fell 2.1 percentage points, from 12.7 percent to 10.6 percent (data not shown in the tables). The decline in the fraction of families without a checking account follows a longer trend; in 1992, the share was 16.6 percent.<sup>1</sup>

Among families without a checking account in 2004, 52.1 percent had held such an account in the past, 55.1 percent had incomes in the lowest 20 percent of that distribution, 56.6 percent were headed by persons younger than 45, and 61.0 percent were nonwhite or Hispanic.

The SCF asked all families that did not have a checking account to give a reason for not having an account (see table). The most commonly reported reason—given by 27.9 percent of families—was that the family did not write enough checks to make account ownership worthwhile. Another 14.4 percent said that they did not have enough money to make account ownership worthwhile, and 22.6 percent said that they did not like dealing with banks. The pattern of the reported reasons differs only slightly from that in 2001.

1. For the definition of “transaction account,” see the main text. For a discussion of the ways that lower-income families obtain checking and credit services and the effects that developments in electronic transactions may have on such families, see Jeanne M. Hogarth and Kevin H. O’Donnell (1999), “Banking Relationships of Lower-Income Families and the Governmental Trend toward Electronic Payments,” *Federal Reserve Bulletin*, vol. 85 (July), pp. 459–73.

When attention is further restricted to families that once had a checking account (data not shown in the table), the general pattern of responses is similar to that for all families without a checking account, but there were some notable changes over the period. For families that once had a checking account, the proportion reporting that they could not manage a checking account or did not like banks both rose from 2001. These increases are offset by decreases in the proportion reporting that they found service charges too high, did not write enough checks, had credit problems, or did not have enough money for an account to be worthwhile.

Distribution of reasons cited by respondents for their families’ not having a checking account, by reason, 1995–2004 surveys

Reason	1995	1998	2001	2004
Do not write enough checks to make it worthwhile . . . . .	25.3	28.4	28.6	27.9
Minimum balance is too high . . .	8.8	8.6	6.5	5.6
Do not like dealing with banks . .	18.6	18.5	22.6	22.6
Service charges are too high . . . .	8.4	11.0	10.2	11.6
Cannot manage or balance a checking account . . . . .	8.0	7.2	6.6	6.8
No bank has convenient hours or location . . . . .	1.2	1.2	.4	1.1
Do not have enough money . . . . .	20.0	12.9	14.0	14.4
Credit problems . . . . .	1.4	2.7	3.6	2.4
Do not need/want an account . . .	4.9	6.3	5.1	5.2
Other . . . . .	3.5	3.1	2.4	2.4
Total . . . . .	100	100	100	100

the mean was 21.7 percent lower. The declines in the median and mean were shared by most demographic groups (means for groups not shown in the tables); a notable exception was the increase in the median for the third income quintile, 41.2 percent.

The great majority of families owned stock in only a small number of companies. In 2004, 34.6 percent had stock in only one company, 59.5 percent had stock in three or fewer companies, and 9.5 percent had stock in fifteen or more companies (data not shown in the tables). For 37.1 percent of stock owners, at least one of the companies was one that employed or had employed the family head or that person’s spouse or partner. The 2001 data show a similar pattern.

### Pooled Investment Funds

From 2001 to 2004, direct ownership of pooled investment funds fell 2.7 percentage points, to

15.0 percent of families.<sup>16</sup> Typically, the pattern of ownership of pooled investment funds resembles that of stocks, but in contrast to the mixed changes in stock ownership over this period, ownership of pooled investment funds declined for almost every demographic group. Both the overall change and the changes for demographic groups break an earlier trend toward broadly increased ownership of this asset. Among families owning pooled investment funds, the survey indicates that ownership shifted over the recent period from funds largely invested in either stocks or government bonds toward funds dedicated to a balance between stocks and bonds of any type. For 2004, the survey for the first time provides separate information on a miscellaneous category of funds, which is composed of hedge funds, exchange-

16. Pooled investment funds in this article are taken to exclude money market mutual funds and indirectly held mutual funds and to include all other types of directly held pooled investment funds, such as traditional open-end and closed-end mutual funds, real estate investment trusts, and hedge funds.

traded funds, and similar instruments; the survey estimates that 4.3 percent of families with pooled investment funds (0.7 percent of all families) had funds of this type (data not shown in the tables).

Among families owning pooled investment funds, the value of holdings has continued an increase seen over the preceding decade; in the recent period, the median holding rose 8.3 percent, and the mean rose 32.1 percent. Among the top quintile of the income distribution, where ownership is most prevalent, the median holding rose substantially over the recent period; holdings fell for the other income groups. At the same time, median holdings across wealth groups fell only for the lowest quartile. By age, holdings rose only for the 45–64 age groups. Median holdings rose for white non-Hispanic families and fell for other families.

### Retirement Accounts

Ownership of tax-deferred retirement assets such as individual retirement accounts (IRAs) tends to increase with families' income and net worth.<sup>17</sup> For several reasons, ownership is also more likely among families headed by persons less than 65 years of age than among the older groups. First, even though retirement accounts have been in existence for about twenty years, they may not have become common until relatively late in the careers of people in the older groups. Second, beginning in the year that a person reaches age 59½, funds held by that person in retirement accounts may be withdrawn without penalty, and some in the group may have done so. Third, families may have used funds from retirement

accounts accumulated from previous employment to purchase an annuity at retirement; annuities are treated in this article as a separate type of managed asset.

From 2001 to 2004, the fraction of families with retirement accounts fell 2.5 percentage points; the drop offset most of the 3.3 percentage point increase of the preceding three years. In the recent period, more than 60 percent of families with some type of account plan had one associated with a current or past job, and nearly as many had an IRA or Keogh account; about one-fourth of families with retirement accounts had both types (data not shown in the tables). Over this time, ownership declined for nearly all groups; key exceptions were families with a retired head and families headed by persons aged 55 to 64 or aged 75 or older. In the preceding three years, ownership had been up in almost every demographic group.

In a continuation of the trend over the preceding decade, holdings in retirement accounts increased markedly in the 2001–04 period; for those having retirement accounts, the median rose 13.9 percent, and the mean rose 11.0 percent. Gains also appeared in the median holdings of most demographic groups over the recent period; one of the largest increases was among nonwhite or Hispanic families, a group for which ownership of such accounts declined substantially in 2004. The 75-or-older age group saw a sizable decline in its median.

Although tax-deferred retirement assets are clearly an important element in retirement planning, families may hold a variety of other assets that are intended, at least in part, to finance retirement. Such other assets might also be used for contingencies as necessary. Similarly, a need for liquidity might drive a family to liquidate or borrow against a tax-deferred retirement asset, even if it will be assessed a penalty for doing so.

Two common and often particularly important types of retirement plan are not included in the assets described in this section: Social Security (the federally funded Old-Age and Survivors' Insurance program, or OASI) and employer-sponsored defined-benefit plans. OASI is well described elsewhere, and it covers the great majority of the population.<sup>18</sup> The retirement income provided by defined-benefit plans is typically based on workers' salaries and years of work with an employer, a group of employers, or a union. Unfortunately, income streams from OASI and

17. Tax-deferred retirement accounts consist of IRAs, Keogh accounts, and certain employer-sponsored accounts. Employer-sponsored accounts consist of 401(k), 403(b), and thrift saving accounts from current or past jobs; other current job plans from which loans or withdrawals can be made; and accounts from past jobs from which the family expects to receive the account balance in the future. This definition of employer-sponsored plans is intended to confine the analysis to accounts that are portable across jobs and for which families will ultimately have the option to withdraw the balance.

IRAs and Keoghs may be invested in virtually any asset, including stocks, bonds, pooled investment funds, options, and real estate. In principle, employer-sponsored plans may be invested in a similarly broad way, but, in practice, individuals' choices for investment are often limited to a narrower set of assets. The 2004 SCF introduced a new sequence of questions to cover employer-sponsored pensions associated with the current jobs of the survey respondent and the spouse or partner of that person. The goal of this redesign was to better cope with the proliferation of complex plans and with the confusion many people appear to have about the exact types of their plans. Although the new sequence was designed to contain the earlier questions, it is still possible that the new context may have changed patterns of response for some types of respondent in ways not compatible with the earlier data.

18. For a detailed description of OASI, see Social Security Administration, "Online Social Security Handbook," Publication 65-008, [www.ssa.gov/OP\\_Home/handbook/ssa-hbk.htm](http://www.ssa.gov/OP_Home/handbook/ssa-hbk.htm).



defined-benefit plans cannot be translated directly into a current value because valuation depends critically on assumptions about future events and conditions—work decisions, earnings, inflation rates, discount rates, mortality, and so on—and no widely agreed-upon standards exist for making these assumptions.<sup>19</sup>

However, the SCF does contain substantial information for family heads and their spouses or partners regarding their defined-benefit plans and plans with some type of account feature to which they have rights from a current or past job.<sup>20</sup> In 2004, 57.5 percent of families had rights to some type of plan other than OASI through the current or past work of either the family head or that person's spouse or partner, a level nearly the same as in 2001. Of this group of families, 57.4 percent had a plan that was a standard defined-benefit plan with an annuity payout scheme, 62.8 percent had a plan with at least some account feature, and 20.1 percent had both types of plan (data not shown in the tables).

In many pension plans with account features, contributions may be made by the employer, the worker, or both. In some cases, these contributions represent a substantial amount of saving, though workers may offset this saving by reducing their saving in other forms. An employer's contributions also represent additional income for the worker. In 2004, 88.5 percent of families with account-type plans on a current job of either the family head or the spouse or partner of the family head had employers who made contributions to the plan, and 89.4 percent of families with such plans made contributions themselves (data not shown in the tables). The median annual contribution by employers who contributed to such accounts was \$2,400, and the median contribution of families that contributed was \$2,700.

The eligibility of working heads of families to participate in any type of job-related pension fell from 57.2 percent in 2001 to 54.8 percent in 2004; it had risen 2.0 percentage points over the preceding

three years (data not shown in the tables). Participation by eligible workers is usually voluntary. In 2004, 84.1 percent of family heads who were eligible to participate elected to do so, down from 85.2 percent in 2001.<sup>21</sup> The choice to participate appears to be related strongly to income. Of heads of families with incomes in the lowest 20 percent of the distribution in 2004, 50.6 percent who were eligible declined to participate; in contrast, among heads of families with incomes in the highest 10 percent of the distribution, only 5.0 percent of eligible workers declined to participate.

### Cash Value Life Insurance

Cash value life insurance combines an investment vehicle with insurance coverage in the form of a death benefit.<sup>22</sup> Some cash value life insurance policies offer a high degree of choice in the way the policy payments are invested. Investment returns on such policies are typically shielded from taxation until the money is withdrawn; if the funds remain untapped until the policyholder dies, the beneficiary of the policy may receive, tax-free, the death benefit or the cash value, whichever is greater. In contrast, term insurance, the other popular type of life insurance, offers only a death benefit. One attraction of cash value policies for some people is that they promote regular saving funded through the required policy premium.

Ownership of cash value insurance is broadly spread across demographic groups, with a tendency toward increasing rates among families with higher levels of income and wealth and those with older family heads. Ownership of cash value policies over the 2001–04 period continued a declining trend, decreasing 3.8 percentage points, to 24.2 percent of families. The decline was shared by nearly all the demographic groups. Over this time, the ownership of either cash value or term life insurance also fell—from 69.3 percent to 65.4 percent of families (data

19. For one possible calculation of net worth that includes the annuity value of defined-benefit pension benefits and OASI payments, see Arthur B. Kennickell and Annika E. Sundén (2005), "Pensions, Social Security, and the Distribution of Wealth," Finance and Economics Discussion Series 1997-55 (Washington: Board of Governors of the Federal Reserve System, October), [www.federalreserve.gov/pubs/feds/1997/index.html](http://www.federalreserve.gov/pubs/feds/1997/index.html).

20. The definition of account plan here differs slightly from that used in computing the survey wealth measure, which includes account balances only if the family has the ability to make withdrawals from, or borrow against, the account. Here the only criterion used in classification is whether there is any account balance. For example, a defined-benefit plan with a portable cash option, which would allow the covered worker to receive a lump sum in lieu of regular payments in retirement, would be treated as an account plan here.

21. An analysis of the March CPS with a definition of family head that is closest to that in this article shows a similar trend in pension eligibility for employed family heads, but that trend is at a somewhat higher level than in the SCF. The CPS eligibility estimate for family heads with a job in the past year was 61.9 percent in 2001 and 57.8 percent in 2004. Differences in the definition of the relevant employment may explain some of the difference in the levels in the two surveys. Unlike the SCF, the CPS shows a small increase in the uptake rate for such eligible workers—from 82.9 percent in 2001 to 83.4 percent in 2004.

22. The survey measures the value of such policies according to their current cash value, not their death benefit. The cash value is included as an asset in this article only when there was a nonzero cash value at the time of the interview.

not shown in the tables). Of those families with some type of life insurance, the proportion with term policies rose, while the proportion with cash value policies fell; these changes follow earlier trends in the survey.

After rising fairly strongly over the period from 1992 to 2001, the median value of cash value insurance for families that had any fell 43.9 percent between 2001 and 2004, and the mean fell 39.8 percent. The median showed sizable declines in every demographic group shown. Percentage declines were most notable among families in the bottom quartile of the wealth distribution, among younger families, and among renters.

### Other Managed Assets

Ownership of other managed assets—personal annuities and trusts with an equity interest and managed investment accounts—is concentrated among families with higher levels of income and wealth and among families headed by persons who are aged 55 or older or who are retired.<sup>23</sup> Ownership of these assets rose 0.7 percentage point between 2001 and 2004 after a similarly small increase over the previous three years. Across demographic groups, changes in ownership were mixed; ownership increased most—5.5 percent—for the oldest age group, and it decreased most—5.4 percent—for the highest wealth group. Of families having such accounts in 2004, 26.3 percent had only a trust or managed investment account, 68.9 percent had only an annuity, and 4.9 percent had both (data not shown in the tables).

23. The survey encourages respondents who have trusts or managed investment accounts that are held in relatively common investments to report the components. Of the 4.2 percent of families that reported having any kind of trust or managed investment account in 2004, 45.1 percent of them reported at least one of the component assets separately. Of families that detailed the components in 2004, 87.2 percent reported some type of financial asset, 11.0 percent reported a primary residence, 13.4 percent reported other real estate, 3.6 percent reported a business, and 2.7 percent reported another type of asset (data not shown in the tables). Comparable figures are not available for 2001.

In this article, the trust or managed investment accounts included in other managed assets are those in which families have an equity interest and for which component parts were not separately reported. Typically, such accounts are those in which the ownership is complicated or the management is undertaken by a professional. In 2004, 79.0 percent of families with trusts or managed investment accounts had an equity interest in those accounts. Annuities may be those in which the family has an equity interest in the asset or in which there is an entitlement only to a stream of income. The wealth figures in this article include only the annuities in which there is an equity interest. In 2004, 7.2 percent of families reported having any type of annuity, and of these families, 81.8 percent reported having an equity interest.

Between 2001 and 2004, the median value of other managed assets fell 39.7 percent, and the mean fell 35.6 percent. During the preceding three-year period, the median had more than doubled. Over the recent period, median holdings declined for almost all demographic groups. The declines reflect substantial reductions both in annuities and in trusts or managed investment accounts. For families with an equity interest in an annuity, the median holding fell 30.6 percent, to \$37,000, in 2004; for families with a trust or managed investment account as defined in this article, the median holding fell 37.4 percent, to \$100,000 (data not shown in the tables).

As noted in the discussion of retirement accounts, some families use settlements from retirement accounts to purchase an annuity. In 2004, 26.7 percent of families with annuities had done so (data not shown in the tables). Of these families, 91.6 percent had an equity interest in their annuities.

### Other Financial Assets

For other financial assets—a heterogeneous category including oil and gas leases, futures contracts, royalties, proceeds from lawsuits or estates in settlement, and loans made to others—ownership rose 0.6 percentage point between 2001 and 2004, to 10.0 percent. Ownership of such assets tends to be more common among higher income and wealth groups, younger age groups, and families headed by a person who is self-employed. Changes in ownership across demographic groups were generally positive, while the median holding for those who had such assets fell 7.0 percent, to \$4,000.

Some publicly traded companies offer stock options to their employees as a form of compensation.<sup>24</sup> Although stock options, when executed, may represent an appreciable part of a family's net worth, the survey does not specifically ask for the value of these options.<sup>25</sup> Instead, the survey asks whether the family head or that person's spouse or partner had been given stock options by an employer during the preceding year. In 2004, 9.3 percent of families reported having received stock options, a share 2.1 percentage points below the level in 2001 (data not shown in the tables).

24. See David Lebow, Louise Sheiner, Larry Slifman, and Martha Starr-McCluer (1999), "Recent Trends in Compensation Practices," Finance and Economics Discussion Series 1999-32 (Washington: Board of Governors of the Federal Reserve System, July).

25. Because such options are typically not publicly traded or their execution is otherwise constrained, their value is uncertain until the exercise date; until then, meaningful valuation would require complex assumptions about the future behavior of stock prices.

## 6. Direct and indirect family holdings of stock, by selected characteristics of families, 1995–2004 surveys

Percent except as noted

Family characteristic	Families with holdings				Median value among families with holdings (thousands of 2004 dollars)				Total stock holdings as a share of total financial assets			
	1995	1998	2001	2004	1995	1998	2001	2004	1995	1998	2001	2004
<b>All families</b> .....	<b>40.4</b>	<b>48.9</b>	<b>51.9</b>	<b>48.6</b>	<b>18.0</b>	<b>29.0</b>	<b>36.7</b>	<b>24.3</b>	<b>40.1</b>	<b>54.0</b>	<b>56.0</b>	<b>47.4</b>
<i>Percentile of income</i>												
Less than 20 .....	6.5	10.0	12.4	11.7	4.6	5.8	7.4	7.0	14.2	20.4	36.9	31.3
20–39.9 .....	24.7	30.8	33.5	28.8	7.8	11.6	8.0	8.8	26.7	29.8	34.9	29.6
40–59.9 .....	41.5	50.2	52.1	49.2	7.7	13.9	16.0	11.6	28.5	38.1	46.5	41.0
60–79.9 .....	54.3	69.3	75.7	66.5	15.6	22.0	30.4	20.0	35.6	45.8	51.7	37.5
80–89.9 .....	69.7	77.9	82.0	82.5	30.8	52.2	68.8	34.6	41.3	50.4	57.4	43.2
90–100 .....	80.0	90.4	89.6	91.0	73.9	156.5	263.8	169.9	45.7	62.5	60.5	53.6
<i>Age of head (years)</i>												
Less than 35 .....	36.6	40.8	48.9	38.8	6.3	8.1	7.5	5.2	27.2	44.9	52.5	30.0
35–44 .....	46.4	56.7	59.5	52.3	12.3	23.2	29.3	12.7	39.5	55.0	57.3	47.7
45–54 .....	48.9	58.6	59.2	54.4	31.9	44.1	53.3	30.6	43.1	55.7	59.1	46.8
55–64 .....	40.0	55.9	57.1	61.6	38.2	54.5	86.5	59.5	44.5	58.4	56.2	51.1
65–74 .....	34.4	42.7	39.2	45.8	41.9	64.9	159.8	75.0	35.8	51.3	55.2	51.1
75 or more .....	27.9	29.4	34.2	34.8	24.6	69.6	127.8	85.9	39.8	48.7	51.4	39.1
<i>Housing status</i>												
Owner .....	48.8	59.8	62.0	59.1	22.2	39.4	53.3	34.4	41.1	55.1	56.7	48.0
Renter or other .....	25.0	27.5	30.7	25.1	7.9	8.7	7.5	6.7	32.4	40.5	46.2	35.5

NOTE: Indirect holdings are those in retirement accounts and other managed assets. See also note to table 1.

## Direct and Indirect Holdings of Publicly Traded Stocks

Families may hold stocks in publicly traded companies directly or indirectly, and information about each of these forms of ownership is collected separately in the SCF. When direct and indirect forms are combined, the 2004 data show a break in a trend of increasing stock ownership dating to before the 1995 survey (table 6). Between 2001 and 2004, the fraction of families holding any such stock fell 3.3 percentage points, to 48.6 percent, a level apparently last reached some time between the 1995 and 1998 surveys. Much like ownership of directly held stock, ownership of direct and indirect holdings is more common among higher-income groups and among families headed by persons aged 35 to 64. Over the recent three-year period, ownership declined for all income groups except the top two deciles and for the age groups 55 or older.

At the same time, the overall median value of direct and indirect stock holdings dropped 33.8 percent. The decline was shared by all the demographic groups shown except for families in the second quintile of the income distribution, a group with a rate of ownership that is much below the average. As a proportion of financial assets, holdings declined 8.6 percentage points overall and also fell substantially for every demographic group shown.

Among families that held stocks in 2004, 78.2 percent held them through a tax-deferred retirement account, 42.5 percent through direct holdings of

stocks, 29.4 percent through direct holdings of pooled investment funds, and 9.7 percent through a managed investment account or an equity interest in an annuity or trust (data not shown in the tables); 44.0 percent had ownership through more than one such means. Regarding the distribution of the amount of directly and indirectly held equities, 30.8 percent was held in tax-deferred retirement accounts, 37.1 percent as directly held stocks, 24.1 percent as directly held pooled investment funds, and 8.0 percent as other managed assets.

## Nonfinancial Assets

By definition, a rise in nonfinancial assets as a share of total assets must exactly offset the 6.3 percentage

## 7. Value of nonfinancial assets of all families, distributed by type of asset, 1995–2004 surveys

Percent

Type of asset	1995	1998	2001	2004
Vehicles .....	7.1	6.5	5.9	5.1
Primary residence .....	47.5	47.0	46.9	50.3
Other residential property .....	8.0	8.5	8.1	9.9
Equity in nonresidential property .....	7.9	7.7	8.2	7.3
Business equity .....	27.2	28.5	29.3	25.9
Other .....	2.3	1.7	1.6	1.5
Total .....	100	100	100	100
<b>MEMO</b>				
Nonfinancial assets as a share of total assets .....	63.3	59.3	58.0	64.3

NOTE: See note to table 1 and text note 26.

## 8. Family holdings of nonfinancial assets and of any asset, by selected characteristics of families and type of asset, 2001 and 2004 surveys

### A. 2001 Survey of Consumer Finances

Family characteristic	Vehicles	Primary residence	Other residential property	Equity in nonresidential property	Business equity	Other	Any nonfinancial asset	Any asset
Percentage of families holding asset								
<b>All families</b> .....	<b>84.8</b>	<b>67.7</b>	<b>11.3</b>	<b>8.2</b>	<b>11.9</b>	<b>7.5</b>	<b>90.7</b>	<b>96.7</b>
<i>Percentile of income</i>								
Less than 20 .....	56.8	40.6	3.1	2.8	2.5	2.9	67.7	85.6
20–39.9 .....	86.7	57.3	5.4	6.7	7.1	5.8	93.1	98.3
40–59.9 .....	91.6	66.0	7.9	6.7	8.8	6.2	95.6	99.8
60–79.9 .....	94.8	81.8	14.2	7.0	12.0	8.7	97.8	100.0
80–89.9 .....	95.4	90.9	19.7	12.1	18.7	9.4	99.4	100.0
90–100 .....	92.8	94.4	32.8	23.9	39.0	17.9	99.5	100.0
<i>Age of head (years)</i>								
Less than 35 .....	78.8	39.9	3.4	2.8	7.0	6.8	83.0	93.2
35–44 .....	88.9	67.8	9.2	7.4	14.2	7.8	93.2	97.4
45–54 .....	90.5	76.2	14.7	10.0	17.1	7.2	95.2	98.1
55–64 .....	90.7	83.2	18.3	12.3	15.6	7.9	95.4	98.4
65–74 .....	81.3	82.5	13.7	12.9	11.7	9.7	91.6	97.1
75 or more .....	73.9	76.2	15.2	8.3	2.4	5.8	86.4	97.8
<i>Race or ethnicity of respondent</i>								
White non-Hispanic .....	89.2	74.3	13.0	9.6	13.9	8.9	94.7	99.0
Nonwhite or Hispanic .....	71.4	47.3	6.3	3.9	5.5	3.1	78.4	89.8
<i>Current work status of head</i>								
Working for someone else .....	88.5	64.7	10.0	6.7	6.1	7.3	92.5	97.8
Self-employed .....	88.6	80.3	19.5	17.9	60.8	14.0	97.1	98.6
Retired .....	77.1	73.8	12.0	8.2	3.3	5.3	86.7	95.8
Other not working .....	63.8	43.6	4.9	3.8	5.8	*	70.3	82.2
<i>Housing status</i>								
Owner .....	92.2	100.0	14.9	10.9	15.5	8.7	100.0	100.0
Renter or other .....	69.3	...	3.9	2.5	4.2	4.9	71.3	89.9
<i>Percentile of net worth</i>								
Less than 25 .....	64.8	14.3	*	*	1.2	3.0	68.2	87.0
25–49.9 .....	86.8	69.6	4.5	3.6	4.0	5.0	96.3	100.0
50–74.9 .....	94.1	91.4	12.7	8.0	11.5	6.6	98.7	100.0
75–89.9 .....	93.1	95.1	19.5	15.3	22.4	10.2	99.6	100.0
90–100 .....	94.1	95.8	39.0	30.0	42.8	22.7	99.7	100.0

point drop in the share of financial assets from 2001 to 2004 discussed earlier in this article (table 4). The changes in these shares may have been driven by changes in portfolio choices, portfolio valuation, or both. Over the six most recent surveys, the 2001 estimate of the value of nonfinancial assets as a share of total assets, 58.0 percent, appears to be the low point; the 2004 level, 64.3 percent, is about the same as the level seen in the 1995 survey (table 7). Over the recent three-year period, the value of primary residences as a share of nonfinancial assets increased 3.4 percentage points, to 50.3 percent, the largest share ever recorded in the survey. The share of other residential property also rose. The largest offsetting decline was in the share of business equity, which fell 3.4 percentage points. Smaller declines were seen in the shares of the remaining nonfinancial assets.

In 2004, the level of ownership of nonfinancial assets was 92.5 percent, 1.8 percentage points higher than in 2001 (first half of tables 8.A and 8.B, next-to-last column). Across most of the demographic groups

shown, the 2004 rate was about 90 percent or more—exceptions were the lowest income and wealth groups, nonwhite or Hispanic families, families headed by persons who were neither working nor retired, and renters. Over the 2001–04 period, ownership rose most for the lowest income and wealth groups, the youngest and the two oldest age groups, nonwhite or Hispanic families, renters, and families headed by persons who were neither working nor retired. The only substantial declines in ownership were seen by the 55–64 age group and the second quintile of the income distribution.

Over the recent period, the median holding of nonfinancial assets for families having any such assets rose 22.2 percent, and the mean rose 19.5 percent. Across demographic groups, substantial gains far outnumbered declines in the median. Over this time, the median fell only for some groups that saw gains in ownership; this result suggests that the fall in the median may have been driven, at least in part, by the influx of new owners with relatively small holdings.

## 8.—Continued

A. 2001 Survey of Consumer Finances—Continued

Family characteristic	Vehicles	Primary residence	Other residential property	Equity in nonresidential property	Business equity	Other	Any nonfinancial asset	Any asset
Median value of holdings for families holding asset (thousands of 2004 dollars)								
<b>All families</b> .....	<b>14.4</b>	<b>131.0</b>	<b>85.2</b>	<b>52.7</b>	<b>106.5</b>	<b>12.8</b>	<b>120.9</b>	<b>156.8</b>
<i>Percentile of income</i>								
Less than 20 .....	5.7	69.2	26.6	34.6	60.0	6.4	36.5	24.4
20–39.9 .....	8.9	85.2	79.9	32.0	37.3	6.4	60.7	71.5
40–59.9 .....	13.4	101.2	53.3	32.0	65.7	10.7	98.2	122.5
60–79.9 .....	18.7	138.5	74.6	53.3	66.6	10.7	161.5	245.0
80–89.9 .....	24.2	186.4	66.6	49.0	106.5	21.3	239.2	401.6
90–100 .....	31.9	319.5	213.0	155.8	285.7	53.3	510.8	1,075.1
<i>Age of head (years)</i>								
Less than 35 .....	12.1	101.2	79.9	35.5	53.3	10.7	31.7	41.4
35–44 .....	15.8	133.1	79.9	42.1	106.5	9.6	125.5	167.9
45–54 .....	16.7	143.8	69.2	60.3	108.6	11.7	150.8	225.7
55–64 .....	16.1	138.5	85.2	83.6	106.5	32.0	157.5	241.1
65–74 .....	14.5	137.4	154.4	53.3	106.5	21.3	158.9	228.6
75 or more .....	9.4	118.2	85.2	29.8	544.2	12.8	130.6	180.6
<i>Race or ethnicity of respondent</i>								
White non-Hispanic .....	15.6	138.5	85.2	53.3	106.5	16.0	141.4	197.7
Nonwhite or Hispanic .....	10.6	99.1	63.9	32.0	53.3	4.8	62.8	61.3
<i>Current work status of head</i>								
Working for someone else .....	14.6	127.8	74.6	42.1	53.3	10.7	108.6	137.4
Self-employed .....	20.5	213.0	159.8	109.1	140.9	32.0	356.8	467.8
Retired .....	10.7	106.5	90.5	61.8	69.8	21.3	111.9	148.5
Other not working .....	10.9	106.5	117.2	35.1	117.2	*	80.6	45.9
<i>Housing status</i>								
Owner .....	17.2	131.0	85.2	53.3	114.7	16.0	167.2	255.8
Renter or other .....	8.1	...	63.9	34.6	37.3	6.4	9.4	14.2
<i>Percentile of net worth</i>								
Less than 25 .....	6.7	52.7	*	*	10.7	4.3	8.8	8.7
25–49.9 .....	12.5	74.6	25.6	9.6	16.0	10.7	66.7	79.9
50–74.9 .....	16.2	127.8	53.3	26.6	53.3	10.7	154.3	229.7
75–89.9 .....	20.2	213.0	85.2	55.7	127.8	19.2	300.1	541.6
90–100 .....	30.7	372.8	223.7	225.5	532.6	42.6	758.9	1,531.7
MEMO								
Mean value of holdings for families holding asset .....	19.5	192.6	198.4	277.2	687.5	60.2	306.6	495.6

NOTE: See notes to table 7.

\*Ten or fewer observations.

... Not applicable.

## Vehicles

Vehicles continue to be the most commonly held nonfinancial asset.<sup>26</sup> Over the recent three-year period, the share of families that owned some type of vehicle rose 1.5 percentage points, to 86.3 percent. Ownership rose for most demographic groups but particularly for families in the lowest income and wealth groups, families headed by persons aged 65 to 74, and nonwhite or Hispanic families.

The median market value of vehicles for those who owned at least one declined 1.4 percent from 2001 to

2004, while the mean rose 3.1 percent.<sup>27</sup> The median value of vehicle holdings fell notably for the lowest two income and wealth groups, the two oldest and the youngest age groups, nonwhite or Hispanic families, renters, and families having a head who was retired; for most other families, the median rose. Continuing a trend, the share of the total value of owned vehicles attributable to sport-utility vehicles rose over the recent period from 14.0 percent to 19.1 percent (data not shown in the tables).

Some families have vehicles that they lease or that are provided to them by an employer for personal

26. The definition of vehicles here is a broad one that includes cars, vans, sport-utility vehicles, trucks, motor homes, recreational vehicles, motorcycles, boats, airplanes, and helicopters. Of families owning any type of vehicle in 2004, 99.8 percent had a car, van, sport-utility vehicle, motorcycle, or truck. The remaining types of vehicle were held by 13.3 percent of families.

27. Survey respondents are asked to provide the year, make, and model of each of their cars, vans, sport-utility vehicles, and trucks. This information is used to obtain market prices from data collected by the National Automobile Dealers Association and a variety of other sources. For other types of vehicle, the respondent is asked to provide a best estimate of the current value.



# 8. Family holdings of nonfinancial assets and of any asset, by selected characteristics of families and type of asset, 2001 and 2004 surveys—Continued

B. 2004 Survey of Consumer Finances

Family characteristic	Vehicles	Primary residence	Other residential property	Equity in nonresidential property	Business equity	Other	Any nonfinancial asset	Any asset
Percentage of families holding asset								
<b>All families</b> .....	<b>86.3</b>	<b>69.1</b>	<b>12.5</b>	<b>8.3</b>	<b>11.5</b>	<b>7.8</b>	<b>92.5</b>	<b>97.9</b>
<i>Percentile of income</i>								
Less than 20 .....	65.0	40.3	3.6	2.7	3.7	3.9	76.4	92.2
20–39.9 .....	85.3	57.0	6.9	3.8	6.7	4.4	92.0	97.8
40–59.9 .....	91.6	71.5	10.0	7.6	9.5	7.5	96.7	99.8
60–79.9 .....	95.3	83.1	14.0	10.6	12.0	10.4	98.4	100.0
80–89.9 .....	95.9	91.8	19.3	12.8	16.0	8.3	99.1	99.8
90–100 .....	93.1	94.7	37.2	20.8	34.7	16.7	99.3	100.0
<i>Age of head (years)</i>								
Less than 35 .....	82.9	41.6	5.1	3.3	6.9	5.5	88.6	96.5
35–44 .....	89.4	68.3	9.4	6.4	13.9	6.0	93.0	97.7
45–54 .....	88.8	77.3	16.3	11.4	15.7	9.7	94.7	98.3
55–64 .....	88.6	79.1	19.5	12.8	15.8	9.2	92.6	97.5
65–74 .....	89.1	81.3	19.9	10.6	8.0	9.0	95.6	99.5
75 or more .....	76.9	85.2	9.7	7.7	5.3	8.5	92.5	99.6
<i>Race or ethnicity of respondent</i>								
White non-Hispanic .....	90.3	76.1	14.0	9.2	13.6	9.3	95.8	99.3
Nonwhite or Hispanic .....	76.1	50.8	8.9	5.8	5.9	3.8	84.0	94.4
<i>Current work status of head</i>								
Working for someone else .....	89.7	66.5	10.4	6.8	5.8	7.1	93.8	98.4
Self-employed .....	91.2	79.1	25.8	18.7	58.1	12.9	97.5	99.1
Retired .....	79.0	75.8	12.8	7.9	3.5	7.1	89.8	97.7
Other not working .....	66.9	40.0	5.4	*	6.9	6.4	76.3	89.6
<i>Housing status</i>								
Owner .....	92.3	100.0	15.7	11.0	14.7	9.2	100.0	100.0
Renter or other .....	73.0	...	5.4	2.4	4.3	4.6	75.9	93.3
<i>Percentile of net worth</i>								
Less than 25 .....	69.8	15.2	*	*	*	2.9	73.7	91.7
25–49.9 .....	89.2	71.2	4.9	4.1	5.6	5.4	97.5	100.0
50–74.9 .....	92.0	93.4	12.7	8.3	11.2	7.8	99.0	100.0
75–89.9 .....	95.2	96.2	23.1	15.1	19.9	12.3	99.8	100.0
90–100 .....	93.1	96.9	45.6	28.8	40.8	18.8	99.9	100.0

use. The share of families having a vehicle from any source rose 1.3 percentage points over the recent period, to 89.2 percent (data not shown in the tables). The small difference between this rate and the ownership rate for personally owned vehicles belies a larger change in the rates of holding for leased and employer-provided vehicles. The proportion of families with a leased vehicle fell from 5.8 percent to 4.0 percent, while that with an employer-provided vehicle fell from 9.1 percent to 7.7 percent.

## Primary Residence and Other Residential Real Estate

The homeownership rate over the 2001–04 period continued its upward trend, rising 1.4 percentage points, to 69.1 percent.<sup>28</sup> In 2004, groups that had a

rate less than the overall rate included nonwhite or Hispanic families, families whose head was neither working nor retired, families with relatively low income or wealth, and families headed by persons aged less than 35. Over the three-year period, ownership rose most for families in the middle of the income and wealth distributions, for families headed by persons aged 75 or older, and for nonwhite or Hispanic families; the rate fell notably for the 55–64 age group and for the self-employed and the other-not-working work-status groups. Despite the above-average rise in ownership for nonwhite or Hispanic families, their ownership rate remained well below that for other families.

As would be expected from the large increase in both the share of total assets attributable to nonfinancial assets and the share of nonfinancial assets attributable to primary residences, the median and mean values of the primary residences of homeowners rose sharply over the recent period; overall, the median rose 22.1 percent, and the mean rose 28.1 percent. Because housing wealth is typically the largest com-

28. This measure of primary residences comprises mobile homes and their sites, the parts of farms and ranches not used for a farming or ranching business, condominiums, cooperatives, townhouses, other single-family homes, and other permanent dwellings.

## 8.—Continued

B. 2004 Survey of Consumer Finances—Continued

Family characteristic	Vehicles	Primary residence	Other residential property	Equity in nonresidential property	Business equity	Other	Any nonfinancial asset	Any asset
Median value of holdings for families holding asset (thousands of 2004 dollars)								
<b>All families</b> .....	<b>14.2</b>	<b>160.0</b>	<b>100.0</b>	<b>60.0</b>	<b>100.0</b>	<b>15.0</b>	<b>147.8</b>	<b>172.9</b>
<i>Percentile of income</i>								
Less than 20 .....	4.5	70.0	33.0	11.0	30.0	4.5	22.4	17.0
20–39.9 .....	7.9	100.0	65.0	30.0	30.0	7.5	71.1	78.3
40–59.9 .....	13.1	135.0	55.0	36.0	62.5	10.0	131.2	154.4
60–79.9 .....	19.8	175.0	100.0	47.0	150.0	10.0	197.2	289.4
80–89.9 .....	25.8	225.0	98.0	60.0	100.0	17.5	281.8	458.5
90–100 .....	33.0	450.0	268.3	189.0	350.0	50.0	651.2	1,157.7
<i>Age of head (years)</i>								
Less than 35 .....	11.3	135.0	82.5	55.0	50.0	5.0	32.3	39.2
35–44 .....	15.6	160.0	80.0	42.2	100.0	10.0	151.3	173.4
45–54 .....	18.8	170.0	90.0	43.0	144.0	20.0	184.5	234.9
55–64 .....	18.6	200.0	135.0	75.0	190.9	25.0	226.3	351.2
65–74 .....	12.4	150.0	80.0	78.0	100.0	30.0	161.1	233.2
75 or more .....	8.4	125.0	150.0	85.8	80.3	11.0	137.1	185.2
<i>Race or ethnicity of respondent</i>								
White non-Hispanic .....	15.7	165.0	105.0	66.0	135.0	16.5	164.8	224.5
Nonwhite or Hispanic .....	9.8	130.0	80.0	30.0	66.7	10.0	64.1	59.6
<i>Current work status of head</i>								
Working for someone else .....	14.9	160.0	88.0	40.0	50.0	10.0	141.9	161.2
Self-employed .....	21.9	248.0	141.5	125.0	174.0	30.0	335.4	468.3
Retired .....	10.1	130.0	100.0	60.0	120.0	25.0	131.7	165.6
Other not working .....	10.7	130.0	86.0	*	25.0	20.0	60.0	30.3
<i>Housing status</i>								
Owner .....	17.5	160.0	100.0	62.0	122.8	17.5	201.6	289.9
Renter or other .....	7.2	...	80.0	56.0	50.0	8.0	8.4	12.2
<i>Percentile of net worth</i>								
Less than 25 .....	5.6	65.0	*	*	*	3.0	7.4	7.7
25–49.9 .....	11.9	85.0	25.6	14.9	17.5	6.0	72.4	84.5
50–74.9 .....	17.4	159.3	65.0	25.0	55.0	10.0	188.1	257.3
75–89.9 .....	22.6	250.0	100.0	73.9	150.0	25.0	360.8	600.2
90–100 .....	30.6	450.0	325.0	250.0	527.4	80.0	907.7	1,572.6
MEMO								
Mean value of holdings for families holding asset .....	20.1	246.8	267.3	298.1	765.5	66.6	366.3	538.4

NOTE: See notes to table 7.

\*Ten or fewer observations.

... Not applicable.

ponent of families' fungible wealth, the large percentage gains in the median and mean produced large dollar gains: \$29,000 for the median and \$54,200 for the mean. Homeowners in all demographic groups saw gains in the median, most of them substantial. One of the largest increases was the 31.2 percent rise in the median value of primary residences for non-white or Hispanic families; in contrast, the median for other families rose 19.1 percent.

In 2004, 12.5 percent of families owned some form of residential real estate besides a primary residence (second homes, time shares, one- to four-family rental properties, and other types of residential property), a level up 1.2 percentage points from the figure in 2001 but approximately the same as the 1998 estimate. Ownership is much more common among the highest income and wealth groups, among the age groups between 45 and 74, and among families headed by self-employed persons. As was the case

with primary residences, the median and mean values for owners increased sharply over the recent period; the median rose 17.4 percent and the mean 34.7 percent. Most of the demographic groups saw substantial gains in the median; only a few saw declines, but where they occurred they tended to be substantial.

### Net Equity in Nonresidential Real Estate

The ownership of nonresidential real estate was about unchanged at 8.3 percent of families in 2004.<sup>29</sup> Ownership follows approximately the same relative distribution over demographic groups as does the owner-

29. Nonresidential real estate comprises the following types of property unless it is owned through a business: commercial property, rental property with five or more units, farm and ranch land, undeveloped land, and all other types of nonresidential real estate.

ship of other residential real estate. Changes in ownership during the recent period were mixed across demographic groups. Among the income groups with substantial ownership in 2001, the key changes were a decline in ownership among the highest decile and an increase among the fourth quintile. Overall, the median value of such property for owners rose 13.9 percent, and the mean rose 7.5 percent. Among income groups, the largest gains in the median were in the top two deciles, which also had the highest rates of ownership; declines in the median appeared for all other income groups except the third quintile.

### Net Equity in Privately Held Businesses

The share of families that owned a privately held business interest edged down 0.4 percentage point during the recent period, to 11.5 percent.<sup>30</sup> The proportion has changed little over the past several surveys. Ownership of this type of asset tends to increase with income and wealth and to be the highest for families headed by persons aged between 45 and 64; over the recent three-year period, declines in ownership were largely concentrated in the highest income and wealth groups. Continuing a pattern seen in the preceding three years, ownership also declined among families with a head who was self-employed.<sup>31</sup>

The median holding of business equity for those having any declined 6.1 percent, while the mean increased 11.3 percent. These changes follow a jump of 53.0 percent in the median and 21.8 percent in the mean between the 1998 and 2001 surveys. Across income groups over the recent three-year period, gains in the median were seen in the top decile and the fourth quintile. Growth rates in median holdings were similar across racial or ethnic groups; however, the median level for nonwhites or Hispanics remained roughly half that of other families with business assets.

30. The forms of business in this category are sole proprietorships, limited partnerships, other types of partnership, subchapter S corporations and other types of corporation that are not publicly traded, limited liability companies, and other types of private business. If the family surveyed lived on a farm or ranch that was used at least in part for agricultural business, the value of that part net of the corresponding share of associated debts is included with other business assets.

31. In the survey, self-employment status and business ownership are independently determined. Among the 11.5 percent of families with a business in 2004, 69.9 percent had a family head or the spouse or partner of the head who was self-employed; among the 15.0 percent of families in which either the head or the spouse or partner of the head was self-employed, 53.5 percent owned a business (data not shown in the tables).

The SCF classifies privately owned business interests into those in which the family has an active management role and those in which it does not. Of families having any business interests in 2004, 92.8 percent had an active role and 12.3 percent had a passive role; 5.1 percent had interests in which they had each type of role (data not shown in the tables). In terms of assets, the actively managed interests accounted for 89.1 percent of total privately owned business interests. The median number of actively managed businesses was 1. The businesses reported in the survey were a mixture of very small businesses with moderate values and substantially more valuable businesses.

Families with more than one business are asked to report which business is most important; that business is designated as the primary one.<sup>32</sup> The vast majority of primary businesses operated in an industry other than manufacturing; the most common organizational form of those businesses was sole proprietorship, and the median number of employees was 2. However, primary actively managed businesses with more than two employees accounted for 83.7 percent of the value of all such businesses, and the largest share of value (40.6 percent) was attributable to businesses organized as subchapter S corporations.

### Other Nonfinancial Assets

Ownership of the remaining nonfinancial assets (tangible items including artwork, jewelry, precious metals, antiques, hobby equipment, and collectibles) increased marginally in the recent period, to 7.8 percent. Among wealth groups, the notable change was a decline of 3.9 percentage points in ownership in the highest wealth group; this change entirely offset a gain for the group over the previous three years. For families having such assets, the median value rose 17.2 percent over the recent period, and the mean rose 10.6 percent. Across wealth groups, median holdings rose substantially in the top two wealth groups and declined among the rest.

### Unrealized Capital Gains

Changes in the values of assets such as stock, real estate, and businesses are a key determinant of changes in families' net worth. Unrealized gains are

32. For families with only one business, that business is, by default, considered the primary one. In 2004, the primary actively managed business accounted for 78.7 percent of the value of all actively managed businesses.



## 9. Family holdings of unrealized capital gains, by selected characteristics of families, 1995–2004 surveys

Thousands of 2004 dollars

Family characteristic	1995		1998		2001		2004	
	Median	Mean	Median	Mean	Median	Mean	Median	Mean
<b>All families</b> .....	<b>6.8</b>	<b>83.3</b>	<b>12.5</b>	<b>111.9</b>	<b>16.0</b>	<b>138.2</b>	<b>23.0</b>	<b>161.7</b>
<i>Percentile of income</i>								
Less than 20 .....	†	19.1	†	20.9	†	18.6	†	31.1
20–39.9 .....	.4	31.2	2.1	34.0	1.5	44.0	3.0	52.1
40–59.9 .....	4.6	40.4	10.4	51.1	10.1	49.1	21.0	74.3
60–79.9 .....	16.4	56.9	23.4	76.3	29.8	91.8	46.7	120.3
80–89.9 .....	33.2	85.5	39.6	110.5	58.6	151.0	70.0	155.5
90–100 .....	80.0	452.6	112.5	643.7	170.4	824.1	221.9	905.8
<i>Age of head (years)</i>								
Less than 35 .....	†	11.8	†	17.9	†	30.3	†	28.1
35–44 .....	4.9	44.7	8.2	73.4	11.7	99.0	19.4	119.6
45–54 .....	22.9	117.7	25.9	146.0	29.8	164.5	39.0	205.4
55–64 .....	34.0	169.5	40.8	216.8	43.6	237.2	58.0	286.7
65–74 .....	36.9	145.3	53.9	190.2	51.1	254.9	50.0	231.4
75 or more .....	40.2	106.0	41.7	131.8	53.3	159.8	58.1	189.0

NOTE: See note to table 1.

† Less than 0.05 (\$50).

increases or decreases in the value of assets that are yet to be sold. To obtain information on this part of net worth, the survey asks about changes in value from the time of purchase for certain key assets—publicly traded stocks, pooled investment funds, the primary residence, other real estate, and the current tax basis of businesses.<sup>33</sup> The median unrealized capital gain in these assets over the 2001–04 period moved up 43.8 percent, and the mean moved up 17.0 percent (table 9); during the 1998–2001 period, the median had risen 28.0 percent, and the mean had risen 23.5 percent. The recent gains predominantly accrued to the middle income groups and to age groups other than the youngest and the 65–74 groups. The rise in unrealized gains reflects strong appreciation of residential real estate over the period as well as the relative illiquidity of real estate and businesses. Of the total amount of unrealized capital gains in 2004, 44.6 percent was due to appreciation of primary residences; the comparable figure for 2001 had been 35.6 percent (data not shown in the tables). In 2004, unrealized gains measured in the SCF accounted for 30.7 percent of the assets of all families; the median share of such gains relative to assets over all families was 11.2 percent.

## LIABILITIES

Liabilities and assets increased substantially from 2001 to 2004, but the rise in liabilities was more rapid overall. Over this time, the principal changes in

## 10. Amount of debt of all families, distributed by type of debt, 1995–2004 surveys

Percent

Type of debt	1995	1998	2001	2004
Secured by residential property				
Primary residence .....	73.1	71.4	75.2	75.2
Other .....	7.6	7.5	6.2	8.5
Lines of credit not secured by residential property .....	.6	.3	.5	.7
Installment loans .....	12.0	13.1	12.3	11.0
Credit card balances .....	3.9	3.9	3.4	3.0
Other .....	2.9	3.7	2.3	1.6
Total .....	100	100	100	100
MEMO				
Debt as a percentage of total assets .....	14.6	14.2	12.1	15.0

NOTE: See note to table 1 and text note 38.

different types of debt as a share of total debt were an increase in the share of loans for other residential property and a decrease in the share of installment loans (table 10). The largest share of total debt was debt secured by the primary residence, the amount of which kept pace with the increase in total debt.

Because liabilities increased faster than assets, the ratio of the overall sum of family debts to the sum of their assets (the leverage ratio) rose 2.9 percentage points, from 12.1 percent to 15.0 percent (table 10, memo line).<sup>34</sup> This increase follows a 2.1 percentage point decrease over the preceding three years. If the calculation is restricted to families that had debt, the leverage ratio was 19.9 percent in 2004, an increase of 3.4 percentage points from 2001 (data not shown in the tables).

33. The survey does not collect information on capital gains on every asset for which such gains are possible. Most notably, it does not collect such information for retirement accounts.

34. Data from the flow of funds accounts show that the leverage ratio for the household sector increased from 16.3 percent in 2001 to 18.1 percent in 2004.

## 11. Family holdings of debt, by selected characteristics of families and type of debt, 2001 and 2004 surveys

## A. 2001 Survey of Consumer Finances

Family characteristic	Secured by residential property		Lines of credit not secured by residential property	Installment loans	Credit card balances	Other	Any debt
	Primary residence	Other					
	Percentage of families holding debt						
All families .....	44.6	4.6	1.5	45.2	44.4	7.2	75.1
Percentile of income							
Less than 20 .....	13.8	*	1.3	25.5	30.3	5.9	49.3
20–39.9 .....	27.0	1.8	1.5	43.2	44.5	5.6	70.2
40–59.9 .....	44.4	3.2	1.5	51.9	52.8	7.7	82.1
60–79.9 .....	61.8	5.3	1.5	56.7	52.6	7.7	85.6
80–89.9 .....	76.9	10.3	2.6	55.7	50.3	9.3	91.4
90–100 .....	75.4	14.2	1.4	41.2	33.1	8.8	85.3
Age of head (years)							
Less than 35 .....	35.7	2.7	1.7	63.8	49.6	8.8	82.7
35–44 .....	59.6	4.9	1.7	57.1	54.1	8.0	88.6
45–54 .....	59.8	6.4	1.5	45.9	50.4	7.4	84.6
55–64 .....	49.0	7.4	3.1	39.3	41.6	7.4	75.4
65–74 .....	32.0	3.4	*	21.1	30.0	5.0	56.8
75 or more .....	9.5	2.0	*	9.5	18.4	3.6	29.2
Race or ethnicity of respondent							
White non-Hispanic .....	47.6	5.3	1.7	45.4	43.3	7.4	75.8
Nonwhite or Hispanic .....	35.6	2.4	1.2	44.4	47.6	6.5	73.0
Current work status of head							
Working for someone else .....	52.5	5.3	1.4	57.0	53.2	8.2	86.5
Self-employed .....	59.1	7.3	3.5	39.8	42.8	8.1	81.7
Retired .....	19.6	1.9	*	17.2	24.0	4.4	44.2
Other not working .....	28.1	*	*	41.5	32.3	6.1	61.9
Housing status							
Owner .....	66.0	5.8	1.0	45.5	44.4	6.9	79.9
Renter or other .....	...	2.0	2.8	44.5	44.3	7.8	65.0
Percentile of net worth							
Less than 25 .....	11.2	*	2.4	48.9	45.5	8.3	68.7
25–49.9 .....	49.4	2.0	1.3	51.0	55.1	7.2	80.8
50–74.9 .....	59.1	5.4	*	48.2	44.6	7.1	78.0
75–89.9 .....	61.1	7.8	*	37.2	38.9	4.9	74.8
90–100 .....	55.5	14.2	2.1	25.6	22.4	8.2	70.2

*Holdings of Debt*

The share of families with any type of debt climbed 1.3 percentage points during 2001–04, to 76.4 percent (first half of tables 11.A and 11.B, last column); the share had risen 1.0 percentage point over the preceding three years. Borrowing is less prevalent among families in the lowest income and wealth groups and in age groups 65 or older. Over the 2001–04 period, the prevalence of borrowing declined for renters, the youngest age group, and the lowest quartile of the wealth distribution and increased or held about steady for the other groups. The largest increase was the 11.1 percentage point rise for families headed by persons aged 75 or older.

The overall median and mean values of total outstanding debt for families that had any each rose 33.9 percent from 2001 to 2004; from 1998 to 2001, median debt had increased 9.5 percent and the mean 5.2 percent. Across demographic groups, median debt tends to rise with income and wealth and to rise and then decline with age. The decline among older age

groups is driven in large part by the paying off of mortgages on primary residences. Over the recent three-year period, the median amount of outstanding debt rose for all groups except for families headed by persons who were neither working nor retired. The increases in the median were particularly notable for families headed by persons aged 65 or older, but their median remained much below the overall median.

*Mortgages and Other Borrowing on the Primary Residence*

Continuing an earlier trend of increases, the proportion of families with debt secured by the primary residence (hereafter, home-secured debt) rose 3.3 percentage points, to 47.9 percent (the share of homeowners with such debt in 2004 was 69.3 percent).<sup>35</sup>

35. Home-secured debt consists of first-lien and junior-lien mortgages and home equity lines of credit secured by the primary residence. For purposes of this article, first- and junior-lien mortgages

## 11.—Continued

## A. 2001 Survey of Consumer Finances—Continued

Family characteristic	Secured by residential property		Lines of credit not secured by residential property	Installment loans	Credit card balances	Other	Any debt
	Primary residence	Other					
	Median value of holdings for families holding debt (thousands of 2004 dollars)						
All families .....	74.6	42.6	4.2	10.3	2.0	3.2	41.3
Percentile of income							
Less than 20 .....	29.8	*	.6	4.9	1.1	1.1	5.5
20–39.9 .....	42.6	32.0	1.1	7.0	1.3	3.2	12.2
40–59.9 .....	59.8	41.3	.7	10.3	2.1	2.1	31.0
60–79.9 .....	80.5	44.7	4.3	12.7	2.4	3.2	66.4
80–89.9 .....	96.9	33.2	8.3	15.4	4.0	4.3	103.1
90–100 .....	142.7	83.1	10.7	14.3	3.0	22.4	155.9
Age of head (years)							
Less than 35 .....	82.0	55.4	.5	10.2	2.1	2.1	26.5
35–44 .....	85.2	52.2	.7	11.8	2.1	3.3	65.5
45–54 .....	79.9	35.7	5.7	10.3	2.4	5.3	57.8
55–64 .....	58.6	41.3	21.8	9.5	2.0	5.3	36.9
65–74 .....	41.5	82.0	*	7.5	1.0	2.7	14.0
75 or more .....	47.7	44.7	*	6.2	.8	2.7	5.3
Race or ethnicity of respondent							
White non-Hispanic .....	79.9	42.6	4.3	10.7	2.1	3.9	47.7
Nonwhite or Hispanic .....	63.9	42.6	.7	8.8	1.6	2.1	21.3
Current work status of head							
Working for someone else .....	78.8	39.9	3.2	10.6	2.1	2.2	45.3
Self-employed .....	106.5	93.2	16.0	10.8	2.7	12.7	82.9
Retired .....	33.6	46.6	*	7.4	.9	3.5	10.4
Other not working .....	76.7	*	*	10.4	2.1	2.7	36.0
Housing status							
Owner .....	74.6	42.6	16.0	11.2	2.2	4.3	73.9
Renter or other .....	...	40.0	1.1	7.5	1.3	2.1	6.4
Percentile of net worth							
Less than 25 .....	60.7	*	.6	8.8	1.7	2.1	9.3
25–49.9 .....	60.2	21.3	1.9	10.0	2.0	1.3	41.0
50–74.9 .....	73.5	50.1	*	10.7	2.1	4.3	63.9
75–89.9 .....	91.6	32.0	*	12.5	2.2	7.5	85.2
90–100 .....	143.8	83.1	21.8	12.1	2.1	32.0	130.7
MEMO							
Mean value of holdings for families holding debt type .....	97.7	78.9	19.2	15.9	4.4	18.8	77.2

NOTE: See note to table 10.

\*Ten or fewer observations.

... Not applicable.

In 2004, 45.0 percent (42.3 percent in 2001) of families had a first-lien mortgage, 4.2 percent (5.8 percent in 2001) had a junior-lien mortgage, and 8.6 percent (4.8 percent in 2001) had a home equity line of credit with a current balance (data not shown in the tables). Of the types of debt considered in this article, home-secured debt had the largest change in overall prevalence. The use of such debt tends to rise with income. Across wealth groups, it is more nearly equal for groups above the bottom quartile; however, homeowners in the lowest wealth group in 2004 had the highest rate of such borrowing, 81.6 percent. Over age groups, the rate of borrowing peaks among fami-

lies in the 45–54 group and declines sharply among older age groups, a pattern also seen in earlier years. Over the recent period, the prevalence of home-secured debt increased for nearly every demographic group.

Overall, the median amount of home-secured debt rose 27.3 percent from 2001 to 2004, and the mean rose 27.0 percent; the median had increased 3.8 percent over the preceding three years, and the mean had increased 8.4 percent. In the recent period, median borrowing rose substantially for every group but one. It declined for the 75-or-older age group even as the group had an unusually large increase in the fraction of families having such debt. This result indicates that the decline in the median was driven by a rise in the number of smaller home-secured loans. Overall, in 2004, 91.3 percent (92.4 percent in 2001) of total home-secured debt was owed on first-lien mortgages, 3.0 percent (4.4 percent in 2001) was owed on junior-

consist only of closed-end loans, that is, loans typically with a one-time extension of credit and a prearranged payment size and frequency. As a type of open-end credit, home equity lines typically allow credit extensions at the borrower's discretion subject to a prearranged limit and allow repayments at the borrower's discretion subject to a prearranged minimum size and frequency.

## 11. Family holdings of debt, by selected characteristics of families and type of debt, 2001 and 2004 surveys—Continued

B. 2004 Survey of Consumer Finances

Family characteristic	Secured by residential property		Lines of credit not secured by residential property	Installment loans	Credit card balances	Other	Any debt
	Primary residence	Other					
	Percentage of families holding debt						
All families .....	47.9	4.0	1.6	46.0	46.2	7.6	76.4
Percentile of income							
Less than 20 .....	15.9	*	*	26.9	28.8	4.6	52.6
20–39.9 .....	29.5	1.5	1.5	39.9	42.9	5.8	69.8
40–59.9 .....	51.7	2.6	1.8	52.4	55.1	8.0	84.0
60–79.9 .....	65.8	4.1	1.8	57.8	56.0	8.3	86.6
80–89.9 .....	76.8	7.5	2.6	60.0	57.6	12.3	92.0
90–100 .....	76.2	15.4	2.5	45.7	38.5	10.6	86.3
Age of head (years)							
Less than 35 .....	37.7	2.1	2.2	59.4	47.5	6.2	79.8
35–44 .....	62.8	4.0	1.5	55.7	58.8	11.3	88.6
45–54 .....	64.6	6.3	2.9	50.2	54.0	9.4	88.4
55–64 .....	51.0	5.9	.7	42.8	42.1	8.4	76.3
65–74 .....	32.1	3.2	.4	27.5	31.9	4.0	58.8
75 or more .....	18.7	1.5	*	13.9	23.6	2.5	40.3
Race or ethnicity of respondent							
White non-Hispanic .....	51.9	4.4	1.7	47.0	46.0	7.8	78.0
Nonwhite or Hispanic .....	37.4	3.0	1.1	43.2	46.7	7.3	72.5
Current work status of head							
Working for someone else .....	56.1	4.1	1.9	55.7	54.9	9.8	86.1
Self-employed .....	59.5	10.2	3.0	43.5	44.3	5.8	81.5
Retired .....	24.6	1.2	*	22.8	25.9	3.9	50.7
Other not working .....	30.3	*	*	45.6	41.0	*	70.4
Housing status							
Owner .....	69.4	5.1	1.3	46.6	48.8	7.7	82.3
Renter or other .....	...	1.7	2.1	44.6	40.4	7.3	63.4
Percentile of net worth							
Less than 25 .....	12.4	*	1.3	47.5	40.3	6.2	64.9
25–49.9 .....	52.8	1.4	1.7	52.4	57.9	9.4	83.8
50–74.9 .....	66.1	4.5	1.9	49.1	52.8	7.0	83.2
75–89.9 .....	61.6	5.7	1.3	40.2	40.5	7.1	74.6
90–100 .....	58.4	16.6	1.4	27.2	23.5	9.1	72.7

lien mortgages, and 5.7 percent (3.2 percent in 2001) was owed on home equity lines of credit (data not shown in the tables).

The rising values of primary residences over the 2001–04 period outpaced the increases in home-secured debt and thus raised the typical amount of home equity held by families. Median home equity among those with home-secured debt rose from \$61,900 to \$70,000 over the period, a 13.1 percent increase (data not shown in the tables).<sup>36</sup> Among those with such debt, the median ratio of home-secured debt to the value of the primary residence held steady at 56.0 percent, down from 58.8 percent in 1998. Over the recent three-year period, an SCF-based estimate of the aggregate ratio of home-secured debt to home values for all homeowners rose 1.4 percentage points, to 34.9 percent.

By eliminating the deductibility of interest payments on most loans other than those on primary and

secondary residences, the Tax Reform Act of 1986 created an incentive for homeowners with a need for additional liquid funds to borrow against their home equity. Over the 2001–04 period, some families may have felt an important additional incentive from low mortgage interest rates, rapidly appreciating home values, and technological changes that reduced the time and cost of mortgage refinancing. Such borrowing against home equity may take the form of refinancing an existing first-lien mortgage for more than the outstanding balance, obtaining a junior-lien mortgage, or accessing a home equity line of credit.

The survey provides detailed information on all these options for home equity borrowing. In 2004, 44.9 percent of homeowners with a first-lien mortgage had refinanced their current first-lien mortgage in the preceding three years (20.8 percent in 2001), and 34.0 percent of such refinancers had borrowed money beyond the amount refinanced (35.2 percent in 2001); the median amount of additional equity extracted by those who had done so was \$20,000

36. Among all homeowners in 2004, median home equity was \$86,000; in 2001 it had been \$74,600.

## 11.—Continued

## B. 2004 Survey of Consumer Finances—Continued

Family characteristic	Secured by residential property		Lines of credit not secured by residential property	Installment loans	Credit card balances	Other	Any debt
	Primary residence	Other					
	Median value of holdings for families holding debt (thousands of 2004 dollars)						
All families .....	95.0	87.0	3.0	11.5	2.2	4.0	55.3
Percentile of income							
Less than 20 .....	37.0	*	*	5.6	1.0	2.0	7.0
20–39.9 .....	53.3	32.5	.3	8.0	1.9	2.7	16.1
40–59.9 .....	78.0	66.0	1.0	10.8	2.2	2.3	44.7
60–79.9 .....	97.0	62.0	7.0	13.9	3.0	3.5	93.4
80–89.9 .....	133.0	78.0	14.0	15.1	2.7	5.0	136.0
90–100 .....	185.0	159.0	40.0	18.0	4.0	9.4	209.0
Age of head (years)							
Less than 35 .....	107.0	62.5	1.0	11.9	1.5	3.0	33.6
35–44 .....	110.0	75.0	1.9	12.0	2.5	4.0	87.2
45–54 .....	97.0	87.0	7.0	12.0	2.9	4.0	83.2
55–64 .....	83.0	108.8	14.0	12.9	2.2	5.5	48.0
65–74 .....	51.0	100.0	4.0	8.3	2.2	5.0	25.0
75 or more .....	31.0	39.0	*	6.7	1.0	2.0	15.4
Race or ethnicity of respondent							
White non-Hispanic .....	98.0	87.0	4.0	12.4	2.5	4.0	69.5
Nonwhite or Hispanic .....	83.0	66.0	.4	9.6	1.6	3.0	30.5
Current work status of head							
Working for someone else .....	100.0	83.0	4.0	12.0	2.3	3.5	71.8
Self-employed .....	119.8	100.0	2.2	15.4	2.7	7.0	93.4
Retired .....	42.0	79.0	*	7.3	1.4	3.0	15.4
Other not working .....	78.0	*	*	7.5	2.5	*	21.1
Housing status							
Owner .....	95.0	90.0	8.0	12.9	2.5	4.0	95.8
Renter or other .....	. . .	83.0	.5	8.7	1.5	3.0	7.8
Percentile of net worth							
Less than 25 .....	71.0	*	.3	10.5	1.8	4.0	11.4
25–49.9 .....	75.0	26.3	1.0	9.3	2.0	2.0	44.2
50–74.9 .....	97.0	47.0	8.0	13.3	2.5	4.0	90.1
75–89.9 .....	115.0	99.0	22.0	12.9	3.0	5.0	110.7
90–100 .....	186.1	148.0	50.0	17.5	3.0	20.0	190.8
MEMO							
Mean value of holdings for families holding debt type .....	124.1	166.7	36.6	18.8	5.1	17.1	103.4

NOTE: See note to table 10.

\*Ten or fewer observations.

... Not applicable.

(data not shown in the tables).<sup>37</sup> Junior-lien mortgages not used to finance a home purchase were used by 4.7 percent of homeowners in 2004 (7.2 percent in 2001), and the median amount owed on such loans for those having one was \$16,000 (\$20,200 in 2001). The proportion of homeowners with home equity lines of credit in 2004 was 17.8 percent (11.2 percent in 2001), and the proportion borrowing against such lines was 12.4 percent (7.1 percent in 2001); the median balance for those borrowing against such lines was \$22,000 (\$16,000 in 2001). For 2004, the major uses of extracted equity were for home improvement and debt consolidation. Home improvement accounted for 45.0 percent of the outstanding

balances attributable to equity extraction, and debt consolidation accounted for 31.0 percent (data not shown in the tables).

With house prices rising over the past three years, much discussion has centered on how families have managed to finance the purchase of a new home. Interest rates are a key determinant of the size of the regular payment that families must make to service their mortgages. The median rate on the stock of outstanding first-lien mortgages on primary residences was 5.90 percent in 2004 (the mean was 6.19) and 7.25 percent in 2001 (the mean was 7.59). Some families select a mortgage with a variable interest rate, typically because such loans have a lower initial rate than a fixed-rate loan. In 2004, 15.0 percent of homeowners with a first-lien mortgage on the primary residence had an interest rate on their loan that could vary; the comparable figure for 2001 was 11.4 percent.

37. Of those with a first-lien mortgage in 2004, 56.7 percent are recorded in the survey as having refinanced it at least once (42.8 percent in 2001); 35.0 percent of these refinancers extracted equity in the most recent instance (36.2 percent in 2001), and the median amount extracted was \$20,000 (data not shown in the tables).

Another key determinant of mortgage payments is the length of time over which the loan must be repaid. Mortgages with an initial term of thirty years or longer accounted for 57.5 percent of fixed-term first-lien mortgages on the primary residence in 2004, and those with a term of fifteen years or less accounted for 32.9 percent; in 2001, 62.9 percent had a term of thirty years or more, and 28.6 percent had a term of fifteen years or less. Some purchasers take out mortgages that do not require them to pay back the entire principal over the contract period of the loan; in such cases, a payment of any remaining principal is required at the end of the loan term. In 2004, 4.1 percent of first-lien mortgages on primary residences had such a loan feature; in 2001, the comparable figure had been 2.1 percent.

### Borrowing on Other Residential Real Estate

From 2001 to 2004, the proportion of families that owned other residential property rose, but the proportion with outstanding loans on such properties declined 0.6 percentage point, to 4.0 percent. Only about one-third of owners in 2004 also had a mortgage on the property. As with the ownership of such property, the associated borrowing is most prevalent among families with relatively high income or wealth. Use of such borrowing declined for most demographic groups over the three-year period. But as would be expected from the increased share of total debt attributable to this type of borrowing, the amount outstanding rose substantially. Both the median and the mean amounts owed more than doubled. Median and mean amounts also rose substantially among families with mortgages on other residential real estate in most demographic groups.

### Borrowing on Other Lines of Credit

Only 3.3 percent of families had an available line of credit other than a home equity line in 2004 (data not shown in the tables).<sup>38</sup> Even fewer families—1.6 percent—had a balance on such a line, a proportion virtually unchanged from 2001. The median amount outstanding on these lines fell 28.6 percent over this three-year period, while the mean rose 90.6 percent.

38. In this article, borrowing on lines of credit excludes borrowing on credit cards.

### Installment Borrowing

Installment borrowing is about as common as home-secured borrowing.<sup>39</sup> In 2004, 46.0 percent of families had installment debt, an increase of 0.8 percentage point over 2001. Although the use of installment borrowing has increased in each of the past two survey intervals, the overall rate of use is comparable to the levels seen in the 1992 and 1995 surveys. The use of installment borrowing is broadly distributed across demographic groups, with notably lower use only in the lowest income group, the highest wealth group, and families headed by retired persons or persons aged 65 or older. From 2001 to 2004, the median amount owed on installment loans rose 11.7 percent, and the mean rose 18.2 percent. Most of the demographic groups shared in the overall increase in the median. The majority of installment borrowing is related to the purchase of a vehicle (data not shown in the tables); in 2004, such borrowing accounted for 55.5 percent of the total amount owed (54.8 percent in 2001). The second-largest use of installment borrowing is for education-related expenses. Balances on loans for this purpose in 2004 made up 26.0 percent of total installment debt; the comparable figure for 2001 had been 22.2 percent.

### Credit Card Balances

As with installment borrowing, the carrying of credit card balances is widespread but notably lower among the highest and lowest income groups, the highest wealth group, and families headed by persons who are aged 65 or older or are retired.<sup>40</sup> From 2001 to 2004, the proportion of families carrying a balance rose 1.8 percentage points, to 46.2 percent. The preceding three years had seen a much smaller increase in use. The recent increase was shared by most demographic groups; the proportion carrying a balance declined for the lowest two income groups, the lowest wealth group, the youngest age group, nonwhite or Hispanic families, and renters.

39. The term “installment borrowing” in this article describes closed-end consumer loans, that is, those that typically have fixed payments and a fixed term. Examples are automobile loans, student loans, and loans for furniture, appliances, and other durable goods.

40. In this article, credit card balances consist of balances on bank-type cards (such as Visa, MasterCard, and Discover, and Optima and other American Express cards that routinely allow carrying a balance), store cards or charge accounts, gasoline company cards, so-called travel and entertainment cards (such as American Express cards that do not routinely allow carrying a balance and Diners Club), other credit cards, and revolving store accounts that are not tied to a credit card. Balances exclude purchases made after the most recent bill was paid.



Overall, the median balance for those carrying a balance rose 10.0 percent, to \$2,200; the mean rose 15.9 percent, to \$5,100. Over the preceding three years, the median had been little changed, but the mean had fallen 8.3 percent. In the recent period, the median balance rose strongly for most demographic groups; but borrowing declined notably for the lowest and next-to-highest income groups and for the youngest age group.

Many families with credit cards do not carry balances.<sup>41</sup> Of the 74.9 percent of families with credit cards in 2004, only 58.0 percent had a balance at the time of the interview; in 2001, 76.2 percent had cards, and 55.4 percent of these families had an outstanding balance on them (data not shown in the tables). The proportion of cardholders who had a bank-type card was unchanged over this three-year period, whereas the proportion of cardholders having most other card types declined, as shown in the following table:

Type of credit card	Cardholders holding	
	2004 (percent)	Change 2001–04 (percentage points)
Bank .....	95.4	.0
Store .....	58.4	–1.0
Gasoline .....	17.3	–3.8
Travel and entertainment .....	10.0	–3.8
Miscellaneous .....	2.6	.2

The declines in card ownership probably reflect, at least in part, a rise during the period in the issuance of bank-type cards under the brand names of stores and gasoline companies and in the issuance of new types of American Express card that routinely allow carrying a balance.

As the most widely held type of card, bankcards hold particular importance in any examination of family finances. Indeed, balances on such cards accounted for 84.9 percent of outstanding credit card balances in 2004, up from 82.1 percent in 2001. As reflected in the overall movement for credit cards from 2001 to 2004, the proportion of bankcard holders who had a balance went up 2.5 percentage points, to 56.2 percent; the proportion of bankcard holders who reported that they usually pay their balances in full was about unchanged in 2004 at 55.7 percent. For the month preceding the interview, the median charge

on all bank-type cards held by the family rose slightly over the recent three-year period, from \$210 in 2001 to \$250 in 2004. For families having any bank-type cards, the median number of such cards remained at 2; the median credit limit on all such cards rose 26.2 percent, to \$13,500; and the median interest rate on the card with the largest balance (or on the newest card, if there were no outstanding balances) fell 3.5 percentage points, to 11.50 percent.

### Other Debt

From 2001 to 2004, the proportion of families that held other types of debt edged up 0.4 percent, to 7.6 percent.<sup>42</sup> In 2004, 0.5 percent of families had a margin loan, 3.5 percent had a loan against a pension from a current job of the family head or that person's spouse or partner, 1.6 percent had a loan against a cash value life insurance policy, and 2.7 percent had another miscellaneous type of loan (data not shown in the tables).

The use of other debt is spread broadly across demographic groups, but rates of use are notably lower for families headed by those who are 65 years of age or older and by those who are retired. Across income groups, use of such debt fell from 2001 to 2004 only for the lowest group. The median amount owed by families with this type of debt rose 25.0 percent, to \$4,000, between 2001 and 2004; over the same time, the mean fell 9.0 percent. In 2004, 50.4 percent of the total amount of this type of debt was attributable to margin loans, 21.2 percent to loans against a pension from a current job of the family head or that person's spouse or partner, 9.8 percent to loans against cash value life insurance policies, and the remaining 18.7 percent to miscellaneous loans (data not shown in the tables).

### Reasons for Borrowing

The SCF provides information on the reasons that families borrow money (table 12). One subtle problem with the use of these data is that, even though money is borrowed for a particular purpose, it may be employed to offset some other use of funds. For example, a family may have sufficient funds to purchase a home without using a mortgage but may

41. The remaining discussion of credit cards excludes revolving store accounts that are not tied to a credit card. In 2004, 6.0 percent (5.5 percent in 2001) of families had such an account, the median outstanding balance for families that had a balance was \$700 (\$600 in 2001), and the total of such balances accounted for 4.3 percent (5.2 percent in 2001) of the total of balances on credit cards and such store accounts (data not shown in the tables).

42. The "other debt" category comprises loans on cash value life insurance policies, loans against pension accounts, borrowing on margin accounts, and a miscellaneous category largely comprising personal loans not explicitly categorized elsewhere.

## 12. Amount of debt of all families, distributed by purpose of debt, 1995–2004 surveys

Percent

Purpose of debt	1995	1998	2001	2004
Primary residence				
Purchase .....	70.3	67.9	70.9	70.2
Improvement .....	2.0	2.1	2.0	1.9
Other residential property .....	8.2	7.8	6.5	9.5
Investments excluding real estate ..	1.0	3.3	2.8	2.2
Vehicles .....	7.6	7.6	7.8	6.7
Goods and services .....	5.7	6.3	5.8	6.0
Education .....	2.7	3.5	3.1	3.0
Unclassifiable loans against				
pension accounts .....	.2	†	†	†
Other .....	2.2	1.5	1.1	.6
Total .....	100	100	100	100

NOTE: See note to table 7.

† Less than 0.05 percent.

instead choose to finance the purchase to free existing funds for another purpose. Thus, trends in the data can only suggest the underlying use of funds by families.

Although the survey information on use is substantial, it is not exhaustive. Most importantly, for the case of credit cards it was deemed impractical to ask about the purposes of borrowing that might well be heterogeneous for individual families. For the analysis here, all credit card debt is included in the category “goods and services.” The surveys before 2004 lack information on the use of funds borrowed through a first-lien mortgage; therefore, for purposes of this calculation, all funds owed on a first-lien mortgage on a primary residence are assumed to have been used for the purchase of the home, even when the homeowner has refinanced and extracted equity.

The great majority of family debt is attributable to the purchase of a primary residence; from 2001 to 2004, the share of debt for this purpose declined a fraction of a percentage point. Borrowing for residential real estate other than a primary residence, the second-largest purpose for borrowing, rose notably. The share of borrowing for vehicles, the third-largest share, fell 1.1 percentage points. The shares of borrowing for other purposes held about steady.

### Choice of Lenders

The survey provides information on the types of lender to which families owe money at the time of the interview (table 13). The share of total family debt held by thrift institutions—savings and loan institutions and savings banks—rose 1.2 percentage points from 2001 to 2004, reversing a previous trend; the 1.4 percentage point increase in the share for real estate or mortgage lenders continued an earlier pat-

## 13. Amount of debt of all families, distributed by type of lending institution, 1995–2004 surveys

Percent

Type of institution	1995	1998	2001	2004
Commercial bank .....	34.9	32.8	34.1	35.1
Thrift institution <sup>1</sup> .....	10.8	9.7	6.1	7.3
Credit union .....	4.5	4.3	5.5	3.6
Finance or loan company .....	3.2	4.1	4.3	4.1
Brokerage .....	1.9	3.8	3.1	2.5
Mortgage or real estate lender ..	32.8	35.6	38.0	39.4
Individual lender .....	5.0	3.3	2.0	1.7
Other nonfinancial .....	.8	1.3	1.4	2.0
Government .....	1.2	.6	1.1	.7
Credit card issuer .....	3.9	3.9	3.7	3.0
Pension .....	.2	.4	.3	.3
Other .....	.7	.3	.5	.2
Total .....	100	100	100	100

NOTE: See note to table 1.

1. Savings and loan association or savings bank.

tern. The share for commercial banks moved up 1.0 percentage point, while the share for credit unions fell 1.9 percentage points. Other smaller changes accounted for the rest of the pattern of changes in 2004.

In some cases, loans may have been held at the time of the interviews by institutions other than the ones that originally made the loans. Resale of loans is particularly important for mortgage debt. According to the 2004 survey, 41.5 percent of the first-lien mortgages on primary residences were held by lenders other than the ones that made the original loans, a figure only slightly changed from 2001.<sup>43</sup> In dollar-weighted terms, the results are similar; mortgages with non-originating lenders account for 43.3 percent of the outstanding balances on first-lien mortgages for primary residences in 2004 (data not shown in the tables).

### Debt Burden

The ability of individual families to service their loans is a function of two factors: the level of their loan payments and the income and assets they have available to meet those payments. In planning their borrowing, families make assumptions about their future ability to repay their loans. Problems may occur when events turn out to be contrary to those assumptions. If such misjudgments are sufficiently large and prevalent, a broad pattern of default,

43. Mortgages and other loans may also be serviced by an institution other than the current lender, and some respondents may mistakenly report their loan as having been sold even though it is simply being serviced by an institution other than the current lender. Because a loan can also be sold without changing the servicer, some borrowers may mistakenly report that their loan has not been sold.



restraint in spending, and financial distress in the wider economy might ensue.

From the third quarter of 2001 to the same period in 2004, inflation-adjusted aggregate household debt reported in the Federal Reserve's flow of funds accounts increased 26.3 percent.<sup>44</sup> At the same time, income was relatively flat, and interest rates tended to be lower at the end of the period. The typical contract periods of various types of loan appear to have been largely unchanged, but borrowers may have substituted longer-term home-secured debt for other debts that typically have shorter contract periods. Thus, whether the growth in debt translated into a change in families' ability to service their debts is not clear a priori. The net consequences of these movements on the ratio of payments to income can only be assessed by looking at how these factors vary together over families.

The Federal Reserve staff has constructed an aggregate-level debt service ratio, defined as an estimate of total scheduled loan payments (interest plus minimum repayments of principal) for all households, divided by disposable personal income. From the third quarter of 2001 to the same period in 2004, the aggregate-level measure edged up about 0.4 percentage point, to 13.2 percent.<sup>45</sup>

The survey data may be used to construct a similar estimate of the debt-burden ratio and to construct such an estimate for various demographic groups (table 14).<sup>46</sup> The SCF-based estimate is the ratio of

total debt payments for all families to total family income of all families. From 2001 to 2004, the SCF-based estimate rose more than the aggregate-level measure, increasing 1.5 percentage points, to 14.4 percent; in the previous three-year period, the SCF measure had declined while the aggregate-level measure had risen. If total payments and incomes are computed from the survey data using only families with debt payments, the results for the recent period show a slightly larger increase, from 16.0 percent in 2001 to 17.7 percent in 2004; if the ratio is computed using only families with home-secured debt, the data show a rise from 18.2 percent in 2001 to 20.1 percent in 2004 (data not shown in the tables).

The ability to look at the distribution of payments relative to income at the level of families potentially offers insights that are not available from any of the aggregate-level figures. In particular, the survey allows a detailed look at the spectrum of payments relative to income across all families with debts. Over the recent period, the median of the ratios for individual families that had any debt rose 1.3 percentage points, to 18.0 percent, in 2004; the increase reversed a 1.2 percentage point decline in the ratio over the preceding three years. The median also rose at least slightly in the recent period for all demographic groups shown except for the 65–74 age group and renters, for which groups the ratio fell slightly.<sup>47</sup>

A limitation of the median ratio is that it may not be indicative of distress because it reflects the situation of only a typical family. Unless errors of judgment by both families and lenders are pervasive, one would not expect to see signs of financial distress at the median. Thus, a more compelling indicator of distress is the proportion of families with unusually large total payments relative to their incomes. From 2001 to 2004, the proportion of debtors with payments exceeding 40 percent of their income edged up 0.4 percentage point, to 12.2 percent; in the preceding three years, the proportion had fallen 1.8 percentage points. The survey shows an interesting pattern of increases and decreases in the proportion of families with debt that had relatively high payments across demographic groups in the recent three-year period. The share fell for families in the lowest and the two highest income and wealth groups and for

44. See <http://www.federalreserve.gov/releases/Z1/Current/>.

45. Data on this measure, the "debt service ratio," and a description of the series are available at [www.federalreserve.gov/releases/housedebt/default.htm](http://www.federalreserve.gov/releases/housedebt/default.htm). See Karen Dynan, Kathleen Johnson, and Karen Pence (2003), "Recent Changes to a Measure of U.S. Household Debt Service," *Federal Reserve Bulletin*, vol. 89 (October), pp. 451–60.

46. The survey measure of payments relative to income may differ from the aggregate-level measure for several reasons. First, the debt payments included in each measure are different. The aggregate-level measure includes only debts originated by depositories, finance companies, and other financial institutions, whereas the survey includes, in principle, debts from all sources.

Second, the aggregate-level measure uses a NIPA estimate of disposable personal income for the period concurrent with the estimated payments as the denominator of the ratio, whereas the survey measure uses total before-tax income reported by survey families for the preceding year; the differences in these two income measures are complex.

Third, the payments in the aggregate-level measure are estimated using a formula that entails complex assumptions about minimum payments and the distribution of loan terms at any given time; the survey measure of payments is directly asked of the survey respondents but may also include payments of taxes and insurance on real estate loans.

Fourth, because the survey measures of payments and income are based on the responses of a sample of respondents, they may be affected both by sampling error and by various types of response error. As mentioned earlier in this article, the survey income measure tracks the most comparable measure of income in the Census Bureau's

Current Population Survey. Over the 2001–04 period, however, the SCF shows more growth in the aggregate level of debt than the Federal Reserve's flow of funds accounts; timing and conceptual differences may explain some of the difference. Finally, the survey measure excludes debt payments of household members who are not members of the family unit analyzed in this article.

47. The median of the ratio for families with home-secured debt in 2004 was 24.2 percent, up from 22.2 percent in 2001 (data not shown in the tables).

14. Ratio of debt payments to family income (aggregate and median), share of debtor families with ratio greater than 40 percent, and share of debtors with any payment past due sixty days or more, 1995–2004 surveys

Percent

Family characteristic	Aggregate				Median for debtors			
	1995	1998	2001	2004	1995	1998	2001	2004
<b>All families</b> .....	<b>14.1</b>	<b>14.9</b>	<b>12.9</b>	<b>14.4</b>	<b>16.2</b>	<b>17.9</b>	<b>16.7</b>	<b>18.0</b>
<i>Percentile of income</i>								
Less than 20 .....	19.1	18.7	16.1	18.2	13.3	18.8	19.2	19.7
20–39.9 .....	17.0	16.5	15.8	16.7	17.5	17.5	16.7	17.4
40–59.9 .....	15.6	18.6	17.1	19.4	15.7	19.4	17.6	19.5
60–79.9 .....	17.9	19.1	16.8	18.5	18.9	19.5	18.1	20.6
80–89.9 .....	16.6	16.8	17.0	17.3	16.8	17.8	17.3	18.1
90–100 .....	9.5	10.3	8.1	9.3	12.6	13.7	11.2	12.7
<i>Age of head (years)</i>								
Less than 35 .....	17.8	17.2	17.2	17.8	16.8	16.9	17.7	18.0
35–44 .....	17.2	17.7	15.1	18.2	18.3	20.0	17.8	20.6
45–54 .....	15.1	16.3	12.8	15.3	16.6	17.9	17.4	18.4
55–64 .....	11.8	13.4	10.9	11.5	14.2	17.6	14.3	15.8
65–74 .....	7.2	8.8	9.2	8.7	12.3	13.2	16.0	15.6
75 or more .....	2.5	4.1	3.9	7.1	2.9	8.1	8.0	12.8
<i>Percentile of net worth</i>								
Less than 25 .....	13.4	15.0	13.4	13.0	11.7	13.6	11.5	13.0
25–49.9 .....	18.5	20.1	18.0	19.5	19.0	20.0	20.1	21.2
50–74.9 .....	18.0	18.3	16.8	20.6	19.3	20.2	18.3	21.4
75–89.9 .....	14.0	14.8	15.4	15.1	15.3	17.8	16.8	17.9
90–100 .....	9.0	10.2	7.5	8.5	12.7	14.0	11.2	12.6
<i>Housing status</i>								
Owner .....	15.6	16.2	13.9	15.6	20.1	21.2	20.0	21.5
Renter or other .....	7.9	8.2	7.4	7.2	8.1	8.5	8.3	8.2

NOTE: The aggregate measure is the ratio of total debt payments to total income for all families. The median is the median of the distribution of ratios calculated for individual families with debt. Also see note to table 1.

families headed by persons older than 55; it rose for the middle of the income and wealth distributions and for younger families. Both for homeowners and for renters, the proportion with high payments was only slightly changed.<sup>48</sup>

Other commonly used indicators of debt-repayment problems are aggregate delinquency rates, that is, the number of delinquent accounts or the percentage of total balances on which payments are late. The measures based on numbers of delinquent accounts tend to show increases or small declines over the recent three-year period, while the measures based on dollar volumes show a decline.<sup>49</sup>

A related measure is collected in the SCF. Families that have any debt at the time of their interview are

asked whether they have been behind in any of their payments in the preceding year. This measure differs conceptually from the aggregate delinquency rates in that the survey counts multiple occasions of late payments as one, counts families instead of balances or accounts, and includes all types of loan; because it counts individual families, not their balances, it is closer in spirit to aggregate measures based on the numbers of delinquent accounts than to those based on the amounts of delinquent balances. Over the 2001–04 period, the survey shows an increase of 1.9 percentage points in the proportion of debtors who were sixty or more days late with their payments on any of their loans in the preceding year, to 8.9 percent. This measure showed increases for all the demographic groups except for the highest two income groups, for the third quartile and highest decile of the wealth distribution, and for families headed by persons aged 55–64.<sup>50</sup> Some of the largest increases were seen by groups that had more modest or even negative changes in the other survey-based measures of debt burden.

48. Of families with home-secured debt, the proportion that had total payments of more than 40 percent of their income was 17.1 percent in 2004, a figure virtually unchanged from that in 2001 (data not shown in the tables).

49. Several measures of credit delinquency are commonly used. Data from the Call Report and Moody's Investors Service are based on dollar volumes of delinquent loans. Those data suggest that delinquencies generally declined between 2001 and 2004 on credit cards, on closed-end consumer credit, and on mortgages. Over the same period, however, data from the American Bankers Association on numbers of delinquent accounts show a smaller decline in delinquencies for closed-end consumer loans, little change for mortgages, and an increase for credit cards.

50. For families with home-secured debt, the result is very similar to that for homeowners overall. The proportion with payments late sixty days or more in 2004 was 5.7 percent, up from 4.5 percent in 2001 (data not shown in the tables).

## 14.—Continued

Family characteristic	Debtors with ratio greater than 40 percent				Debtors with any payment past due sixty days or more			
	1995	1998	2001	2004	1995	1998	2001	2004
<b>All families</b> .....	<b>11.7</b>	<b>13.6</b>	<b>11.8</b>	<b>12.2</b>	<b>7.1</b>	<b>8.1</b>	<b>7.0</b>	<b>8.9</b>
<i>Percentile of income</i>								
Less than 20 .....	27.5	29.9	29.3	27.0	10.2	12.9	13.4	15.9
20–39.9 .....	18.0	18.3	16.6	18.6	10.1	12.3	11.7	13.8
40–59.9 .....	9.9	15.8	12.3	13.7	8.7	10.0	7.9	10.4
60–79.9 .....	7.7	9.8	6.5	7.1	6.6	5.9	4.0	7.1
80–89.9 .....	4.7	3.5	3.5	2.4	2.8	3.9	2.6	2.3
90–100 .....	2.3	2.8	2.0	1.8	1.0	1.6	1.3	.3
<i>Age of head (years)</i>								
Less than 35 .....	12.1	12.8	12.0	12.8	8.7	11.1	11.9	13.7
35–44 .....	9.9	12.5	10.1	12.6	7.7	8.4	5.9	11.7
45–54 .....	12.3	12.9	11.6	13.1	7.4	7.4	6.2	7.6
55–64 .....	15.1	14.0	12.3	10.2	3.2	7.5	7.1	4.2
65–74 .....	11.3	18.1	14.7	11.6	5.3	3.1	1.5	3.4
75 or more .....	7.4	21.4	14.6	10.7	5.4	1.1	.8	3.9
<i>Percentile of net worth</i>								
Less than 25 .....	10.1	13.0	11.6	10.6	14.5	16.1	17.7	22.9
25–49.9 .....	12.9	15.9	14.1	15.8	8.2	9.8	7.2	11.0
50–74.9 .....	12.7	13.0	11.3	12.8	4.4	5.5	3.6	3.2
75–89.9 .....	9.9	12.2	10.7	9.6	2.4	1.0	.7	1.1
90–100 .....	11.6	12.4	8.5	7.6	.7	2.4	.3	.1
<i>Housing status</i>								
Owner .....	14.3	16.5	14.7	14.9	5.1	6.1	4.3	5.6
Renter or other .....	5.8	6.4	4.2	4.4	11.5	12.8	14.0	18.6

## SUMMARY

Data from the SCF show that despite small changes in real family income over the 2001–04 period—an increase of 1.6 percent in the median and a decline of 2.3 percent in the mean—families overall still saw some increase in their net worth. The median value of net worth rose 1.5 percent, while the mean rose more—6.3 percent. However, the measured gains in wealth in the 2001–04 period pale in comparison with the much larger increase of the preceding three years; from 1998 to 2001, median net worth rose 10.3 percent and the mean 28.7 percent. In the more recent period, median wealth declined for families in the bottom 40 percent of the income distribution and rose for those higher in the distribution; in contrast, mean net worth rose or held about steady for all income groups.

In the three years after the 2001 survey, interest rates moved generally lower; indexes of equity market performance trended generally downward over the early part of the period but made up the losses with gains in 2004; and residential real estate appreciated strongly. Against this backdrop, the overall share of financial assets in families' portfolios, as defined in this article, declined despite substantial gains in holdings for some groups. Of particular note, the share of families that held stocks either directly or indirectly through an account-type retirement plan or

another type of managed asset account fell to about 49 percent in 2004 after having reached an SCF high of almost 52 percent in 2001.

Logically balancing the decline in the share of financial assets in families' portfolios was the rise in the share of their nonfinancial assets. The most important factor in this rise was residential real estate. The homeownership rate went up 1.4 percentage points, and the ownership rate for other residential real estate (including both second homes and investment properties) went up 1.2 percentage points. At the same time, the value of real estate increased dramatically in many areas.

Overall, asset ownership and debt use increased in both prevalence and amount. The net effect was an increase in the proportion of families' assets offset by debts—from about 12 percent in 2001 to 15 percent in 2004. The most important factor in the increase was a rise in the amount of debt associated with residential real estate. The amount of other types of debt also rose.

Even with interest rates lower in 2004 than in 2001, the SCF data show a moderate increase in measures of debt burden. The period saw increases in the proportion of families that had been delinquent with their payments in the year preceding the survey and in the median ratio of loan payments to family income. The increase in delinquencies was somewhat less broadly spread across demographic groups than

was the increase in the median ratio. At the same time, the proportion of families with high values of the ratio was only marginally higher.

#### *APPENDIX: SURVEY PROCEDURES AND STATISTICAL MEASURES*

Detailed documentation of the SCF methodology is available elsewhere.<sup>51</sup> The 2004 data used here are derived from the final internal version of the survey information. Data from this survey, suitably altered to protect the privacy of respondents, along with additional tabulations of data from the surveys beginning with 1989, will be available in February 2006 on the Federal Reserve's website at [www.federalreserve.gov/pubs/oss/oss2/scf2004home.html](http://www.federalreserve.gov/pubs/oss/oss2/scf2004home.html). Links to the data used in this article for earlier periods are available on that site. Results reported in this article for earlier surveys may differ from the results reported in earlier articles because of additional statistical processing, correction of data errors, revisions to the survey weights, conceptual changes in the definitions of variables used in the articles, and adjustments for inflation.

As a part of the general reconciliations required for this article, the survey data were compared with many external estimates, a few of which are mentioned in the text. Generally, the survey estimates correspond fairly well to external estimates. One particularly important comparison is between the SCF and the Federal Reserve's flow of funds accounts for the household sector. This comparison suggests that when the definitions of the variables in the two sources can be adjusted to a common conceptual basis, the estimates of totals in the two systems tend to be close. The data series in the SCF and in the flow of funds accounts usually show very similar growth rates.<sup>52</sup> In general, the data from the SCF can be compared with those of other surveys only in terms of the medians because of the special design of the SCF sample.

51. See Arthur B. Kennickell (2000), "Wealth Measurement in the Survey of Consumer Finances: Methodology and Directions for Future Research" (Washington: Board of Governors of the Federal Reserve System, May); Arthur B. Kennickell (2001), "Modeling Wealth with Multiple Observations of Income: Redesign of the Sample for the 2001 Survey of Consumer Finances" (Washington: Board of Governors of the Federal Reserve System, October), [www.federalreserve.gov/pubs/oss/oss2/method.html](http://www.federalreserve.gov/pubs/oss/oss2/method.html); and references cited in these papers.

52. For details on how these comparisons are structured and the results of comparisons for earlier surveys, see Rochelle L. Antoniewicz (2000), "A Comparison of Flow of Funds Accounts and the Survey of Consumer Finances" (Washington: Board of Governors of the Federal Reserve System, October), [www.federalreserve.gov/pubs/oss/oss2/method.html](http://www.federalreserve.gov/pubs/oss/oss2/method.html).

#### *Definition of "Family" in the SCF*

The definition of "family" used throughout this article differs from that typically used in other government studies. In the SCF, a household unit is divided into a "primary economic unit" (PEU)—the family—and everyone else in the household. The PEU is intended to be the economically dominant single individual or couple (whether married or living together as partners) and all other persons in the household who are financially interdependent with that economically dominant person or couple.

This report also designates a head of the PEU, not to convey a judgment about how an individual family is structured but as a means of organizing the data consistently. If a couple is economically dominant in the PEU, the head is the male in a mixed-sex couple and the older person in a same-sex couple. If a single individual is economically dominant, that person is designated as the family head in this report.

#### *Racial and Ethnic Identification*

In this article, the race and ethnicity of a family in the SCF are classified according to the self-identification of that family's original respondent to the SCF interview. The questions underlying the method of classification used in the survey were changed in both 1998 and 2004. Starting in 1998, SCF respondents were allowed to report more than one racial identification; in surveys before then, only one response was recorded. For maximum comparability with earlier data, respondents reporting multiple racial identifications were asked to report their strongest racial identification.

Beginning with the 2004 survey, the question on racial identification is preceded by a question on whether respondents consider themselves to be Hispanic or Latino in culture or origin; previously, such ethnic identification was captured only to the extent that it was reported as a response to the question on racial identification. The sequence of these two questions in the 2004 SCF is similar to that in the CPS. When families in the March 2004 CPS are classified in the way most compatible with the SCF, the proportion of Hispanic families is 10.5 percent; the 2004 SCF estimate is 11.2 percent. Differences in these proportions are attributable to sampling error and possibly to differences in the wording and context of the questions.

For greater comparability with the earlier SCF data, the data reported in this article ignore the infor-



mation on ethnic identification available in 2004, but respondents reporting multiple racial identifications in the surveys starting with 1998 are classified as “nonwhite or Hispanic.” For the 1995 survey, only the single recorded response to the racial classification question is used to classify families. In the 2004 SCF, 2.3 percent of respondents reported more than one racial identification, up from 1.5 percent in 2001. Of those who responded affirmatively to the question on Hispanic or Latino identification in 2004, 85.7 percent also reported “Hispanic or Latino” as one of their racial identifications, and 82.1 percent reported it as their primary racial identification. Because the question on Hispanic or Latino ethnicity precedes the one on racial identification in the 2004 survey, the answer to the second of these two questions may have been influenced by the answer to the first.<sup>53</sup>

### The Sampling Techniques

The survey is expected to provide a core set of data on family income, assets, and liabilities. The major aspects of the sample design that address this requirement have been constant since 1989. The SCF combines two techniques for random sampling. First, a standard multistage area-probability sample (a geographically based random sample) is selected to provide good coverage of characteristics, such as homeownership, that are broadly distributed in the population.

Second, a supplemental sample is selected to disproportionately include wealthy families, which hold a relatively large share of such thinly held assets as noncorporate businesses and tax-exempt bonds. Called the “list sample,” this group is drawn from a list of statistical records derived from tax returns. These records are used under strict rules governing confidentiality, the rights of potential respondents to refuse participation in the survey, and the types of information that can be made available. Individuals listed by *Forbes* magazine as being among the wealthiest 400 people in the United States are excluded from sampling.

Of the 4,522 interviews completed for the 2004 SCF, 3,007 were from the area-probability sample, and 1,515 were from the list sample; the figures for 2001 are 2,917 from the area-probability sample and 1,532 from the list sample. The 2004 survey repre-

sents 112.1 million families, and the 2001 survey represents 106.5 million families.<sup>54</sup>

### The Interviews

The survey questionnaire has changed in only minor ways since 1989, except in a small number of instances in which the structure was altered to accommodate changes in financial behaviors, in types of financial arrangements available to families, and in regulations covering data collection. In the 2004 survey, the most important changes were made in the way data are collected on pensions associated with current jobs and in the way information is solicited about the racial and ethnic identification of families. In these cases and in all earlier ones, every effort has been made to ensure the maximum degree of comparability of the data over time. Except where noted in the article, the data are highly comparable over time.

The generosity of families in giving their time for interviews has been crucial to the SCF. In the 2004 SCF, the median interview length was about eighty minutes. However, in some particularly complicated cases, the amount of time needed was substantially more than two hours. The role of the interviewers in this effort is also critical. Without their dedication and perseverance, the survey would not be possible.

The SCF interviews were conducted largely between the months of May and December in each survey year by NORC, a social science and survey research organization at the University of Chicago. The majority of interviews were obtained in person, although interviewers were allowed to conduct telephone interviews if that was more convenient for the respondent. In the surveys beginning with 1995, each interviewer used a program running on a laptop computer to administer the survey and collect the data.

The use of computer-assisted personal interviewing has the great advantage of enforcing systematic collection of data across all cases. The computer

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Information: Results of the Current Population Survey Supplement on Race and Ethnicity.” BLS Statistical Notes 40, CPS Publications (Washington: Bureau of Labor Statistics, June), [www.bls.census.gov/cps/racethn/1995/stat40rp.htm](http://www.bls.census.gov/cps/racethn/1995/stat40rp.htm).

54. In the development of weights for the SCF, population estimates of the Bureau of the Census are a key input. After the data for the 2001 SCF were processed, the Bureau of the Census altered its population estimates in a way that increases the number of family units relevant for the 2001 SCF to 108.2 million. Pending a more detailed investigation into the change in the population estimate, the 2001 SCF estimates reported in this article are calculated with weights based on the original, lower Census population figure. The use of a different number of families does not affect the median and mean estimates reported in this article. The 1998 survey represents 102.6 million families, and the 1995 survey represents 99.0 million families.

53. For a review of the effects of various approaches to measuring race and ethnicity, see Clyde Tucker, Ruth McKay, Brian Kojetin, Roderick Harrison, Manuel de la Puente, Linda Stinson, and Ed Robinson (1996), “Testing Methods of Collecting Racial and Ethnic

program developed to collect the data for the SCF was tailored to allow the collection of partial information in the form of ranges whenever a respondent either did not know or did not want to reveal an exact dollar figure.

The response rate in the area-probability sample is more than double that in the list sample. In both 2001 and 2004, about 70 percent of households selected for the area-probability sample actually completed interviews. The overall response rate in the list sample was about 30 percent; in the part of the list sample likely containing the wealthiest families, the response rate was only about 10 percent.

### *Weighting*

To provide a measure of the frequency with which families similar to the sample families could be expected to be found in the population of all families, an analysis weight is computed for each case accounting both for the systematic properties of the sample design and for differential patterns of nonresponse. The SCF response rates are low by the standards of other major government surveys, and analysis of the data confirms that the tendency to refuse participation is highly correlated with net worth. However, unlike other surveys, which also almost certainly have differential nonresponse by wealthy households, the SCF has the means to adjust for such nonresponse. A major part of SCF research is devoted to the evaluation of nonresponse and adjustments for nonresponse in the analysis weights of the survey.<sup>55</sup>

### *Sources of Error*

Errors may be introduced into survey results at many stages. Sampling error—the variability expected in

estimates based on a sample instead of a census—is a particularly important source of error. Such error can be reduced either by increasing the size of a sample or, as is done in the SCF, by designing the sample to reduce important sources of variability. Sampling error can be estimated, and for this article we use replication methods to do so.

Replication methods draw samples, called replicates, from the set of actual respondents in a way that incorporates the important dimensions of the original sample design. In the SCF, weights were computed for all the cases in each of the replicates.<sup>56</sup> For each statistic for which standard errors are reported in this article, the weighted statistic is estimated using the replicate samples, and a measure of the variability of these estimates is combined with a measure of the variability due to imputation for missing data to yield the standard error.

Other errors include those that interviewers may introduce by failing to follow the survey protocol or misunderstanding a respondent's answers. SCF interviewers are given lengthy, project-specific training to minimize such problems. Respondents may introduce error by interpreting a question in a sense different from that intended by the survey. For the SCF, extensive pretesting of questions and thorough review of the data tend to reduce this source of error.

Nonresponse—either complete nonresponse to the survey or nonresponse to selected items within the survey—may be another important source of error. As noted in more detail above, the SCF uses weighting to adjust for differential nonresponse to the survey. To address missing information on individual questions within the interview, the SCF uses statistical methods to impute missing data; the technique makes multiple estimates of missing data to allow for an estimate of the uncertainty attributable to this type of nonresponse. □

55. The weights used in this article are adjusted for differential rates of nonresponse across racial and ethnic groups by homeownership status. See Arthur B. Kennickell (1999), "Revisions of the SCF Weighting Methodology: Accounting for Race/Ethnicity and Homeownership" (Washington: Board of Governors of the Federal Reserve System, December), [www.federalreserve.gov/pubs/oss/oss2/method.html](http://www.federalreserve.gov/pubs/oss/oss2/method.html).

56. See Arthur B. Kennickell (2000), "Revisions to the Variance Estimation Procedure for the SCF" (Washington: Board of Governors of the Federal Reserve System, October), [www.federalreserve.gov/pubs/oss/oss2/method.html](http://www.federalreserve.gov/pubs/oss/oss2/method.html).



# Industrial Production and Capacity Utilization: The 2005 Annual Revision

*Kimberly Bayard and Charles Gilbert, of the Board's Division of Research and Statistics, prepared this article. Vanessa Haleco provided research assistance.*

On November 7, 2005, the Board of Governors of the Federal Reserve System issued revisions to its index of industrial production (IP) and the related measures of capacity and capacity utilization for the period from January 1972 through September 2005. For this period, both the levels and the rates of change were revised. For years before 1972, the levels, but not the rates of change, were also revised. Overall, the changes to total industrial production were small (figure 1).<sup>1</sup>

NOTE: Charles Gilbert directed the 2005 revision and, with Kimberly Bayard, David Byrne, Christopher Kurz, Paul Lengermann, Maria Otoo, Dixon Tranum, and Daniel Vine, prepared the revised estimates of industrial production. Norman Morin, John Stevens, and Daniel Vine prepared the revised estimates of capacity and capacity utilization. David Byrne, Carol Corrado, and Aditya Bhav prepared the improved estimates for communications equipment.

1. The production and capacity indexes and the utilization rates referred to in the text and shown in the tables and charts are based on

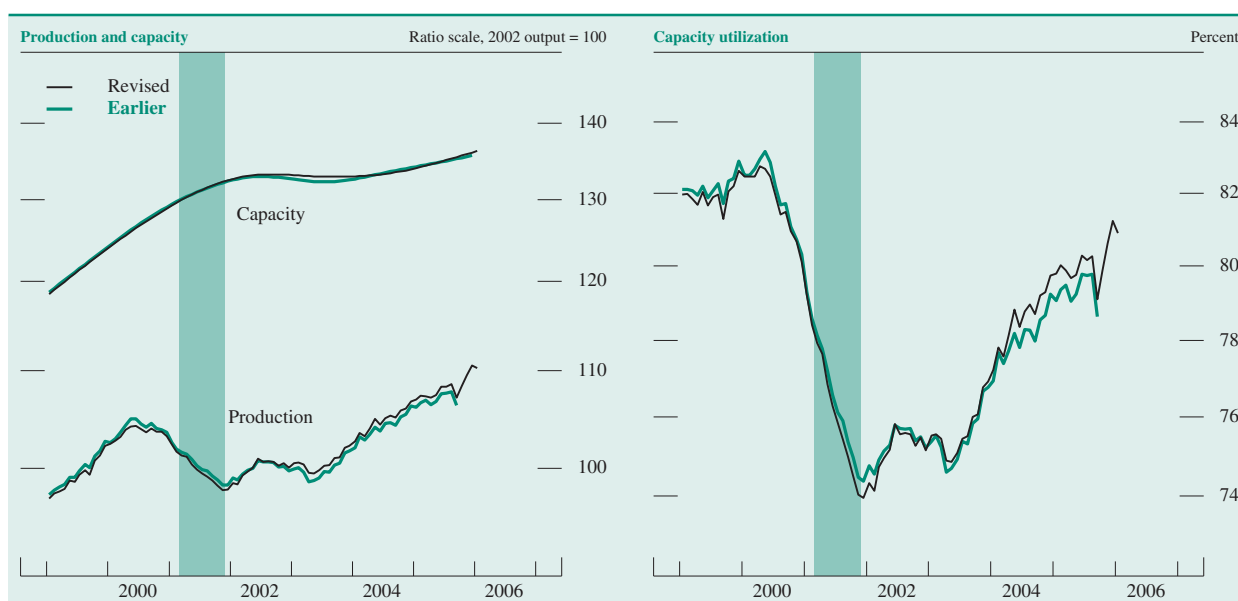
Besides the revisions to the monthly data for IP and capacity utilization starting in 1972, the comparison base year for all production and capacity indexes was changed: The indexes are now expressed as percentages of output in 2002 instead of 1997.<sup>2</sup> The rebasing affects all series from their start dates: 1919 for total IP and manufacturing IP, 1948 for manufacturing capacity, and 1967 for total industrial capacity.

Table 1 summarizes the changes to industrial production, capacity, and capacity utilization from 2001 forward. Measured from fourth quarter to fourth quarter, industrial output since 2001 is now reported to have increased a little more overall than reported previously. The contraction in 2001 is now shown to be a bit steeper than it was earlier, and the gains in

the data published in the G.17 Federal Reserve Statistical Release "Industrial Production and Capacity Utilization" on February 15, 2006. Statements about previously reported estimates refer to the data published on October 14, 2005.

2. For comparisons in this article between the revised and previous indexes, the previous indexes are implicitly recomputed to have a base year of 2002.

## 1. Industrial production, capacity, and capacity utilization: Total industry, January 1999–January 2006



NOTE: Here and in the following figures, the shaded areas are periods of business recession as defined by the National Bureau of Economic Research. Data labeled "revised" are the corresponding data published in the G.17 Federal Reserve statistical release "Industrial Production and Capacity

Utilization" on February 15, 2006. Data labeled "earlier" reflect those published before the November 7, 2005, annual revision. The "earlier" line for capacity extends through the end of 2005 because the capacity indexes are based on annual projections that are converted to a monthly basis.

## 1. Revised rates of change in industrial production and capacity and the revised rates of capacity utilization, 2001–05

Item	MEMO: 2005 pro- portion	Revised rate (percent)						Difference between rates of change: revised minus earlier (percentage points)					
		2001–05 avg.	2001	2002	2003	2004	2005	2001–05 avg.	2001	2002	2003	2004	2005
<i>Production</i>													
Total index	100.0	1.0	–5.3	2.3	1.5	4.3	2.3	.2	–.2	.8	.3	.0	.2
Manufacturing	80.8	1.2	–5.6	2.2	1.7	5.1	2.6	.2	–.2	.9	.2	.1	.2
Excluding selected high-tech industries	76.0	.5	–5.2	1.9	.4	4.2	1.2	.2	–.3	1.2	.0	.0	.0
Selected high-tech industries	4.8	12.0	–9.8	4.8	21.1	18.4	25.2	.0	.3	–3.3	2.4	–.3	1.0
Mining and utilities	19.2	.2	–3.4	2.7	.6	.5	.9	.2	–.1	–.1	1.0	.0	.0
<i>Capacity</i>													
Total index	100.0	1.1	2.9	.7	–.2	.6	1.5	.1	.2	.3	.0	–.5	.4
Manufacturing	82.9	1.1	2.8	.4	–.1	.5	2.0	.1	.3	.3	.0	–.6	.6
Excluding selected high-tech industries	77.4	.2	.8	–.2	–.5	.1	.6	.2	.3	.2	.1	.0	.3
Selected high-tech industries	5.5	14.3	27.8	9.5	8.0	6.8	19.7	–.0	.3	1.5	–.4	–6.6	5.1
Mining and utilities	17.1	1.5	3.1	2.3	1.3	1.2	–.2	–.1	.1	–.3	.2	.2	–.6
<i>Capacity utilization</i>													
Total index	100.0	77.1	74.2	75.3	76.6	79.4	79.8	.1	–.4	–.1	.1	.6	.5
Manufacturing	82.9	75.4	72.1	73.4	74.7	78.2	78.5	.0	–.5	–.1	.0	.5	.3
Excluding selected high-tech industries	77.4	76.2	73.2	74.8	75.4	78.6	78.9	–.1	–.6	.1	.1	.1	–.1
Selected high-tech industries	5.5	66.7	61.1	58.5	65.7	72.8	75.3	.2	.3	–2.3	–1.0	3.0	1.1
Mining and utilities	17.1	86.8	87.0	87.3	86.7	86.1	86.7	.7	.2	.3	1.0	.8	1.2

NOTE: The rates of change for years are calculated from the fourth quarter of the previous year to the fourth quarter of the year specified. The capacity utilization rates are for the last quarter of the year.

The difference between the revised and earlier rates of change for production and capacity for 2005 is calculated for the period 2004:Q4 to 2005:Q3. The difference in capacity utilization for 2005 refers to 2005:Q3.

The selected high-tech industries are semiconductors and related electronic components, computers and peripheral equipment, and communications equipment.

2002, 2003, and 2005 are stronger. The increase in output in 2004 is the same as previously reported.<sup>3</sup>

As of the third quarter of 2005, industrial capacity utilization—the ratio of production to capacity—was 79.8 percent, a little higher than previously stated but 1.2 percentage points below the 1972–2004 average.<sup>4</sup> For the fourth quarter of 2004, capacity utilization was revised up 0.6 percentage point, to 79.4 percent; upward revisions to the operating rates for manufacturing and mining more than offset a downward revision to the operating rate for utilities.<sup>5</sup>

The revision indicates that industrial capacity increased at a faster rate in 2001, 2002, and 2005 than reported earlier. The rate of change for 2003 was unaltered, and the current estimates for 2004 point to a slower expansion than reported earlier.

The updated measures of production and capacity reflect the incorporation of newly available, more-

comprehensive source data and improved methods for compiling a few series. The new annual source data are generally for 2003 and 2004, and the modified methods affected indexes largely from 1997 forward.

The statistical revisions to the IP index were derived principally from the inclusion of information contained in annual reports issued by the U.S. Census Bureau—namely, the 2003 Annual Survey of Manufactures, the revised 2002 Census of Manufactures, and selected 2004 Current Industrial Reports. New government source data included annual data on minerals for 2003 and 2004 from the U.S. Geological Survey (USGS) and updated deflators from the Bureau of Economic Analysis. Also, the new monthly production estimates reflect updated seasonal factors and include monthly source data that became available, or were revised, after the closing of the regular four-month reporting window.

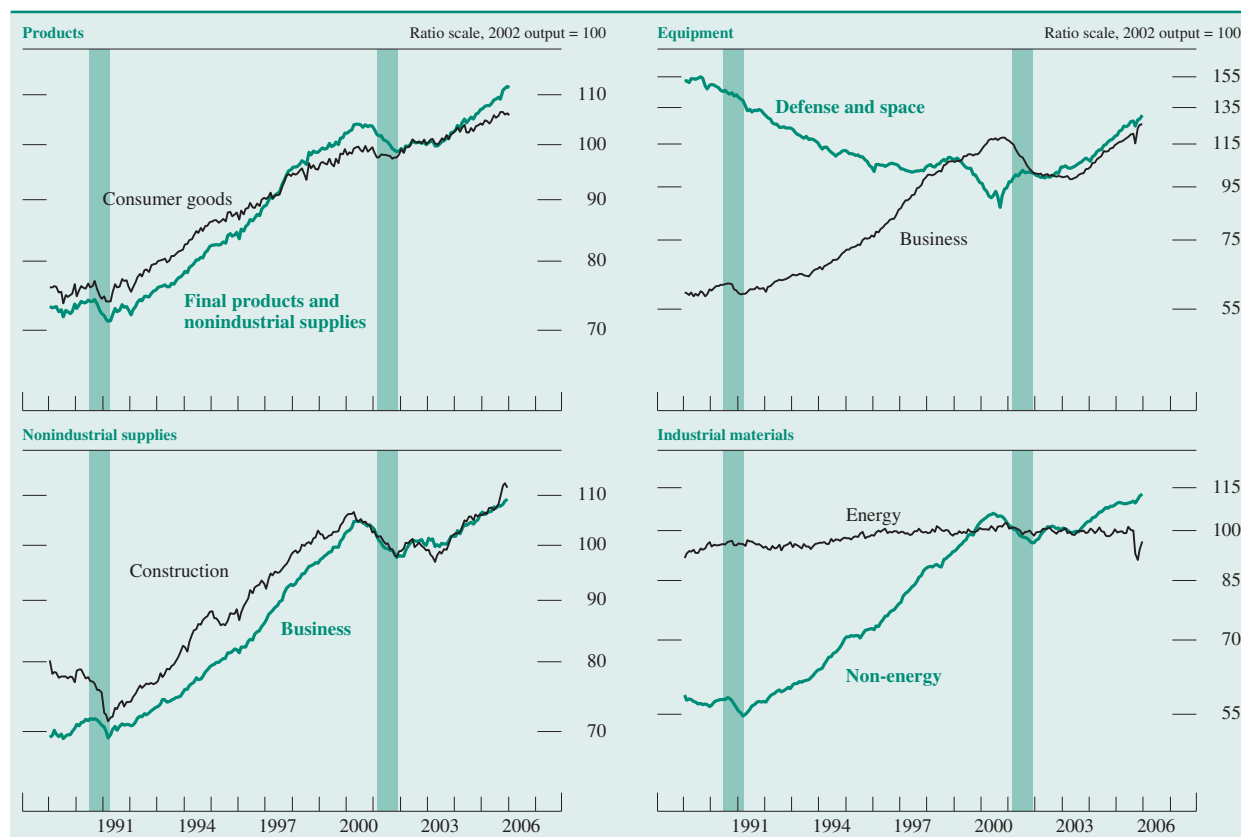
The capacity indexes and capacity utilization rates incorporate the revised production indexes; results from the Census Bureau's 2004 Survey of Plant Capacity for the fourth quarter of the year; and newly available data on industrial capacity from the USGS, the Energy Information Agency of the Department of Energy, and other organizations.

3. For 2005, the rates of change are calculated from the fourth quarter of 2004 to the fourth quarter of 2005, but any comparisons made between the current industrial production data and the pre-revision data are based on annualized rates of change from the fourth quarter of 2004 to the third quarter of 2005.

4. These comparisons use quarterly average data.

5. The fourth quarter of 2004 is the most recent quarter with available survey data on capacity utilization.

## 2. Industrial production: Market groups, January 1989–January 2006



## RESULTS OF THE REVISION

For the third quarter of 2005, total industrial production was reported to be 108.0 percent of output in 2002, and capacity stood at 135.3 percent of output in 2002. Both indexes are higher than reported previously. The capacity utilization rate for total industry, at 79.8 percent, was slightly higher than earlier reports indicated. Results of the revision can be found in the appendix tables.<sup>6</sup>

6. Table A.1 shows the revised data for total industrial production, and table A.2 shows the revised data for capacity and capacity utilization for total industry. Tables A.3 and A.4 show the revised rates of change (fourth quarter to fourth quarter) of industrial production for market groups, industry groups, special aggregates, and selected detail for the years 2001 through 2005. Table A.5 shows the revised rates of change of annual industrial production indexes for market and industry groups for the years 2001 through 2005. Tables A.6 and A.7 show the revised figures for capacity and capacity utilization. Tables A.3, A.4, A.5, and A.6 also show the difference between the revised and earlier rates of change. Table A.7 shows the difference between the revised and previous rates of capacity utilization for the final quarter of the year. Table A.8 shows the annual proportions of market groups and industry groups in total IP.

## Industrial Production

The revision indicated that the overall path of industrial production was much the same as stated earlier. The most significant features of this revision—the incorporation of the 2003 Annual Survey of Manufactures and of the revision to the 2002 Census of Manufactures—had little effect on the top-line estimates. From 1992 through 2000, total IP increased at an average annual rate of 4.7 percent. The index declined 3.5 percent in 2001. After the trough, IP registered moderate gains in 2002, 2003, and 2005 and advanced strongly in 2004 (figure 1).

## Market Groups

Among major market groups (figure 2 and table A.3), the revision shows little change compared with previous estimates in production for final products and nonindustrial supplies for recent years. This index declined in 2001, posted moderate gains in 2002 and 2003, and increased more rapidly in 2004 and 2005

(measured from the fourth quarter of the preceding year to the fourth quarter of the year indicated). Overall, the revisions to consumer goods were small for recent years, and the index still shows a general climb since having dropped back in 2001. The revisions to most of the components of consumer goods were small; however, new data yielded a sizable downward revision to home electronics for 2003, which resulted in less of an increase than stated earlier.

The production of business equipment is now reported to have been somewhat weaker, on balance, in the 2001–05 period than estimated earlier; a downward revision to the index for information processing equipment is largely responsible for the lower 2003 estimate. The output of business equipment declined in 2001 and 2002 but has risen since then. The production of defense and space equipment has increased in recent years, particularly in 2004 and 2005; however, the revision indicates smaller gains in 2002 and 2005 than stated previously and a larger gain in 2004.<sup>7</sup> The indexes for construction supplies and business supplies were revised little for recent years; output in these two market groups dropped in 2001 but has risen in each year since. From 2002 through 2004, the gains in the output of materials were revised up about 0.7 percentage point per year; 2005 had a smaller upward revision, and 2001 had a downward revision of ½ percentage point. Production of materials has advanced in every year from 2002 on; the largest increases were in 2002 and 2004. The production of non-energy materials was revised up, overall, in the 2001–05 period. Within this group, the index for durable materials was revised up a bit. The index for nondurable materials revised up in 2002 and was little changed, on balance, in subsequent years. The output of energy materials was nearly unchanged for 2001–03; the rate of change was revised up a bit in 2004 and down a similar amount in 2005.

### Industry Groups

Relative to earlier reports, the current estimates for manufacturing IP indicate a slightly steeper upward trajectory for 2002 through 2005 (table A.3). Like the revisions to total industrial production, the current estimates for manufacturing IP show a marginally larger decline in 2001 and a faster increase in 2002.

The increases in 2003, 2004, and 2005 were slightly greater than earlier estimates.

Compared with the previous estimates, the revision to durable manufacturing shows a larger rate of decline in 2001 and a more rapid rate of increase since then. The overall contour of this index shows solid gains for the past few years—more than 5 percent per year, on average, from 2002 forward. All major durable goods industries posted gains in 2004, and many showed continued strength in 2005. The only major industries with notable decreases in production in 2005 were primary metals and furniture and related products.

Overall, the index for nondurable manufacturing was little changed from earlier estimates. The output of nondurables declined markedly in 2001 and advanced strongly in 2004; the swings in other recent years were less pronounced. On balance, the output indexes for textile and product mills and for apparel and leather have registered sharp declines in recent years, whereas the indexes for food, beverage, and tobacco products; chemicals; and plastics and rubber products all posted gains.

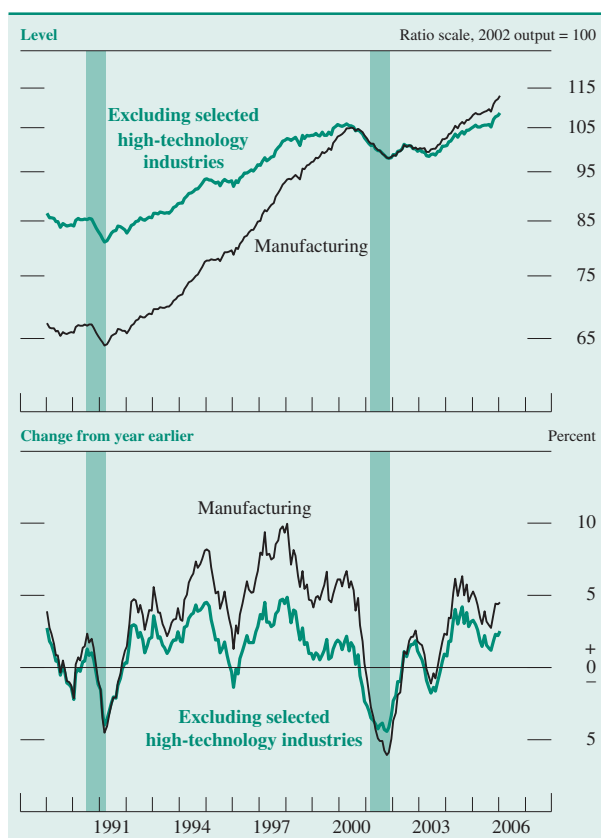
The revision indicated lower output in recent years for the industries that have historically been defined as manufacturing (namely, publishing and logging) but that are classified elsewhere under the North American Industry Classification System (NAICS). In 2003 and 2004, the rates of change are now, on average, about 2 percentage points lower than previously published.

### Special Aggregates

A number of special industrial production aggregates are published to help users understand changes in the industrial sector (table A.4). The high-technology industries are important contributors to growth in the manufacturing sector (figures 3 and 4). The revision shows little change to the aggregate for selected high-technology industries—computers and peripheral equipment, communications equipment, and semiconductors and related electronic components. The small revisions to the aggregate, however, mask somewhat larger revisions to each of its lower-level industries. The production of computers and peripheral equipment is now estimated to have declined in 2002, rather than to have increased, and to have risen less in 2003 and 2004 than was reported earlier; the output gain in 2005 is nearly the same as estimated earlier. For communications equipment, the revision shows a steeper drop in production in 2002 and a more moderate recovery in 2003 than previously

7. For 2005, the third quarter of 2005 was used to calculate the extent of the revisions.

### 3. Industrial production: Manufacturing, and manufacturing excluding selected high-technology industries, January 1989–January 2006



NOTE: Manufacturing comprises North American Industry Classification System (NAICS) manufacturing industries (sector 31-33) plus the logging industry and the newspaper, periodical, book, and directory publishing industries. Logging and publishing are classified elsewhere in NAICS (under agriculture and information respectively), but historically they were considered to be manufacturing industries and were included in the industrial sector under the Standard Industrial Classification (SIC) system. In December 2002 the Federal Reserve reclassified all its industrial output data from the SIC system to NAICS.

The selected high-technology industries are semiconductors and related electronic components (NAICS 334412-9), computers and peripheral equipment (NAICS 3341), and communications equipment (NAICS 3342).

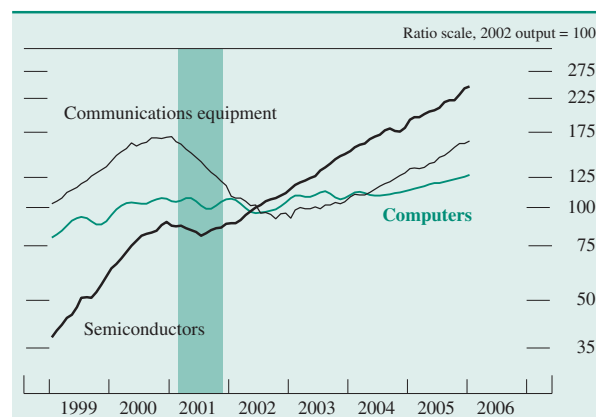
stated; output is now estimated to have risen more rapidly in 2004 and 2005. The index for semiconductors has risen rapidly since a small decline in 2001. Compared with previous estimates, the revision to semiconductors shows a slower increase in 2004 but a more rapid increase in 2003.

The output gain for motor vehicles and parts is now reported to have been stronger in 2002 and 2005—by about 1 percentage point—than was reported earlier. The estimates for other recent years are similar to previous reports.

#### Capacity

The revision did not change the overall contour of manufacturing capacity. Capacity still accelerates

### 4. Industrial production: Selected high-technology industries, January 1999–January 2006



NOTE: Refer to general note in chart 3.

rapidly in the second half of the 1990s, then decelerates through 2004 (with a small decline in 2003), and picks up moderately in 2005 (figure 1). The expansion in 2004 is now reported to have been less than estimated earlier, and the increase in 2005 is somewhat stronger (table A.6). Among selected high-technology industries, the revision suggests a slower expansion of capacity in 2003 and 2004 than reported earlier; however, for 2005, high-technology capacity expanded more rapidly than stated previously—20.8 percent.

Capacity in mining is now estimated to have decreased in each of the past four years and has declined, on balance, more than previously estimated. In contrast, capacity at electric and gas utilities accelerated sharply from 2001 to 2004 and flattened out in 2005; the current estimates for 2005 are lower than previously reported.

By stage of process, capacity in the crude stage, which has contracted since 2001, is now estimated to have been somewhat weaker, on balance, in the 2001–05 period than reported earlier. Relative to previous reports, the capacity index for the primary and semifinished stages increased more in 2001, 2002, and 2005; declined less in 2003; and increased less in 2004. Among finished goods producers, capacity expanded throughout the 2001–05 period. Relative to earlier reports, the revised estimates show more acceleration in 2002, 2004, and 2005 and a little less in 2001; the estimates for 2003 were unrevised.

#### Capacity Utilization

Capacity utilization for total industry was revised up in recent years, but the revisions were relatively small; for the third quarter of 2005, utilization stood



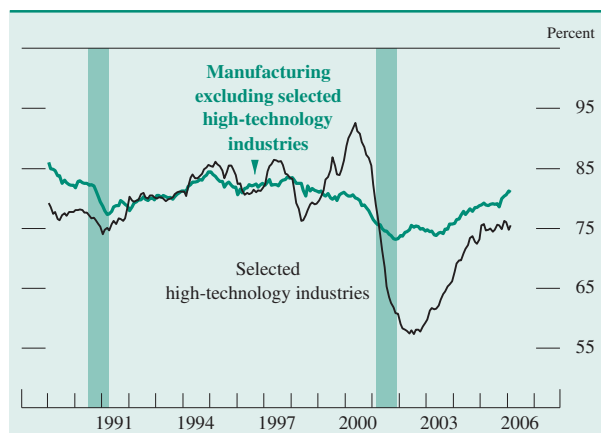
at 79.8 percent, a rate 0.5 percentage point higher than previous estimates suggested but 1.2 percentage points below its long-term (1972–2004) average (table A.7).

The factory operating rate reached 78.5 percent in the third quarter of 2005 after an upwardly revised reading of 78.2 percent in the fourth quarter of 2004 and an unrevised 74.7 percent in the fourth quarter of 2003. Within manufacturing, the current revision places the overall utilization rates in recent years for durable goods manufacturers somewhat higher than previously stated, especially in the fourth quarter of 2004 and the third quarter of 2005. The utilization rates for manufacturers of nondurables were little changed from earlier estimates. Capacity utilization in the other (non-NAICS) manufacturing industries is now lower than previously reported, and the recent increases are smaller than those stated earlier.

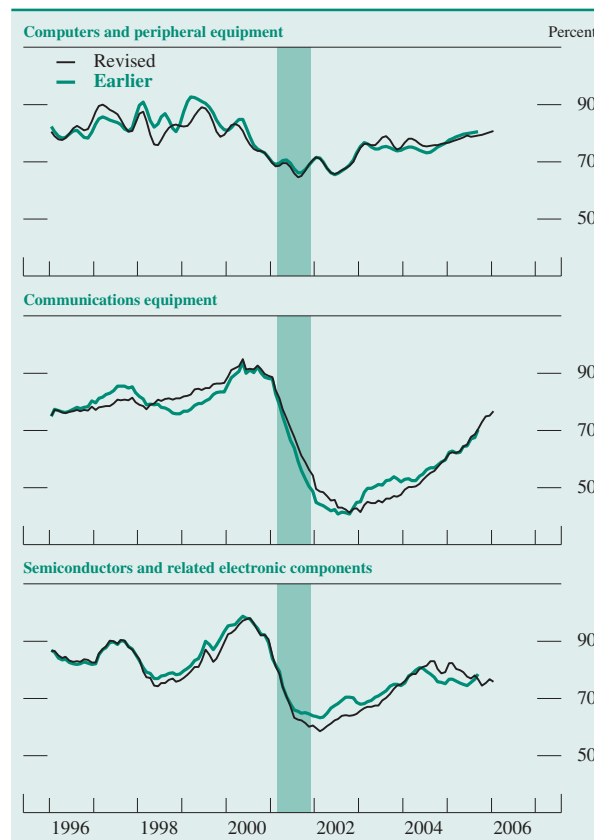
Among selected high-technology industries, utilization is now reported to have been lower in the fourth quarters of 2002 and 2003 but higher in the fourth quarter of 2004 and the third quarter of 2005 (figures 5 and 6). For 2002, a downward revision to the utilization rate for semiconductors and related electronic components accounts for most of the lower estimate. For 2003, the downward revision is largely attributable to lower utilization in the communications equipment industry. For 2004 and 2005, higher utilization rates for producers of semiconductors and related electronic components account for much of the upward revisions. Excluding these high-technology industries, capacity utilization for manufacturing is little changed.

Capacity utilization in mining was revised up, to 88.3 in the fourth quarter of 2004 and to 86.1 in the third quarter of 2005; these estimates are, respec-

5. Capacity utilization: Selected high-technology industries and manufacturing excluding selected high-technology industries, January 1989–January 2006



6. Capacity utilization: Selected high-technology industries, January 1996–January 2006



tively, about 1 percentage point above and below the index's long-term average. Improved capacity estimates of support activities for mining accounted for much of the recent revisions. The utilization rate for electric and gas utilities in the third quarter of 2005 was little changed by the revision and stood at 88.1 percent, a rate 1.3 percentage points above its long-term average.

#### TECHNICAL ASPECTS OF THE REVISION

The revision incorporates updated comprehensive annual data and revised monthly source data used in the estimation of production, capacity, and utilization. As noted earlier, this revision includes information drawn from the 2003 Annual Survey of Manufactures. This revision also incorporates the 2004 Survey of Plant Capacity, other annual industry reports on output and capacity, recent information on prices, and revised monthly source data on physical products and on labor inputs. Along with the individual production series and seasonal factors, the annual value-added weights used in aggregating the



indexes to market and industry groups were also updated.

### Changes to Benchmark Indexes

The benchmark indexes for manufacturing—defined for each six-digit NAICS industry as nominal gross output divided by a price index—were updated to include new information from the 2003 Annual Survey of Manufactures (ASM) and revisions to the estimates from the 2002 Census of Manufactures.

The benchmark indexes for most industries incorporated updated price indexes from the industry output program of the Bureau of Economic Analysis (BEA). One exception is the benchmark index for semiconductor manufacturing, which comprises five subindustry indexes (figure 7). The price indexes for these subindustry indexes are constructed from information issued by trade associations, private research companies, company reports, and producer price indexes from the U.S. Bureau of Labor Statistics.<sup>8</sup> Because the overall benchmark price index for semiconductor manufacturing falls faster than the BEA index, the Federal Reserve's measure of real output in this industry rises faster than the comparable BEA measure. If the BEA price index were used in place

of the Federal Reserve's index, the rate of change for the output of semiconductors would have been 33 percentage points lower per year, on average, from 1997 to 2003.

The price indexes used for most components of communications equipment are also constructed by the Federal Reserve and were updated in this revision. Price and production indexes for networking equipment (routers, switches, and hubs) are discussed later. Among non-networking equipment, industry and government sources on prices for central office equipment, fiber-optic equipment, PBX (private branch exchange) equipment, consumer telecommunications equipment, and wireless infrastructure equipment were used to extend previous work through 2004.<sup>9</sup>

Another change to the benchmark indexes for 2003 involved the recalculation of nominal gross output. Before the 2004 annual revision, nominal gross output for an industry was calculated as the cost of materials plus value added. In the 2004 revision, the benchmark index from 1997 to 2002 was instead calculated with gross output defined as the traditional figure less the cost of resold goods (those goods purchased by a manufacturer and then resold without any material transformation). The 2003 ASM, however, did not include detailed data for the cost of resold goods; in this revision, the nominal gross output used to compute the changes in the benchmark indexes for 2003 was calculated with the traditional method.<sup>10</sup>

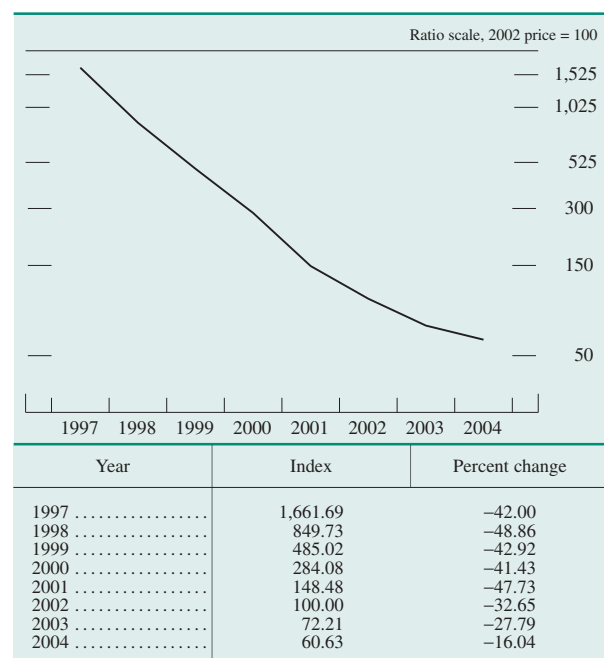
The 2003 ASM also featured a reduction in its industry detail. Previous ASMs reported results for every six-digit NAICS industry (473 in manufacturing under the 2002 NAICS). For 2003, however, the reports combined 239 of those six-digit industries into 88 higher-level industry aggregates. The benchmark indexes for manufacturing IP are calculated from gross output for six-digit industries and then aggregated to the IP industry level (210 industries, each one comprising one or more six-digit NAICS industries) using proportions based on value added. To maintain benchmark references that were consistent over time, the Federal Reserve imputed estimates of gross output and value added for those six-digit industries that were dropped from the ASM. For each unreported industry, the imputations were based on values for the aggregate industry that contained it and the shares of the unreported industry in the aggregate in 2002.

9. Corrado, "Industrial Production and Capacity Utilization," p. 159.

10. The annual changes in the benchmark indexes between 1997 and 2002 continued to be calculated as they were in the 2004 revision.

8. Carol Corrado (2003), "Industrial Production and Capacity Utilization: The 2002 Historical and Annual Revision," *Federal Reserve Bulletin*, vol. 89 (April), pp. 151–76.

### 7. Annual price index: Semiconductors, 1997–2004



The loss of the detail in the ASM probably had only a small effect on the IP industry benchmarks. All but eight of the IP industries are made up entirely of industries or industry combinations that were reported in the ASM. Because the other eight industries, which constitute about 3 percent of total IP, are all six-digit NAICS industries, any effects of the imputation of nominal gross output mostly cancel out at the five-digit NAICS industry level.

### *Changes to Individual Production Series*

With this revision, the monthly production indicators for some series have changed. The source data for production indexes for the following twenty industries, which constituted 10.9 percent of IP in 2004, have been changed from electric power use to production-worker hours for 1997 to the present:

1. fruit and vegetable preserving and specialty food (NAICS 3114)
2. other food (31193-9)
3. leather and hide tanning and finishing (3161)
4. printing (32311)
5. soap, cleaning compound, and toilet preparations (3256)
6. other chemical product and preparations (3259)
7. rubber and plastics hoses and belting (32622)
8. other rubber products (32629)
9. other pressed and blown glass and glass-ware (327212)
10. glass product made of purchased glass (327215)
11. lime (32741)
12. other nonmetallic mineral products (3279)
13. ferrous metal foundries (33151)
14. hardware (3325)
15. machine shops; turned product; and screws, nuts, and bolts (3327)
16. air purification equipment, fans, and blowers (333411, 2)
17. electric lighting equipment (3351)
18. electrical equipment (3353)
19. other electrical equipment (33593, 9)
20. office furniture (including fixtures) (3372)

The decision to switch the monthly indicators for these series resulted from deterioration in the sample of electric utilities that report power use for these industries. The IP indexes no longer contain any series that are based on electric power use as their monthly indicator for the period 1997 to the present.

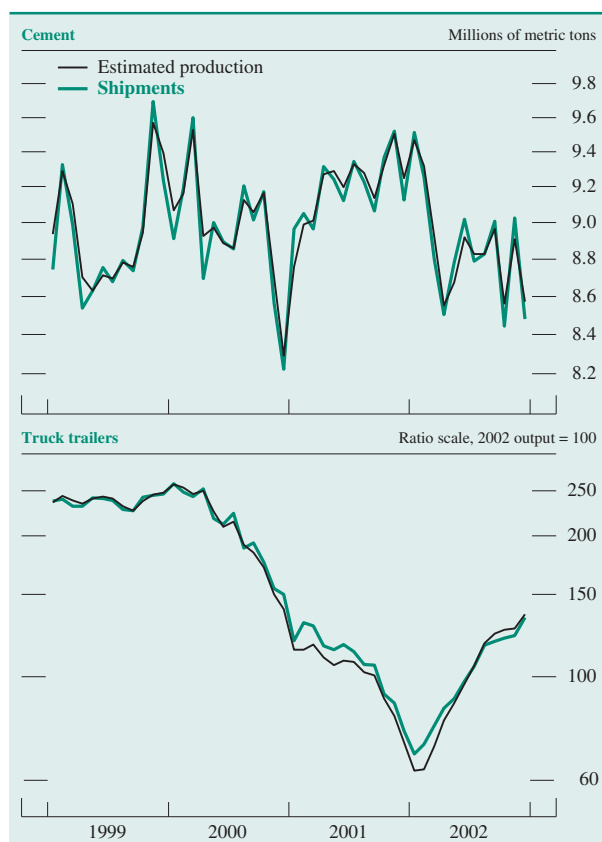
The IP indexes based on product data usually reflect measures of production, but some have been

based on manufacturers' shipments (the implicit assumption being that the factory inventories do not change). In this revision, the procedure that was introduced in the 2004 annual revision for estimating inventories of the machine tool industry was expanded to the following twenty-one industries (with a total weight in IP of 6.6 percent in 2004) for which shipments are the high-frequency indicator:

1. corn syrup and starch (NAICS 311221 pt.)
2. reconstituted wood products (321219)
3. paperboard containers (32221)
4. pharmaceutical preparations (325412)
5. cement (32731)
6. aluminum foundries (331521,4)
7. metal cans, boxes, and other metal containers (light gauge) (33243)
8. burners and other parts (333414 pt.)
9. boilers, heaters, and furnaces (333414 pt.)
10. warm air furnaces (333415 pt.)
11. electron tubes (334411)
12. electric housewares and household fans (335211)
13. household vacuum cleaners (335212)
14. electric water heaters (335228 pt.)
15. gas water heaters (335228 pt.)
16. storage batteries (335911)
17. truck trailers (336212)
18. motor homes (336213)
19. travel trailers and campers (336214)
20. mattresses (33791)
21. book publishers (51113)

The model underlying the estimates of inventories assumes that manufacturers target a specific inventory–sales ratio. In response to surprises in demand, manufacturers are assumed to adjust production plans to partially accommodate the surprise in the same period, and the remainder of the accommodation takes place in subsequent periods. Figure 8 illustrates the high and low frequency effects of the model-based inventory adjustment on the shipments indicators. As a representative example, seasonally adjusted shipments of cement are shown as the thick green line in the top panel. The shipments indicator adjusted for inventory change—the new production indicator shown as the thin black line—has the same basic contour as shipments, with some of the extreme swings tempered. Similarly, shipments of truck trailers, with and without the model-based inventory adjustment, are shown in the bottom panel. From the fourth quarter of 2000 through mid-2002, the new production indicator is lower than shipments as manufacturers try to keep their inventories in line with slumping demand.

## 8. Estimated production and shipments: Cement and truck trailers, January 1999–December 2002



NOTE: Estimated production measures for cement and truck trailers are calculated from shipments adjusted for model-based changes in inventory. Truck trailer data comprise three categories: trailers, containers, and chassis. Shipments of each category are weighted by relative prices and summed; the sum is then indexed.

This revision also incorporated new indicators based on product shipments for four industries. Previously, these industries were estimated from production-worker hours. A model-based estimate of the change in inventories is added to the index derived from shipments to compute a production index for the following four industries:

1. semiconductor manufacturing equipment (NAICS 333295)
2. bare printed circuit boards (334412)
3. printed circuit assemblies (334418)
4. boats (336612)

The total number of individual output indexes that make up industrial production remains at 300 for the period from 1992 forward.

With this revision, the monthly indicator for semiconductor manufacturing equipment (NAICS 333295) from 1992 and forward was derived from data on billings for front-end semiconductor equip-

ment from Semiconductor Equipment and Materials International, an industry association; the billings data are deflated by the producer price index for the industry. The indicators for bare printed circuit boards (NAICS 334412) and for printed circuit assemblies (NAICS 334418) are now constructed from a weighted average of shipment indexes of flexible and rigid circuit boards that is deflated by a producer price index.<sup>11</sup> The output indicator for boats (NAICS 336612) is derived from data from the National Marine Manufacturers Association for the period from 2002 forward; a Fisher quantity index is computed from unit shipments and values for the following eleven types of watercraft:

1. cruisers
2. skiboats
3. inflatables
4. fiberglass outboard boats
5. aluminum outboard boats
6. total sterndrive boats
7. canoes
8. personal watercraft
9. jet drive boats
10. boat trailers
11. kayaks

The new product-based production indexes constituted 1.1 percent of IP in 2004. Table 2 summarizes the type of data (measured as a percentage of value added in 2004) available in each month of the four-month IP publication window. The first estimate of output for a month is preliminary and is subject to revision in each of the subsequent three months as new source data become available. By the third revision (the fourth month of estimate), the product-based content of IP is 51.8 percent.

The revision incorporated refined methods for a few series. The production indicator for boilers, heaters, and furnaces (NAICS 333414 pt.) is now based

11. The shipments indexes are from IPC, an association of electronics manufacturers that emphasizes the importance of printed circuit boards.

## 2. Proportion of industrial production data by type available in reporting window, 2004

Percentage of value added

Type of data	Month of estimate			
	1st	2nd	3rd	4th
Product-based .....	24.8	40.4	50.7	51.8
Production-worker hours .....	44.9	44.9	44.9	44.9
Total available .....	69.7	85.3	95.6	96.7
Federal Reserve estimates .....	30.3	14.7	4.4	3.3

on the quarterly output of boilers (data from the Gas Appliance Manufacturers Association). The data for heaters and furnaces that were previously used to construct the index are no longer available.

The production indicator for machine tools (NAICS 333512, 3) is computed based on a Fisher index of quarterly shipments data from the Census Bureau's Current Industrial Report on metalworking machinery (MQ333W). The report has nominal shipments and unit shipments for numerous categories of machine tools. Previously, the implicit unit values from the report were used as the deflators in the Fisher index calculation. Because the recent data for some of these unit values were highly volatile, a heterogeneity problem in the categories may exist. In this revision, the unit values were replaced by producer price indexes in the Fisher index calculation for the following categories of machine tools: lathes; grinding, polishing, buffing, honing, and lapping machines; machining centers; miscellaneous metal cutting machines valued at more than \$3,025; punching, shearing, bending, and forming machines; presses valued at more than \$3,025; and miscellaneous metal forming machines. The following categories still use unit values as deflators: gear cutting machines, milling machines, miscellaneous metal cutting machines valued at less than \$3,025, and presses valued at less than \$3,025.

The procedure for estimating the index for civilian aircraft was changed to better capture the occasional severe disruptions to production that result from labor actions. Civilian aircraft production is estimated from data on deliveries of large commercial aircraft (which account for most of the total value of commercial aircraft produced in the United States) and data on production-worker hours for the aircraft assembly industry (NAICS 336411). Every large plane completed in a month is the result of production activity in that month and in a number of earlier months. A preliminary estimate of production is made by assuming that the production embodied in a plane occurred in the month it was delivered and in the nine previous months, with the progress toward completion higher in the last few months before the plane is completed. Previously, the preliminary estimate of output for a period was derived entirely from the delivery levels or scheduled deliveries for planes in subsequent periods. With this revision, the preliminary estimate of output also assumes that the amount of progress that occurred in any one month is dependent on the relative production-worker hours in that month. The implicit productivity series from the preliminary estimates is smoothed and then applied to the production-worker hour series to determine the estimate of the

production indicator for IP. A correction factor to align this indicator with the benchmark index is then applied.

### Networking Equipment

The Federal Reserve updated estimates for communications equipment manufacturing (NAICS 3342) from 2001 on. The 2000 revision introduced a new IP series for the production of networking equipment (routers, switches, and hubs).<sup>12</sup> The series is not published in the monthly statistical release, but it is included in the broader IP aggregate for communications equipment and updated on an ongoing basis. Table 3 reports the overall price index for communications equipment manufacturing, the price index for networking equipment and service provider routers, and the price index for all other communications equipment.

Price indexes were constructed for all types of networking equipment from detailed data available from Gartner and from the Telecommunications Industry Association (TIA). Estimates of the annual value of U.S. production by equipment type were developed using information from Current Industrial Reports issued by the U.S. Census Bureau and from consultation with industry analysts.

As usual, the annual revision incorporated source data on networking equipment and service provider routers. In addition to detailed information on routers

12. Carol Corrado (2001), "Industrial Production and Capacity Utilization: The 2000 Annual Revision," *Federal Reserve Bulletin*, vol. 87 (March), pp. 132–48. The improvements to industrial production outlined in Corrado (2001) were based on research documented by Mark Doms and Chris Forman (2005), "Prices for Local Area Network Equipment," *Information Economics and Policy*, vol. 17 (July), pp. 365–88.

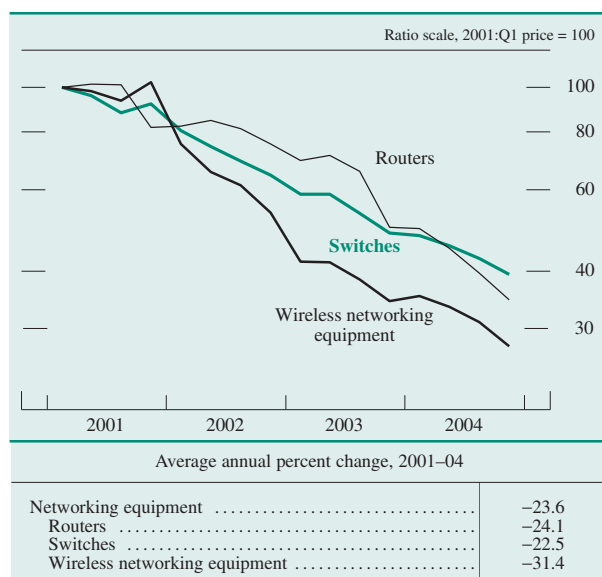
### 3. Price indexes for communications equipment manufacturing, 1997–2004

2002 price = 100

Year	Total	Local area network equipment and service provider routers	Other communications equipment
1997 .....	157.8	310.4	134.8
1998 .....	142.9	223.9	128.8
1999 .....	129.9	183.3	119.2
2000 .....	119.9	163.0	111.0
2001 .....	109.6	128.2	105.5
2002 .....	100.0	100.0	100.0
2003 .....	92.8	75.2	97.4
2004 .....	86.8	57.0	95.5
MEMO			
Average percent change, 1997–2004 .....	–8.2	–21.5	–4.8



## 9. Quarterly price indexes: Networking equipment, 2001–04



and switches, this year's estimates include new data on wireless networking equipment from Gartner starting in 2001. Products covered include networking switches and controllers, add-on adapters for wireless networking, and wireless access points. Figure 9 shows quarterly price indexes for routers, switches, and wireless networking equipment.

## Other Communications Equipment

The Federal Reserve also updated price and quantity indexes for other types of communications equipment using detailed information found in reports from Gartner and the TIA. The types of equipment covered included fiber-optic equipment, PBX equipment, voice processing equipment, and network access systems.

The price index for fiber-optic equipment, introduced with the 2002 IP revision, was extended this year.<sup>13</sup> Information from Gartner on five classes of synchronous optical network (SONET) equipment and three types of digital cross-connect equipment were used to create price indexes for these products. During the 2000–04 period, prices for SONET equipment fell 11 percent and prices for digital cross-connect equipment fell 5 percent. These types of

13. The price indexes for communications equipment introduced in the 2002 revision were based on work described in Mark Doms (2005), "Communications Equipment: What Has Happened to Prices?" in Carol Corrado, John Haltiwanger, and Daniel Sichel, eds., *Measuring Capital in the New Economy*, National Bureau of Economic Research Studies in Income and Wealth (Chicago, University of Chicago Press), pp. 323–62.

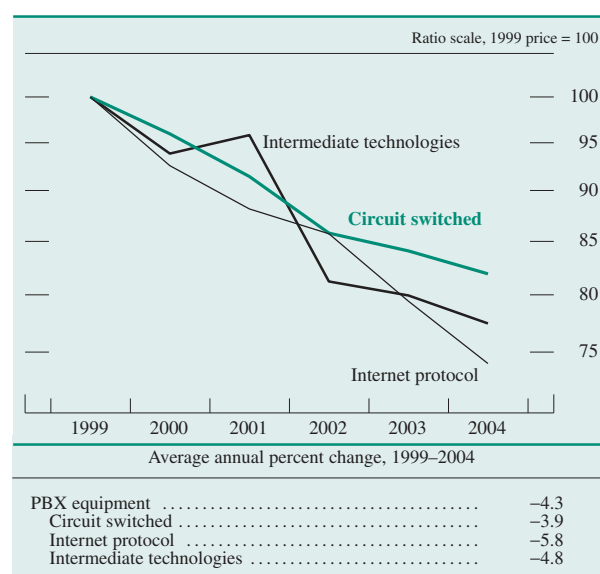
equipment account for about two-thirds of worldwide sales of fiber-optic equipment. Because data on prices of wave division multiplex (WDM) equipment were not available this year, the price index for SONET equipment was applied to WDM equipment (access multiplexers are covered under access systems).

PBX equipment was an area of particular focus in this revision because of the ongoing transition away from circuit-switched PBX equipment and toward equipment based on the internet protocol (IP-PBX equipment), which handles voice-over-IP activity. Data on prices and quantities from Gartner for sixteen types of equipment were used to extend this index. Figure 10 shows price indexes for IP-PBX equipment, circuit-switched PBX equipment, and PBX systems that use intermediate technologies. Prices for IP-PBX equipment fell, on average, 5.8 percent per year from 1999 to 2004, somewhat faster than the average of nearly 4 percent for circuit-switched PBX equipment and the average of almost 5 percent for intermediate technologies.

For other types of communications equipment, Gartner data were used to construct newly introduced or updated price indexes for access systems, such as modems and access multiplexers, ATM (asynchronous transfer mode) equipment, frame relay equipment, and ISDN (integrated services digital network) equipment. Also, Gartner data were used to construct price indexes for the voice-processing equipment and automatic call distributors for the 1992–2004 period.

Information was drawn from the TIA's 2005 Market Review and Forecast to generate price indexes for

## 10. Annual price indexes: Private branch exchange (PBX) equipment, 1999–2004



consumer telecommunications equipment, office facsimile equipment, and ATM equipment.

The remaining types of equipment without specific information on prices and quantities were assigned appropriate producer price indexes. These included broadcast studio equipment, alarm systems, vehicular and pedestrian signal equipment, and paging equipment.

### *Discontinuance of the Survey of Electric Power Use*

The Federal Reserve discontinued its use of survey data of industrial electric power use. The survey was initiated in the 1960s to collect data on electricity use as alternative indicators of output; electricity use tends to be highly correlated with production in capital-intensive industries. Survey data were used directly as the production indicators for industries (particularly those with highly automated assembly operations and a diverse product mix) for which product-based data were unavailable. However, by 2004, the electric power usage covered by the survey had dropped nearly 40 percent from its peak in 1993, and several regions and industries had significant gaps. The surveys, conducted by the Federal Reserve District Banks, had especially poor response rates for District 6 (Atlanta) and District 11 (Dallas). The industries with a substantial presence in those Districts include textiles and chemicals. As noted before, the twenty industry indexes that relied on electric power use now have production-worker hours as the underlying source data for the period 1997 to the present.

In the future, the Federal Reserve hopes to incorporate information from the Census Bureau's Survey of Plant Capacity (SPC) into its estimation of production indexes for capital-intensive industries. The SPC collects data on the factory workweek; like electric power use, the workweek is an indicator of the level of operations in capital-intensive industries. Currently, the SPC data are collected only in the fourth quarter of the year, so they are insufficient for use as high-frequency indicators.

Beyond their use as a direct monthly indicator, electric power data were used in a model that extrapolates productivity in industries for which the monthly output index was based on production-worker hours. In the absence of electric power data, the model now relies on a proxy derived from survey measures of

industry capacity utilization (taken from the SPC) and measures of industry capital input constructed from data in the ASM.

### *Weights for Aggregation*

The IP index is a Fisher index. This revision uses information from the Census of Manufactures to obtain updated estimates of the industry value-added weights used in the aggregation of IP indexes and capacity utilization rates. The Federal Reserve derives estimates of value added for the electric and gas utility industries from annual revenue and expense data issued by other organizations. The weights for aggregation, expressed as unit value added, were estimated for recent years using the latest data on producer prices. Table A.8 shows the annual value-added proportions incorporated in the IP index from 1997 through 2004.

### *Revised Monthly Data*

This revision incorporates product data that became available after the regular four-month reporting window for monthly IP closed. For example, the data on tobacco issued by the Department of the Treasury's Alcohol and Tobacco Tax and Trade Bureau are released with too great a lag to be included with monthly IP estimates; however, the data are available for inclusion in the annual revision.

### *Revised Seasonal Factors*

Seasonal factors for all series were reestimated using data that extended into 2005. Factors for production-worker hours—which adjust for timing, holiday, and monthly seasonal patterns—were updated with data through September 2005 and were prorated to correspond with the seasonal factors for hours aggregated to the three-digit NAICS level. The updated factors for the physical product series, which include adjustments for holiday and workday patterns, used data through at least June 2005. Seasonal factors for unit motor vehicle assemblies have been updated, and projections through June 2006 are on the Board's website at [www.federalreserve.gov/releases/g17/mvsvf.htm](http://www.federalreserve.gov/releases/g17/mvsvf.htm).



## APPENDIX A: TABLES BASED ON THE G.17 RELEASE, FEBRUARY 15, 2006

## A.1. Revised data for industrial production for total industry

Seasonally adjusted data except as noted

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Quarter				Annual avg. <sup>1</sup>
													1	2	3	4	
Industrial production (percent change)																	
1975	-1.3	-2.4	-1.1	.1	-2	.7	1.1	1.0	1.3	.4	.3	1.2	-24.0	-5.3	10.5	8.9	-8.9
1976	1.5	.9	.1	.7	.4	.0	.6	.7	.2	.1	1.5	1.0	12.6	5.2	5.1	7.8	7.8
1977	-6	1.5	1.3	.9	.8	.7	.3	.1	.5	.3	.0	.2	8.4	12.6	4.9	2.8	7.7
1978	-1.3	.4	1.8	2.1	.3	.7	.0	.3	.2	.9	.8	.6	-1.3	16.6	3.4	7.7	5.5
1979	-7	.6	.3	-1.0	.7	.0	-2	-7	.1	.5	-1	.1	1.9	-5	-1.5	1.3	3.1
1980	.4	.0	-3	-2.0	-2.5	-1.3	-7	.3	1.6	1.2	1.7	.6	1.6	-15.9	-6.3	16.1	-2.6
1981	-6	-5	.6	-5	.7	.5	.7	.0	-6	-8	-1.1	-1.1	.9	1.4	4.2	-8.6	1.3
1982	-1.9	1.9	-7	-9	-7	-4	-4	-9	-4	-8	-4	-8	-7.6	-5.1	-5.9	-7.5	-5.1
1983	1.9	-6	.9	1.2	.8	.6	1.6	1.1	1.5	.9	.3	.5	4.3	9.4	14.7	10.9	2.6
1984	2.1	.5	.5	.6	.5	.4	.3	.1	-2	-1	.4	.1	12.4	6.4	2.9	.4	9.0
1985	-3	.4	.2	-2	.1	.0	-6	.5	.4	-4	.3	1.0	1.1	.6	-6	2.5	1.3
1986	.5	-8	-6	.0	.2	-3	.6	-2	.2	.4	.5	.9	2.3	-2.4	1.7	4.5	1.0
1987	-3	1.2	.2	.6	.7	.5	.6	.7	.3	1.5	.5	.5	5.4	7.0	7.1	9.9	5.1
1988	.1	.3	.3	.5	.0	.2	.2	.5	-3	.6	.2	.4	3.4	3.2	2.1	3.3	5.0
1989	.3	-5	.3	-1	-7	.0	-9	.9	-3	-1	.3	.7	1.5	-1.9	-2.5	1.8	.9
1990	-6	.9	.5	.0	.1	.3	-1	.3	.2	-7	-1.2	-7	2.9	2.9	1.3	-5.9	.9
1991	-5	-7	-5	.2	1.0	1.0	.0	.2	.9	-2	-1	-3	-7.6	2.7	5.7	1.0	-1.5
1992	-5	.7	.7	.7	.4	.0	.8	-5	.2	.7	.4	.1	-3	6.9	2.8	3.9	2.9
1993	.5	.3	.0	.3	-4	.3	.3	.0	.5	.7	.4	.5	3.7	1.0	2.4	6.1	3.3
1994	.5	.0	1.0	.5	.6	.7	.2	.5	.2	.9	.6	1.1	5.3	7.5	5.3	7.9	5.4
1995	.3	.0	.2	.0	.2	.3	-4	1.4	.4	-2	.3	.4	5.3	1.1	3.7	3.5	4.8
1996	-8	1.5	-2	.9	.7	.8	-2	.7	.6	.0	1.0	.7	1.8	8.4	5.1	6.2	4.2
1997	.2	1.2	.8	-1	.6	.5	.5	1.2	.9	.7	.9	.4	8.5	5.7	8.9	10.6	7.3
1998	.4	.1	.1	.5	.6	-5	-3	2.2	-2	.7	-1	.3	4.4	3.1	3.6	5.6	5.9
1999	.5	.5	.2	.2	.8	-1	.7	.5	-4	1.3	.6	.9	4.1	4.2	4.3	7.7	4.5
2000	.2	.4	.4	.7	.3	.1	-3	-3	.4	-3	.0	-4	5.4	5.2	-9	-1.3	4.3
2001	-8	-7	-3	-1	-8	-5	-4	-3	-4	-5	-4	.0	-6.6	-4.9	-5.1	-4.5	-3.5
2002	.6	-1	.9	.4	.4	.9	-3	.1	.0	-4	.3	-5	2.9	6.1	1.7	-1.6	.1
2003	.5	.0	-2	-8	-1	.3	.5	.1	.7	.1	.9	.2	.8	-3.3	3.6	5.1	.6
2004	.4	.8	-3	.8	.9	-6	.6	.3	-2	.7	.2	.7	5.3	5.2	2.6	4.2	4.1
2005	.2	.4	.0	-1	.2	.8	.0	.3	-1.3	1.1	1.1	.9	3.8	1.6	1.4	5.6	3.3
2006	-2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Industrial production (2002 = 100)																	
1975	46.3	45.2	44.7	44.7	44.6	44.9	45.4	45.8	46.4	46.6	46.7	47.3	45.4	44.8	45.9	46.9	45.7
1976	48.0	48.4	48.4	48.8	49.0	49.0	49.2	49.6	49.7	49.8	50.5	51.0	48.3	48.9	49.5	50.5	49.3
1977	50.8	51.5	52.2	52.6	53.0	53.4	53.6	53.6	53.9	54.0	54.0	54.1	51.5	53.0	53.7	54.1	53.1
1978	53.4	53.6	54.6	55.7	55.9	56.3	56.3	56.5	56.6	57.1	57.6	57.9	53.9	56.0	56.5	57.5	56.0
1979	57.5	57.8	58.0	57.5	57.8	57.8	57.7	57.3	57.4	57.7	57.7	57.7	57.8	57.7	57.5	57.7	57.7
1980	58.0	58.0	57.8	56.7	55.2	54.5	54.2	54.3	55.2	55.9	56.9	57.2	57.9	55.5	54.6	56.6	56.2
1981	56.9	56.6	56.9	56.6	57.0	57.3	57.7	57.7	57.3	56.9	56.3	55.7	56.8	57.0	57.6	56.3	56.9
1982	54.6	55.7	55.3	54.8	54.4	54.2	54.0	53.6	53.3	52.9	52.7	52.2	55.2	54.5	53.6	52.6	54.0
1983	53.2	52.9	53.4	54.0	54.4	54.7	55.6	56.2	57.0	57.5	57.7	58.0	53.2	54.4	56.3	57.7	55.4
1984	59.2	59.4	59.7	60.1	60.4	60.6	60.8	60.9	60.8	60.7	60.9	61.0	59.5	60.4	60.8	60.9	60.4
1985	60.8	61.1	61.2	61.1	61.1	61.2	60.8	61.1	61.3	61.1	61.3	61.9	61.0	61.1	61.0	61.4	61.2
1986	62.2	61.7	61.4	61.4	61.5	61.3	61.7	61.6	61.7	61.9	62.2	62.8	61.8	61.4	61.6	62.3	61.8
1987	62.6	63.4	63.5	63.8	64.3	64.6	65.0	65.4	65.6	66.6	66.9	67.2	63.2	64.2	65.3	66.9	64.9
1988	67.2	67.5	67.6	68.0	67.9	68.1	68.2	68.5	68.3	68.7	68.8	69.1	67.4	68.0	68.3	68.9	68.2
1989	69.3	69.0	69.2	69.1	68.7	68.7	68.0	68.7	68.5	68.4	68.6	69.1	69.2	68.8	68.4	68.7	68.8
1990	68.7	69.3	69.6	69.6	69.6	69.8	69.7	69.9	70.0	69.5	68.7	68.2	69.2	69.7	69.9	68.8	69.4
1991	67.9	67.4	67.1	67.2	67.9	68.6	68.6	68.7	69.3	69.2	69.1	68.9	67.5	67.9	68.9	69.0	68.3
1992	68.5	69.0	69.5	70.0	70.2	70.3	70.8	70.5	70.6	71.1	71.4	71.5	69.0	70.2	70.7	71.3	70.3
1993	71.8	72.1	72.1	72.3	72.0	72.2	72.5	72.5	72.8	73.3	73.6	74.0	72.0	72.2	72.6	73.7	72.6
1994	74.4	74.4	75.1	75.5	76.0	76.5	76.7	77.0	77.2	77.9	78.3	79.2	74.6	76.0	77.0	78.5	76.5
1995	79.4	79.4	79.6	79.5	79.7	79.9	79.6	80.7	81.0	80.9	81.1	81.4	79.5	79.7	80.4	81.1	80.2
1996	80.7	82.0	81.8	82.5	83.1	83.8	83.7	84.2	84.7	84.7	85.6	86.1	81.5	83.2	84.2	85.5	83.6
1997	86.3	87.3	88.0	88.0	88.5	88.9	89.3	90.4	91.3	92.0	92.8	93.2	87.2	88.5	90.4	92.7	89.7
1998	93.6	93.7	93.7	94.2	94.7	94.2	93.9	96.0	95.8	96.5	96.4	96.7	93.7	94.4	95.2	96.5	94.9
1999	97.1	97.6	97.8	98.0	98.8	98.7	99.4	99.9	99.4	100.7	101.3	102.2	97.5	98.5	99.6	101.4	99.3
2000	102.4	102.8	103.1	103.9	104.2	104.2	103.9	103.6	104.0	103.7	103.6	103.2	102.8	104.1	103.8	103.5	103.5
2001	102.4	101.6	101.3	101.2	100.4	99.9	99.5	99.2	98.8	98.3	97.9	97.9	101.8	100.5	99.2	98.1	99.9
2002	98.6	98.4	99.3	99.7	100.1	101.0	100.6	100.7	100.7	100.3	100.5	100.1	98.8	100.3	100.7	100.3	100.0
2003	100.5	100.6	100.4	99.6	99.5	99.8	100.3	100.4	101.0	101.1	102.0	102.3	100.5	99.7	100.5	101.8	100.6
2004	102.7	103.5	103.2	104.0	105.0	104.4	105.0	105.3	105.1	105.8	106.0	106.7	103.1	104.4	105.1	106.2	104.7
2005	106.9	107.4	107.3	107.2	107.4	108.3	108.3	108.6	107.2	108.4	109.5	110.5	107.2	107.6	108.0	109.5	108.2
2006	110.3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

NOTE: Monthly percent change figures show the change from the previous month; quarterly figures show the change from the previous quarter at a compound annual rate of change. Production and capacity indexes are expressed as percentages of output in 2002.

Estimates from November 2005 to January 2006 are subject to further revision in the upcoming monthly releases.

1. Annual averages of industrial production are calculated from not seasonally adjusted indexes.

... Not available as of February 15, 2006.

## A.2. Revised data for capacity and utilization for total industry

Seasonally adjusted data except as noted

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Quarter				Annual avg.
													1	2	3	4	
	Capacity (percent of 2002 output)																
1975 .....	59.8	59.9	60.0	60.2	60.3	60.4	60.5	60.6	60.7	60.8	61.0	61.1	59.9	60.3	60.6	61.0	60.4
1976 .....	61.2	61.3	61.5	61.6	61.7	61.9	62.0	62.1	62.3	62.4	62.6	62.7	61.3	61.7	62.1	62.6	61.9
1977 .....	62.9	63.0	63.2	63.4	63.5	63.7	63.9	64.1	64.3	64.5	64.6	64.8	63.0	63.5	64.1	64.6	63.8
1978 .....	65.0	65.2	65.4	65.6	65.7	65.9	66.1	66.2	66.4	66.6	66.7	66.9	65.2	65.7	66.2	66.7	66.0
1979 .....	67.0	67.2	67.3	67.5	67.7	67.8	68.0	68.1	68.2	68.4	68.5	68.7	67.2	67.7	68.1	68.5	67.9
1980 .....	68.8	68.9	69.1	69.2	69.3	69.5	69.6	69.8	69.9	70.0	70.2	70.3	68.9	69.3	69.8	70.2	69.6
1981 .....	70.5	70.6	70.8	70.9	71.1	71.3	71.4	71.6	71.8	71.9	72.1	72.3	70.6	71.1	71.6	72.1	71.4
1982 .....	72.5	72.6	72.8	72.9	73.1	73.3	73.4	73.5	73.6	73.7	73.8	73.9	72.6	73.1	73.5	73.8	73.3
1983 .....	74.0	74.0	74.0	74.1	74.1	74.1	74.2	74.2	74.2	74.3	74.3	74.4	74.0	74.1	74.2	74.3	74.2
1984 .....	74.5	74.5	74.6	74.7	74.9	75.0	75.1	75.3	75.4	75.6	75.7	75.9	74.6	74.9	75.3	75.7	75.1
1985 .....	76.1	76.3	76.5	76.6	76.8	77.0	77.2	77.4	77.5	77.7	77.8	77.9	76.3	76.8	77.4	77.8	77.1
1986 .....	78.1	78.2	78.3	78.4	78.5	78.6	78.6	78.7	78.8	78.9	79.0	79.1	78.2	78.5	78.7	79.0	78.6
1987 .....	79.3	79.4	79.5	79.7	79.8	79.9	80.1	80.2	80.3	80.4	80.5	80.6	79.4	79.8	80.2	80.5	80.0
1988 .....	80.6	80.7	80.8	80.8	80.9	80.9	80.9	81.0	81.1	81.1	81.2	81.3	80.7	80.9	81.0	81.2	80.9
1989 .....	81.4	81.5	81.7	81.8	82.0	82.1	82.3	82.5	82.6	82.8	83.0	83.2	81.5	82.0	82.5	83.0	82.2
1990 .....	83.3	83.5	83.7	83.9	84.0	84.2	84.3	84.5	84.6	84.8	84.9	85.0	83.5	84.0	84.5	84.9	84.2
1991 .....	85.2	85.3	85.4	85.5	85.6	85.8	85.9	86.0	86.1	86.2	86.3	86.5	85.3	85.6	86.0	86.3	85.8
1992 .....	86.6	86.7	86.9	87.0	87.2	87.3	87.5	87.6	87.8	88.0	88.1	88.3	86.7	87.2	87.6	88.1	87.4
1993 .....	88.4	88.5	88.7	88.8	88.9	89.1	89.2	89.3	89.5	89.6	89.8	90.0	88.5	88.9	89.3	89.8	89.2
1994 .....	90.1	90.3	90.5	90.8	91.0	91.2	91.5	91.8	92.1	92.4	92.8	93.1	90.3	91.0	91.8	92.8	91.5
1995 .....	93.5	93.8	94.2	94.6	95.0	95.4	95.8	96.2	96.6	97.0	97.5	97.9	93.8	95.0	96.2	97.5	95.6
1996 .....	98.3	98.7	99.2	99.6	100.0	100.4	100.9	101.3	101.7	102.2	102.7	103.1	98.7	100.0	101.3	102.7	100.7
1997 .....	103.6	104.2	104.7	105.2	105.8	106.4	107.0	107.7	108.4	109.0	109.7	110.5	104.2	105.8	107.7	109.7	106.9
1998 .....	111.2	111.9	112.6	113.3	114.0	114.6	115.2	115.8	116.4	116.9	117.5	118.0	111.9	114.0	115.8	117.5	114.8
1999 .....	118.5	119.0	119.5	120.0	120.5	120.9	121.4	121.8	122.3	122.8	123.2	123.7	119.0	120.4	121.8	123.2	121.1
2000 .....	124.2	124.6	125.1	125.5	126.0	126.4	126.8	127.2	127.7	128.1	128.5	128.9	124.6	126.0	127.2	128.5	126.6
2001 .....	129.2	129.6	130.0	130.3	130.6	130.9	131.2	131.5	131.8	132.0	132.2	132.5	129.6	130.6	131.5	132.2	131.0
2002 .....	132.6	132.8	132.9	133.0	133.1	133.2	133.2	133.2	133.2	133.2	133.2	133.2	132.8	133.1	133.2	133.2	133.1
2003 .....	133.1	133.1	133.0	133.0	133.0	132.9	132.9	132.9	132.9	132.9	132.9	132.9	133.1	133.0	132.9	132.9	133.0
2004 .....	133.0	133.0	133.0	133.1	133.1	133.2	133.3	133.4	133.5	133.6	133.7	133.9	133.0	133.1	133.4	133.7	133.3
2005 .....	134.0	134.2	134.3	134.5	134.7	134.9	135.1	135.3	135.5	135.7	135.9	136.1	134.2	134.7	135.3	135.9	135.0
2006 .....	136.3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Utilization (percent)																
1975 .....	77.4	75.3	74.4	74.3	74.1	74.4	75.1	75.6	76.5	76.6	76.6	77.4	75.7	74.3	75.7	76.9	75.6
1976 .....	78.4	78.9	78.8	79.2	79.3	79.2	79.4	79.8	79.8	79.8	80.8	81.4	78.7	79.2	79.7	80.6	79.6
1977 .....	80.7	81.7	82.5	83.1	83.5	83.8	83.8	83.7	83.8	83.8	83.6	83.5	81.7	83.5	83.8	83.6	83.1
1978 .....	82.1	82.3	83.5	85.0	85.1	85.5	85.2	85.3	85.3	85.8	86.3	86.6	82.6	85.2	85.3	86.2	84.8
1979 .....	85.8	86.1	86.2	85.1	85.5	85.3	85.0	84.2	84.1	84.4	84.1	84.1	86.0	85.3	84.4	84.2	85.0
1980 .....	84.2	84.1	83.7	81.9	79.6	78.5	77.8	77.9	79.0	79.8	81.0	81.3	84.0	80.0	78.2	80.7	80.7
1981 .....	80.7	80.1	80.4	79.8	80.2	80.4	80.7	80.6	79.9	79.1	78.1	77.0	80.4	80.1	80.4	78.1	79.7
1982 .....	75.4	76.6	75.9	75.1	74.4	74.0	73.6	72.9	72.5	71.8	71.4	70.7	76.0	74.5	73.0	71.3	73.7
1983 .....	72.0	71.5	72.1	72.9	73.4	73.8	74.9	75.7	76.8	77.5	77.6	77.9	71.8	73.4	75.8	77.7	74.7
1984 .....	79.5	79.7	80.0	80.4	80.7	80.8	80.9	80.9	80.6	80.3	80.5	80.3	79.7	80.7	80.8	80.4	80.4
1985 .....	79.9	80.1	80.0	79.7	79.6	79.4	78.7	78.9	79.1	78.6	78.8	79.4	80.0	79.6	78.9	78.9	79.4
1986 .....	79.7	79.0	78.4	78.3	78.4	78.0	78.4	78.2	78.3	78.5	78.7	79.3	79.0	78.2	78.3	78.9	78.6
1987 .....	79.0	79.8	79.8	80.1	80.6	80.8	81.2	81.6	81.7	82.8	83.1	83.4	79.6	80.5	81.5	83.1	81.2
1988 .....	83.4	83.6	83.7	84.1	84.0	84.2	84.3	84.6	84.3	84.7	84.8	85.0	83.6	84.1	84.4	84.8	84.2
1989 .....	85.1	84.6	84.7	84.5	83.8	83.6	82.7	83.3	82.8	82.6	82.7	83.1	84.8	84.0	82.9	82.8	83.6
1990 .....	82.4	82.9	83.2	83.0	82.9	82.9	82.7	82.8	82.8	82.0	80.9	80.2	82.8	82.9	82.7	81.1	82.4
1991 .....	79.7	79.1	78.6	78.6	79.3	80.0	79.9	79.9	80.5	80.2	80.0	79.7	79.1	79.3	80.1	80.0	79.6
1992 .....	79.1	79.5	80.0	80.4	80.6	80.5	81.0	80.4	80.5	80.9	81.0	81.0	79.6	80.5	80.6	81.0	80.4
1993 .....	81.2	81.4	81.3	81.4	81.0	81.1	81.2	81.1	81.4	81.8	82.0	82.3	81.3	81.1	81.2	82.0	81.4
1994 .....	82.5	82.3	83.0	83.2	83.5	83.8	83.8	83.9	83.8	84.2	84.5	85.0	82.6	83.5	83.8	84.6	83.6
1995 .....	85.0	84.7	84.5	84.1	83.9	83.8	83.1	83.9	83.8	83.3	83.2	83.2	84.7	83.9	83.6	83.2	83.9
1996 .....	82.1	83.0	82.5	82.9	83.1	83.5	83.0	83.2	83.3	82.9	83.3	83.5	82.5	83.2	83.1	83.3	83.0
1997 .....	83.3	83.9	84.1	83.6	83.6	83.5	83.5	84.0	84.3	84.3	84.6	84.4	83.7	83.6	83.9	84.4	83.9
1998 .....	84.2	83.7	83.3	83.1	83.1	82.2	81.5	82.8	82.3	82.5	82.1	81.9	83.7	82.8	82.2	82.2	82.7
1999 .....	82.0	82.0	81.8	81.7	82.0	81.7	81.9	82.0	81.3	82.1	82.2	82.6	81.9	81.8	81.7	82.3	81.9
2000 .....	82.5	82.5	82.5	82.7	82.7	82.5	82.0	81.4	81.5	80.9	80.7	80.1	82.5	82.6	81.6	80.6	81.8
2001 .....	79.2	78.4	77.9	77.6	76.9	76.3	75.9	75.4	75.0	74.5	74.0	73.9	78.5	76.9	75.4	74.2	76.3
2002 .....	74.3	74.1	74.7	74.9	75.2	75.8	75.6	75.6	75.6	75.3	75.5	75.2	74.4	75.3	75.6	75.3	75.1
2003 .....	75.5	75.6	75.4	74.9	74.9	75.1	75.4	75.5	76.0	76.1	76.8	76.9	75.5	74.9	75.6	76.6	75.7
2004 .....	77.2	77.8	77.6	78.1	78.8	78.4	78.8	79.0	78.7	79.2	79.3	79.7	77.5	78.4	78.8	79.4	78.6
2005 .....	79.8	80.0	79.9	79.7	79.8	80.3	80.2	80.3	79.1	79.9	80.6	81.2	79.9	79.9	79.8	80.6	80.1
2006 .....	80.9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

NOTE: Refer also to the general note in table A.1.

... Not available as of February 15, 2006.

A.3. Rates of change in industrial production, by market and industry groups, 2001–05<sup>1</sup>

Item	NAICS code <sup>2</sup>	Revised rate of change (percent)					Difference between rates of change: revised minus earlier (percentage points)				
		2001	2002	2003	2004	2005	2001	2002	2003	2004	2005
<b>Total industry</b> .....	. . .	<b>-5.3</b>	<b>2.3</b>	<b>1.5</b>	<b>4.3</b>	<b>3.1</b>	<b>-2</b>	<b>.8</b>	<b>.3</b>	<b>.0</b>	<b>.2</b>
MARKET GROUP											
Final products and nonindustrial supplies ..	. . .	-4.6	1.5	1.7	4.3	4.7	.0	.8	.0	-.4	.2
Consumer goods .....	. . .	-1.3	2.7	1.3	2.0	2.3	.2	1.1	.1	-1.0	.5
Durable .....	. . .	-1.3	7.9	4.3	1.3	3.1	.0	1.5	1.0	-.2	.5
Automotive products .....	. . .	2.7	12.4	6.5	.4	2.5	.4	2.3	1.3	-.7	-.9
Home electronics .....	. . .	6.3	-7.7	18.5	-3.7	16.4	.5	-3.7	-16.4	4.4	15.3
Appliances, furniture, carpeting .....	. . .	-2.9	4.0	2.2	2.4	2.4	.5	2.2	.8	-.6	.5
Miscellaneous goods .....	. . .	-7.5	4.9	-.7	3.0	3.2	-.9	.6	2.8	.4	1.1
Nondurable .....	. . .	-1.3	.8	.1	2.3	2.0	.2	1.0	-.3	-1.4	.4
Non-energy .....	. . .	-.5	-1.0	.6	2.5	1.9	.3	1.3	-.2	-1.8	.0
Foods and tobacco .....	. . .	-.4	-3.1	2.1	1.8	2.4	.8	.6	-.3	-2.6	.4
Clothing .....	. . .	-21.5	-7.1	-9.3	-2.8	-1.0	-.7	2.6	5.6	2.3	5.1
Chemical products .....	. . .	6.5	4.0	1.0	3.0	.4	-.6	3.1	.4	-1.1	-1.4
Paper products .....	. . .	-2.3	-.5	-3.5	5.9	3.5	.4	.3	-4.1	-1.1	.3
Energy .....	. . .	-5.3	9.5	-1.9	1.7	2.4	-.1	-.6	-.5	.7	2.1
Business equipment .....	. . .	-13.6	-2.3	2.8	10.8	10.4	-.3	.3	-1.9	1.0	-1.1
Transit .....	. . .	-4.6	-10.8	3.6	9.7	14.1	-1.2	1.9	3.5	-1.2	1.7
Information processing .....	. . .	-15.5	-8.9	6.5	14.6	19.4	1.9	-5.2	-9.8	4.6	.3
Industrial and other .....	. . .	-15.3	5.4	.4	9.2	4.4	-1.6	3.4	.9	-.2	-2.4
Defense and space equipment .....	. . .	8.4	.8	5.4	9.7	9.2	.4	-3.0	.1	3.6	-1.2
Construction supplies .....	. . .	-5.0	1.2	1.7	4.6	6.8	.0	1.1	1.1	.7	-.1
Business supplies .....	. . .	-5.5	2.5	.9	3.9	3.8	.0	1.1	.8	-1.0	.8
Materials .....	. . .	-6.1	3.4	1.2	4.3	.9	-.5	.7	.7	.7	.1
Non-energy .....	. . .	-7.2	4.4	1.7	6.0	3.4	-.7	.9	.9	.5	.7
Durable .....	. . .	-8.3	5.4	3.8	7.6	7.2	-1.0	.9	1.7	.6	1.5
Consumer parts .....	. . .	-7.7	6.0	-1.2	2.0	2.1	.2	-1.0	-3.9	-.2	.2
Equipment parts .....	. . .	-9.4	7.4	11.8	14.1	16.5	-1.5	1.2	6.0	-2.0	.9
Other .....	. . .	-7.3	3.4	.0	4.9	2.2	-1.1	1.4	.9	2.3	2.1
Nondurable .....	. . .	-5.1	2.7	-1.7	3.2	-3.0	.0	1.0	-.4	.3	-.7
Textile .....	. . .	-10.3	4.9	-6.5	-6.4	-4.7	-.8	2.9	6.5	-1.9	.8
Paper .....	. . .	-6.2	.8	-6.5	4.6	-.9	.1	-1.3	-2.1	1.4	-.8
Chemical .....	. . .	-4.5	4.0	1.6	5.3	-8.2	.0	1.8	-.5	.4	-2.1
Energy .....	. . .	-2.8	.4	-.1	-.2	-5.1	.0	.0	.2	1.0	-1.2

Table A.3. continues on page A54.

A.3. Rates of change in industrial production, by market and industry groups, 2001–05<sup>1</sup>—Continued

Item	NAICS code <sup>2</sup>	Revised rate of change (percent)					Difference between rates of change: revised minus earlier (percentage points)				
		2001	2002	2003	2004	2005	2001	2002	2003	2004	2005
INDUSTRY GROUP											
Manufacturing <sup>3</sup> .....	...	-5.6	2.2	1.7	5.1	4.2	-.2	.9	.2	.1	.2
Manufacturing (NAICS) .....	31-33	-5.6	2.5	2.0	5.2	4.3	-.3	.9	.4	.1	.2
Durable manufacturing .....	...	-7.7	3.8	4.0	7.1	7.8	-.5	.7	.7	.5	.6
Wood products .....	321	-1.3	.9	4.0	3.0	7.8	.4	.9	.8	2.2	4.5
Nonmetallic mineral products .....	327	-3.4	1.0	2.2	5.1	3.2	-.9	.7	.5	.7	-1.8
Primary metal .....	331	-9.3	6.6	1.0	3.9	-1.6	-.6	-.4	.3	.6	2.6
Fabricated metal products .....	332	-10.5	1.2	-.7	5.2	4.1	-1.9	1.5	2.2	2.0	1.2
Machinery .....	333	-18.6	4.2	1.0	11.5	6.4	-1.8	2.9	.3	-.4	-3.6
Computer and electronic products ..	334	-8.9	2.9	15.7	16.1	23.3	.1	-2.8	1.2	.9	.9
Electrical equipment, appliances, and components .....	335	-14.8	-2.2	-.7	5.2	6.8	-.2	3.1	-1.9	-.8	4.5
Motor vehicles and parts .....	3361-3	-1.8	12.2	4.7	2.6	2.3	.2	1.0	-.1	-.3	.8
Aerospace and miscellaneous transportation equipment .....	3364-9	5.1	-7.3	-.4	5.3	11.5	.5	.2	-1.2	.8	-1.0
Furniture and related products .....	337	-6.3	7.3	.3	2.2	-2.0	-.1	3.1	2.1	-.1	-.8
Miscellaneous .....	339	-1.5	9.6	.6	3.9	4.8	.1	2.2	2.8	-.4	.9
Nondurable manufacturing .....	...	-2.9	.8	-.4	2.8	-.1	.1	1.2	.0	-.3	-.4
Food, beverage, and tobacco products .....	311,2	-.2	-2.2	1.7	1.7	3.0	.7	.7	-.4	-2.2	.5
Textile and product mills .....	313,4	-9.9	2.2	-4.2	-3.9	.5	-.4	1.8	4.3	-1.4	1.6
Apparel and leather .....	315,6	-21.9	-6.9	-9.4	-2.2	-.2	-.8	2.4	4.9	2.4	5.7
Paper .....	322	-5.0	3.4	-6.0	4.5	-.7	.8	-.7	-2.7	1.2	-.9
Printing and support .....	323	-9.0	-3.2	-3.0	1.5	1.6	-.9	.0	.5	.6	.1
Petroleum and coal products .....	324	1.0	2.9	.3	6.2	-6.3	.2	-1.2	-.9	2.2	-.8
Chemical .....	325	.1	3.6	.7	4.2	-3.3	-.1	2.6	-.5	.0	-2.1
Plastics and rubber products .....	326	-5.1	4.4	-.2	3.2	3.6	-.6	1.9	1.9	1.6	1.2
Other manufacturing (non-NAICS) .....	1133,5111	-5.5	-2.6	-3.0	3.7	1.7	.8	1.4	-3.2	-1.4	.3
Mining .....	21	-.7	-3.8	.5	-.4	-6.3	.0	-.1	.3	1.6	-1.6
Utilities .....	2211,2	-5.2	7.0	.7	1.2	3.3	-.1	-.1	1.3	-1.5	2.2
Electric .....	2211	-3.8	5.6	1.9	2.0	4.8	-.1	-.1	1.4	-1.7	1.7
Natural gas .....	2212	-12.9	15.5	-5.5	-2.9	-3.6	-.1	.1	.7	-.4	4.6

NOTE: Estimates for the fourth quarter of 2005 are subject to further revision in the upcoming monthly releases.

1. Rates of change are calculated as the percent change in the seasonally adjusted index from the fourth quarter of the previous year to the fourth quarter of the year specified in the column heading. For 2005, the difference between the rates of change are calculated from annualized rates of change between the fourth quarter of 2004 and the third quarter of 2005.

2. North American Industry Classification System.

3. Manufacturing comprises North American Industry Classification System (NAICS) manufacturing industries (sector 31-33) plus the logging industry and the newspaper, periodical, book, and directory publishing industries. Logging and publishing are classified elsewhere in NAICS (under agriculture and information respectively), but historically they were considered to be manufacturing industries and were included in the industrial sector under the Standard Industrial Classification (SIC) system. In December 2002 the Federal Reserve reclassified all its industrial output data from the SIC system to NAICS.

... Not applicable.

A.4. Rates of change in industrial production, special aggregates and selected detail, 2001–05<sup>1</sup>

Item	NAICS code <sup>2</sup>	Revised rate of change (percent)					Difference between rates of change: revised minus earlier (percentage points)				
		2001	2002	2003	2004	2005	2001	2002	2003	2004	2005
<b>Total industry</b> .....	...	<b>-5.3</b>	<b>2.3</b>	<b>1.5</b>	<b>4.3</b>	<b>3.1</b>	<b>-2</b>	<b>.8</b>	<b>.3</b>	<b>.0</b>	<b>.2</b>
Energy .....	...	-3.3	2.8	.5	.7	-2.1	.0	-2	.7	.2	-1
Consumer products .....	...	-5.3	9.5	-1.9	1.7	2.4	-1	-6	-5	.7	2.1
Commercial products .....	...	-1.4	4.5	5.1	2.4	3.0	-2	-2	5.1	-5.0	1.3
Oil and gas well drilling .....	...	-7.8	-15.2	21.2	8.3	11.8	.3	.3	.2	-.4	1.2
Converted fuel .....	...	-8.0	4.1	.6	1.6	-1.7	.1	.1	.6	-.1	-1.3
Primary materials .....	...	.0	-1.6	-.4	-1.0	-6.5	.0	-.1	.0	1.6	-.9
Non-energy .....	...	-5.7	2.2	1.7	5.1	4.4	-2	1.0	.2	.0	.2
Selected high-technology industries .....	...	-9.8	4.8	21.1	18.4	26.1	.3	-3.3	2.4	-.3	1.0
Computers and peripheral equipment .....	3341	-2.7	-2.6	5.8	4.6	11.3	.9	-3.5	-16.0	-2.3	-1.2
Communications equipment .....	3342	-27.4	-22.6	9.9	22.3	25.7	2.9	-8.3	-12.6	12.8	3.4
Semiconductors and related electronic components .....	334412-9	-.6	26.0	34.1	21.4	30.7	-2.3	.8	17.9	-8.5	-1.0
Excluding selected high-technology industries .....	...	-5.2	1.9	.5	4.2	3.0	-.3	1.3	.1	.0	.1
Motor vehicles and parts .....	3361-3	-1.8	12.2	4.7	2.6	2.3	.2	1.0	-.1	-.3	.8
Motor vehicles .....	3361	2.4	14.4	10.4	1.6	-.2	-.1	3.3	3.7	-.8	.2
Motor vehicle parts .....	3363	-4.0	10.3	-1.5	2.2	3.3	1.0	-.5	-4.2	.5	.2
Excluding motor vehicles and parts .....	...	-5.5	.9	.0	4.4	3.1	-.3	1.3	.1	.0	.0
Consumer goods .....	...	-1.5	.0	.7	2.3	2.1	.2	1.2	.0	-1.4	.3
Business equipment .....	...	-11.3	.4	.5	9.0	9.5	-1.2	2.5	.4	-.3	-2.4
Construction supplies .....	...	-4.8	1.4	1.7	4.6	6.7	.0	1.1	1.1	.7	-.1
Business supplies .....	...	-6.4	1.4	-1.6	3.3	2.6	.0	1.6	-.7	.2	.4
Materials .....	...	-7.8	1.8	-.8	4.7	.8	-.6	1.2	.1	.9	.4
<i>Measures excluding selected high-technology industries</i>											
Total industry .....	...	-4.9	2.1	.5	3.6	1.9	-.2	1.0	.2	.0	.0
Manufacturing <sup>3</sup> .....	...	-5.2	1.9	.4	4.2	2.8	-.3	1.2	.0	.0	.0
Durable .....	...	-7.2	3.5	1.7	5.6	5.5	-.7	1.3	.5	.5	.3
<i>Measures excluding motor vehicles and parts</i>											
Total industry .....	...	-5.5	1.5	1.3	4.5	3.2	-.2	.8	.3	.1	.1
Manufacturing <sup>3</sup> .....	...	-5.9	1.3	1.4	5.4	4.4	-.3	.9	.2	.1	.1
Durable .....	...	-8.6	2.2	3.8	8.0	8.9	-.7	.6	.9	.7	.6
<i>Measures excluding selected high-technology industries and motor vehicles and parts</i>											
Total industry .....	...	-5.1	1.3	.1	3.6	1.9	-.3	1.0	.2	.0	.0
Manufacturing <sup>3</sup> .....	...	-5.5	1.0	.0	4.4	2.9	-.3	1.3	.0	.1	-.1
<i>Measures of non-energy material inputs to</i>											
Finished processors .....	...	-8.5	5.7	3.6	7.9	8.4	-.8	.2	1.7	-.4	.8
Primary and semifinished processors .....	...	-5.8	3.3	.2	4.3	-.5	-.5	1.5	.2	1.3	.7
<i>Stage-of-process groups</i>											
Crude .....	...	-2.8	-1.1	-1.7	1.9	-8.2	.2	-.1	-.3	1.8	-1.9
Primary and semifinished .....	...	-6.3	4.2	1.2	4.4	4.4	-.4	.8	.9	.1	1.2
Finished .....	...	-4.5	.6	2.8	4.9	5.3	.0	1.0	-.4	-.5	-.4

NOTE: Estimates for the fourth quarter of 2005 are subject to further revision in the upcoming monthly releases.

1. Rates of change are calculated as the percent change in the seasonally adjusted index from the fourth quarter of the previous year to the fourth quarter of the year specified in the column heading. For 2005, the difference between

the rates of change are calculated from annualized rates of change between the fourth quarter of 2004 and the third quarter of 2005.

2. North American Industry Classification System.

3. Refer to footnote 3 in table A.3.

... Not applicable.

A.5. Rates of change for annual industrial production indexes, 2001–05<sup>1</sup>

Item	Revised rate of change (percent)					Difference between rates of change: revised minus earlier (percentage points)				
	2001	2002	2003	2004	2005	2001	2002	2003	2004	2005
<b>Total industry</b> .....	<b>-3.5</b>	<b>.1</b>	<b>.6</b>	<b>4.1</b>	<b>3.2</b>	<b>.0</b>	<b>.4</b>	<b>.6</b>	<b>-.1</b>	<b>.1</b>
<b>MARKET GROUPS</b>										
Consumer goods .....	-1.1	2.2	1.0	2.1	2.1	.0	.8	.8	-.6	-.4
Durable .....	-4.3	6.3	4.0	2.8	1.9	.0	.9	1.9	-.3	.2
Nondurable .....	.1	.7	-.2	1.8	2.2	.0	.7	.4	-.8	-.6
Business equipment .....	-7.0	-7.8	.0	9.3	9.0	.1	.1	-1.2	-.1	.2
Defense and space equipment .....	8.6	-.1	5.0	7.8	10.6	-.3	-1.3	-2.3	3.1	1.1
Construction supplies .....	-4.5	-.2	-.9	5.5	4.0	.1	.7	1.4	.4	.0
Business supplies .....	-4.0	.2	.7	3.2	3.5	.0	1.0	1.1	-1.3	.4
Materials .....	-4.5	1.0	.4	4.2	2.0	.0	.1	.9	.5	.3
Non-energy .....	-5.6	1.4	.6	5.8	3.5	.0	.1	1.1	.6	.5
Energy .....	-1.1	.0	-.4	.0	-1.7	.0	.0	.3	.4	-.2
<b>INDUSTRY GROUPS</b>										
Manufacturing <sup>2</sup> .....	-4.2	.1	.5	4.8	3.9	.0	.5	.6	.0	.1
Manufacturing (NAICS) .....	-4.1	.3	.7	5.0	3.9	.0	.4	.7	.2	.2
Durable manufacturing .....	-4.8	-.2	2.3	7.3	6.4	.1	.0	1.0	.3	.7
Nondurable manufacturing .....	-3.2	1.0	-1.1	2.2	.7	.0	.8	.4	.0	-.6
Other manufacturing (non-NAICS) .....	-5.9	-3.0	-3.0	1.8	3.0	-.2	2.0	-2.0	-2.4	-.4
Mining .....	.9	-4.3	-.2	-.2	-2.0	.0	-.1	.2	.7	-.4
Utilities .....	-.5	3.1	2.0	1.2	2.6	.0	.0	1.6	-1.4	.5

NOTE: Estimates for the fourth quarter of 2005 are subject to further revision in the upcoming monthly releases.

1. The rates of change are calculated from annual averages of seasonally adjusted industrial production indexes, rather than between the fourth quarter of

one year and the fourth quarter of the next. The difference between revised and earlier changes for 2005 are computed from annualized rates of change between the full year 2004 and the first three quarters of 2005.

2. Refer to footnote 3 in table A.3.

A.6. Rates of change in capacity, by industry groups, 2001–05<sup>1</sup>

Item	Revised rate of change (percent)					Difference between rates of change: revised minus earlier (percentage points)				
	2001	2002	2003	2004	2005	2001	2002	2003	2004	2005
<b>Total industry</b> .....	<b>2.9</b>	<b>.7</b>	<b>-.2</b>	<b>.6</b>	<b>1.6</b>	<b>.2</b>	<b>.3</b>	<b>.0</b>	<b>-.5</b>	<b>.4</b>
Manufacturing <sup>2</sup> .....	2.8	.4	-.1	.5	2.1	.3	.3	.0	-.6	.7
Manufacturing (NAICS) .....	3.1	.5	.1	.5	2.2	.3	.4	.0	-.7	.7
Durable manufacturing .....	5.1	1.1	1.2	1.4	4.0	.2	.5	.0	-.8	1.0
Nondurable manufacturing .....	.5	-.3	-1.1	-.7	-.2	.4	.2	.2	-.5	.3
Other manufacturing (non-NAICS) .....	-1.1	-2.7	-3.0	.4	.5	.2	-.2	-.1	.3	.2
Mining .....	2.1	-1.3	-1.0	-.6	-.6	.0	-.7	.7	-.3	.1
Utilities .....	3.9	4.5	3.1	2.6	.0	.0	.0	.1	.7	-1.2
Selected high-technology industries .....	27.8	9.5	8.0	6.8	20.8	.3	1.5	-.4	-6.6	5.9
Manufacturing except selected high-technology industries <sup>2</sup> .....	.8	-.2	-.5	.1	.6	.3	.2	.1	.0	.3
<i>Stage-of-process groups</i>										
Crude .....	1.5	-1.0	-2.1	-1.1	-.9	.6	-.3	.2	-.9	-.2
Primary and semifinished .....	3.4	.9	-.1	.9	2.5	.5	.2	.1	-1.1	.7
Finished .....	2.3	.6	.6	.8	1.2	-.1	.4	.0	.5	.3

1. Rates of change are calculated as the percent change in the seasonally adjusted index from the fourth quarter of the previous year to the fourth quarter of the year specified in the column heading.

2. Refer to footnote 3 in table A.3.



## A.7. Capacity utilization rates, by industry groups, 1972–2005

Item	NAICS code <sup>1</sup>	Revised rate (percent of capacity, seasonally adjusted)					Difference between rates: revised minus earlier (percentage points)			
		1972–2004 avg.	2002:Q4	2003:Q4	2004:Q4	2005:Q3	2002:Q4	2003:Q4	2004:Q4	2005:Q3
<b>Total industry</b> .....	...	<b>81.0</b>	<b>75.3</b>	<b>76.6</b>	<b>79.4</b>	<b>79.8</b>	<b>–.1</b>	<b>.1</b>	<b>.6</b>	<b>.5</b>
Manufacturing <sup>2</sup> .....	...	79.8	73.4	74.7	78.2	78.5	–.1	.0	.5	.3
Manufacturing (NAICS) .....	31–33	79.6	73.0	74.3	77.8	78.1	–.2	.1	.7	.4
Durable manufacturing .....	...	78.1	70.3	72.2	76.3	77.1	–.3	.1	1.1	1.0
Wood products .....	321	80.1	74.4	78.4	81.0	80.9	.0	1.1	2.5	5.1
Nonmetallic mineral products .....	327	79.4	77.7	79.4	82.4	80.8	.9	1.4	1.6	.5
Primary metal .....	331	80.4	78.2	80.6	85.0	79.4	–.4	1.3	2.4	4.2
Fabricated metal products .....	332	77.1	70.4	70.0	73.9	74.7	1.0	2.3	3.8	3.7
Machinery .....	333	78.7	67.5	69.4	78.3	80.1	–.3	–.5	.0	–2.2
Computer and electronic products .....	334	78.6	60.9	67.0	72.9	76.5	–1.8	–.8	1.7	.6
Electrical equipment, appliances, and components .....	335	83.2	74.0	75.8	81.1	84.9	1.4	1.0	.8	2.7
Motor vehicles and parts .....	3361–3	77.5	80.4	80.3	80.5	80.9	–.5	–1.6	–2.1	–1.3
Aerospace and miscellaneous transportation equipment .....	3364–9	72.6	63.0	62.3	65.2	65.8	–.2	–.9	–.3	–.6
Furniture and related products .....	337	78.7	73.1	73.8	75.1	73.8	.5	2.6	1.6	.9
Miscellaneous .....	339	76.6	75.0	74.8	76.7	78.2	–.9	.6	–.5	–.8
Nondurable manufacturing .....	...	81.7	76.6	77.2	79.9	79.5	.0	–.1	.0	–.4
Food, beverage, and tobacco products ..	311,2	81.8	77.0	78.2	79.4	80.7	.4	–.4	–2.3	–1.8
Textile and product mills .....	313,4	82.8	74.7	74.6	75.1	77.2	–2.1	1.2	.5	.4
Apparel and leather .....	315,6	79.3	65.7	66.7	72.9	77.3	–1.0	1.8	2.4	4.5
Paper .....	322	87.8	84.9	81.4	85.5	83.2	.1	–2.1	–1.2	–1.6
Printing and support .....	323	84.0	72.5	71.6	74.9	76.5	–.5	.0	2.8	3.3
Petroleum and coal products .....	324	85.9	86.5	88.4	93.4	90.1	–.5	–.5	2.1	1.4
Chemical .....	325	78.3	74.4	74.4	77.4	74.7	1.0	.4	.8	–.9
Plastics and rubber products .....	326	83.5	79.0	81.3	85.0	86.6	–2.0	.1	1.5	1.8
Other manufacturing (non-NAICS) .....	1133,5111	84.7	82.1	82.2	84.9	85.5	1.5	–1.2	–2.6	–2.6
Mining .....	21	87.3	86.8	88.2	88.3	86.1	1.4	1.1	2.7	1.5
Utilities .....	2211,2	86.8	87.6	85.6	84.4	88.1	–.3	.8	–1.0	1.0
Selected high-technology industries .....	...	78.2	58.5	65.7	72.8	75.3	–2.3	–1.0	3.0	1.1
Computers and peripheral equipment .....	3341	78.2	70.4	74.9	76.3	79.0	–.5	.8	.4	–1.4
Communications equipment .....	3342	76.0	42.2	47.1	58.6	68.9	–.6	–5.8	–.1	.7
Semiconductors and related electronic components .....	334412–9	80.6	64.3	74.3	79.4	77.3	–5.5	–.6	3.8	.3
<i>Measures excluding selected high-technology industries</i>										
Total industry .....	...	81.2	76.6	77.3	79.8	80.2	.1	.2	.2	.1
Manufacturing <sup>2</sup> .....	...	79.9	74.8	75.4	78.6	78.9	.1	.1	.1	–.1
<i>Stage-of-process groups</i>										
Crude .....	...	86.4	84.1	85.0	87.8	84.2	.6	.1	2.3	1.3
Primary and semifinished .....	...	82.2	77.5	78.6	81.3	81.8	–.5	.2	1.1	1.5
Finished .....	...	77.9	71.1	72.4	75.3	76.9	.3	.0	–.7	–1.1

1. North American Industry Classification System.

... Not applicable.

2. Refer to footnote 3 in table A.3.

## A.8. Annual proportion in industrial production, by market groups and industry groups, 1997–2005

Item	NAICS code <sup>1</sup>	1997	1998	1999	2000	2001	2002	2003	2004	2005
<b>Total industry</b> .....	<b>...</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<b>MARKET GROUPS</b>										
Final products and nonindustrial supplies .....	...	56.9	58.1	57.6	57.6	59.1	59.0	58.6	57.8	57.6
Consumer goods .....	...	27.6	28.0	28.2	28.5	30.1	31.0	31.2	30.2	29.7
Durable .....	...	7.9	7.9	8.0	7.9	8.1	8.9	9.0	8.7	8.3
Automotive products .....	...	3.7	3.7	3.9	3.7	4.0	4.7	4.9	4.7	4.6
Home electronics .....	...	.4	.4	.4	.4	.4	.3	.3	.3	.2
Appliances, furniture, carpeting .....	...	1.4	1.4	1.4	1.4	1.4	1.5	1.4	1.4	1.4
Miscellaneous goods .....	...	2.4	2.4	2.4	2.4	2.3	2.4	2.3	2.3	2.2
Nondurable .....	...	19.7	20.1	20.2	20.7	22.0	22.1	22.1	21.6	21.3
Non-energy .....	...	16.3	16.9	16.7	16.9	18.1	18.3	18.0	17.4	16.9
Foods and tobacco .....	...	8.7	9.2	9.1	9.3	10.0	9.8	9.8	9.5	9.1
Clothing .....	...	1.6	1.5	1.3	1.2	1.1	1.0	.9	.8	.7
Chemical products .....	...	3.7	3.8	3.8	3.9	4.5	4.9	4.9	4.8	4.7
Paper products .....	...	1.8	1.9	1.9	1.9	2.0	2.0	1.9	1.9	1.9
Energy .....	...	3.4	3.2	3.5	3.7	3.8	3.9	4.1	4.2	4.4
Business equipment .....	...	11.8	12.3	11.9	11.7	11.2	10.3	9.9	10.0	10.1
Transit .....	...	2.1	2.5	2.3	2.0	2.0	1.9	1.8	1.9	2.0
Information processing .....	...	4.0	4.0	4.1	4.1	3.8	3.1	2.9	2.7	2.8
Industrial and other .....	...	5.8	5.8	5.5	5.6	5.4	5.3	5.2	5.4	5.3
Defense and space equipment .....	...	1.9	1.9	1.8	1.5	1.8	1.8	1.9	1.9	2.1
Construction supplies .....	...	4.2	4.3	4.3	4.3	4.3	4.3	4.3	4.4	4.5
Business supplies .....	...	11.1	11.1	11.1	11.2	11.2	11.2	11.1	10.8	10.6
Materials .....	...	43.1	41.9	42.4	42.4	40.9	41.0	41.4	42.2	42.4
Non-energy .....	...	33.8	33.3	33.1	32.3	30.9	30.7	30.0	30.2	29.4
Durable .....	...	21.7	21.5	21.4	20.9	19.6	19.1	18.7	19.0	18.8
Consumer parts .....	...	4.2	4.2	4.4	4.1	3.8	4.0	3.8	3.7	3.5
Equipment parts .....	...	8.3	8.2	8.1	8.2	7.3	6.7	6.6	6.7	6.7
Other .....	...	9.2	9.1	8.9	8.6	8.4	8.4	8.4	8.7	8.5
Nondurable .....	...	12.1	11.8	11.7	11.4	11.2	11.6	11.3	11.2	10.7
Textile .....	...	1.1	1.0	1.0	.9	.8	.8	.8	.7	.6
Paper .....	...	2.9	2.8	2.9	2.8	2.8	2.7	2.5	2.4	2.3
Chemical .....	...	4.9	4.6	4.5	4.3	4.2	4.5	4.5	4.7	4.4
Energy .....	...	9.3	8.6	9.2	10.1	10.0	10.3	11.4	12.0	13.0
<b>INDUSTRY GROUPS</b>										
Manufacturing <sup>2</sup> .....	...	85.7	86.5	85.8	84.5	84.1	83.9	82.6	82.0	80.8
Manufacturing (NAICS) .....	31–33	81.3	81.8	81.0	79.7	79.2	79.1	77.9	77.5	76.4
Durable manufacturing .....	...	46.5	47.1	46.7	45.6	44.3	43.6	42.9	43.1	42.9
Wood products .....	321	1.5	1.5	1.6	1.4	1.4	1.5	1.5	1.6	1.5
Nonmetallic mineral products .....	327	2.2	2.3	2.3	2.2	2.3	2.3	2.2	2.3	2.3
Primary metal .....	331	3.1	2.9	2.8	2.5	2.3	2.3	2.3	2.6	2.4
Fabricated metal products .....	332	6.0	6.1	6.0	6.0	5.9	5.7	5.6	5.7	5.8
Machinery .....	333	6.3	6.2	5.9	6.0	5.7	5.3	5.1	5.4	5.3
Computer and electronic products .....	334	10.4	10.2	10.3	10.3	9.2	8.0	7.8	7.7	7.9
Electrical equipment, appliances, and components .....	335	2.6	2.6	2.5	2.5	2.4	2.2	2.1	2.1	2.1
Motor vehicles and parts .....	3361–3	6.7	6.6	7.0	6.6	6.5	7.4	7.5	7.3	7.1
Aerospace and miscellaneous transportation equipment .....	3364–9	3.4	4.1	3.8	3.3	3.8	3.6	3.5	3.5	3.7
Furniture and related products .....	337	1.6	1.7	1.7	1.7	1.7	1.8	1.8	1.7	1.6
Miscellaneous .....	339	2.8	2.8	2.8	2.9	3.1	3.3	3.3	3.2	3.2
Nondurable manufacturing .....	...	34.7	34.7	34.4	34.1	35.0	35.5	35.0	34.4	33.5
Food, beverage, and tobacco products .....	311,2	10.1	10.6	10.4	10.7	11.4	11.4	11.4	11.0	10.7
Textile and product mills .....	313,4	1.7	1.6	1.5	1.4	1.3	1.4	1.3	1.2	1.1
Apparel and leather .....	315,6	1.8	1.6	1.4	1.3	1.2	1.0	.9	.8	.7
Paper .....	322	3.2	3.2	3.2	3.2	3.1	3.1	2.9	2.8	2.7
Printing and support .....	323	2.7	2.6	2.6	2.6	2.6	2.4	2.3	2.1	2.0
Petroleum and coal products .....	324	1.6	1.5	1.7	1.9	1.7	1.7	2.0	2.3	2.5
Chemical .....	325	10.1	9.9	9.6	9.4	9.8	10.6	10.6	10.5	10.2
Plastics and rubber products .....	326	3.7	3.7	3.8	3.7	3.7	3.8	3.7	3.6	3.6
Other manufacturing (non-NAICS) .....	1133,5111	4.4	4.7	4.8	4.8	4.9	4.8	4.7	4.5	4.4
Mining .....	21	5.4	4.8	5.5	6.5	6.4	6.4	7.5	8.5	9.8
Utilities .....	2211,2	8.9	8.7	8.6	9.0	9.5	9.7	9.9	9.5	9.5
Electric .....	2211	7.7	7.5	7.4	7.6	8.1	8.2	8.3	7.9	7.8
Natural gas .....	2212	1.3	1.2	1.2	1.4	1.4	1.4	1.6	1.6	1.7

NOTE: The IP proportion data are estimates of the industries' relative contributions to the overall IP change between the reference year and the following year. For example, a 1 percent increase in durable goods manufacturing between 2005 and 2006 would account for a 0.429 percent increase in total IP.

1. North American Industry Classification System.

2. Refer to footnote 3 in table A.3.

... Not applicable.

# Understanding U.S. Cross-Border Securities Data

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In recent years, foreign holdings of U.S. securities have grown markedly. During 2005, reported foreign holdings increased nearly \$1 trillion for the second consecutive year, bringing the estimated total to about \$7.3 trillion, or roughly 16 percent of all U.S. long-term securities outstanding at year-end. These large numbers are understandably attracting a great deal of attention, as external deficits are a subject of growing concern in today's global economy.

In this article, we present current data on U.S. cross-border securities holdings and transactions and describe the system that collects the data. We discuss how to make the best use of the information available by avoiding common misinterpretations of the data and by adjusting the published figures to improve their accuracy and comprehensiveness. We also discuss how to construct monthly estimates of cross-border securities holdings by country, combining monthly transactions data with less frequently reported positions data. Besides providing more timely measures of holdings of securities, these estimates incorporate a number of adjustments that improve our overall picture of cross-border portfolio positions. Finally, to improve our ability to correctly attribute U.S. liabilities to foreign holders, we compare our estimates of foreign holdings of U.S. securities with estimates obtained from asset surveys conducted by other countries.

## INCREASING IMPORTANCE OF FOREIGN HOLDINGS OF U.S. SECURITIES

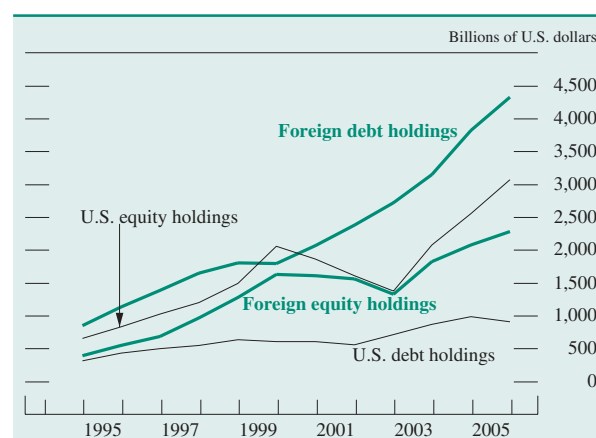
The increasing importance of foreign holdings of U.S. securities can be seen by comparing the growth of these holdings with the growth of U.S. ownership of foreign securities. Since 1994, when the first survey of U.S. holdings of foreign long-term securities was conducted, foreign ownership of U.S. long-term securities has consistently exceeded U.S. ownership of foreign long-term securities. At the end of 1994, the market value of foreign holdings was approxi-

mately 40 percent higher than that of U.S. holdings; by the end of 2005, it was approximately 70 percent higher. The more-rapid growth of foreign holdings of U.S. securities over the past ten years is the counterpart to the record U.S. trade and current account deficits incurred over the period, as the financial inflows associated with the deficits have occurred largely through foreign purchases of U.S. securities.

The trend in foreign holdings relative to U.S. holdings varies by type of security. In recent years, U.S. holdings of foreign equity have been somewhat larger than foreign holdings of U.S. equity (figure 1). For holdings of long-term debt, however, the situation has been very different, as foreign holdings have exceeded U.S. holdings by a wide margin. The disparity can be partly explained by the holdings of foreign official institutions, which are discussed in detail later in this article.

An increase in the level of foreign holdings of U.S. securities has also resulted in an increase in the share of U.S. securities that are foreign held. Since 1974, when surveys began to collect data on foreign ownership of U.S. long-term securities, the share of the total value of U.S. long-term securities held by foreigners has more than tripled, from less than 5 percent to 16 percent as of June 2005 (table 1). As a fraction of

1. Foreign holdings of U.S. long-term securities and U.S. holdings of foreign long-term securities, by type of security, 1994–2005



SOURCE: Treasury International Capital reporting system and staff estimates.

1. Foreign holdings of U.S. long-term securities as a share of such securities outstanding, by type of security and for survey dates, 1974–2005

Percent

Month and year	Type of security				
	All	Equity <sup>1</sup>	Debt		
			U.S. Treasury <sup>2</sup>	U.S. government agency	Other <sup>3</sup>
Dec. 1974 ..	5	4	15	n.a.	n.a.
Dec. 1978 ..	4	5	12	3	1
Dec. 1984 ..	6	5	14	3	3
Dec. 1989 ..	9	6	22	4	7
Dec. 1994 ..	8	5	19	5	8
Mar. 2000 ..	10	7	35	7	12
June 2002 ..	12	8	41	10	16
June 2003 ..	14	9	46	11	16
June 2004 ..	14	9	52	11	17
June 2005 ..	16	10	52	14	20

NOTE: Percentages should be viewed as approximate, as data on the total value of U.S. long-term securities outstanding by security type are unavailable on the same basis as that used in collecting the survey data on foreign holdings of such securities. For example, whereas data on total U.S. long-term debt securities outstanding are based on the *face value* of the securities, data on foreign holdings are based on their *market value*. However, the percentages should still be useful for showing long-term trends.

1. Both common and preferred stock as well as all types of investment company shares, such as open-end, closed-end, and money market mutual funds.

2. Marketable Treasury securities only.

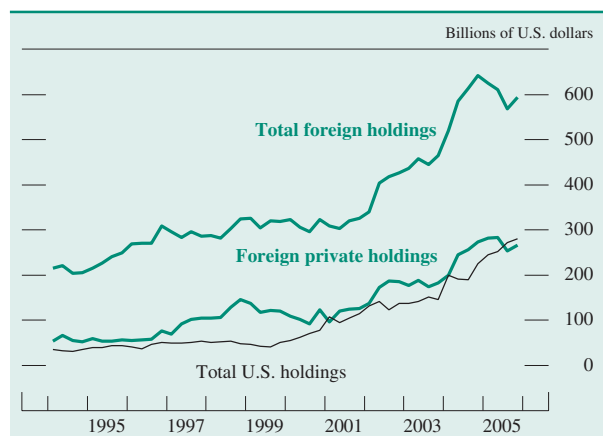
3. U.S. debt securities issued by all other institutions, primarily corporate issuers.

n.a. Not available.

SOURCE: U.S. Department of the Treasury, *Report on Foreign Portfolio Holdings of U.S. Securities*, various dates.

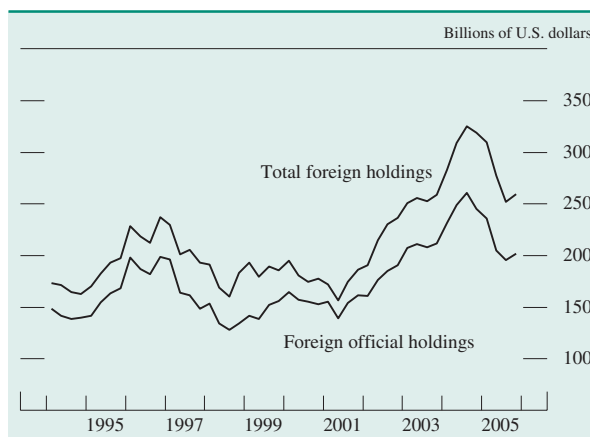
the total outstanding, holdings are greatest in Treasuries: More than half of all marketable Treasury securities held by the public are foreign owned. In terms of market value, the level of foreign holdings of U.S. long-term securities increased from \$67 billion as of year-end 1974 to \$6.3 trillion as of June 2005.

2. Total foreign and foreign private holdings of U.S. short-term debt securities, and total U.S. holdings of foreign short-term debt securities, 1994–2005



SOURCE: Treasury International Capital reporting system.

3. Total foreign holdings and foreign official holdings of U.S. short-term Treasury securities, 1994–2005



SOURCE: Treasury International Capital reporting system.

A similar relationship holds for relative sizes of foreign and U.S. holdings of short-term securities, although the magnitude of these holdings is considerably smaller. Total foreign holdings of U.S. short-term debt securities are more than twice as large as U.S. holdings of foreign short-term debt securities, in large part because of the sizable holdings of foreign official institutions (figure 2). The importance of holdings by foreign official institutions is especially striking for short-term Treasury securities (figure 3). As shown in the figure, foreign official holdings account for more than three-fourths of short-term Treasury securities held by foreigners.

### THE TIC REPORTING SYSTEM

The data that underlie these estimates of U.S. cross-border financial activity are collected by the Treasury International Capital (TIC) reporting system.<sup>1</sup> This system is more comprehensive than many users realize. Users often assume that the TIC system collects only monthly data on cross-border transactions in long-term securities. Although these data receive considerable attention in the financial press, they constitute only a small part of the TIC system.

Besides the transactions data, which cover only long-term securities (that is, securities with an original maturity of more than one year), the TIC system includes monthly and quarterly cross-border data (including holdings of short-term securities) reported

1. TIC data are published on the Treasury Department's website at [www.treas.gov/tic/](http://www.treas.gov/tic/). The website includes past and present data, articles about the TIC system, TIC forms and instructions, related non-TIC websites, and TIC contact information.

by banks and broker-dealers; periodic (now annual) in-depth surveys of cross-border holdings of both long- and short-term securities; and quarterly position data reported by nonbank respondents such as commercial concerns, exporters and importers, and other financial institutions. In 2005, the TIC system also began to collect data on cross-border derivatives positions.<sup>2</sup>

### *Transactions in Long-Term Securities*

Information on cross-border transactions in U.S. and foreign long-term securities is collected monthly on the TIC S form. Data are collected by country, at market value, and are published with a forty-five-day lag. The primary respondents for these transactions data are U.S.-resident brokers and dealers, although some end investors and security issuers also report on the TIC S.

For U.S. securities, data are collected separately for four types of securities: equity, U.S. Treasury debt, U.S. government agency debt, and debt issued by all other institutions (primarily corporate issuers). For foreign securities, only two security types, equity and long-term debt, are separately measured. Information on foreign official purchases of U.S. securities is also collected separately from information on purchases by other foreigners.

For analytical purposes, the sales of each type of security are usually subtracted from gross purchases to measure net transactions. The S form follows international reporting conventions for measuring the balance of payments: It reports foreign net purchases of U.S. long-term securities with a positive sign because they are a source of capital inflow to the United States, and it reports U.S. net purchases of foreign long-term securities with a negative sign because they are a source of capital outflow from the United States.<sup>3</sup>

2. For all monthly and quarterly TIC forms, reporting is required by law as long as the reporter has cross-border activity above the exemption level set for that form.

3. The TIC S form reports all data from the perspective of the foreign resident involved in the cross-border transaction. Thus, when a U.S. investor purchases a foreign security, the transaction is reported as a foreign sale of a foreign security. Likewise, when a U.S. investor sells a foreign security, the transaction is recorded as a foreign purchase of a foreign security. Therefore, net foreign *sales* of foreign securities are equivalent to net U.S. *purchases* of foreign securities. The data on transactions in foreign securities are also reported in this way in the TIC system's online files of gross purchases and gross sales.

### *Holdings of Short-Term Securities*

Selected data on cross-border holdings of short-term securities are collected monthly or quarterly, but these data may be less well known than the data on transactions in long-term securities because they are reported and released with the banking data collected on the TIC B forms. The B data include foreign holdings of U.S. short-term securities—such as U.S. Treasury bills and certificates, U.S. government agency securities, commercial paper, and negotiable certificates of deposit (collected in the banking liabilities data)—as well as U.S. holdings of similar types of foreign short-term securities (collected in the banking claims data). The primary respondents for these position data are U.S.-resident custodians that report their holdings on behalf of their customers.

Like the S data on long-term securities transactions, the B data on short-term securities holdings are collected by country and by broad class of security type, such as U.S. Treasury securities; these data are also reported by major foreign counterparties, including foreign official institutions, foreign banks, and other private foreigners. The short-term securities data are reported at face value; data on U.S.-dollar-denominated and foreign-currency-denominated securities are reported separately. Because the short-term securities data are reported as positions, net transactions in these securities must be calculated as the change in position from one period to another. The S forms and the B forms provide much less detail than do the periodic surveys, which are discussed in the next section. Nevertheless, because the data are released about forty-five days after the end of a given month, they offer a timely and fairly comprehensive measure of cross-border securities flows.

### *Annual Surveys of Holdings of Long- and Short-Term Securities*

More-comprehensive data on the level of both foreign holdings of U.S. securities (U.S. liabilities) and U.S. holdings of foreign securities (U.S. assets) are measured in the annual surveys. As noted earlier, the surveys now collect data on both long- and short-term securities.<sup>4</sup> Whereas in other parts of the TIC system the respondents report data in aggregate by country and by broad instrument type, respondents to

4. The annual surveys collected data on only long-term securities until the December 2001 survey of U.S. holdings of foreign securities. Data on foreign holdings of U.S. short-term securities were first collected in the June 2002 survey.



the surveys report information on cross-border holdings on a security-by-security basis.

Collecting data on holdings of individual securities allows for much more detailed data reporting and significantly improves survey accuracy, but it also requires the processing of a large number of records (more than 500,000 for the asset surveys and almost 2.8 million for the liabilities surveys). The surveys thus take much longer to complete than do other reports for the TIC system: Preliminary results are usually available after nine months and final data after twelve months. However, the greater detail in the data collected permits the surveys to produce information that is otherwise unavailable, such as currency composition, maturity structure, industry sector, both face and market value of holdings, and the specific securities held. Liabilities surveys measure positions as of June 30, and asset surveys measure them as of December 31.<sup>5</sup>

### *Banking and Nonfinancial Corporate Data*

Besides data on holdings of short-term securities, the B forms collect data on cross-border positions in the form of deposits, loans, brokerage balances, and repurchase agreements. Although these data are commonly referred to as the TIC “banking” data, they include positions reported by entities other than banks, such as other depository institutions, bank and financial holding companies, and securities brokers and dealers.

Cross-border positions of “nonbanks” (including entities such as exporters and importers, industrial firms, insurance companies, and pension funds) are collected quarterly, by country, on the TIC C forms. The C forms distinguish between “financial” claims and liabilities (such as deposits, short-term securities, and loans) and “commercial” claims and liabilities (such as accounts receivable or payable arising from import or export activities). Compared with the data reported on the B forms, the C data report much smaller cross-border positions. As of year-end 2004, total bank-reported claims and liabilities (excluding short-term securities) were about \$2 trillion and \$2.4 trillion respectively. In contrast, the corresponding amounts for nonbanks were only about \$200 billion and \$100 billion. In part, these smaller reported positions illustrate the difficulty of collecting accu-

rate cross-border data from a diverse and evolving set of participants.<sup>6</sup>

### *USE OF TIC DATA IN THE BALANCE OF PAYMENTS AND FLOW OF FUNDS ACCOUNTS*

The most comprehensive measures of cross-border financial flows and positions are those that the Bureau of Economic Analysis (BEA) reports in the quarterly balance of payments accounts and in the annual net international investment position.<sup>7</sup> The portfolio statistics in these international accounts are based on the monthly and quarterly TIC securities data and on the annual surveys. However, the balance of payments accounts also include flows and positions calculated from the remaining TIC bank- and nonbank-reported data, as well as information on direct investment collected and compiled by the BEA.

The TIC data are also used as inputs in the estimates for the “rest of the world” sector, included in the flow of funds accounts compiled by the Board of Governors of the Federal Reserve System. In most estimates of financial flows and holdings for that sector, the flow of funds accounts incorporate the BEA’s official balance of payments statistics, and thus the flow of funds statistics are based only indirectly on the TIC data. However, if the balance of payments statistics are not yet available, the estimates for the rest of the world in the preliminary release of the flow of funds accounts for a given quarter are derived directly from the TIC data.<sup>8</sup>

### *ISSUES IN THE COLLECTION AND INTERPRETATION OF THE TIC SECURITIES DATA*

While recognizing that the TIC system covers a variety of cross-border financial transactions, we will focus in the remainder of this article on interpreting the TIC data on securities—that is, the monthly trans-

5. The dates of the surveys are staggered primarily to reduce the year-end reporting burden on the institutions that report the survey data.

6. This problem affects cross-border data collection not only in the United States but also in other countries. For example, an International Monetary Fund conference on capital flow and debt statistics pointed to a general difficulty in obtaining accurate and timely information on the cross-border activity of nonbank commercial concerns. Refer to the conference summary, note 13, at [www.imf.org/external/pubs/ft/seminar/2000/capflows/summary.htm](http://www.imf.org/external/pubs/ft/seminar/2000/capflows/summary.htm).

7. The BEA’s data on international accounts, including the balance of payments accounts and the international investment position, are published in the Survey of Current Business and at the BEA’s website ([www.bea.gov/bea/di1.htm](http://www.bea.gov/bea/di1.htm)).

8. The flow of funds accounts are published at [www.federalreserve.gov/releases/z1/current/default.htm](http://www.federalreserve.gov/releases/z1/current/default.htm).



actions data on long-term securities, the monthly position data on short-term securities, and the annual survey data. The following sections discuss topics related to the design and accuracy of the TIC system that should be understood for proper interpretation of these data. But because cross-border financial inflows can come through various means, including through the banking system and through direct investment, it is important to view the cross-border securities data in this broader context.

### *Country Attribution*

The collection of accurate country-level data on cross-border financial activity ranges from straightforward to virtually impossible, depending on the type of data to be collected and the method of collection.

The country attribution of the portfolio asset surveys should be extremely accurate. The annual position surveys, by design, attempt to collect information by country of issuer for foreign securities and by country of foreign owner for U.S. securities. And because the surveys collect data at the level of individual securities, precisely identifying each security issuer's country of residence—from information supplied by survey reporters as well as from commercial data sources—is a relatively straightforward task.

In the liabilities surveys, however, the involvement of chains of intermediaries in the custody or management of securities frequently makes accurate identification of the actual owners of U.S. securities impossible. For example, a resident of Italy may buy a U.S. security and entrust it to a custodian bank in Switzerland. The Swiss bank, in turn, will typically employ the services of a U.S.-resident custodian to facilitate settlement and custody operations. When surveys are conducted, information is collected only from U.S.-resident entities. Thus, the U.S.-resident bank, acting as the subcustodian of the Swiss bank, will report this security on the survey. Because the U.S. bank will typically know only that it is holding the security on behalf of a Swiss bank, it will report the security as Swiss held. This practice tends to create a “custodial bias” in the liabilities surveys by attributing excessively large holdings to countries that are major custodial, investment management, or security depository centers, such as Belgium, the Cayman Islands, Luxembourg, and Switzerland. An additional problem is caused by bearer, or unregistered, securities. Because no information is typically available on the ownership of these securities, they are listed on the surveys as “country unknown.” In the June 2005

survey, foreign holdings attributed to that category amounted to almost \$200 billion.

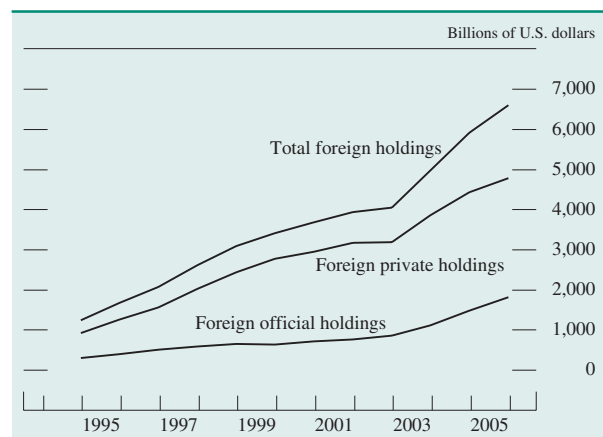
Another problem of country attribution occurs in the reporting of monthly transactions data. The monthly transactions data, by design, record purchases and sales against the country from which transactions are made, which is not necessarily the country of the ultimate purchaser or actual seller (in the case of foreign transactions in U.S. securities) or the country of issuance (in the case of U.S. transactions in foreign securities). This reporting convention means that if, for example, a resident of Germany buys a U.S. Treasury bond and the transaction is booked through a London broker, the TIC S data will show a net purchase of a Treasury bond recorded against the United Kingdom, not Germany. Likewise, if a U.S. investor purchases French equity from a dealer in Switzerland, the TIC S data will report a U.S. net purchase of foreign equity from Switzerland. As transactions tend to be concentrated in major international financial centers, such as the United Kingdom and the Cayman Islands, the monthly data show a significant financial center “transactions bias” that often gives an inaccurate picture of the nationality of the actual foreign buyers and sellers.

### *Foreign Official Institutions*

Data on foreign ownership of U.S. securities are divided into holdings of foreign official institutions and holdings of foreign private investors. Contrary to the assumptions of many data users, the holdings of foreign official institutions as reported in the TIC system consist of more than the foreign reserve asset holdings of central banks and of other foreign government institutions involved in the formulation of international monetary policy. They also include the holdings of foreign government-sponsored investment funds and other foreign government institutions, and thus they may differ from data on reserve asset holdings found elsewhere.

The distinction between foreign official and other foreign investors is made because the motivations of official investors for holding U.S. securities may differ from those of private investors. The rapid buildup in U.S. liabilities since 2001 is due in part to the substantial acquisition by foreign official institutions of U.S. long-term securities, especially long-term U.S. Treasury and U.S. government agency securities. By year-end 2005, foreign official institutions are estimated to have held approximately \$1.8 trillion of the total \$6.7 trillion in U.S. long-term securities held by all foreign investors (figure 4).

#### 4. Total foreign, foreign private, and foreign official holdings of U.S. long-term securities, 1994–2005



SOURCE: Treasury International Capital reporting system and staff estimates.

Accurately distinguishing official from private holders, however, is difficult for the same reasons that obtaining accurate information on the country of foreign owners of U.S. securities is difficult. Chains of intermediaries can obscure not only the country but also the type of foreign holder. Thus, foreign official holdings are almost certainly undercounted in the TIC data, though the degree of undercount is less in the annual surveys than in the monthly transactions data. The undercount in the transactions data is evident when the results of a new annual survey become available: Frequently, measured official holdings in the new survey exceed those derived from summing the monthly transactions since the previous survey (table 2).

To understand how foreign official acquisitions of U.S. securities may be undercounted, consider the following example. Suppose a foreign official institution acquires a U.S. security, such as a U.S. Treasury bond, from a private foreign entity on a foreign securities exchange and then has the security moved to the United States to be held in custody at the Federal Reserve Bank of New York. In this case, the surveys will report increased holdings of Treasury securities by foreign official institutions, but no corresponding foreign official purchase will be recorded on the TIC S because the acquisition by the foreign official institution from another foreigner is not a U.S. cross-border transaction; rather, it is a foreign-to-foreign transaction. Note, however, that when the private foreigner first acquired the Treasury security, a U.S. cross-border transaction should have been reported in the TIC system. But it would not have been recorded as a foreign official purchase, nor would it necessarily have been recorded in the same

#### 2. Market value of foreign official holdings of U.S. long-term Treasury bonds: Comparison of survey results with estimated values, for survey dates, 2000–05

Billions of dollars

Month and year	Survey <sup>1</sup>	Estimate <sup>2</sup>
Mar. 2000 .....	492	436
June 2002 .....	561	454
June 2003 .....	653	605
June 2004 .....	923	846
June 2005 .....	1,073	1,028

NOTE: Foreign official holdings consist of foreign reserve asset holdings, holdings of foreign government-sponsored investment funds, and holdings of foreign government institutions not involved in the formulation of international monetary policy.

1. Surveys of foreign holdings of U.S. securities (liabilities).

2. Result of adding monthly transactions at market value to the market value amounts measured by the most recent survey.

SOURCE: For survey results (except for June 2005), U.S. Department of the Treasury (2004), *Report on Foreign Portfolio Holdings of U.S. Securities*, June 30; result for June 2005 is from the preliminary release of the 2005 survey of foreign portfolio holdings of U.S. securities. For estimated values, Treasury International Capital reporting system, "Major Foreign Holders of Treasury Securities" (table), [www.treas.gov/tic/mfh.txt](http://www.treas.gov/tic/mfh.txt).

calendar month or against the same country as was the movement into U.S. custody.<sup>9</sup>

#### Effects of Exchange Rate Changes and Other Valuation Adjustments

Although many users of the TIC data assume that foreign securities held by U.S. investors are exclusively denominated in foreign currencies and that U.S. securities held by foreign investors are exclusively denominated in U.S. dollars, such is not the case. According to the most recent data available (for 2004), 74 percent of the \$1.2 trillion in U.S. holdings of foreign debt securities were denominated in U.S. dollars, whereas 12 percent of the \$4.1 trillion in foreign holdings of U.S. debt securities were denominated in foreign currencies.<sup>10</sup>

Accounting correctly for the currency denominations of U.S. holdings of foreign securities and of foreign holdings of U.S. securities allows for more-accurate measurement of valuation changes resulting from exchange rate fluctuations. In any given year, the effects of such fluctuations can be larger than total net securities flows during the year. For example, given the level of cross-border holdings of both

9. For more information, including a comparison of TIC data on foreign official holdings of Treasury and agency securities with Federal Reserve data on such securities held in custody at the Federal Reserve Bank of New York for official accounts, refer to "Frequently Asked Questions (FAQs) regarding the TIC System and TIC data," FAQ 10, [www.treas.gov/tic/faq1.html](http://www.treas.gov/tic/faq1.html).

10. For the currency denominations of U.S. holdings of foreign securities, refer to [www.treas.gov/tic/shc2004r.pdf](http://www.treas.gov/tic/shc2004r.pdf), p. 11; for the currency denominations of foreign holdings of U.S. securities, refer to [www.treas.gov/tic/sh12004r.pdf](http://www.treas.gov/tic/sh12004r.pdf), p. 117.

equity and debt securities at the end of 2004, a 10 percent appreciation in the value of the U.S. dollar would have resulted in a net loss of \$250 billion to the U.S. balance sheet, as it would have decreased the value of U.S. holdings of foreign securities (U.S. assets) denominated in foreign currencies approximately \$300 billion while decreasing the value of foreign holdings of U.S. securities (U.S. liabilities) only about \$50 billion (because most U.S. securities are U.S.-dollar-denominated and thus unaffected).<sup>11</sup> Other asset price changes, such as changes in the value of U.S. or foreign equities, can also have sizable effects on the value of securities holdings.

### *Asset-Backed and Zero-Coupon Securities*

When estimating the value of cross-border securities holdings, analysts should take into account more than the measured levels of holdings, the measured levels of transactions, and fluctuations in prices and exchange rates. The reason is that some securities—namely, asset-backed and zero-coupon securities—gain or lose value over time even if there are no cross-border transactions and prices and exchange rates remain stable.

Because many asset-backed securities repay principal on a regular basis, they decrease in value over time. These principal repayment flows are not recorded by the TIC S monthly transactions system, but the effects of these principal repayments on the value of asset-backed holdings are measured by the annual position surveys. Asset-backed securities account for a growing share of foreign holdings of U.S. government agency debt and U.S. corporate debt: As of June 30, 2002, asset-backed securities represented 25 percent of foreign holdings of U.S. agency securities and 15 percent of foreign holdings of corporate debt securities. By June 30, 2005, these proportions had increased to 33 percent and 26 per-

cent respectively, bringing the corresponding market values of such holdings to \$259 billion and \$458 billion. Estimates of the repayment flows associated with foreign holdings of asset-backed securities are published on the TIC website.<sup>12</sup> These repayment flows can be sizable: For 2005, they are estimated to have reduced foreign holdings of U.S. agency bonds by \$48 billion and such holdings of corporate bonds by \$38 billion. U.S. holdings of foreign asset-backed securities are still relatively small but have been increasing.

Unlike asset-backed securities, which gradually decline in value, zero-coupon securities gain value over time as they accumulate implicit interest payments. Again, these increases in value will not be captured by the monthly transactions system but will be measured by the annual surveys. Cross-border holdings of zero-coupon securities are much smaller than such holdings of asset-backed securities. According to the asset and liabilities surveys conducted in 2004, foreign investors held zero-coupon U.S. securities with a market value of \$20 billion and a face value at maturity of \$30 billion. The corresponding figures for U.S. investors' holdings of zero-coupon foreign securities were \$10 billion and \$16 billion respectively.

### *Offshore Financial Centers*

An institution is considered to be resident in the country in which it is incorporated or otherwise legally created. In many cases, residency and the center of economic activity coincide. But when they differ, problems of data interpretation arise. For example, companies frequently create corporations and “special-purpose vehicles” (SPVs) in so-called offshore financial centers to take advantage of the tax or regulatory benefits that these countries offer.<sup>13</sup> When these entities issue securities, the issues will be

11. The effect of a 10 percent appreciation in the U.S. dollar will be perceived differently depending on whether these holdings are viewed as U.S. liabilities (the U.S. perspective) or as foreign assets (the foreign perspective). For example, assume that foreign residents own \$100 in U.S. securities, 80 percent of which are denominated in U.S. dollars and 20 percent of which are denominated in a foreign currency. Further, assume that the U.S. dollar appreciates 10 percent with respect to this foreign currency. From the U.S. perspective, the appreciation will have the effect of reducing the value of U.S. liabilities 2 percent (the 80 percent denominated in U.S. dollars is unaffected; the 20 percent denominated in the foreign currency decreases in value 10 percent; the total effect is a 2 percent reduction in value). From the foreign perspective, however, the value of foreign assets has increased 8 percent (the 20 percent denominated in foreign currency is unaffected; the 80 percent denominated in U.S. dollars increases in value 10 percent; the total effect is an 8 percent increase in value).

12. Estimates of monthly asset-backed repayment flows since June 2002 are available at [www.treas.gov/tic/absprin.html](http://www.treas.gov/tic/absprin.html).

13. A special-purpose vehicle is a legal entity created in an offshore financial center (OFC) to engage in financial activities in a low-tax environment. An onshore corporation establishes an SPV in an offshore center to engage in a specific activity, such as the issuance of asset-backed securities. The onshore corporation may assign a set of assets to the offshore SPV (for example, a portfolio of mortgages, loans, or credit card receivables). The SPV then offers to investors a variety of securities based on the underlying assets. The SPV, and hence the onshore parent, benefit from the favorable tax treatment in the OFC. Financial institutions also use SPVs to take advantage of less-restrictive regulations on their activities. Banks, in particular, use them to raise Tier I capital in the lower tax environments of OFCs. And nonbank financial institutions create them to take advantage of more-liberal netting rules than those faced in home countries—rules that enable such institutions to reduce their capital requirements.

attributed to the country of the offshore financial center rather than to the country of the onshore parent corporation, even though the onshore parent corporation may be understood to be the ultimate obligor. Further, some companies have reincorporated from their country of origin to offshore financial centers for tax purposes. Although the reincorporation probably has little or no effect on their locus of activity, securities issued by these companies will now be attributed to the country of reincorporation.

U.S. holdings of securities issued in offshore financial centers, especially those in the Caribbean, pose a challenge to measuring and interpreting U.S. investors' portfolios. Equity issued in offshore centers, in large part reflecting the equity of reincorporated multinationals and other entities controlled by onshore corporations, accounts for a growing percentage of the U.S. portfolio of foreign assets: In 1997, U.S. holdings of equity issued by Caribbean offshore financial centers (Bahamas, Bermuda, British Virgin Islands, Cayman Islands, Netherlands Antilles, and Panama) amounted to \$48 billion, or roughly 4 percent of all foreign equity held by U.S. investors. By the end of 2004, these amounts had grown to \$277 billion, or nearly 11 percent of all foreign equity held.

The growing share of these holdings in U.S. investors' foreign equity portfolios affects the degree to which their portfolios are exposed to exchange rate risk. An increase in the share of foreign equity in an investor's portfolio usually raises foreign currency exposure. Equity issued through offshore financial centers, however, is typically either dollar denominated or denominated in currencies pegged to the dollar, and so it carries a different exchange rate exposure. Although foreign equity still represents a fairly small share of the total equity portfolio held by U.S. investors, the share has grown in recent years, from about 9 percent in 1997 to about 14 percent in 2004. But the increase in foreign currency exposure of U.S. equity portfolios has been more modest, as more than 1 percentage point of that 5 percentage point increase has been attributable to the acquisition of equity issued in Caribbean offshore centers.

Holdings of long-term debt issued in offshore financial centers present a different challenge. Here U.S. holdings consist largely of debt securities issued through SPVs, especially those established in the Cayman Islands. Such holdings of Cayman Island debt by U.S. investors amounted to about 2 percent of U.S. investors' holdings of foreign bonds in 1997 but had grown to nearly 12 percent by 2004. Partly because of the growth of both asset-backed and conventional debt issued through offshore financial cen-

ters and held by U.S. investors, the U.S.-dollar-denominated share of foreign long-term debt has increased in recent years, from 60 percent in 1997 to 72 percent by the end of 2004.

The increase in U.S. holdings of equity and debt issued by offshore centers raises questions about the interpretation of such securities in the U.S. portfolio. Although these securities fit the definition of foreign securities, U.S. investors may not regard them as such, as they trade in U.S. dollars on U.S. exchanges and are often issued by firms that conduct their market activity largely in the United States and otherwise behave like U.S. firms. Likewise, when foreign investors acquire such securities, they may consider them equivalent to U.S. securities.

On the U.S. liabilities side, the acquisition of U.S. securities by entities in offshore financial centers—especially those in the Caribbean—poses additional obstacles to interpreting cross-border financial activity. Such activity partly reflects the importance of these Caribbean countries as international financial centers, and purchases and sales recorded against these regions typically represent the first leg of a series of international transactions. It may also reflect the buying and selling of securities by the numerous investment funds that have been established in such offshore locations. Moreover, because many financial institutions have affiliated banking and nonbanking offices in these offshore locations, analyzing securities transactions through these centers can be difficult without knowing whether offsetting transactions are occurring through other parts of the financial accounts. For example, net financial outflows in the form of net sales of U.S. securities through financial centers may be offset by equally sizable net inflows reported in the TIC banking data from the same financial centers.

Caribbean financial centers are an increasingly important location for cross-border transactions in U.S. securities: Gross trading in long-term U.S. securities through these centers has grown from less than 10 percent of total cross-border trades in the first half of the 1990s to nearly 30 percent in the past five years. Net transactions through Caribbean financial centers can also be quite volatile, as they may record large foreign net purchases of long-term securities one month and large foreign net sales the next.

### *Repurchase and Securities-Lending Agreements*

Repurchase agreements, or repos, are arrangements whereby the owner of a security sells it for cash and agrees to repurchase it at a future time (or under



other specified conditions) at an agreed-upon price. Although some market participants engage in repo transactions to gain control of certain securities, repos are often structured as cash loans for traders who use the cash received in the repo transaction as a low-cost loan to fund their securities purchases, whereas the lenders receive the securities as collateral against borrower default. The securities typically used as collateral are U.S. Treasury securities and, to a lesser extent, U.S. government agency and corporate debt securities.

Securities-lending agreements are similar to repurchase agreements in that the owner transfers title of the securities to a borrower who agrees to return a like quantity of the same or similar securities at a future date or under other agreed-upon conditions. Again, the borrower provides collateral, but unlike in the case of repos, for which securities are used as collateral, the collateral for securities-lending agreements can be cash, other securities, or bank-issued letters of credit. Many market participants engage in securities-lending transactions to obtain securities needed to meet delivery obligations; for example, brokers may need to cover a failed trade, or investors may want to create a “short” position.<sup>14</sup> Both equity and debt securities are involved in securities-lending arrangements.

Repurchase and securities-lending agreements pose a problem for the TIC system. Although both arrangements involve the outright sale of securities, the TIC system does not treat them as such. Instead, it treats them as collateralized loans, as the return of the same or similar securities at a set price is agreed upon in advance and thus the economic risk of holding the securities continues to reside with the securities lender (the economic owner) even while the lender does not own the securities. Repurchase and securities-lending agreements are not recorded as purchases or sales of securities in the monthly transactions data. Instead, funds loaned to or borrowed from foreigners under such agreements are reported on the TIC B forms. For the benchmark surveys, lenders (or their custodians) are instructed to report the securities as continuously held, and borrowers (or their custodians) are instructed not to count them as holdings.

As a result of treating securities-lending agreements as collateralized loans, the TIC system may

report larger foreign ownership of U.S. securities than it would if these agreements were recorded as outright sales, since there is both an economic owner and a legal owner of the same security. Although TIC instructions specify that only the economic owner should be reported, TIC-reporting entities may lack sufficient information to follow these instructions properly. Further, the legal owner has the right to resell a borrowed security, and the subsequent buyer or the institution reporting on behalf of the buyer may have no knowledge that the security was originally borrowed. This situation can result in two different foreign residents being reported on a liabilities survey as holding the same U.S. security, or it can result in the same U.S. security being reported as having been purchased twice by foreign residents with no intervening sale.

### *Comprehensiveness of the Data*

In general, the data on U.S. liabilities are considered to be reasonably comprehensive, as debt instruments tend to be issued by and bought or sold through large institutions that can be fairly readily identified and included in the data reporting network. U.S. foreign assets held by or through large U.S. institutions should also be well recorded. However, for smaller U.S. investors, directly purchasing foreign securities abroad without using the services of a large, U.S.-resident institution is increasingly easy. Such acquisitions will not be captured in the U.S. recording system but will most likely be recorded as liabilities by the counterparty country’s measurement system. Because all countries face this problem, cross-border assets are probably undercounted worldwide.

### *Stock Swaps*

An additional problem is that the TIC S data fail to capture U.S. acquisitions of foreign stock and foreign acquisitions of U.S. stock that arise from stock swaps associated with corporate mergers or takeovers. When a foreign company acquires a U.S. company and the deal is financed in part through a stock swap, U.S. residents who held stock in the target company become holders of foreign equity. Likewise, if a U.S. company acquires a foreign company, a stock swap can increase foreign holdings of U.S. equity. Although missing from the TIC S data, stock swaps are reported in the BEA’s quarterly balance of payments statistics, and monthly estimates of swaps

14. A short sale is the sale of a security not owned. Securities are borrowed—typically from a brokerage firm—and then sold in the hope that the price of the security will fall. If the price drops, the security can then be bought at the lower price and returned to the lender at a profit. Conversely, if the price of the security rises, a loss is incurred.

based on these statistics are provided on the TIC website.<sup>15</sup>

Although merger activity has tapered off in recent years, stock swaps previously were an important source of financing such activity. For example, in 2000, U.S. residents acquired \$13 billion in foreign equity through net purchases but \$80 billion through stock swaps associated with foreign acquisitions of U.S. companies.

### Adjustments to the Transactions Data

We have raised a number of caveats that users should be aware of when using the TIC securities data. However, users can take some straightforward steps that will help them use the published data more effectively. Users can obtain more-comprehensive estimates of cross-border securities flows by incorporating the estimates described earlier for principal repayment flows of asset-backed securities and for stock swaps. Combining flows of short-term securities with the transactions data on long-term securities can also improve coverage. In addition, users should be aware of the problem of financial center transactions bias when attributing securities flows to individual countries. Because survey data on securities holdings are believed to be more accurate than the higher-frequency transactions data, combining the two sources can substantially improve one's understanding of both the magnitude and the country attribution of cross-border securities holdings. We explore these ideas in greater detail in the following sections.

### ESTIMATING POSITIONS BY COUNTRY BETWEEN SURVEYS

Although the annual surveys give comprehensive measures of holdings by country at a point in time, analysts often wish to have a time series of holdings by country, as well as more-current measures of holdings. For short-term securities, the data from the TIC B forms provide reasonably comprehensive measures of current holdings. For long-term securities, however, estimates must be constructed.

This section describes the construction of monthly estimates of asset and liabilities positions that are

15. Data from Security Data Corporation on the financing of corporate mergers and takeovers are used to distribute the quarterly statistics of stock swaps by month. Monthly estimates from January 2000 through recent months are available at [www.treas.gov/tic/swapstk.html](http://www.treas.gov/tic/swapstk.html).

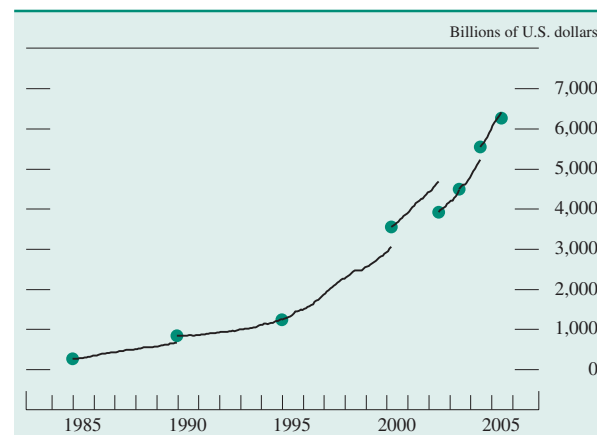
consistent with the survey positions taken at annual—or, as in the past, at less frequent—intervals. The procedure is based on that described in a recent *Federal Reserve Bulletin* article and extended in a related research paper by Thomas, Warnock, and Wongswan (2004), although the numerical computation procedure has been simplified from that presented in the paper.<sup>16</sup>

### Basic Position Estimate

We begin with an illustration of the basic situation for total U.S. long-term securities held by foreigners (figure 5). In the figure, the dots show the actual survey values for total foreign holdings of U.S. long-term securities. Note that the length of time between surveys varies from one to five years. The black lines show “naïve” position estimates obtained by summing monthly net transactions from the date of the previous survey. (As discussed above, we have reduced the naiveté of the estimates by adjusting the net transactions for principal repayment flows of asset-backed securities and for stock swaps.)

16. Refer to William L. Grier, Gary A. Lee, and Francis E. Warnock (2001), “The U.S. System for Measuring Cross-Border Investment in Securities: A Primer with a Discussion of Recent Developments,” *Federal Reserve Bulletin*, vol. 87 (October), pp. 633–50, [www.federalreserve.gov/pubs/bulletin/2001/1001lead.pdf](http://www.federalreserve.gov/pubs/bulletin/2001/1001lead.pdf); and Charles P. Thomas, Francis E. Warnock, and Jon Wongswan, “The Performance of International Portfolios,” International Finance Discussion Papers Series 2004-817 (Washington: Board of Governors of the Federal Reserve System, October), [www.federalreserve.gov/pubs/ifdp/2004/817/default.htm](http://www.federalreserve.gov/pubs/ifdp/2004/817/default.htm).

#### 5. Foreign holdings of U.S. long-term securities: Comparison of survey values with monthly position estimates, 1984–2005



NOTE: Dots represent positions reported in liabilities surveys. Lines represent monthly position estimates obtained by adding net transactions to the position of the previous survey.



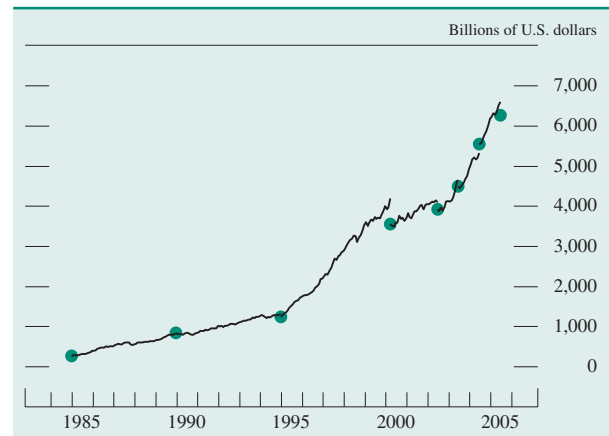
The figure shows eight survey values. For the last seven of these, we can compare the survey result with the naive estimate made starting from the previous survey. In two years (2000 and 2002), a very substantial “gap” separates the estimate and the actual survey result, whereas in 1989 and 2004, a much smaller gap exists, and in 1994, 2003, and 2005, virtually no gap exists at all. (In 1984, of course, no gap is defined, as this year is the starting point for our analysis because of a lack of usable earlier data.)

### Adjustment for Valuation Change

One way of improving the monthly position estimates is to include an estimate of the valuation change from one month to the next. Starting from the previous survey, one can apply the change in relevant securities price indexes to the previous position to obtain an estimate of the capital gain or loss from month to month. For foreign holdings of U.S. long-term securities, the composition of the security portfolio being held (for example, long-term U.S. Treasury bonds) is known, and obtaining an appropriate price index for evaluating changes in Treasury bond prices is fairly easy. In contrast, U.S. holdings of foreign securities comprise securities issued by many different countries, greatly compounding the valuation estimation problem. To estimate valuation changes for foreign securities, we use individual country equity or bond price indexes for most countries, taking into account the currency composition of U.S. holdings.<sup>17</sup> However, in some cases—for example, for pricing the holdings of securities issued by offshore financial centers—the best estimate will result from using information on the holdings of individual foreign securities derived from the U.S. asset survey data to construct a customized index, as no published index currently available is appropriate.

We present estimated monthly positions obtained by adding net transactions to the previous survey benchmark, adjusting the results for valuation changes (figure 6). In general, the gaps between the estimated positions and the following benchmark survey are smaller than in figure 5, though the large gap in 2000 now switches sign: Adjusting for valuation changes during the stock market boom in the late

### 6. Foreign holdings of U.S. long-term securities: Comparison of survey values with monthly position estimates adjusted for valuation changes, 1984–2005



NOTE: Dots represent positions reported in liabilities surveys. Lines represent monthly position estimates obtained by adding net transactions to the position of the previous survey and by adjusting the result for valuation changes.

1990s now leads to an overestimate of actual foreign holdings of U.S. securities. We also note that the adjustment for valuation changes introduces a degree of high-frequency variability into the estimated positions.

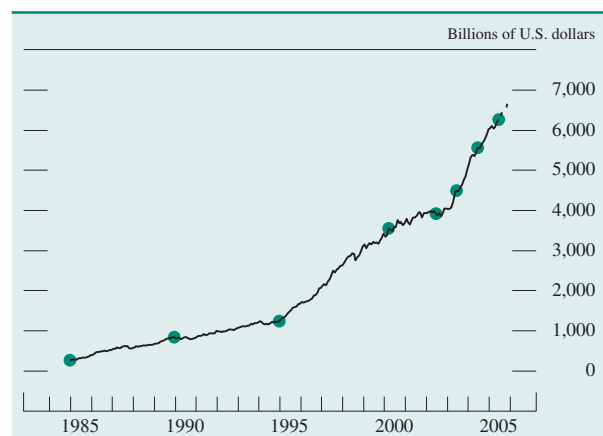
### Distribution of Gap Error

The survey gaps represent known information that can be used to estimate positions between surveys. Because we believe the surveys are more likely than the monthly position estimates to accurately measure securities positions, we assume that the sum of the net transactions, adjusted as described earlier, is in error by the amount of the gap. The gap represents errors and omissions in the monthly transactions data of current S-form reporters, as well as transactions conducted by entities that have not yet been identified as prospective reporters. In addition, the gap may be due to various measurement and approximation errors in constructing the prices used to calculate the valuation adjustment.

Of course, we lack knowledge of how the errors reflected in the overall gap error are distributed over time; we know only how large the gap is and that it accumulated over the period from the previous survey to the present. To proceed, we must make an assumption about the distribution of the gap over the intersurvey period. We assume, as did Thomas, Warnock, and Wongswan, that the gap is distributed in proportion to the volume of transactions in each

17. For holdings of bonds issued by most industrial countries, we use local currency bond indexes to estimate valuation changes. For debt issued by most emerging-market countries, we use J.P. Morgan's Emerging Markets Bond Index Plus (EMBI+) indexes, which track returns of debt denominated in external currencies. The EMBI+ indexes are appropriate because the majority of emerging-market debt held by U.S. investors is dollar denominated.

7. Foreign holdings of U.S. long-term securities:  
Comparison of survey values with monthly position  
estimates adjusted for valuation changes and gap error,  
1984–2005



NOTE: Dots represent positions reported in liabilities surveys. Lines represent monthly position estimates obtained by adding net transactions to the position of the previous survey and by adjusting the result for valuation changes. Gap error is distributed in proportion to the volume of monthly transactions; the distribution allows for the effect of price changes. Dashed line indicates forecast.

month over the period and that the distribution allows for the effect of price changes.

Applying this procedure generates an estimated monthly path for total foreign holdings of U.S. long-term securities (figure 7). Note that the gaps have been eliminated, as the line passes through all the dots, representing survey values. The line also appears to exhibit attenuated versions of the line variations in figure 6, illustrating that the estimation procedure preserves the variability introduced by valuation changes.

Note also that a dotted line extends beyond the last survey date. The extension represents an estimate of the future position based on observed transactions and prices and on a forecast of the survey gap. As discussed in the next section, the estimates for many countries seem to exhibit gaps that tend to be either consistently positive or consistently negative. Accordingly, we forecast the next future survey gap by using the simple average of the previous two actual gaps, scaled by nominal position and by time.<sup>18</sup>

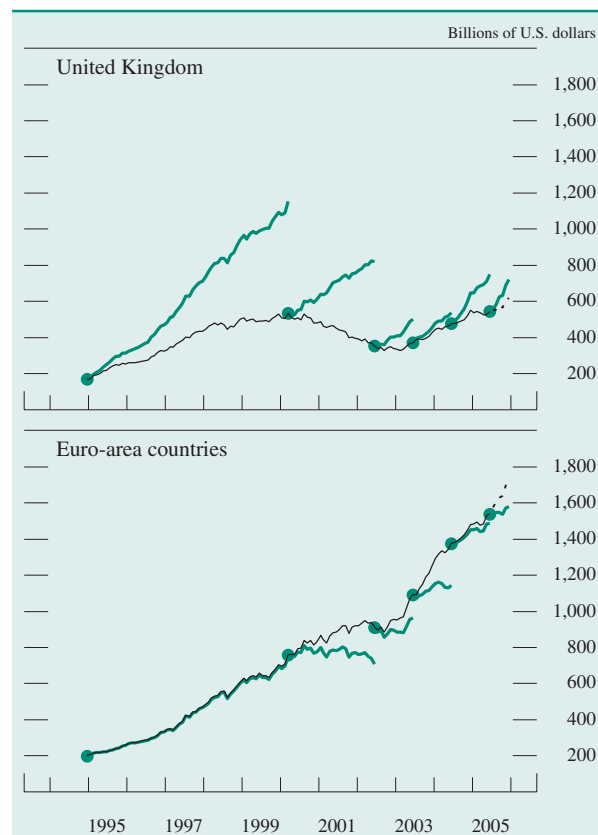
18. We first scale the gaps by nominal position (the actual survey value) to convert the nominal magnitude of the raw gaps to a units-free measure, allowing comparisons across countries and across surveys. We then scale the gaps by time (the number of months between surveys), recognizing that errors in measuring the true position are additive from month to month. Applying this second normalization significantly reduces the magnitude of the gaps in the early part of the sample.

*Estimated Positions Adjusted  
for Transactions Bias*

We present the same illustration (showing estimated monthly positions and forecast gaps) for U.S. securities held by investors in the United Kingdom and in euro-area countries (figure 8). Note that the gaps for the United Kingdom are consistently large and positive, an indication that the transactions-based monthly estimates consistently overstate the actual positions eventually reported in the surveys. In contrast, the gaps for the euro area are generally substantial and negative, a sign that the monthly estimates consistently understate the actual positions.

The explanation for this result is the transactions bias inherent in the monthly TIC S data reported for the United Kingdom: London is a major financial

8. Holdings of U.S. long-term securities by the United  
Kingdom and by euro-area countries: Comparison of  
survey values with adjusted monthly position  
estimates, 1994–2005



NOTE: Dots represent positions reported in liabilities surveys. In each panel, the line connecting all the dots represents monthly position estimates adjusted for valuation changes and gap error as described in the note to figure 7; the lines extending separately from the dots represent monthly position estimates adjusted only for valuation changes. Dashed lines indicate forecasts.

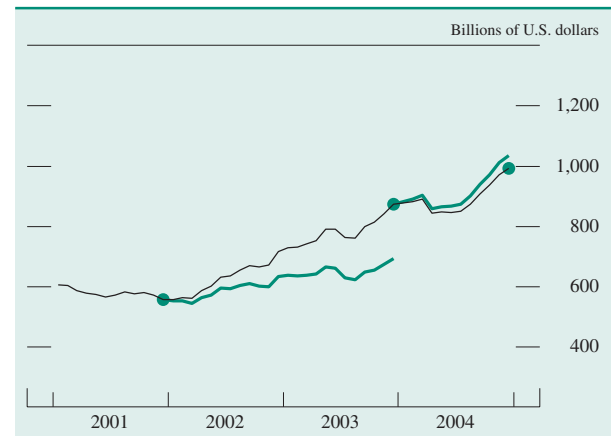
center, and financial intermediaries in London often buy U.S. securities on behalf of customers in other countries, many of whom are in the euro area. This pattern, which emerges quite clearly in the data, has significant implications for forecasting the positions of individual countries. As shown by the dotted black line in the first panel of figure 8, the projected U.K. position rises by about \$90 billion by year-end 2005, reflecting the typical historical pattern, but this increase is less than what we would estimate on the basis of flows and valuation adjustments alone (indicated by the line extending from the nearest dot). In contrast, the projection for the euro area indicates an increase in holdings of about \$200 billion, about \$130 billion more than would be implied by flows and valuation adjustments.

### *Applications of Position Estimates*

Besides providing between-survey and more-recent estimates of both foreign holdings of U.S. securities and U.S. holdings of foreign securities—by country and with an adjustment for transactions bias—our estimates can also help identify potential problems with the TIC data system and improve reporting. As a new survey becomes available, we can compare our estimates, constructed forward from the previous survey, with the reported values in the new survey. If the estimates are considerably different from what the survey indicates, the difference suggests that errors exist in the transactions data, the valuation changes applied over the intersurvey period, the survey results, or some combination of these factors.

The experience of the December 2003 survey of U.S. holdings of foreign securities illustrates how this approach can identify missed reporting and improve the TIC reporting system. Estimating forward from the December 2001 survey generates a value for U.S. holdings of about \$650 billion in foreign long-term debt as of December 2003—slightly higher than the roughly \$600 billion measured at the end of December 2001—which resulted from small reported net sales of foreign debt over the two-year period plus positive valuation changes (figure 9). That estimate was significantly lower than the figure reported in the December 2003 survey, which valued U.S. holdings of foreign long-term debt securities at nearly \$870 billion, about \$220 billion more than expected. An in-depth investigation of the securities reported in the survey showed that U.S. investors held a sizable amount of newly issued foreign debt. These findings suggested that an area of missed reporting most likely involved new issues of foreign securities in the

### 9. U.S. holdings of foreign long-term debt securities: Comparison of survey values with adjusted monthly position estimates, 2001–04



NOTE: Dots represent positions reported in asset surveys. The line connecting all the dots represents monthly position estimates adjusted for valuation changes and gap error as described in the note to figure 7; the lines extending separately from the dots represent monthly position estimates adjusted only for valuation changes.

United States, and indeed, further investigation of S-form reporters indicated reporting errors in this area. Although most respondents on the S form have not revised their reports for omissions in 2002 and 2003, S-form reporting appears to capture new issues of foreign bonds more completely for the data beginning in 2004. The results from the December 2004 survey have been encouraging: Measured U.S. holdings of foreign debt came in much closer to the estimated positions.

### *COMPARING U.S. LIABILITIES ESTIMATES WITH CPIS ASSET POSITIONS*

Although our estimated between-survey positions of foreign holders of U.S. securities are corrected for transactions bias, they still suffer from the custodial bias present in the liabilities surveys. However, we can perhaps gain a better understanding of the true owners of U.S. securities—and of the possible holders of U.S. bearer bonds—by comparing our liabilities positions with holdings of U.S. securities as reported by other countries in the Coordinated Portfolio Investment Surveys (CPIS), which are conducted annually under the auspices of the International Monetary Fund (IMF).<sup>19</sup> The CPIS asset surveys represent a commitment to collect and pub-

19. Because the CPIS asset surveys are conducted annually as of December 31, whereas the liabilities surveys are conducted annually as of June 30, we compare the CPIS measures with our between-survey estimates of holdings as of December 31.

lish comprehensive data on foreign portfolio security holdings. Approximately seventy countries participate in the CPIS, measuring and reporting, by country, their domestic investors' portfolio holdings of equity, long-term debt, and short-term debt; the U.S. asset survey is the United States' contribution to this cross-country effort.<sup>20</sup>

Because the individual country asset surveys in the CPIS are expected to be accurate in terms of country attribution, their estimates of holdings of U.S. securities will be free of custodial bias. The absence of such bias should permit the comparison of each CPIS country's reported holdings of U.S. equity and long-term debt with our reported liabilities data. But some complications attend this comparison. First, the amounts of U.S. securities reported in the CPIS surveys include only nonreserve holdings, and thus they will not be comparable to our liabilities measures, which include sizable foreign official holdings.<sup>21</sup> Second, the CPIS surveys will also suffer from the problem that asset surveys generally are not as comprehensive in terms of their coverage of holders within a country as are liabilities surveys. Finally, some countries that are major foreign holders of U.S. securities, as identified in the U.S. liabilities surveys, do not participate in the CPIS.<sup>22</sup>

### Foreign Holdings of U.S. Long-Term Debt Securities

Because official reserves are rarely held in the form of equity, the omission of reserve holdings from the CPIS surveys is more problematic for comparing holdings of U.S. debt securities than for comparing holdings of U.S. equities. Nonreserve holdings of U.S. long-term debt securities as measured by CPIS-reporting countries were \$1.2 trillion at year-end 2001 and had grown to more than \$2 trillion by year-end 2004 (table 3). Although we can distinguish official holdings from private holdings in the U.S. liabilities surveys (and in our year-end estimates based on these survey values), this distinction is confidential at the country level. Because we want to

### 3. Foreign holdings of U.S. long-term debt securities: Estimated foreign assets, estimated U.S. liabilities, and the difference between the estimates, for CPIS-reporting countries, year-end 2001–04

Billions of dollars

Item	Market value of holdings			
	2001	2002	2003	2004
Foreign assets .....	1,695	1,948	2,420	3,094
CPIS surveys (nonreserves) .....	1,165	1,369	1,710	2,010
Reserves <sup>1</sup> .....	530	580	710	1,084
U.S. liabilities <sup>2</sup> .....	1,899	2,164	2,532	3,131
Difference (liabilities less assets) .....	204	216	112	37

NOTE: Coordinated Portfolio Investment Surveys (CPIS), also known as CPIS surveys, are conducted annually as of December 31, whereas U.S. liabilities surveys are conducted annually as of June 30. Liabilities estimates represent between-survey estimates of holdings as of December 31.

1. Estimated for each CPIS-reporting country from aggregate reported reserve holdings of U.S. long-term debt securities in dollars as reported by the International Monetary Fund (IMF). For a description of the estimation procedure, refer to text note 23.

2. Nonreserve and reserve asset holdings as well as a prorated share of unallocated bearer bonds.

SOURCE: For CPIS surveys, IMF, [www.imf.org/external/np/sta/pi/cpis.htm](http://www.imf.org/external/np/sta/pi/cpis.htm); for reserves, IMF data (refer to text note 23); for U.S. liabilities, Treasury International Capital reporting system, [www.treas.gov/tic/fpis.html](http://www.treas.gov/tic/fpis.html).

compare, country by country, holdings of U.S. securities as reported in the U.S. liabilities surveys with those reported in the CPIS, we impute an estimate of reserves in dollars for each CPIS-reporting country, using aggregate reported reserve holdings of U.S. long-term debt securities in dollars as reported by the IMF.<sup>23</sup>

20. The IMF collects and publishes these data on its website at [www.imf.org/external/np/sta/pi/cpis.htm](http://www.imf.org/external/np/sta/pi/cpis.htm) (select "CPIS Data"). Also available is descriptive information about each country's survey technique (select "CPIS Metadata"), which can be used to help judge the quality and comprehensiveness of the country surveys.

21. The tables in the IMF's Survey of Geographical Distribution of Securities Held as Foreign Exchange Reserves (SEFER) report aggregate data on total U.S. securities held as reserves by SEFER-reporting countries; the data are not reported by country.

22. Notably, the CPIS excludes mainland China, Taiwan, and most Middle Eastern oil-exporting countries.

23. The IMF-published reserve holdings consist of data on total reserve holdings in the form of U.S. long-term securities as reported in the IMF SEFER survey, data on total reserves less gold as of the various year-end dates for each country as reported in *International Financial Statistics*, and data on the estimated fraction of reserves held in dollars as recorded in the IMF database known as COFER (Currency Composition of Foreign Exchange Reserves). We start by using IMF COFER data to construct the fraction of reserves held in dollars. For industrial countries, the COFER data indicate that roughly 76 percent of reserves were dollar denominated at year-end 2001, 72 percent at year-end 2002, 73 percent at year-end 2003, and 72 percent at year-end 2004. We assume that all industrial countries held these fractions of their nongold reserves in dollars. For all other countries, the COFER data indicate that, of the reserves for which currency was identified, 70 percent were dollar denominated at year-end 2001, 65 percent at year-end 2002, 62 percent at year-end 2003, and 61 percent at year-end 2004. We assume that all non-industrial countries held these fractions of their nongold reserves in dollars. These calculations give an estimate of roughly \$1.5 trillion in aggregate dollar reserves as of the end of 2003.

Because not all of these estimated dollar reserves are held in long-term U.S. debt securities, we then prorate the estimated holdings of reserves in dollars per country by the proportion of SEFER-reported U.S. long-term debt securities in each period to estimated aggregate dollar reserves. For more information on the IMF data, refer to the SEFER webpage, [www.imf.org/external/np/sta/pi/sec.htm](http://www.imf.org/external/np/sta/pi/sec.htm); International Monetary Fund (2006), *International Financial Statistics*, February; and the COFER webpage, [www.imf.org/external/np/sta/cofer/eng/index.htm](http://www.imf.org/external/np/sta/cofer/eng/index.htm).



Adding an estimate of dollar reserves held in the form of U.S. long-term debt securities increases the CPIS-based estimates considerably. These estimates are still somewhat lower than those based on the liabilities surveys, although the gap has narrowed in recent years. The estimates based on CPIS asset holdings plus estimated reserve holdings of U.S. long-term debt securities give figures of \$1.7 trillion in such securities as of the end of 2001 and \$3.1 trillion as of the end of 2004. In comparison, total holdings of U.S. securities as reported in the U.S. liabilities surveys for the set of CPIS-reporting countries (including a prorated share of the unallocated bearer bonds identified in the liabilities surveys) are \$1.9 trillion at the end of 2001 and \$3.1 trillion at the end of 2004. Overall, the difference between the two estimates of aggregate foreign holdings of U.S. securities is small enough to suggest that the country-by-country estimates are also reasonably accurate, and indeed, we find for many countries that the CPIS-plus-reserve estimates are quite close to our liabilities figures. However, as would be expected, the two measures also diverge for many countries: Our reported holdings are considerably larger than the CPIS-based estimates in several instances, and they are smaller in others.

We illustrate the differences between the two estimates for 2004 (figure 10). Our liabilities estimates for 2004 are notably larger than the CPIS-based estimates for Belgium, the Cayman Islands, and Luxembourg, and they are larger by somewhat smaller amounts for Switzerland and Germany, and they are smaller for Sweden and Germany, an indication that custodial bias may overstate these

countries' combined holdings of U.S. long-term debt securities by about \$660 billion.<sup>24</sup>

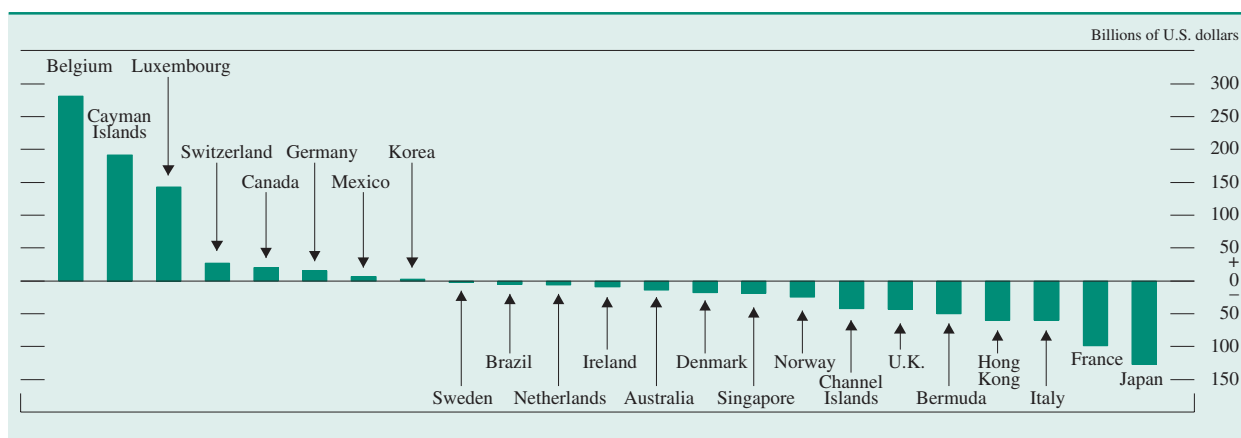
In contrast, our liabilities estimates for U.S. long-term debt securities are smaller than the CPIS-based estimates for Japan (by more than \$120 billion in 2004) and for a number of other countries, most notably the Channel Islands, the United Kingdom, Bermuda, Hong Kong, Italy, and France. Taken together, the CPIS data suggest that our liabilities estimates understate investment in U.S. long-term debt securities in this group of countries by more than \$480 billion in 2004. These results indicate that at least some of the custodial bias overstatement most evident for Belgium, Luxembourg, and the Cayman Islands likely reflects ultimate beneficial ownership by investors in the countries for which our estimates are understated, although a portion may also reflect ownership by investors in countries not included in the CPIS surveys.

### Foreign Holdings of U.S. Equities

As noted earlier, the omission of reserve holdings in the CPIS surveys has little effect on our comparison of liabilities estimates of foreign holdings of U.S.

24. An additional problem for comparing the estimates for the Cayman Islands is that the coverage of the CPIS survey for the islands is incomplete, as it is based on assets as reported by banks only and thus excludes securities held by the large number of mutual funds that operate in the Cayman Islands.

10. Differences between U.S. liabilities estimates and CPIS-based asset estimates of foreign holdings of U.S. long-term debt securities, for selected CPIS-reporting countries, December 2004



NOTE: Refer to notes to table 3. Difference for each country is calculated by subtracting a CPIS-based asset estimate from a U.S. liabilities estimate. CPIS-based asset estimate consists of nonreserve holdings as reported in the

CPIS surveys and reserve holdings as estimated from data published by the International Monetary Fund.

4. Foreign holdings of U.S. equities: Reported foreign assets, estimated U.S. liabilities, and the difference between these measures, for CPIS-reporting countries, year-end 2001–04

Billions of dollars

Item	Market value of holdings			
	2001	2002	2003	2004
Foreign assets (CPIS surveys) <sup>1</sup> .....	997	902	1,267	1,470
U.S. liabilities <sup>2</sup> .....	1,390	1,237	1,712	1,966
Difference (liabilities less assets) .....	393	335	445	497

NOTE: Refer to general note to table 3.

1. Nonreserve holdings only.

2. Nonreserve and reserve holdings. For estimated holdings by all foreign official institutions, refer to text note 25.

SOURCE: For foreign assets, International Monetary Fund, [www.imf.org/external/np/sta/pi/cpis.htm](http://www.imf.org/external/np/sta/pi/cpis.htm); for U.S. liabilities, Treasury International Capital reporting system, [www.treas.gov/tic/fpis.html](http://www.treas.gov/tic/fpis.html).

equities with CPIS-reported holdings.<sup>25</sup> As of year-end 2001, CPIS-reporting countries held in aggregate a little more than \$1 trillion in U.S. equity; this amount had increased to almost \$1.5 trillion by year-end 2004 (table 4). Comparison with our liabilities surveys suggests a more significant undercount in the CPIS surveys for equities than for long-term debt, as our liabilities-based estimates indicate holdings of U.S. equity by CPIS-reporting countries of \$1.4 trillion in 2001 and \$2.0 trillion in 2004 (although in percentage terms that gap has also narrowed in recent years). Consequently, we find more countries for which our liabilities-based estimates are larger than the CPIS-reported holdings, and we find fewer

countries for which our estimates are smaller (figure 11). Nonetheless, for several of the countries for which our liabilities estimates for equity are larger—the Cayman Islands, Switzerland, Germany, and Belgium—our estimates for long-term debt were also larger, providing further indications of custodial bias in our liabilities estimates for these countries.

### Foreign Holdings of All U.S. Long-Term Securities

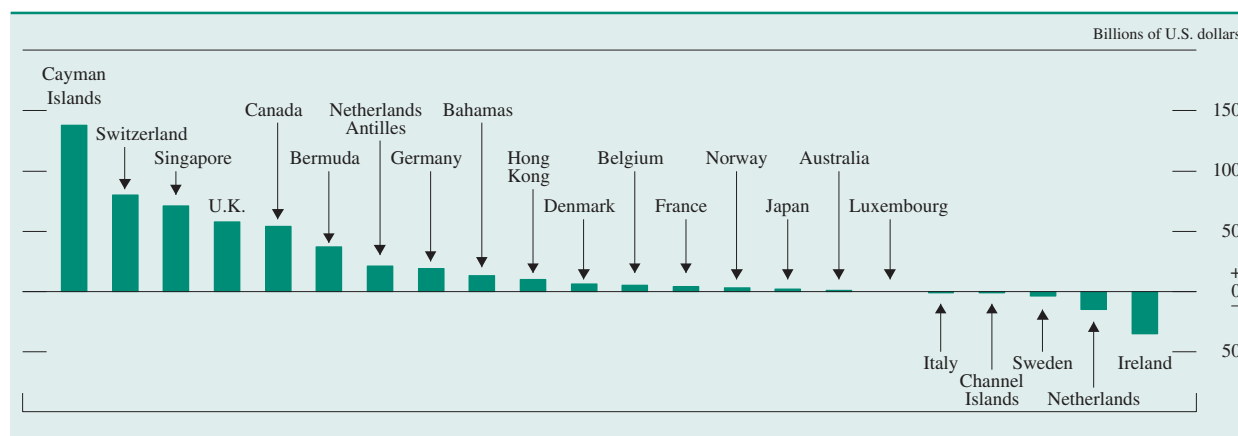
Overall, the comparison of estimates from the U.S. liabilities surveys with values reported in the CPIS surveys supports our interpretation that the liabilities surveys overstate holdings in several large custodial centers, especially Belgium, Luxembourg, and the Cayman Islands. Correspondingly, the holdings reported in the U.S. liabilities surveys of several other European as well as some Asian countries are smaller than the CPIS-based estimates, although some of the custodial center holdings as well as some bearer bonds no doubt represent holdings of countries that have not yet participated in the CPIS surveys. In general, our analysis provides support for the comparability of both the CPIS and the U.S. liabilities surveys, and it suggests that both types of surveys are capturing comparable securities holdings.

### SUMMARY AND CONCLUSION

In recent years, U.S. cross-border securities activity has grown dramatically. As such activity attracts greater attention, it is increasingly important to have

25. Our liabilities estimates show that foreign official holdings of U.S. equity were \$94 billion in 2001, \$87 billion in 2002, \$125 billion in 2003, and \$162 billion in 2004.

11. Differences between U.S. liabilities estimates and CPIS asset reports of foreign holdings of U.S. equities, for selected CPIS-reporting countries, December 2004



NOTE: Refer to notes to table 4. Difference for each country is calculated by subtracting a CPIS-reported asset level from a U.S. liabilities estimate.



a data collection system that both accurately tracks these positions and flows and is well understood by data users.

To properly interpret the data on cross-border portfolio activity, users should understand the strengths and weaknesses of the system that produces the data. In this article, we outline a number of factors that influence the interpretation of the data collected in the TIC system, focusing especially on the data on cross-border securities. We note ways in which the data on monthly transactions in long-term securities may provide an incomplete or misleading picture of cross-border securities flows, and we describe several adjustments that can improve the usefulness and comprehensiveness of the published data.

We also discuss a procedure that combines information collected in the most comprehensive part of the TIC system, the annual surveys, with more-current but less comprehensive data on monthly secu-

rities transactions to provide more-timely estimates of cross-border securities holdings by country. This approach improves our ability to correct estimated holdings for the bias inherent in the monthly transactions data and to adjust holdings for valuation changes.

Although our survey-based estimates of foreign holdings of U.S. securities are considered to be comprehensive in their coverage, their country attribution is imperfect because of the custodial bias in the data. We illustrate how information on holdings of U.S. securities as reported in other countries' asset surveys can help data users to better interpret the country attribution of data obtained from U.S. liabilities surveys. As cross-border financial activity continues to evolve and foreign data reporting systems continue to improve, such complementary sources of information may become increasingly beneficial in analyzing U.S. cross-border securities data. □



# Profits and Balance Sheet Developments at U.S. Commercial Banks in 2005

*Elizabeth C. Klee and Gretchen C. Weinbach, of the Board's Division of Monetary Affairs, prepared this article. Thomas C. Allard assisted in developing the database underlying much of the analysis. Arshia A. Burney provided research assistance.*

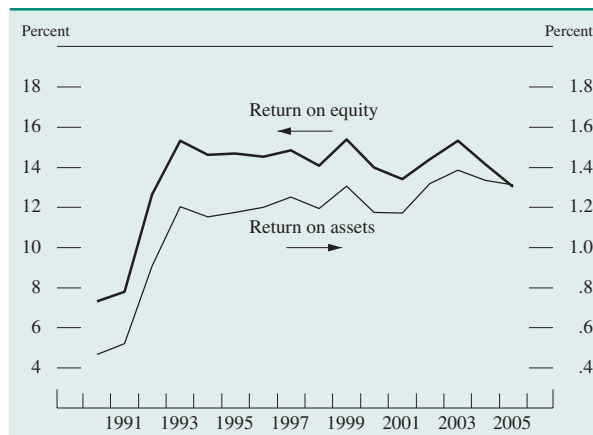
The profitability of the U.S. commercial banking industry remained strong again in 2005, although it was a bit below the levels of recent years. Asset quality was still sound, but pressure on net interest margins lowered the return on assets, and an increase in equity relative to assets—owing to an accumulation of goodwill from recent large mergers—pushed down the return on equity more substantially (figure 1). Growth in industry assets remained solid.

These bank profit and balance sheet developments were in large part attributable to the generally favorable financial and economic conditions of the U.S. economy in 2005. On the financial front, short- and intermediate-term interest rates increased as monetary policy tightening lifted the target federal funds rate 2 percentage points during the year (figure 2). Longer-term interest rates remained quite low, how-

NOTE: The data in this article cover insured domestic commercial banks and nondeposit trust companies (hereafter, banks). Except where otherwise indicated, the data are from the Consolidated Reports of Condition and Income (Call Report). The Call Report consists of two forms submitted by domestic banks to the Federal Financial Institutions Examination Council: FFIEC 031 (for those with domestic and foreign offices) and FFIEC 041 (for those with domestic offices only). The data thus consolidate information from foreign and domestic offices, and they have been adjusted to take account of mergers and the effects of push-down accounting. For additional information on the adjustments to the data, see the appendix in William B. English and William R. Nelson (1998), "Profits and Balance Sheet Developments at U.S. Commercial Banks in 1997," *Federal Reserve Bulletin*, vol. 84 (June), p. 408. Size categories, based on assets at the start of each quarter, are as follows: the 10 largest banks, large banks (those ranked 11 through 100), medium-sized banks (those ranked 101 through 1,000), and small banks. At the start of the fourth quarter of 2005, the approximate asset sizes of the banks in those groups were as follows: the ten largest banks, more than \$87.6 billion; large banks, \$7.3 billion to \$85.7 billion; medium-sized banks, \$457 million to \$7.2 billion; and small banks, less than \$457 million.

Data shown in this article may not match data published in earlier years because of revisions and corrections. In the tables, components may not sum to totals because of rounding. Appendix table A.1, A–E, reports portfolio composition, income, and expense items, all as a percentage of overall average net consolidated assets, for all banks and for each of the four size categories. Appendix table A.2 reports income statement data for all banks.

## 1. Bank profitability, 1990–2005



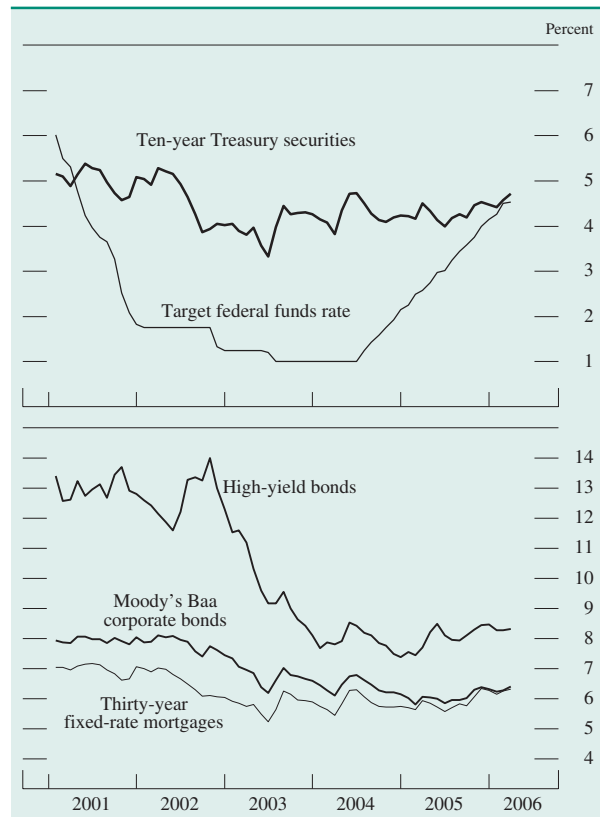
NOTE: The data are annual.

ever, and thus the Treasury yield curve flattened considerably. Interest rates on fixed-rate home-mortgage loans were relatively low over most of 2005, although they rose somewhat late in the year. Corporate risk spreads stayed quite narrow by historical standards.

The U.S. economy continued to expand at a solid pace in 2005. In the household sector, consumer spending remained vigorous despite higher energy prices; it was supported by an improving labor market and gains in household wealth that reflected further substantial increases in house prices. The low level of residential mortgage interest rates last year spurred sales of both new and existing homes to record levels, although sales cooled somewhat late in the year. Mortgage refinancing rose for a time during the first half of the year but dropped back in the second half.

In the corporate sector, investment spending expanded at a solid pace, buoyed by robust growth in final sales. Corporate profits posted strong gains, and firms maintained ample stocks of liquid assets. As a result, businesses financed much of their capital expenditures out of internal funds. Nonetheless, elevated merger and acquisition activity and a considerable rise in share buybacks contributed to a pickup in business borrowing, particularly in the form of commercial and industrial (C&I) loans. The growth in

## 2. Selected interest rates, 2001–06



NOTE: The data are monthly and extend through March 2006.

SOURCE: For Treasury securities, mortgages, and Moody's corporate bonds, Federal Reserve Board, Statistical Release H.15, "Selected Interest Rates" ([www.federalreserve.gov/releases/h15](http://www.federalreserve.gov/releases/h15)); for federal funds, Federal Reserve Board ([www.federalreserve.gov/fomc/fundsrate.htm](http://www.federalreserve.gov/fomc/fundsrate.htm)); for high-yield bonds, Merrill Lynch Master II index.

C&I loans was also fueled by increased availability; banks reported that they eased standards and terms on C&I loans throughout the year. At the same time, higher prices for commercial properties supported growth in commercial mortgages.

These financial and economic conditions left an imprint on banks' balance sheets. The relatively low level of fixed mortgage interest rates and the rapid climb in the prices of residential and commercial real estate spurred the demand for bank loans secured by real estate, and the share of bank assets attributable to real estate loans rose to nearly one-third. Although the growth in residential mortgage lending by banks slowed somewhat toward the end of the year, the pace of commercial real estate lending remained vigorous. C&I lending surged in 2005, and the share of such loans in banks' assets edged higher for the first time in several years. In contrast, consumer loan growth was anemic, as households apparently continued to favor mortgage financing over relatively high-cost

consumer loans.<sup>1</sup> For both households and businesses, the combination of rising short-term market interest rates and banks' deposit pricing policies reduced the relative attractiveness of core deposits. As a result, core deposits grew relatively slowly, while banks continued to issue managed liabilities at a brisk pace.<sup>2</sup>

Other developments in 2005 also strongly influenced banks' profitability. As the yield curve flattened considerably, net interest margins were squeezed at large banks, but the general increase in the level of short-term rates led to a widening of the net interest margin at smaller banks, whose liabilities tend to reprice more slowly than those held by larger banks. Competition in business lending likely also contributed to narrower spreads of loan rates over banks' cost of funds. At the same time, strong non-interest income, especially trading revenue, and a significant drop in non-interest expense helped shore up bank profitability. Robust business balance sheets and increases in household wealth kept overall credit quality high. But changes to the bankruptcy law and the devastation caused by last year's hurricanes reduced earnings at some banks. Despite these challenges, loss provisions as a share of assets remained at about the level of 2004, and overall, delinquency and charge-off rates fell for the year.

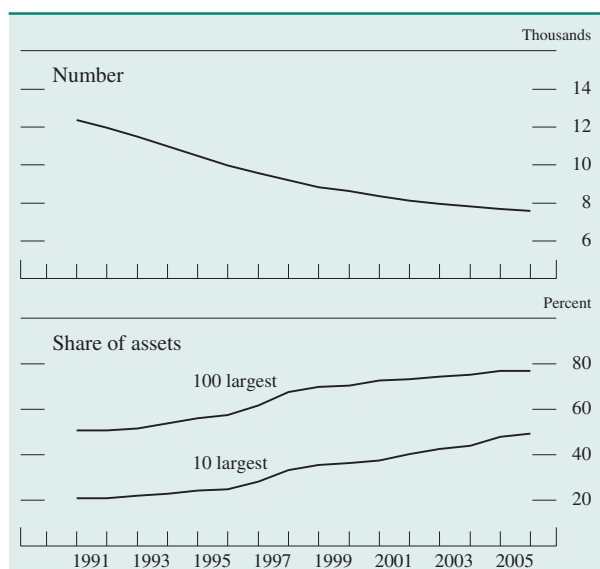
The number of new banks increased for the third year in a row, but the number of consolidations of one bank charter into another also increased, pulling the number of banks at year-end down to 7,569 from 7,677 at year-end 2004 (figure 3). Merger activity at the 10 largest institutions slowed from the pace in 2004, and the share of industry assets at these banks rose only 1.4 percentage points, to 49.4 percent, at year-end. The share held at the 100 largest banks was steady at 76.9 percent. According to the Federal Deposit Insurance Corporation (FDIC), 2005 was the first year without any bank failures since 1934, when federal deposit insurance began.

The number of mergers at the bank holding company level moderated a bit, as did the rate at which bank holding companies formed. At year-end 2005, there were 5,155 bank holding companies, 6 more than at year-end 2004 (for multitiered bank holding companies, only the top-tier organization is counted

1. In this article, consumer loans consist of loans to households that are not secured by real estate, and they include credit card loans.

2. In this article, core deposits consist of transaction deposits, savings deposits (including money market deposit accounts), and small time deposits. Managed liabilities consist of large time deposits in domestic offices, deposits booked in foreign offices, subordinated notes and debentures, federal funds purchased and securities sold under repurchase agreements, Federal Home Loan Bank advances, and other borrowed money.

### 3. Number of banks, and share of assets at the largest banks, 1990–2005



NOTE: The data are as of year-end. For the definition of bank size, refer to the general note on the first page of the main text.

for this article). The share of bank holding company assets at the 50 largest bank holding companies with major commercial banking operations remained relatively steady at 74 percent.<sup>3</sup> The number of financial holding companies fell moderately, from 639 at year-end 2004 to 625 at year-end 2005. Most of the largest bank holding companies have elected to become financial holding companies. Consequently, at the end of 2005, about 84 percent of the assets of bank holding companies were held by financial holding companies.<sup>4</sup>

3. The 50 largest bank holding companies are defined here as the 50 largest (as measured by total consolidated assets) after the exclusion of a few institutions whose commercial banking operations account for only a small portion of their assets and earnings. The quarterly article in the *Federal Reserve Bulletin*, "Report on the Condition of the U.S. Banking Industry," at [www.federalreserve.gov/pubs/bulletin/default.htm](http://www.federalreserve.gov/pubs/bulletin/default.htm), provides information on the 50 large bank holding companies (the 50 largest as defined here) and on the banking industry from the perspective of bank holding companies (including financial holding companies) that file reports FR Y-9C and FR Y-9LP; currently, only about 2,300 top-tier bank holding companies are required to file those reports (refer to "Report on the Condition" table 1, last row, and note 1).

4. Financial holding company statistics include both domestic bank holding companies that have elected to become financial holding companies and foreign banking organizations operating in the United States as financial holding companies and subject to the Bank Holding Company Act. For more information, refer to Board of Governors of the Federal Reserve System (2003), *Report to the Congress on Financial Holding Companies under the Gramm-Leach-Bliley Act* (Washington: Board of Governors, November), at [www.federalreserve.gov/pubs/reports\\_other.htm](http://www.federalreserve.gov/pubs/reports_other.htm).

## BALANCE SHEET DEVELOPMENTS

Total bank assets grew 7.7 percent in 2005, about 3 percentage points slower than in 2004 but in line with the average pace over the preceding five years (table 1). The growth of assets last year was driven mainly by lending secured by real estate. Continued economic expansion and relatively low long-term interest rates supported hefty increases in lending in both residential and commercial real estate markets. A surge in C&I lending, fueled by favorable demand and supply conditions, also supported the growth of assets. Overall, total loans and leases expanded 10.4 percent; this ample loan volume led banks to increase their securities holdings only 2.4 percent.

On the other side of the balance sheet, liabilities expanded 7.7 percent on a year-end basis, a rate in line with the gain in assets and nearly 2 percentage points lower than in 2004. Growth in core deposits fell back a bit; given banks' deposit pricing policies, rising short-term interest rates damped the relative attractiveness of liquid deposits for businesses and households. The expansion in managed liabilities, however, remained brisk.

Banks continued to add to their capital positions; on an annual average basis, bank capital as a share of average net consolidated assets edged up for the second year in a row, to 10.1 percent. This ratio has risen over the past decade under the influence of three trends: Banks' retained earnings have increased, paid-in capital from parent holding companies has moved higher on balance, and industry mergers and acquisitions have augmented the value of goodwill on banks' books. Regulatory capital ratios moved down a little in 2005 but remained high.

## Loans to Businesses

U.S. nonfinancial corporations needed only limited recourse to external funds last year given strong cash positions and robust profits. Firms' net financing gap dropped into negative territory at the end of the year (figure 4).<sup>5</sup> This decline also partly reflected temporary tax provisions that encouraged the repatriation of profits held at foreign subsidiaries. Net corporate bond issuance was subdued in 2005, but C&I loan growth surged to 12.5 percent. Apparently, a rise in mergers and acquisitions and a considerable increase in share buybacks significantly lifted the demand for bank financing. In addition, commercial real estate

5. The net financing gap is defined here as the four-quarter moving average of the difference between capital expenditures and U.S. funds generated internally.

## 1. Change in balance sheet items, all U.S. banks, 1996–2005

Percent

Item	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	MEMO Dec. 2005 (billions of dollars)
Assets	6.13	9.22	8.18	5.44	8.76	5.11	7.19	7.19	10.78	7.72	8,897
Interest-earning assets	5.82	8.66	8.20	5.83	8.66	3.96	7.54	7.28	11.29	7.96	7,727
Loans and leases, net	8.17	5.32	8.76	8.03	9.24	1.82	5.90	6.52	11.20	10.38	5,227
Commercial and industrial	7.24	12.02	12.94	7.88	8.54	-6.73	-7.41	-4.56	4.35	12.54	1,012
Real estate	5.45	9.30	7.99	12.22	10.74	7.94	14.43	9.78	15.41	13.80	2,954
Booked in domestic offices	5.51	9.53	7.97	12.36	11.02	8.02	14.85	9.68	15.08	13.92	2,902
One- to four-family residential	4.66	9.67	6.36	9.70	9.28	5.70	19.85	10.05	15.79	12.10	1,645
Other	6.75	9.32	10.29	16.06	13.31	10.95	8.81	9.20	14.14	16.41	1,257
Booked in foreign offices	3.18	.34	8.79	6.28	-1.62	3.97	-7.41	15.74	35.59	7.19	52
Consumer	5.12	-2.19	.34	-1.49	8.04	4.16	6.55	9.32	10.11	2.26	799
Other loans and leases	22.28	-7.91	13.95	6.71	7.01	-2.02	-.03	8.31	3.57	-.18	531
Loan-loss reserves and unearned income	.04	-.45	3.11	2.34	7.99	13.15	5.73	-2.68	-4.19	-5.72	69
Securities	.86	8.85	8.40	5.11	6.36	7.22	16.21	9.43	10.58	2.39	1,882
Investment account	-1.10	8.66	12.06	6.68	2.86	8.88	13.54	8.70	6.15	1.18	1,528
U.S. Treasury	-14.28	-8.85	-25.17	-1.89	-32.72	-40.27	41.92	14.14	-15.87	-17.60	50
U.S. government agency and corporation obligations	3.63	14.18	17.00	1.83	3.75	12.85	18.11	9.67	9.46	-1.85	970
Other	1.83	11.21	26.99	20.90	13.39	12.18	2.72	5.98	3.02	10.16	508
Trading account	14.44	10.00	-13.32	-6.93	37.16	-3.72	36.12	14.01	36.81	7.96	354
Other	1.06	38.54	3.79	-8.37	10.30	13.02	-2.92	6.83	14.28	5.83	617
Non-interest-earning assets	8.29	13.03	8.10	2.90	9.45	12.79	5.10	6.61	7.60	6.18	1,170
Liabilities	5.99	9.11	8.06	5.58	8.59	4.45	7.13	7.25	9.55	7.74	8,003
Core deposits	4.13	4.52	7.04	.23	7.53	10.55	7.58	7.30	8.25	6.50	4,233
Transaction deposits	-3.44	-4.55	-1.41	-8.97	-1.31	10.21	-5.12	2.83	3.20	-1.07	736
Savings deposits (including MMDAs)	13.83	12.96	18.32	6.68	12.51	20.68	18.46	13.71	11.72	6.89	2,745
Small time deposits	2.25	4.18	.53	-.76	7.20	-7.23	-4.92	-6.77	1.58	13.47	751
Managed liabilities <sup>1</sup>	9.73	13.79	9.44	15.54	8.79	-2.73	5.34	6.97	12.06	12.11	3,263
Large time deposits	21.17	20.15	9.09	14.19	19.37	-3.64	5.05	1.43	21.86	22.33	862
Deposits booked in foreign offices	4.27	11.13	8.71	14.60	7.84	-10.96	4.49	12.63	16.84	6.32	920
Subordinated notes and debentures	17.74	21.05	17.00	5.07	13.98	9.56	-.59	5.08	10.49	11.41	122
Gross federal funds purchased and RPs	-2.20	30.51	4.35	1.56	6.49	5.72	12.75	-8.70	8.40	15.64	635
Other managed liabilities	19.73	-4.04	15.65	35.27	1.80	-.28	.97	22.01	1.37	6.15	725
Revaluation losses held in trading accounts	8.89	36.94	3.44	-13.20	7.47	-17.06	33.44	14.02	-12.61	-17.96	135
Other	-1.30	14.82	12.75	-1.27	20.61	14.90	5.22	5.29	17.08	-1.70	373
Capital account	7.77	10.44	9.53	3.89	10.65	12.30	7.83	6.63	23.14	7.60	893
MEMO											
Commercial real estate loans <sup>2</sup>	7.67	10.13	11.37	15.42	12.16	13.10	6.82	8.99	13.87	16.71	1,255
Mortgage-backed securities	2.06	14.16	22.12	-3.34	3.29	29.05	15.56	10.10	13.45	2.06	882
Federal Home Loan Bank advances	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	17.21	3.74	3.73	9.99	269

NOTE: Data are from year-end to year-end.

1. Measured as the sum of large time deposits in domestic offices, deposits booked in foreign offices, subordinated notes and debentures, federal funds purchased and securities sold under repurchase agreements, Federal Home Loan Bank advances, and other borrowed money.

2. Measured as the sum of construction and land development loans secured by real estate; real estate loans secured by nonfarm nonresidential properties or

by multifamily residential properties; and loans to finance commercial real estate, construction, and land development activities not secured by real estate.

n.a. Not available.

MMDA Money market deposit account.

RP Repurchase agreement.

loans continued to expand rapidly, probably in part because of some improved market fundamentals.

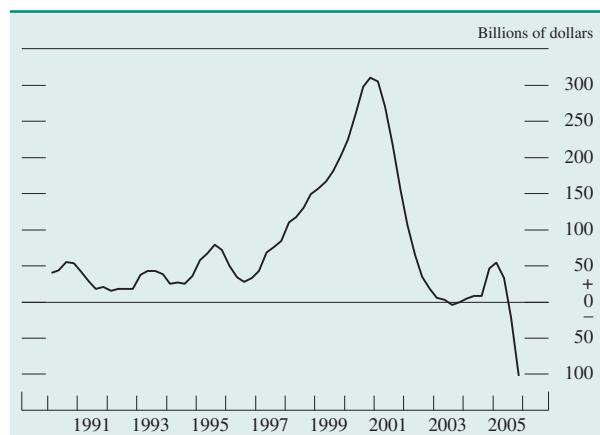
Unlike the pattern in preceding years, C&I loan growth was rapid at banks of all sizes in 2005. Responses to the Federal Reserve's quarterly Senior Loan Officer Opinion Survey on Bank Lending Practices (BLPS) suggest that factors related to both demand and supply likely played a role in the gains in C&I lending. Throughout the year, most survey respondents reported greater demand for business financing, attributing it to a rising need to finance inventories, accounts receivable, and investment in plant and equipment (figure 5, top panel). A substantial fraction of respondents to some surveys also

pointed to a pickup in mergers and acquisitions. Although the net percentage of banks reporting stronger demand declined toward the end of last year, the fraction remained substantial.

BLPS respondents also indicated that, on net, their institutions had further eased credit standards and terms on C&I lending last year, although the net percentage of banks so reporting declined toward the end of the year. Survey respondents typically reported that they had eased credit standards on C&I loans to large and middle-market firms (figure 5, bottom panel). Similarly, according to the Federal Reserve's Survey of Terms of Business Lending, average spreads of rates on C&I loans over those on



#### 4. Financing gap at nonfarm nonfinancial corporations, 1990–2005



NOTE: The data are four-quarter moving averages. The financing gap is the difference between capital expenditures and internally generated funds.

SOURCE: Federal Reserve Board, Statistical Release Z.1, "Flow of Funds Accounts of the United States," table F. 102 ([www.federalreserve.gov/releases/z1](http://www.federalreserve.gov/releases/z1)).

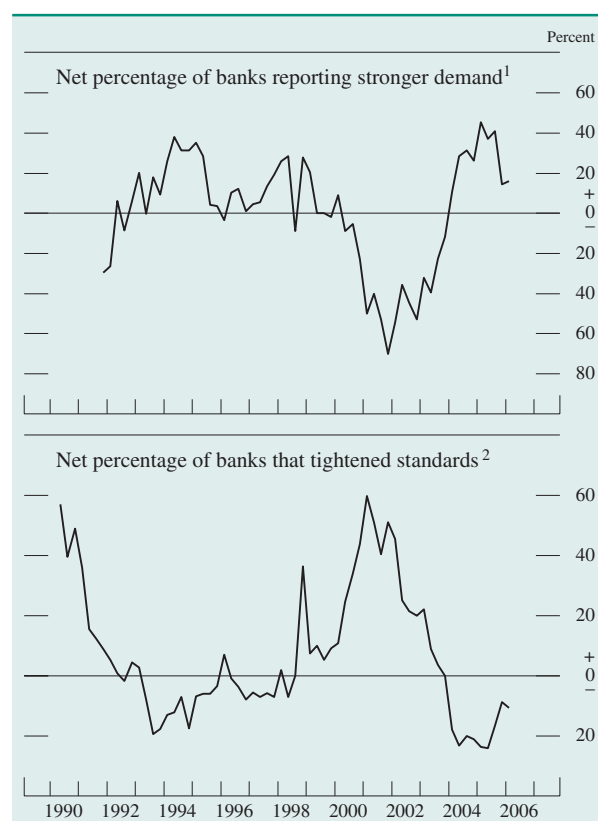
comparable-maturity securities declined notably on balance in 2005.

Commercial real estate (CRE) loans grew rapidly last year; the 16.7 percent pace was nearly 3 percentage points above the brisk rate of expansion in 2004. Unlike some preceding years, in which CRE loan growth was highly concentrated at medium-sized and small banks, CRE lending in 2005 was quite brisk in all bank size categories, particularly at the ten largest banks.

Real-estate-secured loans for construction and land development led the pickup in CRE lending last year and were likely fueled in part by the record-setting levels of new home construction. This category of CRE lending grew 34.4 percent last year and 25.5 percent in 2004; it now accounts for nearly one-third of all CRE loans, compared with about one-fourth at the end of 2003 (figure 6). The largest category of CRE lending, real estate loans secured by nonfarm nonresidential structures, expanded 9.9 percent last year, a rate down slightly from 2004.

Respondents to the BLPS reported stronger demand for CRE loans throughout 2005, although the net percentage doing so dropped markedly at the end of the year (figure 7, top panel). Respondents also noted that their institutions eased standards on CRE loans, on net, over most of the year (figure 7, bottom panel). In addition, responses to a special question in the January 2006 BLPS about changes in various terms on CRE lending indicated a considerable easing over the past year. The main reason banks cited for such easing was more-aggressive competition from other banks or nonbank lenders. In addition, some

#### 5. Changes in demand and supply conditions at selected banks for C&I loans to large and middle-market firms, 1990–2006



NOTE: The data are drawn from a survey generally conducted four times per year; the last observation is for the January 2006 survey, which covers 2005:Q4. Net percentage is the percentage of banks reporting an increase in demand or a tightening of standards less, in each case, the percentage reporting the opposite. The definition for firm size suggested for, and generally used by, survey respondents is that large and middle-market firms have sales of \$50 million or more.

1. Series begins with the November 1991 survey.

2. Series begins with the May 1990 survey.

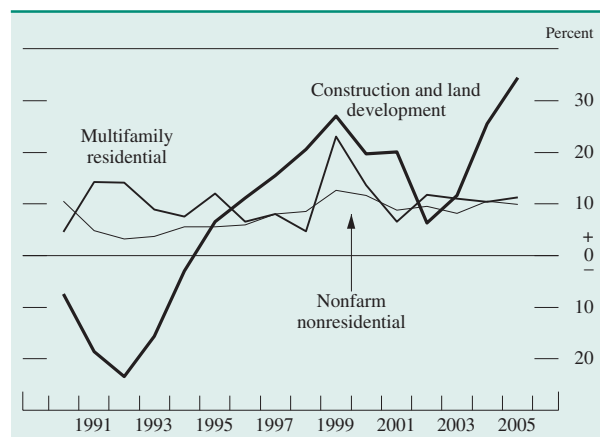
SOURCE: Federal Reserve Board, Senior Loan Officer Opinion Survey on Bank Lending Practices ([www.federalreserve.gov/boarddocs/snloansurvey](http://www.federalreserve.gov/boarddocs/snloansurvey)).

respondents also pointed to improvements in the condition of, or the outlook for, the CRE sector in the markets in which they operate.

#### Loans to Households

Gains in personal income and employment accompanied the solid economic expansion last year, while interest rates on fixed-rate mortgages remained in a relatively low range and house prices posted further sizable increases. Accordingly, residential mortgage lending, including both first- and second-lien loans secured by one- to four-family residential properties, grew briskly again in 2005, at 12.1 percent, although the advance was down a bit from the pace in 2004.

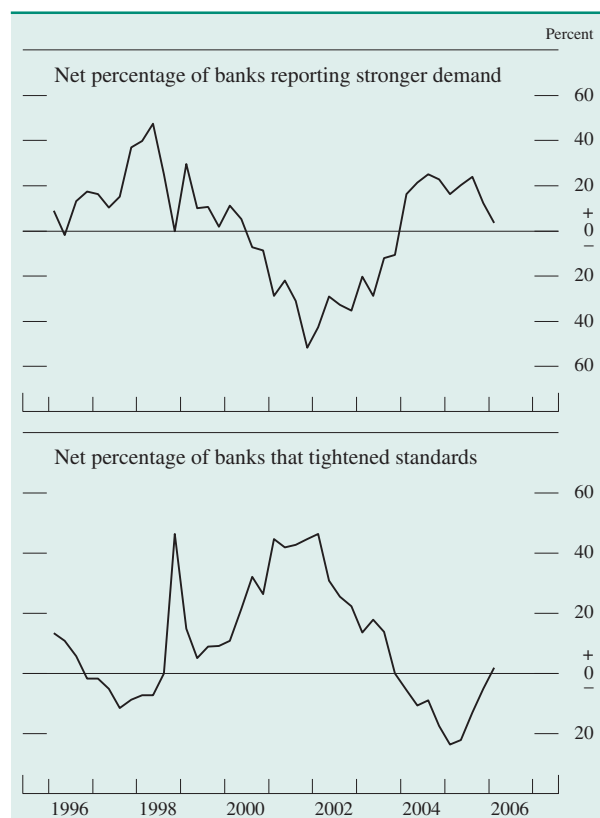
## 6. Changes in the major components of commercial real estate loans, by purpose, 1990–2005



NOTE: The data are annual.

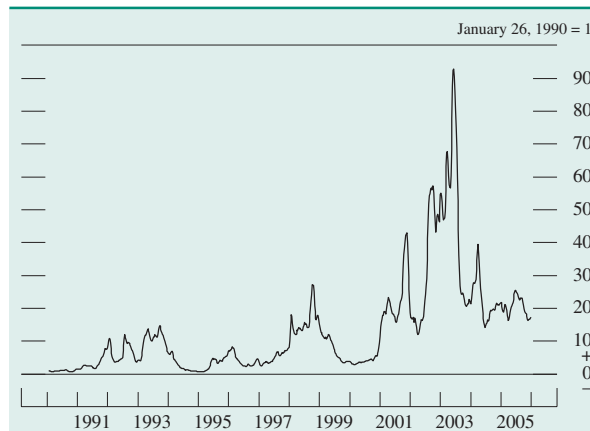
The pattern of residential mortgage lending during the year was strongly influenced by changes in long-term interest rates. Mortgage rates dropped somewhat over the first half of the year, and mortgage-refinancing activity picked up somewhat. But in the second half, mortgage rates more than reversed their

## 7. Changes in demand and supply conditions for commercial real estate loans at selected banks, 1996–2006



NOTE: Refer to figure 5, general note and source note.

## 8. Residential mortgage refinancing, 1990–2005



NOTE: The data are four-week moving averages. For definition of residential mortgages, refer to text.

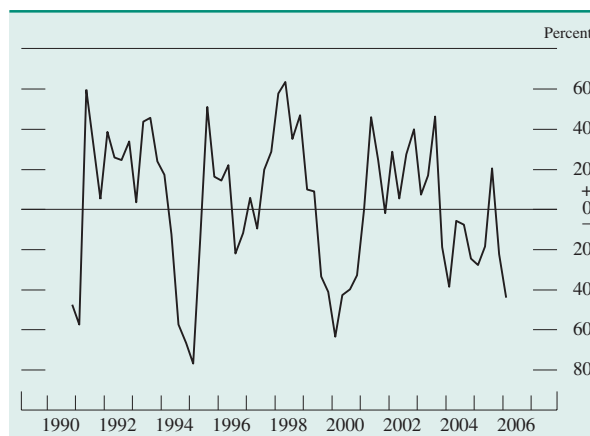
SOURCE: Mortgage Bankers Association.

declines, and refinancing activity dropped back (figure 8). The BLPS responses during the year were consistent with these aggregate patterns: On net, demand for one- to four-family mortgages was reported to have risen earlier in the year but to have fallen off at year-end (figure 9).<sup>6</sup>

To provide a longer-term perspective, a special question in the October 2005 BLPS asked domestic banks how their terms on mortgage loans used to purchase homes had changed over the past two years. A significant fraction of banks reported they had eased some terms on such loans. These easings

6. In asking banks how demand for mortgages to purchase homes has changed over the past three months, the BLPS instructs banks to consider only new originations as opposed to the refinancing of existing mortgages. However, this distinction may be difficult for banks to make in practice.

## 9. Net percentage of selected banks reporting stronger demand for residential mortgages, 1990–2006



NOTE: Series begins with the October 1990 survey. For definition of residential mortgages, refer to text. Refer also to figure 5, general note and source note.

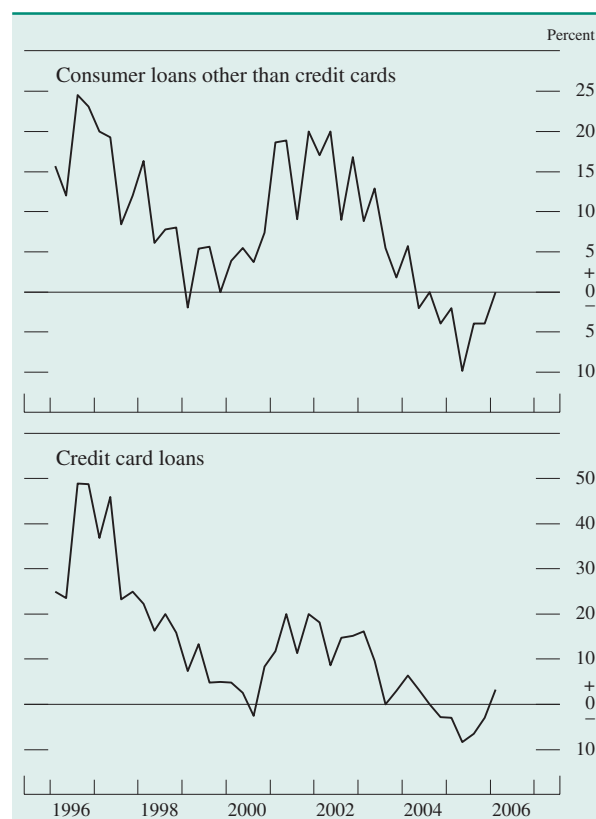
included increasing the maximum size of primary mortgages they were willing to provide, increasing the maximum size of second mortgages, narrowing spreads of mortgage rates over an appropriate market base rate, and increasing the maximum loan-to-value ratio on such loans. By contrast, banks noted that the maximum length of extended interest-rate locks, minimum required credit scores, and loan origination fees were little changed.

The slower growth of revolving home equity loans in 2005 likely reflected the effects of higher interest rates. Most revolving home equity loans carry variable interest rates that are tied to short-term market rates, which rose steadily. As a result, growth in these loans dropped steeply from the very brisk rate over the preceding several years, when short-term interest rates were particularly low. Still, these loans expanded at 8.1 percent for the year as a whole, faster than the overall increase in bank assets.

A special set of questions in the July 2005 BLPS queried banks about their current holdings and recent originations of nontraditional mortgage products.<sup>7</sup> Respondents generally reported that such loans accounted for less than one-fourth of their residential mortgage originations and of the mortgages on their books. However, more than one-half of the respondents to that survey noted that the share of mortgage originations attributable to nontraditional mortgage products had been higher over the past twelve months than over the previous twelve-month period.<sup>8</sup>

Consumer loans on banks' books grew just 2.3 percent in 2005, less than half the pace of 2004 after adjusting the 2004 rate downward to account for the effect of a large merger.<sup>9</sup> Mortgage-related borrowing likely took the place of some consumer loans as the rates on various types of consumer loans moved higher. Banks generally eased standards on consumer lending over the first three quarters of last year,

10. Net percentage of selected banks reporting tightened standards for consumer lending, 1996–2006



NOTE: Refer to figure 5, general note and source note.

according to the BLPS, but did not ease them further in the fourth quarter (figure 10). BLPS respondents generally kept terms on consumer loans about unchanged last year. Banks also reported in the BLPS that demand for consumer loans had weakened over the second half of the year.

### Other Loans and Leases

The amount of other loans and leases reported on banks' balance sheets at year-end 2005 was essentially unchanged from a year earlier. Loans and leases to depository institutions grew 12.8 percent after having been flat in 2004. Agricultural-related loans expanded moderately again after having contracted over a period of several years, and estimates suggest that most categories of farm loans contributed to the pickup.<sup>10</sup> Rising incomes, retail sales, and property

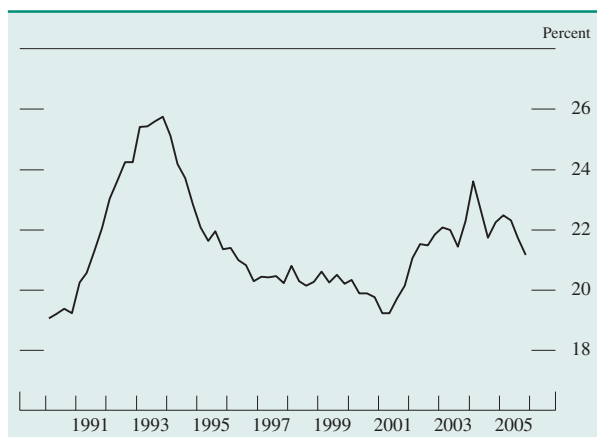
7. The July 2005 BLPS defined "nontraditional mortgage products" to include, but not be limited to, adjustable-rate mortgages with multiple payment options, interest-only mortgages, and so-called "Alt-A" products such as mortgages with limited income verification and mortgages secured by non-owner-occupied properties. Respondents to that survey were instructed to exclude standard adjustable-rate mortgages and common hybrid adjustable-rate mortgages—those on which the interest rate is initially fixed for a multiyear period and subsequently adjusts more frequently.

8. In December 2005, federal banking regulators proposed guidance to financial institutions on managing the risks associated with nontraditional mortgage products; the guidance also proposed consumer protection practices ("Federal Financial Regulatory Agencies Propose Guidance on Nontraditional Mortgage Products," press release, December 20, [www.federalreserve.gov/boarddocs/press/bcreg/2005](http://www.federalreserve.gov/boarddocs/press/bcreg/2005)).

9. For information on this 2004 adjustment, refer to Elizabeth C. Klee and Fabio M. Natalucci (2005), "Profits and Balance Sheet Developments at U.S. Commercial Banks in 2004," *Federal Reserve Bulletin*, vol. 91 (Spring), p. 151, footnote 6.

10. Using its Survey of Terms of Bank Lending to Farmers, the Federal Reserve estimates non-real-estate bank loans made to farmers by purpose of the loan, such as to obtain farm equipment and machinery or to cover operating expenses. This information is published quarterly in Board of Governors of the Federal Reserve System, Statistical Release E.15, "Agricultural Finance Databook," section A ([www.federalreserve.gov/releases/e15](http://www.federalreserve.gov/releases/e15)).

### 11. Bank holdings of securities as a proportion of total bank assets, 1990–2005



NOTE: The data are quarterly.

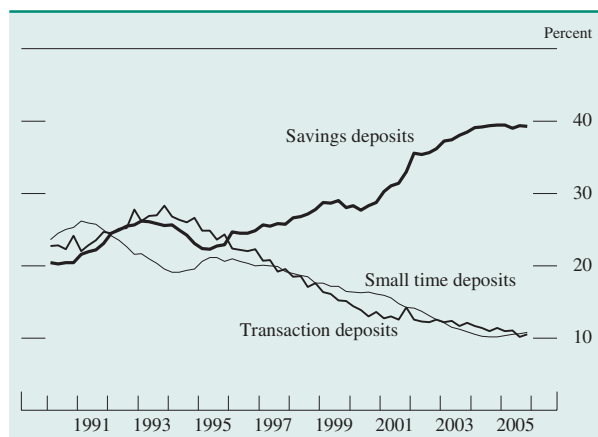
values supported the continuing improvement in the fiscal positions of state and local governments. As a consequence, growth in loans to this sector slowed a bit, to 11.7 percent, from 13.2 percent in 2004. By contrast, the remaining categories of other loans and leases—which include, among others, lease financing receivables, loans for purchasing or carrying securities, and loans to foreign depository institutions, and which account for a bit more than half of the total—declined last year.

### Securities

With loans expanding briskly in 2005, banks trimmed the growth in their securities holdings. At just 2.4 percent, the rate of increase was nearly 10 percentage points below the average over the previous three years. Accordingly, banks' holdings of securities as a share of total assets declined, although at year-end the share was only a little below its recent elevated range (figure 11).

Growth in securities held in both investment and trading accounts ebbed significantly. In particular, mortgage-backed securities (MBS) held in investment accounts grew only 2.1 percent after having expanded at a double-digit pace for several years. In addition, banks continued to shed U.S. Treasury securities for the second consecutive year, and holdings of non-mortgage-backed agency securities contracted for the first time in more than a decade. Banks accumulated securities at a fairly rapid clip on balance over the first half of 2005, as long-term interest rates declined on net and mortgage refinancing picked

### 12. Selected domestic liabilities at banks as a proportion of their total domestic liabilities, 1990–2005



NOTE: The data are quarterly. Savings deposits include money market deposit accounts.

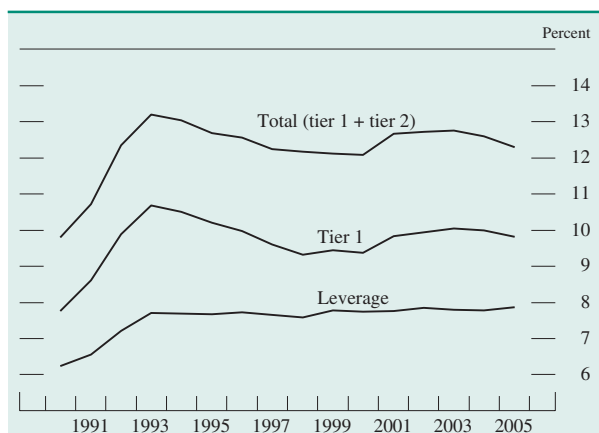
up somewhat. However, as long-term interest rates backed up over the second half of the year and refinancing activity slowed, banks' securities holdings declined a bit.

### Liabilities

The expansion of bank liabilities slowed from the rapid pace posted in 2004. Even so, last year's advance of 7.7 percent was still a bit above the average rate of the previous ten years. The growth in core deposits, at 6.5 percent, was the slowest in six years. Increases in short-term market rates typically make core deposits overall less attractive to deposit holders because the rates banks pay on the majority of these deposits tend to lag increases in market rates. When short-term market rates rise, as they did in 2005, banks adjust rates on liquid deposits relatively slowly and by smaller margins than they do rates on small time deposits. As a result, transaction deposits declined last year, and the rate of growth of savings accounts was only about half that posted in 2004, whereas the issuance of small-denomination time deposits surged. As a share of total liabilities, therefore, transaction accounts and savings deposits fell a bit, and small time deposits rose a little (figure 12).

The growth of managed liabilities, at 12.1 percent, was the same as in 2004. Large time deposits expanded quite briskly again, the growth of subordinated debt continued at a low double-digit pace, advances from Federal Home Loan Banks rose a rapid 10.0 percent, and the growth of deposits booked in foreign offices dropped back to 6.3 percent.

## 13. Regulatory capital ratios, 1990–2005



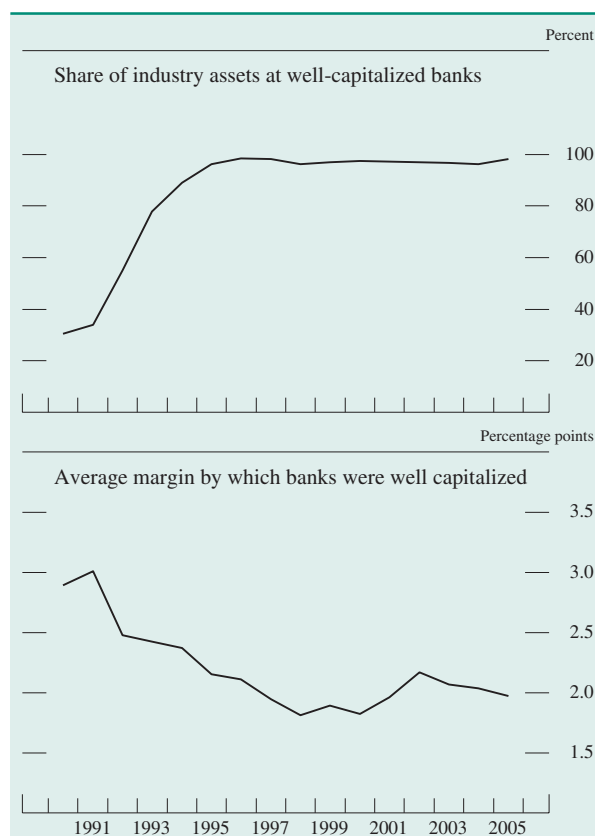
NOTE: The data are as of year-end. For the components of the ratios, refer to text notes 11 and 12.

## Capital

Banks' capital positions remained strong in 2005. The 7.6 percent rate of growth of capital accounts about matched that of banks' assets and liabilities. Retained earnings of \$48 billion accounted for about three-fourths of the increase in banks' capital accounts. Banks also boosted capital by receiving funding from their parent holding companies and by issuing shares to the public. Tier 1 capital increased 9.9 percent, and tier 2 capital advanced 7.5 percent.<sup>11</sup> Unlike the pattern of the preceding several years, risk-weighted assets grew more quickly than total assets in 2005. Banks reduced their holdings of Treasury and agency securities, which generally have a zero risk weight, while they modestly increased their agency-related MBS holdings, which have a 20 percent risk weight. Meanwhile, assets that receive higher risk weights, such as C&I loans, climbed rapidly. As a result, the ratio of tier 1 capital to all risk-weighted assets edged down, to just under 9.9 percent (figure 13). The tier 2 ratio fell slightly as well, causing the total ratio (tier 1 plus tier 2) to move down for the second year in a row, although it remained above its recent low in

11. Tier 1 and tier 2 capital are regulatory measures. Tier 1 capital consists primarily of common equity (excluding intangible assets such as goodwill and excluding net unrealized gains on investment account securities classified as available for sale) and certain perpetual preferred stock. Tier 2 capital consists primarily of subordinated debt, preferred stock not included in tier 1 capital, and loan-loss reserves up to a cap of 1.25 percent of risk-weighted assets. Risk-weighted assets are calculated by multiplying the amount of assets and the credit-equivalent amount of off-balance-sheet items (an estimate of the potential credit exposure posed by the items) by the risk weight for each category. The risk weights rise from 0 to 1 as the credit risk of the assets increases. The tier 1 ratio is the ratio of tier 1 capital to risk-weighted assets; the total ratio is the ratio of the sum of tier 1 and tier 2 capital to risk-weighted assets.

## 14. Assets and regulatory capital at well-capitalized banks, 1990–2005



NOTE: The data are annual. For the definitions of "well capitalized" and of the margin by which banks remain well capitalized, refer to text notes 13 and 14.

2000. By contrast, the leverage ratio, which is based on tangible average assets, inched up.<sup>12</sup>

The overall share of industry assets held by well-capitalized banks in 2005 rose to 98 percent, from 96 percent at the end of 2004 (figure 14, top panel).<sup>13</sup> The estimated average margin by which well-capitalized banks exceeded regulatory capital standards fell slightly again in 2005 but remained in the middle of its range over the past decade (figure 14, bottom panel).<sup>14</sup>

12. The leverage ratio is the ratio of tier 1 capital to tangible assets. Tangible assets are equal to total average consolidated assets less assets excluded from common equity in the calculation of tier 1 capital.

13. Well-capitalized banks are those with a total risk-based capital ratio of 10 percent or greater, a tier 1 risk-based ratio of 6 percent or greater, a leverage ratio of 5 percent or greater, and a composite CAMELS rating of 1 or 2. Each letter in CAMELS stands for a key element of bank financial condition—Capital adequacy, Asset quality, Management, Earnings, Liquidity, and Sensitivity to market risks.

14. The estimated average margin by which banks were well capitalized was computed as follows: Among the leverage, tier 1, and total capital ratios of each well-capitalized bank, the institution's "tightest" capital ratio is defined as the one closest to the regulatory standard for being well capitalized. The bank's margin is then defined



## 2. Change in notional value and fair value amounts of derivatives, all U.S. banks, 2000–05

Percent

Item	2000	2001	2002	2003	2004	2005	MEMO Dec. 2005 (billions of dollars)
Total derivatives							
Notional amount .....	16.87	11.47	24.14	26.54	23.70	15.42	101,886
Fair value							
Positive .....	20.80	26.42	85.41	.36	13.71	−6.47	1,262
Negative .....	21.86	20.82	89.18	1.00	13.75	−5.78	1,246
Interest rate derivatives							
Notional amount .....	18.70	15.93	26.83	27.62	22.07	11.92	84,500
Fair value							
Positive .....	23.75	63.87	108.20	−5.95	13.14	−5.52	982
Negative .....	24.24	56.55	113.02	−5.07	12.94	−5.14	961
Exchange rate derivatives							
Notional amount .....	5.65	−7.00	7.34	18.81	21.03	7.61	9,712
Fair value							
Positive .....	25.85	−16.21	8.67	41.81	14.86	−35.87	147
Negative .....	27.61	−15.65	15.73	38.81	12.74	−37.41	144
Credit derivatives							
Notional amount .....	48.55	−1.20	52.47	55.98	134.52	148.09	5,822
Guarantor .....	34.40	21.84	38.57	61.82	139.07	137.87	2,681
Beneficiary .....	60.03	−16.89	66.36	51.13	130.46	157.53	3,141
Fair value							
Guarantor .....	n.a.	n.a.	n.a.	68.31	69.92	81.42	36
Positive .....	n.a.	n.a.	n.a.	378.09	74.56	−5.63	17
Negative .....	n.a.	n.a.	n.a.	−68.87	38.37	827.99	19
Beneficiary .....	n.a.	n.a.	n.a.	19.85	51.28	83.50	41
Positive .....	n.a.	n.a.	n.a.	−63.13	2.64	505.51	22
Negative .....	n.a.	n.a.	n.a.	295.74	66.36	2.78	19
Other derivatives <sup>1</sup>							
Notional amount .....	24.94	−12.06	6.70	3.77	33.15	32.25	1,852
Fair value							
Positive .....	1.40	−34.72	20.28	3.16	8.55	58.51	95
Negative .....	4.42	−42.63	24.62	−5.25	19.73	74.28	103

NOTE: Data are from year-end to year-end.

1. Other derivatives consist of equity and commodity derivatives and other contracts.

n.a. Not available.

*Derivatives*

Banks' holdings of off-balance-sheet derivatives continued to expand in 2005 although not as rapidly as they had over the preceding few years. The notional principal amount of derivatives contracts held by banks grew 15 percent last year, and it totaled about \$102 trillion at the end of the year (table 2). However, the fair market value of these holdings is typically much smaller than the notional amount. In addition, because many of these holdings are linked to banks' role as dealers, a considerable portion of their derivatives positions are offsetting. At the end of 2005, the aggregate fair market value of contracts with positive value was \$1.26 trillion, and the aggregate fair market value of contracts with negative value was at a similar level. As a result, the net fair value of all contracts—the total fair market value of contracts with positive values less the fair

as the percentage point difference between its tightest capital ratio and the corresponding regulatory standard. The average margin among all well-capitalized banks—the measure referred to in figure 14—is the weighted average of all the individual margins; the weights are each bank's share of the total assets of well-capitalized banks.

market value of those with negative values—was only about \$16 billion at the end of 2005, about one-third lower than at the end of 2004.<sup>15</sup> Derivatives holdings continued to be highly concentrated—the ten largest banks accounted for 98 percent of the notional value of all derivatives held by banks at the end of 2005, a ratio unchanged from 2004.

The majority of banks' derivatives holdings in notional terms continued to be in the form of interest rate swaps. Banks' holdings of such swaps grew about 15 percent in 2005, and the share of these contracts relative to all derivatives contracts held steady at 64 percent in notional terms.<sup>16</sup> Interest rate swaps are typically used to hedge interest rate risk, including that related to holdings of interest-sensitive assets such as mortgages, MBS, and assets related to

15. That the fair market values of banks' derivatives contracts are nearly offsetting does not mean that banks' aggregate exposure to the market and credit risk associated with the contracts are likewise nearly offsetting because, for example, the counterparties to banks' positive- and negative-valued contracts may differ.

16. Interest rate swaps are agreements in which two parties contract to exchange two payment streams, one based on a floating interest rate and one based on a fixed interest rate; the payment streams are calculated on the basis of some notional principal amount.

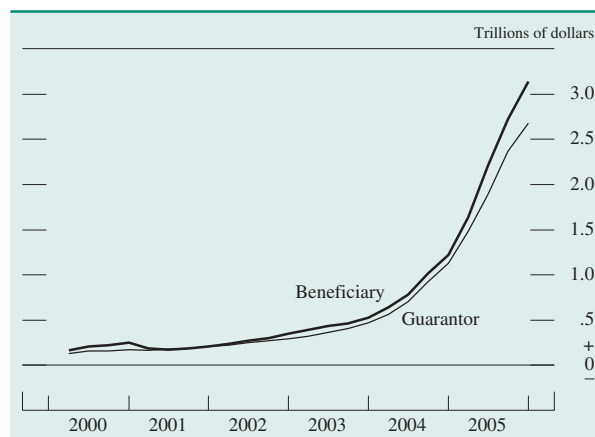


mortgage servicing. The growth in the notional value of banks' holdings of interest rate swaps in 2005 was the slowest in more than a decade, perhaps because low interest rate volatility throughout the year damped demand for interest rate hedging by banks' customers.

The notional value of banks' holdings of all interest rate derivatives contracts, including interest rate futures, forwards, and options contracts, advanced 12 percent last year and accounted for 83 percent of the notional value of all derivatives contracts held by banks at year-end, down from about 86 percent for the preceding three years. Banks' notional holdings of foreign exchange derivatives grew nearly 8 percent last year, and their holdings of equity and commodity derivatives advanced briskly, at about 32 percent. Commodity derivatives include those on energy products, whose prices were quite volatile last year. Banks that are major derivatives dealers reportedly targeted commodity derivatives for expansion in 2005.<sup>17</sup> In notional terms, foreign exchange, equity, and commodity derivatives contracts accounted for a bit more than 11 percent of all derivatives held at year-end, down slightly from year-end 2004.

Banks' holdings of credit derivatives continued to surge last year.<sup>18</sup> For the second year in a row, the notional amount of credit derivatives held by banks more than doubled relative to the preceding year, reaching \$5.8 trillion at the end of 2005. The fair-value amount of credit derivatives on banks' books expanded 83 percent, to \$77 billion at year-end 2005 from \$42 billion at year-end 2004. Still, in terms of notional value, these holdings account for only about 6 percent of all derivatives. Given their role as dealers, banks are both buyers (beneficiaries of credit protection) and sellers (protection providers, or guarantors) of these contracts, as they are for other derivatives. Banks were again net recipients of credit protection last year—the notional amount of banks' positions as beneficiaries totaled a bit more than \$3.1 trillion at the end of last year, while their

#### 15. Notional amounts of credit derivatives for which banks were beneficiaries or guarantors, 2000–05



NOTE: The data are as of quarter-end.

positions as guarantors totaled nearly \$2.7 trillion (figure 15).

#### TRENDS IN PROFITABILITY

Measures of banking industry profitability remained strong in 2005, although they were down a bit from recent high levels. The economy's solid performance supported the industry's profitability by keeping loan loss provisions low and boosting the demand for loans. Return on assets (ROA) ticked down 3 basis points, to 1.31 percent, owing largely to a narrowed net interest margin, but it remained in the upper half of its range of the past decade. Return on equity (ROE) dropped more than 1 percentage point, to 13.01 percent, reaching its lowest level in more than ten years. The decline, however, is largely attributable to an expansion of equity owing to an accumulation of goodwill acquired in some recent large mergers. Excluding goodwill, ROE was near the top of its historical range.<sup>19</sup> Banks operating in hurricane-affected areas suffered to varying degrees in the third quarter; their revenue may pick up as rebuilding efforts continue, but the ultimate extent of losses and the possible gains from rebuilding remain uncertain (for further discussion, refer to box "The Effects of Hurricane Katrina"). For the industry as a whole, the fraction of banks with negative net income rose a bit from 2004, to 6.3 percent, but the share of industry assets at banks incurring losses fell to about 0.5 percent.

A further narrowing of the net interest margin at the ten largest banks weighed on the profitability of those institutions, but the net interest margin widened

17. Most of the 32 percent growth in banks' holdings of equity and commodity derivatives last year is attributable to the expansion of commodity derivatives at one large bank. According to its 2005 annual bank holding company report filed with the Securities and Exchange Commission, this bank wanted to increase its commodities trading activities to provide a new source of trading revenue and to reduce volatility in its trading results over time.

18. Credit derivatives are over-the-counter agreements in which the risk of default of a certain reference entity is transferred from one party (the beneficiary) to another (the protection provider or guarantor). For a general description of credit derivatives, including a discussion of how they are used by banks, refer to Roberto Perli, "Credit Derivatives," in Klee and Natalucci, "Profits and Balance Sheet Developments," p. 154.

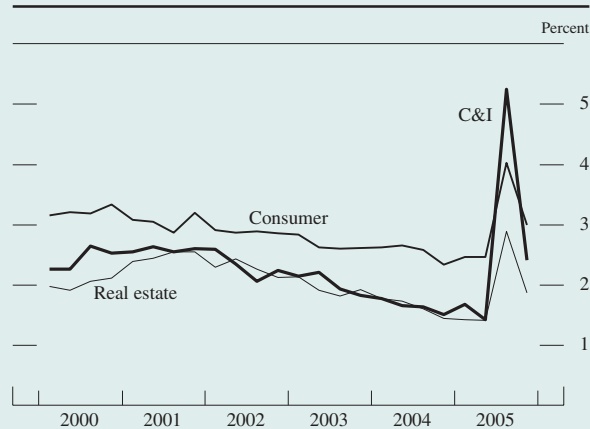
19. Banks accumulated a significant amount of goodwill from a few large mergers in mid-2004. For more details, refer to Klee and Natalucci, "Profits and Balance Sheet Developments," p. 152.

## The Effects of Hurricane Katrina

Hurricane Katrina made its Gulf Coast landfall on August 29, 2005; by the time it left the area it had ravaged nearly 90,000 square miles in the Gulf Coast region and displaced about 770,000 people, according to data from the Federal Emergency Management Agency (FEMA). Immediately after the hurricane, the Federal Reserve took a number of steps to help support the operation of financial institutions in the region. It adjusted its cash operations to alleviate transportation burdens and maintain cash distribution. It moved its New Orleans check clearing operations to Atlanta and worked with numerous financial institutions to address the special processing issues created by the hurricane. In addition, the Federal Reserve Bank of Atlanta reminded depository institutions that the discount window was available to meet their liquidity needs. As part of ongoing efforts, the public website of the Federal Reserve Board has continued to maintain information clearinghouses that address hurricane-related concerns.<sup>1</sup>

1. Refer to [www.federalreserve.gov/hurricanekatrina.htm](http://www.federalreserve.gov/hurricanekatrina.htm).

A. Delinquency rates on loans at hurricane-affected banks, 2000–05



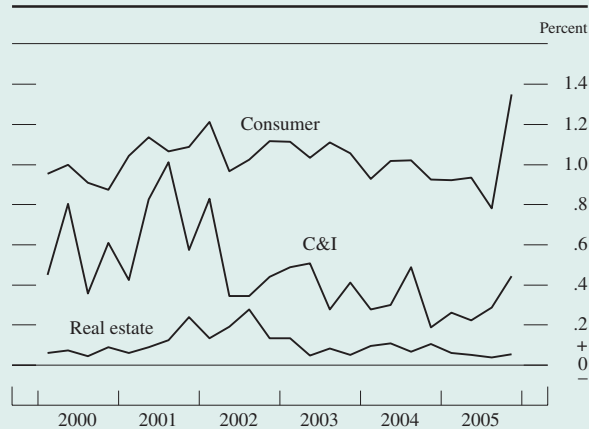
NOTE: The data are quarterly and seasonally adjusted. For definition of delinquencies, refer to the note for figure 24 of the main text. For definition of "hurricane-affected banks," refer to footnote 2 in this box.

In addition to the significant operational challenges it created, the storm influenced the profitability of the so-called hurricane-affected banks.<sup>2</sup> The delinquency rates on consumer, real estate, and C&I loans at hurricane-affected banks spiked in the third quarter, but they declined somewhat in the fourth quarter (figure A). To date, charge-off rates on loans at these banks have generally shown a smaller effect; the future effect is unknown because of the uncertainty regarding ultimate repayment (figure B).<sup>3</sup> Nevertheless, hurricane-affected banks have begun to reduce their earnings by provisioning for elevated future loan losses.

2. "Hurricane-affected banks" are defined as banks with more than 75 percent of their deposits in branches located in counties declared by FEMA to be "Individual Assistance" disaster areas. The banks from this group are small-national and regional banks tend to be diversified beyond these FEMA counties—and represent a little more than 1/2 percent of total industry assets. Larger national banks took additional loan loss provisions but appear to be well diversified beyond the region.

3. Regulatory agencies have encouraged financial institutions to consider reasonable and prudent steps to ease burdens on affected individuals and have issued assurances to institutions that regulators will exercise prudence, discretion, and flexibility when possible and appropriate in fulfilling supervisory and regulatory responsibilities.

B. Charge-off rates on loans at hurricane-affected banks, 2000–05



NOTE: The data are quarterly and seasonally adjusted. For definition of net charge-offs, refer to the note for figure 24 of the main text. For definition of "hurricane-affected banks," refer to footnote 2 in this box.

a bit for other banks. Increases in non-interest income, led by strong trading income, buoyed industry profitability. Results were also bolstered by a decline in non-interest expense as a share of assets, an improvement largely reflecting the reversal of an earlier jump in charges related to litigation and mergers.

Solid economic growth along with healthy business balance sheets and rising household wealth contributed to a robust credit environment that partially offset

the effect of narrowed interest margins. Asset quality as a whole remained strong, and the delinquency rate on loans and leases fell, to 1.57 percent at the end of the year. Loan loss provisioning as a share of assets was the same in 2005 as in 2004 despite provisioning for losses related to the hurricanes and the effects of a change in the bankruptcy law implemented in the fall (for further discussion, refer to box "The New Bankruptcy Law and Its Effect on Credit Card Loans"). Net

### The New Bankruptcy Law and Its Effect on Credit Card Loans

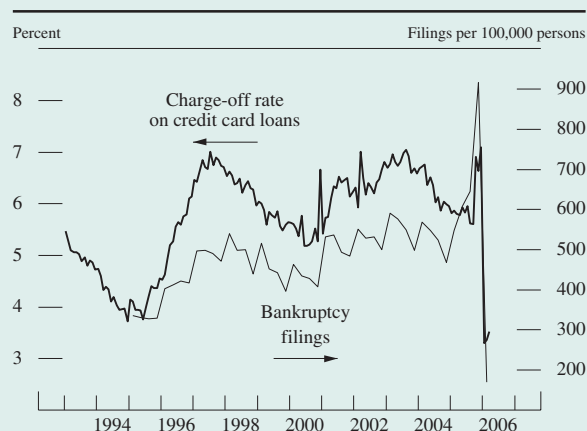
Under the U.S. bankruptcy code, individuals who are unable to meet their obligations can file for bankruptcy either under chapter 7 or under chapter 13 of the code. Under chapter 7, they can keep assets up to a state-defined exemption level and their remaining unsecured debts are discharged; under chapter 13, they must provide a plan under which they will repay a portion of their debts. On April 20, 2005, President Bush signed into law the Bankruptcy Abuse and Consumer Protection Act of 2005, which became effective on October 17, 2005. The law aims to reduce the number of bankruptcy filers and diminish creditors' losses resulting from bankruptcy. Before the passage of the new law, a large majority of debtors seeking bankruptcy protection filed under chapter 7. The new law mandates that consumers whose incomes are high enough and whose expenses are low enough must file under chapter 13, thus making bankruptcy a less attractive option.

Consumers rushed to file for bankruptcy in September and early October as the implementation date of the new bankruptcy law approached (figure A). For the fourth quarter as a whole, bankruptcy filings ran at almost twice the pace of earlier in the year. Because credit card loans are charged off by banks once borrowers are in bankruptcy,

charge-offs on securitized credit card loans shot up almost 130 basis points from September to October and moved up further through December, on net. Bankruptcy filings dropped off considerably in mid-October, as many of the pre-October 17 filings would apparently have been submitted later in the absence of the new law. Bankruptcy filings have continued to run at low levels this year, and the charge-off rate on securitized credit card loans has retreated from its elevated levels of last fall. Effects of the new bankruptcy law on the charge-off rates for other types of consumer loans and residential mortgages appeared to be small.

Banks anticipated the growth in credit card charge-offs and provisioned for these changes accordingly. At credit card banks, defined as those banks having credit card assets that are greater than 40 percent of their total assets and ranked among the 1,000 largest in total assets, the ratio of provisions to assets climbed 20 basis points, to 3.93 percent, from the second to the third quarter and rose another 27 basis points in the fourth quarter, to 4.20 percent. The boost in provisioning pushed down the return on assets (ROA) and return on equity (ROE) of credit card banks, especially in the fourth quarter: The ROA in that quarter fell about 50 basis points, to 2.35 percent, its lowest level since 2000; and the ROE dropped about 230 basis points, to 11.65 percent, its lowest level of the past decade. Nonetheless, the annual returns for credit card banks—2.89 for the ROA and 14.18 for the ROE (figure B)—continued to exceed the corresponding averages for banks as a whole.

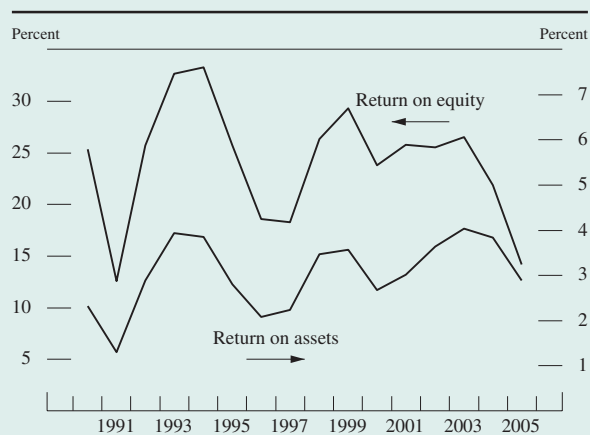
A. Charge-off rate on credit card debt in securitized pools, and household bankruptcy filings, 1993–2006



NOTE: The data for bankruptcy filings are quarterly and extend through 2006:Q1; the data for credit cards are monthly at an annual rate and extend through March 2006. The charge-off rate is the proportion of total loans outstanding that have been written off as uncollectible.

SOURCE: For bankruptcy filings, staff calculations based on data from Lundquist Consulting, Inc.; for data on credit card debt in securitized pools, Moody's Investors Service.

B. Credit card bank profitability, 1990–2005



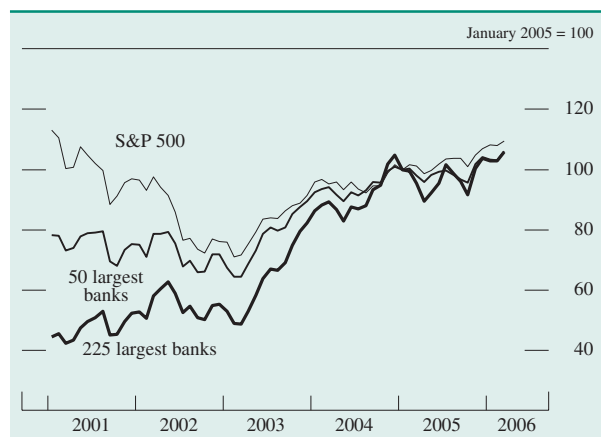
NOTE: The data are annual.

realized gains on investment account securities relative to assets decreased a bit in 2005.

As in 2004, dividends were a relatively low fraction of net income, and robust retained earnings boosted equity capital. Although, on net, bank holding company stocks made gains in 2005, they under-

performed the S&P 500. For both the 50 largest bank holding companies and the 225 largest, much of the gain was concentrated toward the end of the year (figure 16). The average spread of rates on banks' subordinated debt over those on comparable-maturity Treasury securities, which was about unchanged from

16. Bank stock prices, by market value of bank, and the S&P 500, 2001–06



NOTE: The data are monthly and extend through March 2006. Stock prices are weighted by market value.

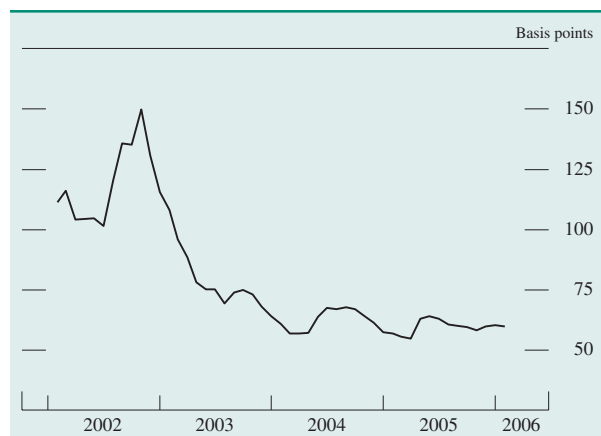
SOURCE: Standard & Poor's and *American Banker*.

the very low levels of 2004 (figure 17), reflected a relatively benign risk outlook for the banking sector.

### Interest Income and Expense

As monetary policy tightened in 2005, the average rate of return earned on banks' assets and the average rate of interest paid on banks' liabilities moved higher. The average rate earned rose less than the average rate paid, however, which caused the net interest margin to narrow for the third consecutive year, to 3.55 percent (figure 18). The rate of narrowing was, however, somewhat slower in 2005 than it had been in recent years.

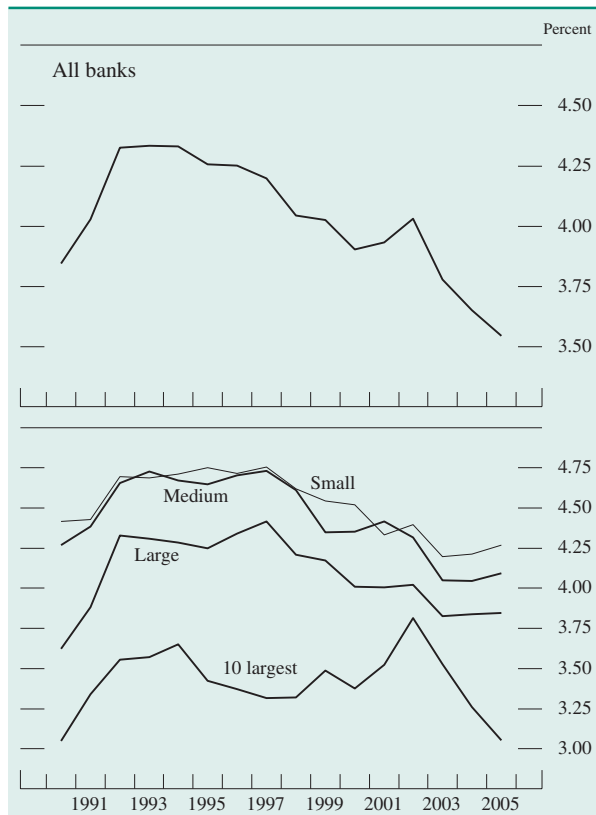
17. Average spread of rates on subordinated debt at selected bank holding companies, 2002–06



NOTE: The data are monthly and extend through March 2006. Spreads are over comparable-maturity Treasury securities.

SOURCE: Merrill Lynch bond data.

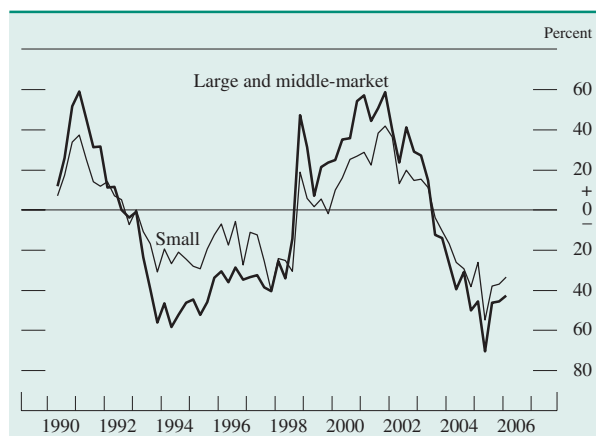
18. Net interest margin, by size of bank, 1990–2005



NOTE: The data are annual. Net interest margin is net interest income divided by average interest-earning assets. For definition of bank size, refer to the general note on the first page of the main text.

In line with the narrowing net interest margin, responses to the BLPS over the year indicated that domestic banks decreased the spread of rates on C&I loans over their cost of funds (figure 19) and also reduced the costs of credit lines. In response to each

19. Net percentage of selected domestic banks reporting increased spreads of rates on C&I loans over cost of funds, by size of borrower, 1990–2006



NOTE: Refer to figure 5, general note and source note.

of the four surveys covering 2005, the respondents indicated that the narrowing in spreads reflected more-aggressive competition from other banks or nonbank lenders. In the April 2005 and January 2006 surveys, banks indicated that tighter C&I loan spreads stemmed from an increased tolerance for risk and improved liquidity in the secondary market for these loans. Spreads on new investment-grade syndicated business loans continued to edge lower over 2005, while those on leveraged syndicated loans moved up a bit but remained quite low by historical standards.

The decline of the net interest margin for the banking sector as a whole was attributable to a drop of 21 basis points at the ten largest banks; the margin at other banks widened a few basis points. At the ten largest banks, the average rate earned on interest-bearing assets moved up about 57 basis points, while the average rate paid on interest-bearing liabilities leaped 100 basis points. Unlike other banks, the ten largest increased the share of their interest-earning assets attributable to securities, which at these banks had an average yield of 4.27 percent, a significantly lower average yield than loans, at 6.16 percent. They also increased the share of managed liabilities, which carry higher interest rates, on average, than other interest-bearing funding sources. In addition, larger banks rely more heavily on managed liabilities than smaller banks, and rates on managed liabilities rose more rapidly than those on other liabilities.

At large banks (those ranked 11 through 100), the net interest margin was about unchanged in 2005. Like the 10 largest banks, these banks rely heavily on managed liabilities and saw the rates paid on those liabilities rise significantly over the year. Unlike the 10 largest banks, however, large banks increased the share of loans in their portfolios, which boosted interest earned on assets; and they raised the fraction of their assets financed by non-interest-bearing liabilities, which held down interest expense.

In contrast to the situation at the ten largest banks, the average net interest margins at small and medium-sized banks have widened a bit since the onset of monetary policy tightening in 2004 and remain higher than the average at larger banks. Small and medium-sized banks rely relatively more on core deposits than on managed liabilities, and, as noted previously, core deposits have not repriced upward as much as managed liabilities. In addition, real estate loans, which earn relatively high yields, have expanded briskly at these institutions (especially commercial real estate loans), whereas securities, which earn relatively low yields, have declined. Furthermore, rates on C&I loans moved up significantly more rapidly at small and medium-sized banks than at larger banks; the

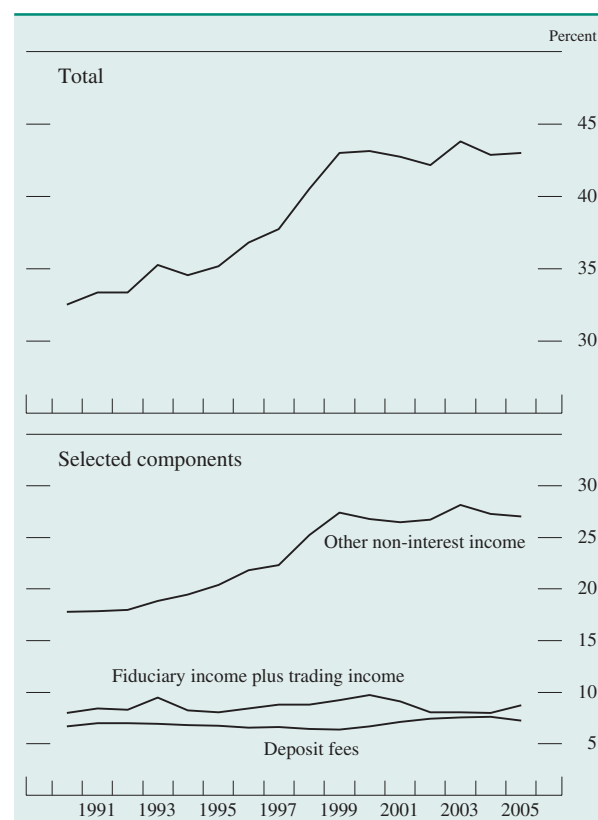
divergence perhaps reflects greater competitive pressures on larger institutions from nonbanks.

### Non-interest Income and Expense

Non-interest income at U.S. commercial banks grew 6.6 percent in 2005, a pickup from the sluggish 2.5 percent advance posted in 2004. As net interest income also increased, non-interest income as a share of total revenue remained about flat, on balance, at about 43 percent (figure 20). The rise in non-interest income was fueled by strong trading revenues, which surged 44 percent overall and which are concentrated at the ten largest banks. Income from interest rate derivatives contracts and equity derivatives contracts gained considerably overall but fluctuated somewhat during the year.

Most other categories of non-interest income posted smaller gains. The growth of fiduciary income slowed to a 5 percent pace, and the level held steady as a proportion of revenue. Deposit fees grew at a slower rate than total revenue and moved down as a share of deposits for the third consecutive year (figure 21), a

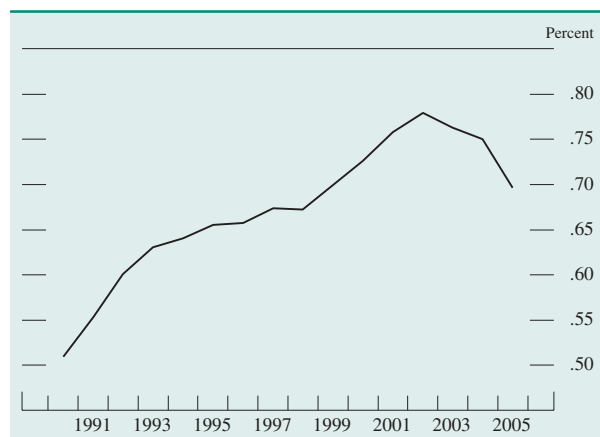
20. Non-interest income and selected components as a proportion of revenue, 1990–2005



NOTE: The data are annual. Revenue is calculated as the sum of non-interest income and net interest income.



## 21. Deposit fee income as a proportion of total domestic deposits, 1990–2005



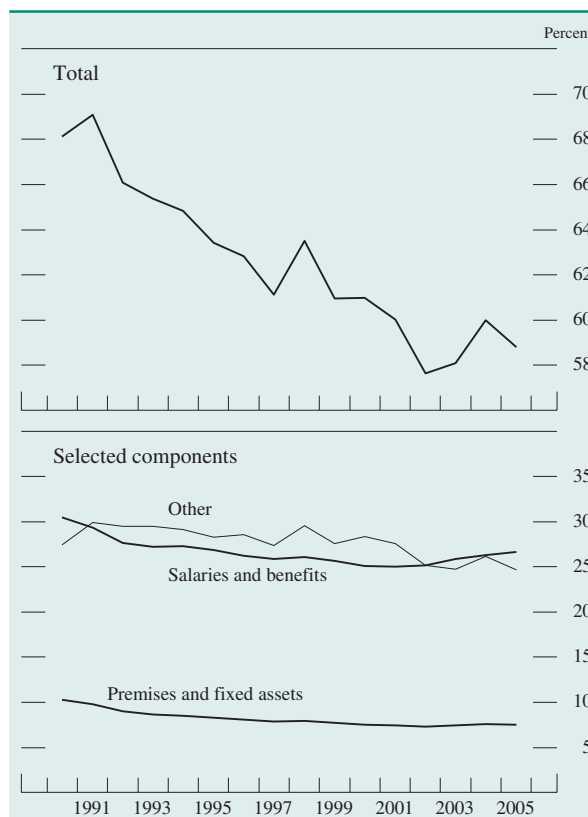
NOTE: The data are annual.

trend perhaps reflecting increased competition for retail deposits, or perhaps reflecting higher spreads now that base rates have risen.

Items recorded under “other non-interest income” grew about 5.2 percent and maintained their share of revenue at 27 percent. Revenues from investment banking fell slightly, while gains from sales of loans fell considerably, perhaps owing to a slowdown in mortgage originations. Several of the remaining items in other non-interest income—including check printing fees, automated teller machine fees, and the rental of safe deposit boxes—advanced solidly last year. However, trends for these items are difficult to infer because an item is reported only if it exceeds 1 percent of total income.

The 4.1 percent growth of non-interest expense in 2005 was down considerably from the 2004 pace, and the moderation led to a decline in the ratio of non-interest expense to total revenue of about 1 percentage point, to 59 percent (figure 22). Expenses for premises and fixed assets as a share of revenue have changed little over the past five years; according to data from the FDIC, the number of branches increased a bit. Growth in salary and employee benefits quickened more than 1 percentage point last year, to 7.6 percent, but the ratio of such costs to total revenue only inched up. The number of bank employees grew about 2 percent overall. Employment increased at the ten largest institutions but declined somewhat at smaller institutions, a difference likely reflecting, in part, the effects of bank consolidation. Salaries and benefits per employee grew 5.7 percent last year, an increase reportedly attributable in part to higher incentive compensation. The gain was a notable pickup from the rate in 2004 and faster than the 2005 rise in compensation per business-sector employee.

## 22. Non-interest expense and selected components as a proportion of revenue, 1990–2005



NOTE: The data are annual.

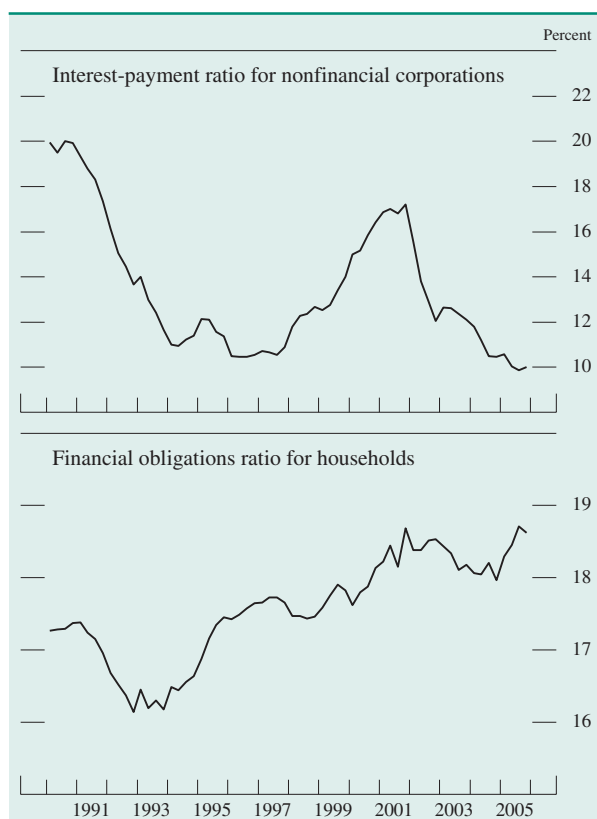
Other expenses, which barely grew in 2005, fell about 1.5 percentage points as a share of total revenue, to 24.7 percent. The decline in this ratio was greatest at the ten largest banks. Contributing to the improved performance at the largest banks were lower expenses related to merger activity and to litigation charges, both of which had jumped at a few large banks in 2004.

## Loan Performance and Loss Provisioning

Indicators of credit quality generally remained robust last year. The interest-payment ratio of businesses declined further from its level in 2004 and ended 2005 at about its lowest level for the past decade (figure 23). In contrast, the financial obligations ratio for households trended higher in 2005, as mortgage debt service increased as a share of income. On net, loan-loss provisions were little changed as a share of assets from 2004; however, they increased modestly in the second half of the year, in part owing to the effects of the hurricanes and the increase in personal bankruptcies in advance of the implementation of



23. Interest-payment ratio for businesses, and financial obligations ratio for households, 1990–2005



NOTE: The data are quarterly. The interest-payment ratio is calculated as interest payments as a percentage of cash flow. The financial obligations ratio is an estimate of debt payments and recurring obligations as a percentage of disposable personal income; debt payments and recurring obligations consist of required payments on outstanding mortgage debt, consumer debt, auto leases, rent, homeowner's insurance, and property taxes.

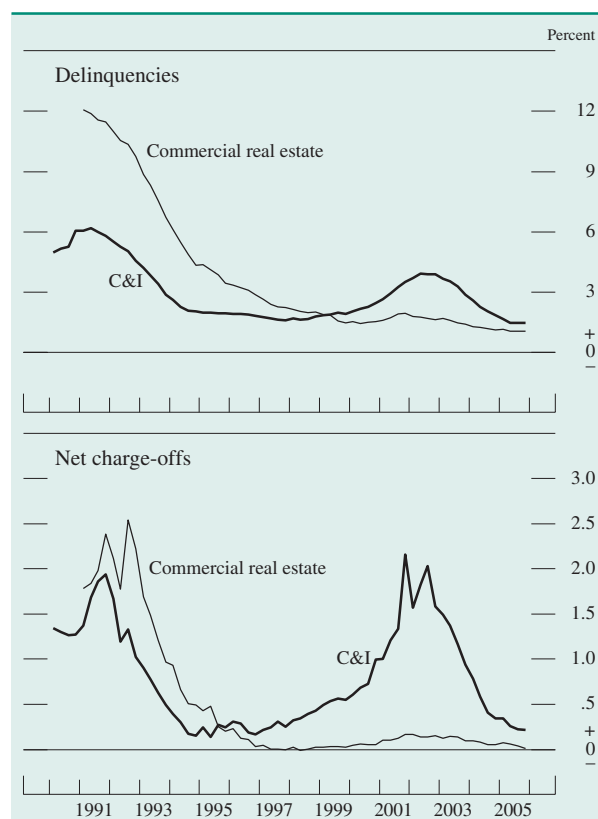
SOURCE: For interest-payment ratio, national income and product accounts and Federal Reserve Board; for financial obligations ratio, Federal Reserve Board ([www.federalreserve.gov/releases/housedebt](http://www.federalreserve.gov/releases/housedebt)).

new rules in October. As a share of all bank loans, delinquent loans remained low in 2005, and net charge-offs declined a bit, to 0.54 percent of average loans.

### C&I Loans

At the end of 2005, only 1.5 percent of C&I loans were delinquent, the lowest percentage in more than fifteen years (figure 24). A decline in the delinquency rate of more than 40 basis points at the 100 largest banks continued the downward trend in delinquencies at these banks evident since 2002. The net charge-off rate on C&I loans declined to 0.2 percent by year-end, its lowest level since 1997; net charge-off rates at larger banks were lower than at medium-sized and small banks.

24. Delinquency and charge-off rates for loans to businesses, by type of loan, 1990–2005



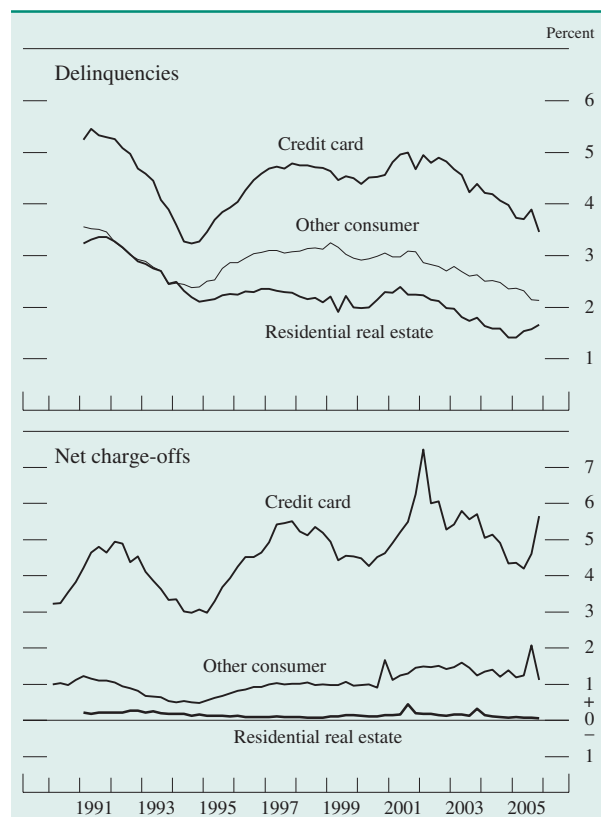
NOTE: The data are quarterly and seasonally adjusted; the data for commercial real estate begin in 1991. Delinquent loans are loans that are not accruing interest and those that are accruing interest but are more than thirty days past due. The delinquency rate is the end-of-period level of delinquent loans divided by the end-of-period level of outstanding loans. The net charge-off rate is the annualized amount of charge-offs over the period, net of recoveries, divided by the average level of outstanding loans over the period. For the computation of these rates, commercial real estate loans exclude loans not secured by real estate (refer to table 1, note 2).

The quality of bank C&I loans may slip a bit in 2006. Banks were asked in the January 2006 BLPS about the outlook for C&I loan quality this year under the assumption that economic activity progresses in line with consensus forecasts. On balance, the responses suggest that banks expect the quality of C&I loans to deteriorate somewhat in 2006 from recent robust levels.

### Commercial Real Estate Loans

The credit quality of CRE loans was supported by improving market conditions in the sector and remained strong last year. Vacancy rates in the office sector and industrial sectors continued to trend down modestly from their peaks a few years earlier, and the vacancy rate in the retail sector stayed relatively low. Rental rates and prices on commercial properties

## 25. Delinquency and charge-off rates for loans to households, by type of loan, 1990–2005



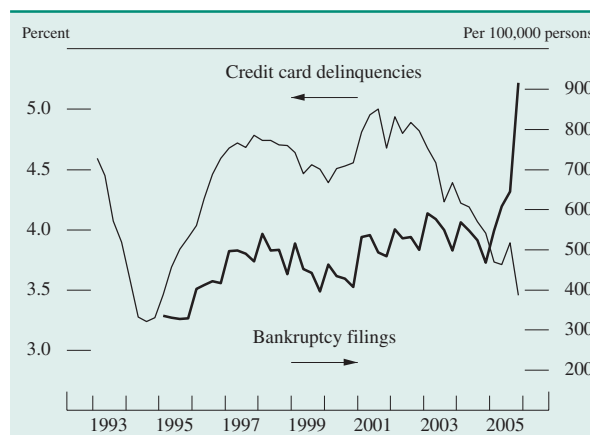
NOTE: The data are quarterly and seasonally adjusted; data for delinquencies and for net charge-offs of residential real estate loans begin in 1991. For definitions of delinquencies and net charge-offs, refer to the note for figure 24.

moved up. Against this backdrop, the delinquency rate on CRE loans fell a few basis points, to about 1.1 percent, its lowest level in more than a decade (figure 24). These developments have been accompanied in credit markets by relatively low spreads on commercial-mortgage-backed securities. The net charge-off rate on commercial real estate loans hovered near zero for the second year in a row.

### Loans to Households

The delinquency rate on residential real estate loans moved up 25 basis points, to 1.7 percent, over the four quarters of 2005 but was still well below its historical average (figure 25). Delinquency rates picked up both on one- to four-family residential real estate loans and on home equity loans. A midyear change in reporting instructions that requires seller- or servicer-banks to rebook delinquent mortgages that they had previously securitized and then sold as issues backed by the Government National Mortgage

## 26. Credit card delinquency rate and household bankruptcy filings, 1993–2005



NOTE: The data are quarterly and seasonally adjusted. The series shown for bankruptcy filings begins in 1995:Q1. For definition of delinquencies, refer to the note for figure 24.

SOURCE: For bankruptcy filings, staff calculations based on data from Lundquist Consulting, Inc.

Association (GNMA) considerably boosted delinquent mortgages in the third and fourth quarters and accounted for much of the rise in the delinquency rate. In addition, broad measures of subprime mortgage delinquencies have moved up over the past few quarters.

Net charge-offs on residential real estate loans declined to a very low rate of 5 basis points by the fourth quarter as the economy remained strong and house prices appreciated. Although the increases in house prices moderated somewhat in the latter part of the year, gains over the year were still robust and boosted homeowners' equity.

Delinquencies and charge-offs on credit card loans were significantly affected by a surge of bankruptcy filings as households rushed to file before the rule changes in October (figure 25). As a result, the net charge-off rate on credit card loans jumped about 1 percentage point in the fourth quarter, to 5.7 percent. The pattern in bankruptcies and charge-offs was reflected in loan delinquencies, which had peaked at 3.9 percent in the third quarter but fell back to end the year lower than in 2004 (figure 26). Responses to the January 2006 BLPS survey indicated that much of the rise in fourth-quarter credit card charge-offs could be attributable to the loans that would have been written off in later quarters if the bankruptcy law had not been changed. Indeed, since October, bankruptcies have been very low, and likely as a consequence, the charge-off rate on securitized credit card loans fell sharply in the first few months of 2006 (figure A of box "The New Bankruptcy Law and Its Effect on Credit Card Loans").

The net charge-off rate on other consumer loans rose to a quite elevated level in the third quarter, but the movement came primarily from a large bank's change in its accounting for loans extended at its European offices. For the year as a whole, the rate was little changed from 2004. The delinquency rate on other consumer loans trended down in 2005 and ended the year at its lowest level in more than a decade.

### Securitized Loans

Delinquency rates on many types of securitized loans continued to decline from the relatively low levels posted in 2004. The delinquency rate on securitized credit card receivables at the end of the fourth quarter, about 3.3 percent, was down about 60 basis points from a year earlier. Although the delinquency rate on securitized mortgages rose for a time, it remained below the average level in 2004 and finished the year at just 3.7 percent. The delinquency rate on securitized home equity loans moved up a little and ended the year at about 0.8 percent, still a bit lower than the average level over the past few years.

### Loss Provisioning

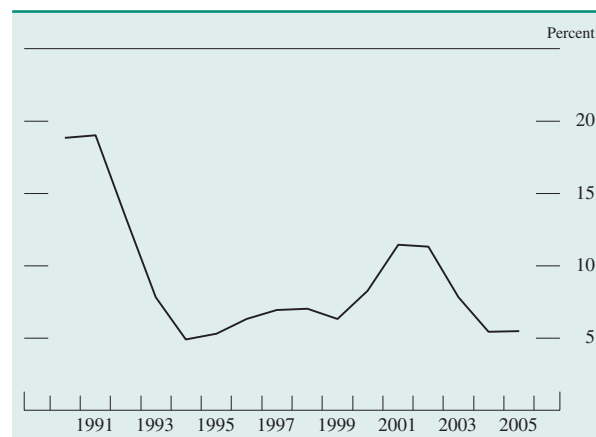
Banks' provisioning for loan losses as a share of average net consolidated assets held steady from 2004, even with the increase in provisioning in the third and fourth quarters caused by the surge in personal bankruptcies and the hurricanes. Provisions for loan and lease losses as a share of total revenue ticked up slightly, to 5.5 percent, but the measure remains in the bottom part of its range seen over the past decade (figure 27).

However, charge-offs outpaced provisions in 2005, and reserves for loan and lease losses fell about 5 percent. The ratio of reserves to total loans and leases fell for the third consecutive year, to 1.4 percent, its lowest level in almost twenty years (figure 28). But because of healthy credit quality overall, the ratio of reserves to delinquent loans held about steady at 86 percent; the ratio of reserves to net charge-offs changed little and remained near the middle of its range of the past several years.

### INTERNATIONAL OPERATIONS OF U.S. COMMERCIAL BANKS

In 2005, the share of bank assets booked in foreign offices increased about 40 basis points, to 11.8 per-

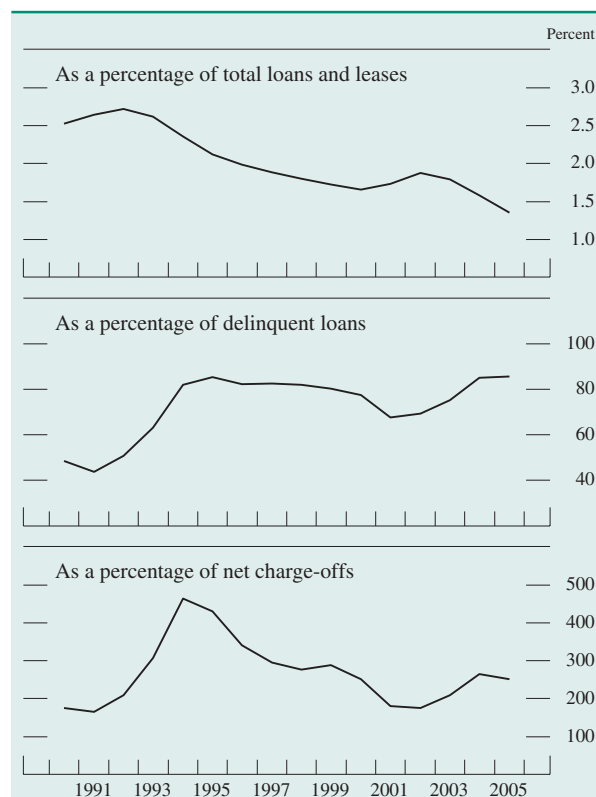
27. Provisions for loan and lease losses as a proportion of total revenue, 1990–2005



NOTE: The data are annual.

cent. The dollar volume of U.S. banks' exposures to India, Mexico, and Brazil, including lending and derivatives exposures for cross-border and local-office operations, rose somewhat, while exposures to other countries remained about flat relative to tier 1 capital (table 3). Improving economic prospects in India and Brazil probably contributed to a rise in U.S.

28. Reserves for loan and lease losses, 1990–2005



NOTE: The data are annual. For definitions of delinquencies and net charge-offs, refer to the note for figure 24.

## 3. Exposure of U.S. banks to selected countries at year-end relative to tier 1 capital, by bank size, 1997–2005

Percent

Bank size and year	Selected Asian countries <sup>1</sup>	India	Eastern Europe and Russia		Latin America				Total
			All	Russia	All	Mexico	Argentina	Brazil	
<b>All</b>									
1997 .....	16.11	1.48	3.47	1.80	29.67	5.48	5.84	9.74	50.73
1998 .....	15.49	2.35	3.49	.43	42.93	9.88	9.66	11.27	64.26
1999 .....	14.37	2.39	2.85	.37	39.00	9.50	9.40	10.49	58.61
2000 .....	13.17	2.63	4.35	.49	37.88	9.08	8.41	11.15	58.03
2001 .....	12.09	2.55	4.29	.60	54.06	25.97	6.61	2.99	72.99
2002 .....	11.44	2.74	5.53	1.06	38.90	20.80	2.44	8.36	58.61
2003 .....	11.15	3.86	5.44	1.48	32.85	17.95	1.73	6.77	53.30
2004 .....	20.33	4.16	6.09	1.54	31.78	16.65	1.47	6.51	62.36
2005 .....	17.77	4.92	5.87	1.95	31.84	17.36	1.34	6.94	60.40
<i>Money center and other large banks</i>									
1997 .....	26.87	2.58	6.12	3.16	48.37	8.40	10.01	16.13	83.94
1998 .....	24.02	4.19	5.61	.68	64.20	14.10	15.19	17.04	98.02
1999 .....	20.73	3.56	4.25	.55	53.90	12.62	13.63	14.53	82.44
2000 .....	19.98	4.14	6.83	.77	54.98	12.69	12.68	16.40	85.93
2001 .....	17.88	3.86	6.47	.91	79.08	34.54	9.79	18.74	107.29
2002 .....	16.96	4.18	8.17	1.63	57.32	31.14	3.65	12.38	86.63
2003 .....	16.98	5.93	8.41	2.29	49.19	27.13	2.64	10.02	80.51
2004 .....	30.95	6.31	9.34	2.36	46.96	24.99	2.22	9.59	93.56
2005 .....	27.16	7.52	8.93	2.96	47.39	26.16	2.04	10.35	91.00
<i>Other banks</i>									
1997 .....	2.34	.07	.08	.05	5.73	1.75	.51	1.56	8.22
1998 .....	2.08	.05	.16	.00	9.51	3.24	.97	.00	11.80
1999 .....	1.75	.07	.08	.01	9.41	3.31	1.01	2.47	11.31
2000 .....	1.41	.03	.08	.00	8.35	2.84	1.04	2.08	9.87
2001 .....	1.07	.06	.14	.00	6.45	2.04	.57	2.05	7.72
2002 .....	1.03	.08	.65	.00	5.00	1.86	.02	.96	6.76
2003 .....	.90	.24	.21	.06	4.20	1.53	.13	1.05	5.55
2004 .....	.90	.21	.14	.04	4.00	1.39	.09	.85	5.25
2005 .....	.55	.16	.25	.10	3.37	1.24	.06	.69	1.06
<b>MEMO</b>									
<i>Total exposure (billions of dollars)</i>									
1997 .....	55.24	5.07	11.91	6.16	101.73	18.80	20.03	33.40	173.96
1998 .....	37.87	5.43	8.53	1.05	104.69	24.15	23.62	27.55	156.52
1999 .....	37.45	6.23	7.43	.95	101.63	24.77	24.51	27.34	152.74
2000 .....	37.30	7.46	12.33	1.39	107.31	25.71	23.82	31.59	164.40
2001 .....	36.32	7.66	12.88	1.80	162.39	78.00	19.87	39.01	219.25
2002 .....	36.32	8.70	17.55	3.37	123.53	66.15	7.75	26.55	186.10
2003 .....	39.12	13.55	19.07	5.20	115.23	62.98	6.07	23.74	186.97
2004 .....	79.57	16.27	23.85	6.02	124.39	65.17	5.75	25.46	244.07
2005 .....	77.92	21.58	25.73	8.55	139.66	76.14	5.87	30.42	264.89

NOTE: For the definition of tier 1 capital, see text note 11. Exposures consist of lending and derivatives exposures for cross-border and local-office operations. Respondents may file information on one bank or on the bank holding company as a whole.

The year-end 2005 data cover sixty-seven banks with a total of \$438.6 billion in tier 1 capital; of these institutions, four were money center banks, with \$217.5 billion in tier 1 capital, and four were other large banks, with \$66.2 bil-

lion in tier 1 capital; the remaining fifty-nine ("other") banks had \$154.9 billion in tier 1 capital. The average "other" bank at year-end 2005 had \$33.8 billion in assets.

1. Indonesia, Korea, Malaysia, Philippines, and Thailand.

SOURCE: Federal Financial Institutions Examination Council (2006), Statistical Release E.16, "Country Exposure Lending Survey" (March 31), [www.ffiec.gov/E16.htm](http://www.ffiec.gov/E16.htm).

banks' exposures to these countries; most of the increase was at money center and other large banks.

## DEVELOPMENTS IN EARLY 2006

The economy expanded briskly over the first three months of 2006. Growth in consumer spending and business purchases rebounded, and levels of resource utilization increased. The prices of crude oil and of some other commodities moved higher, and consumer energy prices rose further, but core inflation remained relatively low. In these circumstances, the Federal Reserve firmed policy by raising the target federal funds rate 25 basis points at each of its first two meetings in 2006. Longer-term interest rates also rose considerably over the first quarter—yields on

ten-year nominal Treasury securities increased nearly 50 basis points.

Weekly data published by the Federal Reserve indicates that asset growth at commercial banks remained rapid in the first quarter of 2006.<sup>20</sup> Expansion in securities was supported by increased holdings of Treasury and agency debt, and loan growth remained vigorous. C&I loans continued to advance briskly, and, although the growth in loans secured by real estate slowed, it remained near a double-digit pace. Robust increases in deposits continued to help fund the strong expansion in assets over the first quarter.

20. Statistical Release H.8, "Assets and Liabilities of Commercial Banks in the United States" ([www.federalreserve.gov/releases/h8](http://www.federalreserve.gov/releases/h8)).

Bank profitability appeared to remain strong in early 2006 according to the statements on first-quarter earnings of several large bank holding companies. Although results varied across institutions, some trimmed their loan loss provisions in the first quarter, citing solid asset quality. The pace of personal bankruptcy filings remained well below the level they had reached before the new bankruptcy law took effect last October. Non-interest income was supported by gains in fee income and trading revenue. Despite continued increases in deposit rates, changes in net interest margins appear to have been mixed. And with bank assets expanding notably, growth in net interest income appears to have been solid.

Reflecting strong balance sheets and continuing profitability over the first quarter, stock prices of large bank holding companies generally rose a bit more than did the equity prices of large firms in general, as measured by the S&P 500 stock index. However, the gains in bank stock prices were in line with those of the broader market, as measured by the Wilshire 5000. Roughly the same number of mergers—consolidations of one bank charter into another—occurred in the first quarter of 2006 as in the first quarter of 2005, but the mergers in 2006 have generally involved significantly smaller-sized institutions.

## A.1. Portfolio composition, interest rates, and income and expense, U.S. banks, 1996–2005

A. All banks

Item	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Balance sheet items as a percentage of average net consolidated assets										
Interest-earning assets	87.38	87.15	86.76	87.03	87.13	86.49	86.42	86.08	86.90	86.83
Loans and leases, net	59.91	58.72	58.33	59.34	60.48	58.95	57.83	56.88	56.98	57.88
Commercial and industrial	15.59	15.77	16.36	17.07	17.16	16.08	14.07	12.18	11.06	11.17
U.S. addressees	13.06	13.17	13.61	14.43	14.67	13.69	12.04	10.48	9.52	9.63
Foreign addressees	2.53	2.60	2.75	2.64	2.49	2.39	2.04	1.70	1.54	1.53
Consumer	12.27	11.50	10.41	9.71	9.38	9.23	9.35	9.06	9.18	9.12
Credit card	4.93	4.62	4.02	3.51	3.52	3.63	3.78	3.55	3.86	4.05
Installment and other	7.34	6.88	6.39	6.20	5.87	5.60	5.57	5.51	5.31	5.06
Real estate	25.04	25.00	24.85	25.44	27.04	27.10	28.39	29.91	30.78	32.40
In domestic offices	24.42	24.39	24.28	24.87	26.49	26.60	27.91	29.46	30.25	31.84
Construction and land development	1.63	1.73	1.86	2.18	2.51	2.85	2.98	2.99	3.25	3.89
Farmland	.56	.55	.55	.56	.56	.55	.56	.54	.54	.54
One- to four-family residential	14.42	14.41	14.25	14.10	14.96	14.67	15.40	16.96	17.42	18.27
Home equity	1.85	1.94	1.89	1.76	1.96	2.18	2.80	3.40	4.34	4.95
Other	12.57	12.47	12.37	12.34	13.00	12.49	12.60	13.57	13.09	13.32
Multifamily residential	.85	.83	.82	.88	.99	.97	1.02	1.05	1.06	1.08
Nonfarm nonresidential	6.96	6.88	6.80	7.15	7.48	7.56	7.95	7.91	7.98	8.06
In foreign offices	.63	.61	.57	.57	.54	.50	.48	.46	.53	.56
To depository institutions and acceptances of other banks	2.33	1.93	1.91	1.96	1.87	1.83	1.87	1.98	2.11	1.73
Foreign governments	.26	.18	.15	.16	.12	.10	.09	.08	.08	.06
Agricultural production	.92	.90	.89	.83	.78	.75	.70	.63	.59	.56
Other loans	3.32	2.80	2.78	2.75	2.58	2.34	2.06	2.00	2.35	2.09
Lease-financing receivables	1.51	1.87	2.13	2.52	2.63	2.58	2.44	2.11	1.79	1.58
LESS: Unearned income on loans	-.12	-.09	-.07	-.06	-.05	-.04	-.05	-.04	-.04	-.03
LESS: Loss reserves <sup>1</sup>	-1.21	-1.13	-1.07	-1.04	-1.02	-1.04	-1.11	-1.04	-.91	-.79
Securities	21.00	20.40	20.37	20.40	20.01	19.53	21.27	21.90	22.57	22.05
Investment account	18.19	17.23	17.48	18.33	17.59	16.82	18.30	18.97	18.99	17.87
Debt	17.74	16.74	16.93	17.73	16.93	16.48	17.99	18.72	18.79	17.71
U.S. Treasury	4.19	3.38	2.71	2.14	1.66	.85	.78	.90	.89	.62
U.S. government agency and corporation obligations	9.74	9.73	10.28	10.85	10.31	10.08	11.46	12.26	12.37	11.51
Government-backed mortgage pools	4.80	4.93	5.16	5.24	4.75	5.13	6.09	6.75	7.13	6.78
Collateralized mortgage obligations	2.11	1.93	2.12	2.15	1.92	1.95	2.35	2.34	2.01	1.80
Other	2.83	2.86	2.99	3.46	3.63	2.99	3.02	3.17	3.22	2.93
State and local government	1.68	1.59	1.57	1.62	1.52	1.49	1.49	1.48	1.41	1.36
Private mortgage-backed securities	.61	.50	.67	.88	.95	1.09	1.25	1.30	1.41	1.76
Other	1.51	1.54	1.70	2.24	2.48	2.98	3.01	2.78	2.72	2.47
Equity	.45	.50	.55	.61	.66	.34	.31	.25	.20	.16
Trading account	2.81	3.16	2.90	2.06	2.43	2.72	2.97	2.93	3.58	4.17
Gross federal funds sold and reverse RPs	3.81	5.18	5.37	4.61	4.12	5.11	4.81	4.85	4.58	4.75
Interest-bearing balances at depositories	2.66	2.86	2.69	2.68	2.52	2.90	2.52	2.45	2.76	2.15
Non-interest-earning assets	12.62	12.85	13.24	12.97	12.87	13.51	13.58	13.92	13.10	13.17
Revaluation gains held in trading accounts	2.24	2.59	2.95	2.57	2.28	2.37	2.42	2.70	2.19	1.82
Other	10.37	10.26	10.29	10.40	10.58	11.15	11.16	11.22	10.91	11.36
Liabilities	91.73	91.57	91.51	91.52	91.58	91.25	90.85	90.96	90.57	89.91
Core deposits	52.72	50.89	49.43	48.60	46.52	47.07	48.98	49.18	48.56	47.54
Transaction deposits	17.57	15.76	14.10	12.58	11.07	10.36	10.06	9.73	9.10	8.46
Demand deposits	12.81	12.15	10.99	9.78	8.61	8.00	7.67	7.26	6.58	6.16
Other checkable deposits	4.75	3.61	3.11	2.81	2.46	2.36	2.39	2.47	2.52	2.30
Savings deposits (including MMDAs)	19.07	19.76	20.87	22.47	22.43	24.53	28.13	30.12	31.19	30.85
Small time deposits	16.08	15.37	14.46	13.55	13.01	12.18	10.80	9.33	8.27	8.24
Managed liabilities <sup>2</sup>	32.77	34.13	34.97	36.59	38.83	37.42	35.05	34.61	35.69	36.22
Large time deposits	6.52	7.25	7.67	7.89	8.76	8.89	8.30	8.09	8.00	9.08
Deposits booked in foreign offices	10.45	10.48	10.59	10.96	11.43	10.66	9.42	9.38	10.24	10.39
Subordinated notes and debentures	1.07	1.15	1.30	1.36	1.37	1.43	1.40	1.33	1.30	1.34
Gross federal funds purchased and RPs	7.18	8.13	7.98	7.97	7.83	7.95	7.77	7.75	7.24	7.05
Other managed liabilities	7.54	7.13	7.43	8.41	9.44	8.49	8.16	8.06	8.91	8.37
Revaluation losses held in trading accounts	2.14	2.64	2.97	2.52	2.29	2.21	2.09	2.30	1.95	1.67
Other	4.10	3.91	4.14	3.81	3.94	4.54	4.73	4.87	4.36	4.47
Capital account	8.27	8.43	8.49	8.48	8.42	8.75	9.15	9.04	9.43	10.09
MEMO										
Commercial real estate loans <sup>3</sup>	9.91	9.98	10.11	10.87	11.58	12.09	12.57	12.47	12.78	13.51
Other real estate owned <sup>4</sup>	.14	.11	.08	.06	.05	.05	.06	.06	.06	.04
Mortgage-backed securities	7.53	7.37	7.96	8.27	7.63	8.17	9.69	10.39	10.56	10.33
Federal Home Loan Bank advances	n.a.	n.a.	n.a.	n.a.	n.a.	2.89	3.17	3.19	3.07	3.04
Average net consolidated assets (billions of dollars)	4,379	4,737	5,148	5,439	5,906	6,334	6,635	7,249	7,879	8,592



A.1.—Continued

A. All banks—Continued

Item	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Effective interest rate (percent) <sup>5</sup>										
<i>Rates earned</i>										
Interest-earning assets	8.16	8.17	8.02	7.71	8.20	7.37	6.11	5.30	5.10	5.71
Taxable equivalent	8.22	8.23	8.07	7.76	8.26	7.42	6.15	5.34	5.14	5.75
Loans and leases, gross	9.01	9.03	8.85	8.47	9.00	8.15	6.90	6.16	5.91	6.52
Net of loss provisions	8.56	8.50	8.30	7.97	8.33	7.15	5.85	5.48	5.48	6.10
Securities	6.46	6.54	6.45	6.27	6.47	6.04	4.95	3.96	3.86	4.18
Taxable equivalent	6.66	6.73	6.63	6.46	6.65	6.22	5.10	4.10	3.99	4.30
Investment account	6.39	6.50	6.38	6.25	6.45	6.05	5.04	4.00	3.96	4.29
U.S. Treasury securities and U.S. government agency obligations (excluding MBS)	n.a.	n.a.	n.a.	n.a.	n.a.	5.76	4.42	3.29	3.11	3.46
Mortgage-backed securities	n.a.	n.a.	n.a.	n.a.	n.a.	6.45	5.44	4.24	4.38	4.60
Other	n.a.	n.a.	n.a.	n.a.	n.a.	5.60	4.74	4.08	3.76	4.22
Trading account	6.86	6.75	6.85	6.47	6.63	6.01	4.38	3.71	3.35	3.72
Gross federal funds sold and reverse RPs	5.21	5.45	5.29	4.78	5.56	3.86	1.93	1.43	1.43	2.65
Interest-bearing balances at depositories	6.20	6.23	6.32	5.95	6.48	4.01	2.79	2.09	1.98	3.70
<i>Rates paid</i>										
Interest-bearing liabilities	4.82	4.92	4.88	4.47	5.17	4.15	2.54	1.87	1.77	2.68
Interest-bearing deposits	4.34	4.39	4.31	3.87	4.45	3.61	2.12	1.48	1.37	2.05
In foreign offices	5.54	5.44	5.66	4.91	5.61	3.95	2.38	1.64	1.77	2.78
In domestic offices	4.07	4.16	4.01	3.63	4.17	3.54	2.07	1.45	1.29	1.91
Other checkable deposits	2.04	2.25	2.29	2.08	2.34	1.96	1.06	.75	.77	1.41
Savings (including MMDAs)	3.00	2.93	2.79	2.49	2.86	2.19	1.13	.74	.72	1.24
Large time deposits <sup>6</sup>	5.39	5.45	5.22	4.92	5.78	5.04	3.38	2.59	2.35	3.19
Other time deposits <sup>6</sup>	5.40	5.54	5.48	5.09	5.69	5.43	3.73	2.91	2.56	3.10
Gross federal funds purchased and RPs	5.12	5.17	5.19	4.73	5.77	3.84	1.88	1.30	1.55	3.09
Other interest-bearing liabilities	6.92	6.94	6.89	6.48	6.97	5.92	4.32	3.59	3.26	4.50
Income and expense as a percentage of average net consolidated assets										
Gross interest income	7.16	7.15	6.99	6.73	7.18	6.38	5.28	4.55	4.44	4.98
Taxable equivalent	7.22	7.21	7.04	6.78	7.22	6.43	5.32	4.59	4.48	5.02
Loans	5.48	5.41	5.27	5.12	5.53	4.92	4.07	3.56	3.42	3.82
Securities	1.16	1.11	1.10	1.14	1.15	1.00	.89	.74	.74	.77
Gross federal funds sold and reverse RPs	.21	.29	.29	.23	.23	.20	.09	.07	.07	.13
Other	.32	.35	.32	.24	.27	.27	.22	.18	.21	.26
Gross interest expense	3.43	3.48	3.46	3.22	3.76	2.98	1.79	1.30	1.26	1.89
Deposits	2.46	2.48	2.43	2.20	2.56	2.09	1.23	.87	.81	1.23
Gross federal funds purchased and RPs	.38	.43	.43	.39	.45	.31	.15	.10	.12	.23
Other	.59	.57	.60	.63	.75	.58	.41	.33	.33	.44
Net interest income	3.73	3.68	3.53	3.51	3.41	3.40	3.48	3.25	3.18	3.09
Taxable equivalent	3.79	3.73	3.57	3.56	3.46	3.45	3.52	3.28	3.22	3.13
Loss provisions <sup>7</sup>	.37	.41	.42	.39	.50	.68	.68	.45	.30	.30
Non-interest income	2.18	2.23	2.40	2.66	2.59	2.54	2.54	2.53	2.39	2.33
Service charges on deposits	.39	.39	.38	.40	.40	.42	.45	.44	.42	.39
Fiduciary activities	.33	.35	.37	.38	.38	.35	.32	.31	.32	.31
Trading revenue	.17	.17	.15	.19	.21	.20	.16	.16	.13	.17
Interest rate exposures	.09	.08	.05	.07	.08	.09	.08	.06	.03	.05
Foreign exchange rate exposures	.06	.08	.09	.09	.08	.07	.07	.07	.07	.07
Other commodity and equity exposures	.02	*	.01	.03	.04	.03	.01	.02	.03	.04
Other	1.29	1.32	1.49	1.69	1.61	1.57	1.61	1.63	1.52	1.47
Non-interest expense	3.71	3.61	3.77	3.76	3.66	3.57	3.47	3.36	3.34	3.19
Salaries, wages, and employee benefits	1.55	1.53	1.55	1.58	1.51	1.49	1.51	1.50	1.46	1.44
Occupancy	.48	.47	.47	.48	.45	.44	.44	.43	.42	.41
Other	1.69	1.62	1.75	1.70	1.70	1.64	1.52	1.43	1.46	1.34
Net non-interest expense	1.54	1.38	1.36	1.11	1.07	1.03	.93	.82	.95	.86
Gains on investment account securities	.03	.04	.06	*	-.04	.07	.10	.08	.05	*
Income before taxes and extraordinary items	1.85	1.92	1.81	2.02	1.81	1.77	1.97	2.05	1.97	1.93
Taxes	.65	.68	.62	.72	.63	.59	.65	.67	.64	.62
Extraordinary items, net of income taxes	*	*	.01	*	*	-.01	*	.01	*	*
Net income	1.20	1.25	1.20	1.31	1.18	1.17	1.32	1.39	1.34	1.31
Cash dividends declared	.90	.90	.80	.96	.89	.87	1.01	1.07	.76	.75
Retained income	.30	.35	.40	.35	.29	.31	.30	.31	.58	.56
MEMO: Return on equity	14.51	14.83	14.08	15.39	13.97	13.40	14.40	15.33	14.16	13.01

1. Includes allocated transfer risk reserve.

2. Measured as the sum of large time deposits in domestic offices, deposits booked in foreign offices, subordinated notes and debentures, federal funds purchased and securities sold under repurchase agreements, Federal Home Loan Bank advances, and other borrowed money.

3. Measured as the sum of construction and land development loans secured by real estate; real estate loans secured by nonfarm nonresidential properties or by multifamily residential properties; and loans to finance commercial real estate, construction, and land development activities not secured by real estate.

4. Other real estate owned is a component of other non-interest-earning assets.

5. When possible, based on the average of quarterly balance sheet data reported on schedule RC-K of the quarterly Call Report.

6. Before 1997, large time deposit open accounts were included in other time deposits.

7. Includes provisions for allocated transfer risk.

\* In absolute value, less than 0.005 percent.

n.a. Not available.

MMDA Money market deposit account.

RP Repurchase agreement.

MBS Mortgage-backed securities.

## A.1. Portfolio composition, interest rates, and income and expense, U.S. banks, 1996–2005

## B. Ten largest banks by assets

Item	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Balance sheet items as a percentage of average net consolidated assets										
Interest-earning assets	80.12	81.84	81.25	81.49	82.23	81.74	81.68	81.39	83.54	83.96
Loans and leases, net	53.51	50.91	50.76	53.37	55.22	53.86	53.61	52.20	51.29	51.35
Commercial and industrial	17.17	16.90	18.07	19.20	19.87	18.82	16.16	12.98	10.54	10.61
U.S. addressees	9.59	10.24	11.76	13.14	13.95	13.42	11.69	9.40	7.49	7.74
Foreign addressees	7.59	6.66	6.31	6.06	5.92	5.41	4.47	3.59	3.06	2.87
Consumer	6.22	6.40	6.04	5.94	5.43	6.17	7.82	7.96	8.49	8.80
Credit card	1.23	1.34	1.30	1.36	1.34	1.64	2.90	2.81	3.19	3.60
Installment and other	4.99	5.06	4.74	4.58	4.09	4.53	4.92	5.15	5.30	5.21
Real estate	16.53	17.42	16.51	16.96	19.82	19.23	20.78	22.68	23.21	24.55
In domestic offices	14.44	15.69	15.08	15.55	18.48	18.05	19.70	21.74	22.21	23.52
Construction and land development	.51	.68	.77	.90	.98	1.27	1.42	1.36	1.40	1.70
Farmland	.06	.09	.09	.10	.11	.11	.12	.10	.10	.10
One- to four-family residential	10.43	11.02	10.33	10.77	13.37	12.41	13.51	16.03	16.71	17.73
Home equity	1.53	1.70	1.72	1.54	1.61	1.78	2.35	2.96	4.04	5.22
Other	8.90	9.31	8.61	9.22	11.76	10.63	11.17	13.07	12.67	12.52
Multifamily residential	.38	.39	.38	.43	.60	.51	.55	.47	.45	.44
Nonfarm nonresidential	3.05	3.52	3.51	3.35	3.42	3.76	4.09	3.78	3.55	3.55
In foreign offices	2.09	1.73	1.43	1.41	1.34	1.18	1.08	.94	1.00	1.03
To depository institutions and acceptances of other banks	6.14	4.20	4.05	4.34	3.78	3.23	3.20	3.54	4.10	3.15
Foreign governments	.69	.45	.35	.38	.28	.20	.20	.17	.16	.12
Agricultural production	.23	.31	.28	.26	.23	.28	.23	.19	.22	.20
Other loans	6.34	4.15	3.74	3.96	3.75	3.51	2.94	2.87	3.32	2.81
Lease-financing receivables	1.59	2.24	2.81	3.40	3.07	3.43	3.44	2.87	2.08	1.78
LESS: Unearned income on loans	-.11	-.07	-.06	-.05	-.04	-.04	-.08	-.06	-.04	-.04
LESS: Loss reserves <sup>1</sup>	-1.30	-1.08	-1.01	-1.03	-.97	-.97	-1.12	-1.02	-.80	-.65
Securities	19.83	20.00	19.72	18.34	18.98	17.81	20.54	21.22	22.95	23.37
Investment account	10.60	10.97	12.12	13.08	13.71	12.14	14.36	15.31	15.99	15.59
Debt	10.22	10.55	11.64	12.57	13.03	11.88	14.13	15.11	15.83	15.44
U.S. Treasury	1.93	1.56	1.70	1.98	1.96	.68	.59	.82	.86	.56
U.S. government agency and corporation obligations	4.59	5.34	6.31	6.35	6.59	6.84	8.69	9.20	9.92	9.69
Government-backed mortgage pools	3.58	4.26	5.13	5.03	4.88	4.99	6.38	7.59	8.64	8.65
Collateralized mortgage obligations	.95	.93	.93	.79	.93	1.11	1.52	.91	.70	.54
Other	.06	.15	.26	.52	.78	.74	.79	.70	.58	.50
State and local government	.39	.51	.47	.45	.51	.55	.59	.59	.57	.58
Private mortgage-backed securities	.30	.32	.60	.57	.51	.58	.92	1.10	.96	1.18
Other	3.01	2.81	2.57	3.22	3.47	3.22	3.34	3.40	3.52	3.43
Equity	.38	.42	.47	.51	.68	.26	.22	.20	.16	.14
Trading account	9.23	9.03	7.60	5.25	5.26	5.67	6.18	5.91	6.96	7.79
Gross federal funds sold and reverse RPs	3.10	7.56	7.81	6.64	5.02	6.38	5.26	5.79	6.37	6.96
Interest-bearing balances at depositories	3.68	3.37	2.96	3.14	3.01	3.69	2.28	2.18	2.93	2.28
Non-interest-earning assets	19.88	18.16	18.75	18.51	17.77	18.26	18.32	18.61	16.46	16.04
Revaluation gains held in trading accounts	7.63	7.36	7.62	6.66	5.66	5.48	5.40	5.79	4.45	3.50
Other	12.25	10.80	11.13	11.85	12.11	12.78	12.93	12.83	12.01	12.54
Liabilities	93.04	92.61	92.58	92.28	92.36	92.14	91.52	91.94	91.64	90.81
Core deposits	29.12	31.66	32.94	33.76	33.28	36.38	40.61	41.07	42.02	40.18
Transaction deposits	11.34	10.19	9.45	8.55	8.01	8.40	8.34	7.74	6.65	6.05
Demand deposits	9.73	8.98	8.46	7.83	7.28	7.50	7.40	6.72	5.43	4.90
Other checkable deposits	1.61	1.21	.99	.72	.74	.90	.95	1.02	1.22	1.15
Savings deposits (including MMDAs)	12.93	15.32	17.07	18.94	19.24	22.21	26.82	28.99	31.54	30.11
Small time deposits	4.85	6.15	6.42	6.26	6.03	5.77	5.44	4.34	3.83	4.02
Managed liabilities <sup>2</sup>	47.39	46.02	44.42	45.49	46.84	43.41	38.89	38.60	39.33	40.83
Large time deposits	3.04	4.17	5.04	5.19	5.55	5.46	5.13	5.53	5.21	6.28
Deposits booked in foreign offices	27.78	23.39	21.23	22.22	22.76	20.28	17.31	16.62	17.20	17.51
Subordinated notes and debentures	1.90	1.80	1.89	1.98	2.10	2.16	2.11	1.92	1.78	1.89
Gross federal funds purchased and RPs	5.88	10.26	9.78	8.84	8.89	9.04	8.83	8.62	7.79	8.39
Other managed liabilities	8.79	6.40	6.49	7.27	7.55	6.47	5.53	5.90	7.35	6.76
Revaluation losses held in trading accounts	7.27	7.53	7.67	6.51	5.69	5.10	4.63	4.88	3.95	3.21
Other	9.26	7.39	7.55	6.52	6.55	7.26	7.39	7.40	6.34	6.60
Capital account	6.96	7.39	7.42	7.72	7.64	7.86	8.48	8.06	8.36	9.19
MEMO										
Commercial real estate loans <sup>3</sup>	4.65	5.45	5.61	5.69	5.87	6.68	6.92	6.31	5.99	6.33
Other real estate owned <sup>4</sup>	.18	.13	.09	.06	.04	.04	.03	.03	.03	.02
Mortgage-backed securities	4.83	5.52	6.65	6.40	6.32	6.68	8.82	9.60	10.30	10.36
Federal Home Loan Bank advances	n.a.	n.a.	n.a.	n.a.	n.a.	.82	.82	.84	.79	.63
Average net consolidated assets (billions of dollars)	1,189	1,514	1,820	1,935	2,234	2,527	2,785	3,148	3,654	4,232

## A.1.—Continued

## B. Ten largest banks by assets—Continued

Item	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Effective interest rate (percent) <sup>5</sup>										
<i>Rates earned</i>										
Interest-earning assets	7.72	7.57	7.55	7.37	7.76	6.83	5.83	5.01	4.72	5.29
Taxable equivalent	7.74	7.60	7.57	7.39	7.78	6.86	5.86	5.03	4.74	5.31
Loans and leases, gross	8.32	8.25	8.21	7.99	8.46	7.50	6.54	5.78	5.53	6.16
Net of loss provisions	8.31	8.10	7.77	7.65	7.92	6.55	5.32	5.21	5.30	5.84
Securities	6.80	6.78	6.83	6.58	6.48	6.23	5.04	4.15	4.04	4.27
Taxable equivalent	6.85	6.85	6.89	6.65	6.55	6.31	5.11	4.21	4.10	4.33
Investment account	6.70	6.76	6.78	6.59	6.40	6.23	5.30	4.26	4.37	4.63
U.S. Treasury securities and U.S. government agency obligations (excluding MBS)	n.a.	n.a.	n.a.	n.a.	n.a.	5.01	3.74	2.62	2.92	3.29
Mortgage-backed securities	n.a.	n.a.	n.a.	n.a.	n.a.	6.42	5.55	4.51	4.83	4.93
Other	n.a.	n.a.	n.a.	n.a.	n.a.	6.34	5.30	4.28	3.76	4.26
Trading account	6.90	6.81	6.92	6.56	6.70	6.24	4.46	3.87	3.32	3.57
Gross federal funds sold and reverse RPs	4.92	5.45	5.20	4.52	4.93	3.86	2.20	1.66	1.47	2.45
Interest-bearing balances at depositories	6.71	6.91	7.16	7.22	7.43	3.73	3.40	2.49	1.80	4.06
<i>Rates paid</i>										
Interest-bearing liabilities	5.44	5.41	5.29	4.79	5.37	4.09	2.55	1.86	1.80	2.80
Interest-bearing deposits	4.57	4.54	4.40	3.82	4.40	3.27	1.95	1.36	1.30	2.00
In foreign offices	5.62	5.52	5.83	4.99	5.67	4.02	2.59	1.76	1.87	2.79
In domestic offices	3.32	3.69	3.39	3.04	3.51	2.84	1.68	1.20	1.08	1.68
Other checkable deposits	1.32	1.97	1.67	1.44	1.61	1.67	.93	.80	.97	2.27
Savings (including MMDAs)	2.76	2.68	2.45	2.11	2.43	1.92	1.02	.73	.71	1.15
Large time deposits <sup>6</sup>	4.62	5.17	4.53	4.36	5.32	4.40	3.26	2.36	2.14	3.06
Other time deposits <sup>6</sup>	4.58	5.45	5.21	4.95	5.53	5.11	3.55	2.86	2.61	3.23
Gross federal funds purchased and RPs	4.93	5.02	5.18	4.53	5.47	3.81	2.02	1.39	1.71	3.16
Other interest-bearing liabilities	8.86	9.13	8.85	8.61	8.15	7.01	5.39	4.26	3.69	5.25
Income and expense as a percentage of average net consolidated assets										
Gross interest income	6.26	6.31	6.21	6.01	6.39	5.55	4.78	4.06	3.95	4.47
Taxable equivalent	6.27	6.33	6.22	6.03	6.41	5.57	4.80	4.08	3.97	4.49
Loans	4.48	4.31	4.27	4.35	4.74	4.13	3.58	3.05	2.86	3.19
Securities	.71	.73	.81	.85	.88	.72	.73	.63	.69	.72
Gross federal funds sold and reverse RPs	.18	.45	.42	.30	.25	.25	.12	.10	.10	.18
Other	.88	.82	.70	.51	.51	.44	.35	.28	.30	.38
Gross interest expense	3.52	3.55	3.48	3.16	3.60	2.69	1.65	1.20	1.22	1.89
Deposits	2.26	2.26	2.20	1.97	2.33	1.74	1.06	.75	.74	1.16
Gross federal funds purchased and RPs	.31	.54	.54	.40	.49	.35	.18	.13	.14	.27
Other	.95	.75	.74	.79	.78	.59	.41	.33	.33	.45
Net interest income	2.73	2.76	2.73	2.84	2.78	2.87	3.13	2.86	2.73	2.58
Taxable equivalent	2.75	2.79	2.75	2.86	2.80	2.89	3.15	2.88	2.75	2.60
Loss provisions <sup>7</sup>	.11	.16	.31	.26	.38	.59	.73	.35	.16	.20
Non-interest income	2.34	2.12	2.15	2.55	2.54	2.26	2.32	2.31	2.21	2.37
Service charges on deposits	.28	.32	.33	.37	.40	.44	.48	.46	.45	.42
Fiduciary activities	.31	.34	.32	.31	.27	.29	.25	.26	.24	.27
Trading revenue	.52	.43	.33	.46	.48	.43	.32	.30	.22	.31
Interest rate exposures	.30	.23	.10	.17	.20	.20	.15	.12	.06	.11
Foreign exchange rate exposures	.17	.20	.20	.19	.18	.14	.14	.14	.12	.12
Other commodity and equity exposures	.05	*	.03	.09	.11	.08	.03	.04	.04	.07
Other	1.23	1.04	1.17	1.41	1.39	1.10	1.26	1.29	1.30	1.38
Non-interest expense	3.57	3.24	3.47	3.45	3.31	3.13	3.16	3.02	3.11	2.99
Salaries, wages, and employee benefits	1.57	1.45	1.45	1.57	1.46	1.38	1.41	1.39	1.34	1.38
Occupancy	.50	.47	.47	.50	.47	.45	.46	.45	.43	.43
Other	1.50	1.33	1.54	1.38	1.39	1.30	1.28	1.18	1.33	1.19
Net non-interest expense	1.23	1.12	1.32	.90	.77	.87	.84	.71	.90	.62
Gains on investment account securities	.04	.08	.11	.03	-.03	.08	.13	.11	.08	*
Income before taxes and extraordinary items	1.44	1.56	1.22	1.71	1.60	1.48	1.69	1.91	1.74	1.75
Taxes	.52	.58	.44	.66	.60	.49	.57	.62	.56	.57
Extraordinary items, net of income taxes	*	*	*	*	*	-.01	*	*	*	*
Net income	.92	.98	.78	1.05	1.00	.99	1.12	1.29	1.18	1.18
Cash dividends declared	.70	.82	.53	.79	.86	.66	1.05	.99	.65	.59
Retained income	.21	.15	.25	.26	.13	.32	.07	.30	.53	.59
MEMO: Return on equity	13.21	13.22	10.53	13.58	13.04	12.55	13.24	16.01	14.11	12.90

1. Includes allocated transfer risk reserve.

2. Measured as the sum of large time deposits in domestic offices, deposits booked in foreign offices, subordinated notes and debentures, federal funds purchased and securities sold under repurchase agreements, Federal Home Loan Bank advances, and other borrowed money.

3. Measured as the sum of construction and land development loans secured by real estate; real estate loans secured by nonfarm nonresidential properties or by multifamily residential properties; and loans to finance commercial real estate, construction, and land development activities not secured by real estate.

4. Other real estate owned is a component of other non-interest-earning assets.

5. When possible, based on the average of quarterly balance sheet data reported on schedule RC-K of the quarterly Call Report.

6. Before 1997, large time deposit open accounts were included in other time deposits.

7. Includes provisions for allocated transfer risk.

\* In absolute value, less than 0.005 percent.

n.a. Not available.

MMDA Money market deposit account.

RP Repurchase agreement.

MBS Mortgage-backed securities.

## A.1. Portfolio composition, interest rates, and income and expense, U.S. banks, 1996–2005

C. Banks ranked 11 through 100 by assets

Item	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Balance sheet items as a percentage of average net consolidated assets										
Interest-earning assets	88.26	87.50	87.87	88.41	88.67	88.09	88.34	88.10	88.18	87.88
Loans and leases, net	64.24	63.89	64.38	64.23	64.88	62.14	60.00	59.48	60.63	63.37
Commercial and industrial	18.95	19.01	18.92	19.40	18.19	15.84	13.27	11.96	11.90	12.18
U.S. addressees	17.71	17.78	17.59	18.18	17.64	15.36	12.94	11.66	11.64	11.91
Foreign addressees	1.24	1.22	1.33	1.22	.55	.48	.33	.30	.26	.27
Consumer	15.67	15.62	14.52	13.57	13.79	13.20	12.79	12.57	12.73	12.84
Credit card	8.26	8.50	7.67	6.78	6.97	6.97	6.56	6.35	6.90	7.44
Installment and other	7.40	7.12	6.86	6.79	6.82	6.23	6.22	6.21	5.83	5.39
Real estate	23.26	22.99	24.59	24.80	26.21	27.29	28.94	30.67	32.16	34.89
In domestic offices	23.10	22.85	24.42	24.62	26.12	27.21	28.88	30.54	31.97	34.73
Construction and land development	1.55	1.69	2.03	2.43	3.00	3.31	3.36	3.22	3.51	4.21
Farmland	.13	.14	.17	.19	.22	.23	.22	.20	.19	.19
One- to four-family residential	14.15	13.88	14.86	14.15	14.51	15.51	17.05	18.79	19.52	21.06
Home equity	2.08	2.22	2.17	2.08	2.49	2.90	3.92	4.74	5.90	6.04
Other	12.07	11.65	12.69	12.07	12.02	12.60	13.13	14.05	13.62	15.02
Multifamily residential	.89	.93	1.00	1.02	1.11	1.16	1.20	1.32	1.34	1.45
Nonfarm nonresidential	6.37	6.21	6.36	6.82	7.28	6.99	7.05	7.00	7.41	7.82
In foreign offices	.16	.15	.18	.19	.09	.09	.06	.13	.20	.16
To depository institutions and acceptances of other banks	1.53	1.30	1.09	.93	1.05	1.40	1.44	1.21	.54	.56
Foreign governments	.20	.09	.06	.06	.03	.03	.02	.02	.01	.02
Agricultural production	.28	.29	.33	.33	.37	.32	.27	.23	.19	.19
Other loans	3.27	3.18	3.35	2.99	2.57	2.03	1.80	1.59	1.87	1.62
Lease-financing receivables	2.41	2.70	2.72	3.29	3.82	3.18	2.65	2.35	2.30	2.07
LESS: Unearned income on loans	-.06	-.05	-.04	-.04	-.03	-.02	-.02	-.02	-.02	-.01
LESS: Loss reserves <sup>1</sup>	-1.27	-1.24	-1.16	-1.11	-1.12	-1.13	-1.17	-1.10	-1.06	-.97
Securities	16.87	15.80	16.66	17.79	17.32	19.00	20.30	21.16	21.28	19.98
Investment account	16.06	15.07	16.13	17.28	16.10	17.71	19.17	20.09	20.12	18.82
Debt	15.62	14.58	15.58	16.64	15.50	17.32	18.82	19.88	19.96	18.69
U.S. Treasury	3.34	2.81	2.25	1.70	1.12	.67	.74	.95	.89	.60
U.S. government agency and corporation obligations	9.12	8.98	9.93	10.57	9.70	10.09	11.45	12.99	12.80	11.62
Government-backed mortgage pools	5.42	5.17	4.98	5.12	4.31	5.19	6.00	6.08	5.74	4.83
Collateralized mortgage obligations	2.16	2.13	2.83	2.89	2.55	2.42	2.79	3.72	3.42	3.39
Other	1.54	1.68	2.12	2.56	2.84	2.48	2.65	3.19	3.64	3.40
State and local government	.99	.88	.92	.99	.96	.99	.97	.95	.96	.98
Private mortgage-backed securities	.96	.73	.96	1.35	1.66	2.01	2.13	2.14	2.65	3.59
Other	1.21	1.18	1.53	2.02	2.06	3.56	3.53	2.85	2.66	1.90
Equity	.44	.49	.55	.65	.60	.39	.34	.21	.16	.13
Trading account	.80	.73	.54	.51	1.22	1.29	1.13	1.07	1.16	1.16
Gross federal funds sold and reverse RPs	4.26	4.38	3.57	3.34	3.76	4.06	4.71	4.20	2.98	2.30
Interest-bearing balances at depositories	2.89	3.43	3.24	3.06	2.71	2.88	3.33	3.26	3.29	2.24
Non-interest-earning assets	11.74	12.50	12.13	11.59	11.33	11.91	11.66	11.90	11.82	12.12
Revaluation gains held in trading accounts	.51	.69	.75	.56	.40	.55	.47	.60	.42	.33
Other	11.23	11.81	11.38	11.03	10.92	11.37	11.19	11.30	11.40	11.79
Liabilities	92.02	91.85	91.63	91.66	91.57	91.15	90.79	90.65	89.87	88.86
Core deposits	52.96	51.51	49.89	48.35	46.28	46.28	47.07	47.93	46.55	48.24
Transaction deposits	17.53	16.12	14.15	12.12	9.93	8.37	7.49	7.29	7.06	6.64
Demand deposits	14.47	14.17	12.39	10.52	8.61	7.17	6.32	5.96	5.65	5.35
Other checkable deposits	3.06	1.95	1.75	1.60	1.32	1.20	1.17	1.33	1.41	1.29
Savings deposits (including MMDAs)	21.17	21.71	22.51	23.90	24.02	26.62	30.07	32.34	31.75	33.40
Small time deposits	14.26	13.69	13.24	12.32	12.33	11.28	9.51	8.30	7.74	8.21
Managed liabilities <sup>2</sup>	35.60	36.60	38.11	39.83	41.98	40.81	39.48	38.12	39.29	36.98
Large time deposits	6.54	7.37	7.83	8.17	9.54	9.72	8.99	8.20	8.76	10.04
Deposits booked in foreign offices	7.73	8.08	8.37	8.19	7.56	7.05	6.28	6.54	7.21	6.02
Subordinated notes and debentures	1.41	1.48	1.66	1.71	1.54	1.53	1.44	1.38	1.39	1.31
Gross federal funds purchased and RPs	10.00	9.36	9.48	9.77	9.28	9.71	9.66	9.69	8.95	7.17
Other managed liabilities	9.92	10.31	10.77	11.99	14.07	12.79	13.11	12.30	12.97	12.44
Revaluation losses held in trading accounts	.49	.68	.76	.58	.41	.52	.44	.56	.40	.33
Other	2.97	3.05	2.87	2.90	2.91	3.54	3.80	4.05	3.64	3.30
Capital account	7.98	8.15	8.37	8.34	8.43	8.85	9.21	9.35	10.13	11.14
MEMO										
Commercial real estate loans <sup>3</sup>	9.38	9.44	10.11	11.00	12.06	12.06	12.24	12.10	12.85	13.92
Other real estate owned <sup>4</sup>	.08	.06	.04	.03	.03	.04	.05	.06	.05	.04
Mortgage-backed securities	8.54	8.03	8.76	9.36	8.52	9.63	10.93	11.93	11.81	11.81
Federal Home Loan Bank advances	n.a.	n.a.	n.a.	n.a.	n.a.	4.07	4.85	4.75	4.65	5.19
Average net consolidated assets (billions of dollars)	1,450	1,604	1,745	1,881	2,031	2,130	2,124	2,287	2,376	2,403

A.1.—Continued

C. Banks ranked 11 through 100 by assets—Continued

Item	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Effective interest rate (percent) <sup>5</sup>										
<i>Rates earned</i>										
Interest-earning assets	8.18	8.33	8.13	7.84	8.44	7.54	6.03	5.30	5.26	6.05
Taxable equivalent	8.23	8.36	8.17	7.88	8.48	7.58	6.07	5.33	5.29	6.08
Loans and leases, gross	8.88	9.03	8.82	8.50	9.14	8.26	6.80	6.11	5.98	6.63
Net of loss provisions	8.21	8.27	8.15	7.80	8.25	6.96	5.59	5.11	5.19	5.90
Securities	6.49	6.55	6.31	6.32	6.64	5.96	4.79	3.80	3.63	4.18
Taxable equivalent	6.66	6.70	6.46	6.46	6.77	6.08	4.91	3.90	3.73	4.29
Investment account	6.49	6.57	6.33	6.34	6.66	6.04	4.86	3.87	3.64	4.11
U.S. Treasury securities and U.S. government agency obligations (excluding MBS)	n.a.	n.a.	n.a.	n.a.	n.a.	5.83	4.28	3.17	2.94	3.47
Mortgage-backed securities	n.a.	n.a.	n.a.	n.a.	n.a.	6.60	5.34	4.20	4.02	4.34
Other	n.a.	n.a.	n.a.	n.a.	n.a.	5.13	4.22	3.61	3.29	4.04
Trading account	6.53	6.05	5.86	5.58	6.25	4.83	3.59	2.56	3.39	5.30
Gross federal funds sold and reverse RPs	5.31	5.45	5.46	5.12	6.06	3.86	1.68	1.14	1.25	3.24
Interest-bearing balances at depositories	5.82	5.76	5.67	4.81	5.49	4.38	2.46	1.93	2.27	3.20
<i>Rates paid</i>										
Interest-bearing liabilities	4.70	4.79	4.77	4.38	5.22	4.16	2.41	1.80	1.71	2.68
Interest-bearing deposits	4.15	4.22	4.15	3.76	4.42	3.60	1.96	1.35	1.29	2.03
In foreign offices	5.29	5.23	5.22	4.70	5.38	3.67	1.70	1.23	1.42	2.76
In domestic offices	3.96	4.04	3.96	3.60	4.26	3.60	1.99	1.36	1.27	1.95
Other checkable deposits	1.78	2.01	2.41	2.03	2.57	2.32	.94	.64	.72	1.28
Savings (including MMDAs)	2.91	2.84	2.76	2.49	2.94	2.30	1.08	.66	.65	1.30
Large time deposits <sup>6</sup>	5.50	5.47	5.32	4.96	5.88	5.11	3.37	2.70	2.49	3.30
Other time deposits <sup>6</sup>	5.26	5.43	5.35	5.03	5.73	5.42	3.68	2.95	2.58	3.04
Gross federal funds purchased and RPs	5.19	5.29	5.22	4.87	6.02	3.86	1.73	1.20	1.37	3.04
Other interest-bearing liabilities	5.95	5.85	5.81	5.41	6.36	5.30	3.54	3.02	2.76	3.87
Income and expense as a percentage of average net consolidated assets										
Gross interest income	7.24	7.26	7.16	6.98	7.54	6.70	5.31	4.67	4.67	5.34
Taxable equivalent	7.28	7.30	7.19	7.02	7.57	6.73	5.34	4.70	4.70	5.36
Loans	5.80	5.87	5.79	5.56	6.05	5.28	4.15	3.72	3.72	4.27
Securities	1.03	.98	1.00	1.10	1.09	1.06	.90	.75	.73	.77
Gross federal funds sold and reverse RPs	.23	.22	.19	.18	.22	.15	.08	.04	.03	.06
Other	.18	.19	.18	.14	.18	.21	.18	.15	.19	.22
Gross interest expense	3.39	3.41	3.45	3.26	3.96	3.14	1.77	1.30	1.26	1.94
Deposits	2.18	2.23	2.23	2.02	2.41	2.01	1.09	.77	.74	1.18
Gross federal funds purchased and RPs	.55	.51	.51	.51	.56	.38	.17	.12	.13	.23
Other	.66	.68	.71	.74	.99	.75	.51	.41	.40	.53
Net interest income	3.84	3.85	3.71	3.72	3.58	3.56	3.54	3.37	3.41	3.40
Taxable equivalent	3.89	3.89	3.74	3.75	3.61	3.59	3.57	3.40	3.44	3.42
Loss provisions <sup>7</sup>	.54	.60	.54	.55	.68	.91	.80	.67	.55	.52
Non-interest income	2.61	2.76	3.07	3.36	3.18	3.35	3.30	3.29	3.05	2.75
Service charges on deposits	.44	.44	.42	.41	.42	.42	.42	.42	.40	.37
Fiduciary activities	.43	.44	.49	.48	.52	.42	.42	.37	.42	.35
Trading revenue	.08	.08	.09	.08	.07	.08	.08	.09	.07	.06
Interest rate exposures	.03	.02	.03	.02	.02	.04	.04	.04	-.01	-.01
Foreign exchange rate exposures	.04	.05	.06	.05	.04	.03	.04	.04	.05	.04
Other commodity and equity exposures	.01	*	*	*	*	*	*	.01	.03	.02
Other	1.67	1.79	2.07	2.39	2.18	2.43	2.37	2.41	2.16	1.98
Non-interest expense	3.85	3.85	4.03	4.12	4.00	3.95	3.73	3.64	3.55	3.36
Salaries, wages, and employee benefits	1.51	1.51	1.53	1.53	1.44	1.47	1.49	1.47	1.45	1.37
Occupancy	.48	.46	.46	.45	.43	.42	.40	.41	.39	.37
Other	1.86	1.88	2.04	2.14	2.14	2.07	1.84	1.76	1.70	1.62
Net non-interest expense	1.24	1.10	.96	.76	.82	.60	.43	.35	.50	.61
Gains on investment account securities	.02	.02	.03	-.01	-.05	.09	.10	.06	.03	*
Income before taxes and extraordinary items	2.09	2.18	2.24	2.40	2.02	2.14	2.41	2.42	2.39	2.27
Taxes	.75	.77	.78	.86	.70	.74	.82	.82	.82	.77
Extraordinary items, net of income taxes	*	*	*	*	*	*	*	*	*	.01
Net income	1.34	1.42	1.45	1.54	1.32	1.39	1.59	1.59	1.57	1.50
Cash dividends declared	1.07	.93	.96	1.16	.94	.96	.99	1.05	.95	1.00
Retained income	.26	.48	.50	.38	.38	.43	.60	.54	.62	.50
MEMO: Return on equity	16.78	17.36	17.38	18.46	15.72	15.74	17.24	17.03	15.54	13.48

1. Includes allocated transfer risk reserve.

2. Measured as the sum of large time deposits in domestic offices, deposits booked in foreign offices, subordinated notes and debentures, federal funds purchased and securities sold under repurchase agreements, Federal Home Loan Bank advances, and other borrowed money.

3. Measured as the sum of construction and land development loans secured by real estate; real estate loans secured by nonfarm nonresidential properties or by multifamily residential properties; and loans to finance commercial real estate, construction, and land development activities not secured by real estate.

4. Other real estate owned is a component of other non-interest-earning assets.

5. When possible, based on the average of quarterly balance sheet data reported on schedule RC-K of the quarterly Call Report.

6. Before 1997, large time deposit open accounts were included in other time deposits.

7. Includes provisions for allocated transfer risk.

\* In absolute value, less than 0.005 percent.

n.a. Not available.

MMDA Money market deposit account.

RP Repurchase agreement.

MBS Mortgage-backed securities.

## A.1. Portfolio composition, interest rates, and income and expense, U.S. banks, 1996–2005

D. Banks ranked 101 through 1,000 by assets

Item	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Balance sheet items as a percentage of average net consolidated assets										
Interest-earning assets	91.11	91.34	91.38	91.68	91.50	91.16	91.36	91.34	91.56	91.32
Loans and leases, net	62.72	62.34	61.23	61.48	62.15	62.46	61.46	61.32	63.33	65.15
Commercial and industrial	12.76	12.38	12.45	12.64	12.95	13.03	12.38	11.51	11.52	11.78
U.S. addressees	12.58	12.14	12.12	12.32	12.60	12.65	12.06	11.20	11.21	11.48
Foreign addressees	.18	.23	.32	.32	.36	.38	.31	.31	.31	.30
Consumer	16.11	14.36	12.56	10.79	10.19	9.76	8.13	6.79	6.33	5.42
Credit card	6.92	5.87	4.78	3.37	3.27	3.61	2.63	1.82	1.91	1.24
Installment and other	9.19	8.49	7.78	7.41	6.92	6.15	5.50	4.97	4.42	4.18
Real estate	31.28	33.10	33.83	35.90	36.93	37.64	38.92	40.96	43.38	45.86
In domestic offices	31.26	33.08	33.81	35.87	36.91	37.62	38.89	40.91	43.32	45.78
Construction and land development	2.38	2.68	2.87	3.48	4.15	4.90	5.40	5.89	6.98	8.81
Farmland	.46	.52	.56	.58	.65	.66	.73	.80	.91	.99
One- to four-family residential	17.29	18.08	18.14	18.26	17.17	16.18	15.39	15.71	15.36	15.22
Home equity	2.30	2.29	2.14	1.99	2.10	2.21	2.51	2.92	3.46	3.61
Other	14.99	15.78	16.00	16.26	15.06	13.97	12.88	12.79	11.90	11.61
Multifamily residential	1.28	1.28	1.25	1.44	1.58	1.69	1.83	2.00	2.24	2.37
Nonfarm nonresidential	9.85	10.52	10.99	12.12	13.36	14.18	15.55	16.51	17.82	18.40
In foreign offices	.02	.02	.02	.02	.02	.02	.03	.05	.06	.08
To depository institutions and acceptances of other banks	.50	.59	.52	.46	.37	.38	.37	.37	.25	.13
Foreign governments	.02	.02	.03	.03	.03	.03	.02	.02	.01	*
Agricultural production	.70	.73	.80	.78	.82	.85	.86	.83	.82	.81
Other loans	1.67	1.47	1.30	1.25	1.22	1.22	1.18	1.25	1.32	1.36
Lease-financing receivables	1.00	.99	.99	.78	.75	.74	.75	.67	.75	.75
LESS: Unearned income on loans	−1.10	−1.10	−.09	−.08	−.08	−.07	−.06	−.06	−.06	−.06
LESS: Loss reserves <sup>1</sup>	−1.23	−1.19	−1.15	−1.06	−1.04	−1.12	−1.10	−1.02	−.98	−.90
Securities	22.61	23.37	24.18	25.17	24.34	22.81	23.86	24.36	23.59	21.58
Investment account	22.49	23.26	24.08	25.09	24.25	22.70	23.80	24.23	23.54	21.50
Debt	21.97	22.65	23.39	24.33	23.46	22.28	23.30	23.79	23.18	21.21
U.S. Treasury	5.59	4.94	3.91	2.53	1.81	1.32	1.22	1.00	1.02	.83
U.S. government agency and corporation obligations	12.62	13.91	15.08	16.29	15.56	14.70	15.85	16.96	16.70	15.05
Government-backed mortgage pools	5.67	6.20	6.45	6.72	6.22	6.27	6.55	7.03	6.80	5.73
Collateralized mortgage obligations	3.11	3.00	3.21	3.52	3.04	3.08	3.69	3.69	3.41	3.16
Other	3.84	4.71	5.42	6.05	6.30	5.35	5.60	6.24	6.49	6.16
State and local government	2.23	2.43	2.69	2.91	2.91	2.90	2.89	2.95	2.92	2.78
Private mortgage-backed securities	.76	.59	.65	1.00	.99	.94	.99	.87	1.08	1.17
Other	.76	.78	1.06	1.60	2.19	2.42	2.34	2.01	1.46	1.37
Equity	.52	.61	.69	.77	.79	.43	.50	.43	.36	.29
Trading account	.12	.10	.11	.08	.09	.11	.06	.14	.05	.08
Gross federal funds sold and reverse RPs	3.86	3.59	4.16	3.35	3.40	4.20	4.15	3.85	2.95	2.83
Interest-bearing balances at depositories	1.93	2.05	1.80	1.68	1.60	1.68	1.89	1.81	1.69	1.76
Non-interest-earning assets	8.89	8.66	8.62	8.32	8.50	8.84	8.64	8.66	8.44	8.68
Revaluation gains held in trading accounts	.02	*	*	.01	.02	.01	.01	*	*	*
Other	8.86	8.66	8.62	8.31	8.49	8.84	8.64	8.66	8.44	8.68
Liabilities	91.06	90.78	90.55	90.90	90.95	90.32	89.93	89.69	89.18	89.10
Core deposits	64.28	64.06	63.87	62.48	60.80	60.33	61.26	61.31	60.40	59.08
Transaction deposits	19.99	18.05	16.08	13.94	12.29	11.48	11.37	11.50	11.77	11.16
Demand deposits	13.80	13.11	11.87	10.19	8.97	8.23	8.05	7.96	8.13	7.88
Other checkable deposits	6.19	4.94	4.22	3.75	3.32	3.25	3.32	3.54	3.64	3.28
Savings deposits (including MMDAs)	22.69	23.97	26.43	28.55	28.55	29.40	32.34	34.00	34.42	33.74
Small time deposits	21.60	22.05	21.36	19.99	19.96	19.46	17.55	15.81	14.20	14.17
Managed liabilities <sup>2</sup>	24.96	24.89	24.65	26.33	28.01	27.75	26.57	26.40	26.98	28.34
Large time deposits	8.34	9.68	10.09	10.30	11.98	12.60	12.17	11.92	12.12	13.60
Deposits booked in foreign offices	1.34	1.23	1.31	1.20	1.28	1.24	.88	.64	.65	.57
Subordinated notes and debentures	.36	.33	.37	.35	.30	.31	.34	.35	.35	.27
Gross federal funds purchased and RPs	8.17	7.06	6.15	6.90	6.30	5.77	5.27	5.35	5.52	5.54
Other managed liabilities	6.74	6.59	6.73	7.57	8.15	7.84	7.90	8.13	8.34	8.35
Revaluation losses held in trading accounts	.02	.01	.01	.01	*	.01	.01	*	*	*
Other	1.79	1.82	2.02	2.10	2.13	2.23	2.08	1.98	1.81	1.69
Capital account	8.94	9.22	9.45	9.10	9.05	9.68	10.07	10.31	10.82	10.90
MEMO										
Commercial real estate loans <sup>3</sup>	13.80	14.72	15.33	17.28	19.32	21.03	23.05	24.62	27.25	29.79
Other real estate owned <sup>4</sup>	.13	.11	.09	.08	.07	.08	.10	.11	.10	.08
Mortgage-backed securities	9.55	9.79	10.30	11.24	10.25	10.29	11.24	11.59	11.29	10.06
Federal Home Loan Bank advances	n.a.	n.a.	n.a.	n.a.	n.a.	5.27	5.71	6.29	6.46	6.42
Average net consolidated assets (billions of dollars)	1,078	971	938	972	986	1,002	1,022	1,072	1,080	1,152



## A.1.—Continued

D. Banks ranked 101 through 1,000 by assets—Continued

Item	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Effective interest rate (percent) <sup>5</sup>										
<i>Rates earned</i>										
Interest-earning assets	8.44	8.54	8.38	7.83	8.48	7.86	6.43	5.60	5.46	6.12
Taxable equivalent	8.52	8.63	8.47	7.92	8.56	7.94	6.51	5.68	5.53	6.19
Loans and leases, gross	9.41	9.53	9.42	8.74	9.42	8.76	7.32	6.57	6.25	6.90
Net of loss provisions	8.77	8.79	8.79	8.26	8.75	7.88	6.56	6.02	5.87	6.64
Securities	6.34	6.43	6.31	6.03	6.45	5.97	4.95	3.81	3.79	4.03
Taxable equivalent	6.60	6.69	6.57	6.29	6.71	6.25	5.21	4.06	4.04	4.28
Investment account	6.34	6.43	6.30	6.03	6.45	5.96	4.93	3.82	3.78	4.02
U.S. Treasury securities and U.S. government agency obligations (excluding MBS)	n.a.	n.a.	n.a.	n.a.	n.a.	5.85	4.54	3.42	3.15	3.47
Mortgage-backed securities	n.a.	n.a.	n.a.	n.a.	n.a.	6.33	5.38	3.95	4.01	4.23
Other	n.a.	n.a.	n.a.	n.a.	n.a.	5.40	4.51	4.07	4.21	4.42
Trading account	5.94	6.37	6.84	7.33	9.30	6.60	14.05	3.07	10.30	5.82
Gross federal funds sold and reverse RPs	5.29	5.42	5.31	4.98	6.15	3.91	1.73	1.27	1.57	3.31
Interest-bearing balances at depositories	5.69	5.44	5.77	5.07	5.76	3.94	1.79	1.26	1.47	3.29
<i>Rates paid</i>										
Interest-bearing liabilities	4.58	4.67	4.60	4.19	4.93	4.11	2.54	1.88	1.73	2.48
Interest-bearing deposits	4.27	4.34	4.28	3.84	4.46	3.82	2.28	1.61	1.44	2.09
In foreign offices	5.72	5.42	5.55	5.07	6.13	4.45	2.14	1.43	1.43	3.05
In domestic offices	4.23	4.32	4.25	3.82	4.43	3.81	2.28	1.61	1.44	2.08
Other checkable deposits	1.96	2.17	2.15	1.99	2.27	1.81	1.06	.74	.72	1.18
Savings (including MMDAs)	3.11	3.08	2.96	2.65	3.07	2.22	1.17	.76	.74	1.27
Large time deposits <sup>6</sup>	5.48	5.56	5.51	5.17	6.00	5.27	3.34	2.58	2.33	3.21
Other time deposits <sup>6</sup>	5.57	5.57	5.64	5.11	5.74	5.51	3.77	2.86	2.51	3.10
Gross federal funds purchased and RPs	5.16	5.20	5.14	4.82	5.95	3.83	1.83	1.29	1.45	2.94
Other interest-bearing liabilities	5.90	6.08	5.99	5.36	6.45	5.41	4.17	3.60	3.37	4.00
Income and expense as a percentage of average net consolidated assets										
Gross interest income	7.70	7.79	7.66	7.19	7.79	7.16	5.85	5.08	4.99	5.57
Taxable equivalent	7.78	7.87	7.74	7.27	7.86	7.24	5.93	5.16	5.06	5.64
Loans	6.01	6.05	5.89	5.47	5.96	5.59	4.57	4.08	4.01	4.55
Securities	1.42	1.49	1.50	1.51	1.58	1.33	1.15	.91	.88	.86
Gross federal funds sold and reverse RPs	.20	.19	.22	.17	.21	.16	.07	.05	.05	.09
Other	.06	.06	.06	.04	.04	.08	.06	.05	.05	.07
Gross interest expense	3.41	3.47	3.45	3.20	3.79	3.14	1.92	1.41	1.29	1.84
Deposits	2.57	2.69	2.70	2.44	2.87	2.48	1.49	1.04	.92	1.34
Gross federal funds purchased and RPs	.43	.37	.32	.34	.38	.22	.09	.07	.08	.16
Other	.42	.42	.42	.42	.54	.44	.34	.30	.29	.34
Net interest income	4.29	4.32	4.22	3.99	4.00	4.02	3.93	3.68	3.70	3.73
Taxable equivalent	4.37	4.39	4.29	4.07	4.07	4.10	4.00	3.75	3.77	3.79
Loss provisions <sup>7</sup>	.52	.58	.49	.39	.52	.65	.55	.40	.30	.24
Non-interest income	1.88	2.07	2.26	2.31	2.35	2.37	2.37	2.31	2.26	2.02
Service charges on deposits	.41	.40	.39	.38	.36	.39	.41	.41	.39	.36
Fiduciary activities	.29	.32	.37	.38	.44	.40	.35	.34	.37	.35
Trading revenue	.02	.01	.02	.02	.01	*	*	.01	.01	.01
Interest rate exposures	.01	.01	.01	.01	.01	-.01	*	.01	.01	.01
Foreign exchange rate exposures	.01	*	*	*	*	*	*	*	*	*
Other commodity and equity exposures	*	*	*	*	*	*	*	*	*	*
Other	1.16	1.34	1.49	1.53	1.55	1.58	1.61	1.55	1.49	1.30
Non-interest expense	3.69	3.73	3.86	3.70	3.84	3.88	3.73	3.60	3.54	3.37
Salaries, wages, and employee benefits	1.44	1.50	1.56	1.56	1.59	1.61	1.64	1.64	1.64	1.61
Occupancy	.45	.46	.47	.47	.47	.46	.45	.43	.43	.41
Other	1.80	1.77	1.83	1.68	1.78	1.81	1.64	1.53	1.47	1.35
Net non-interest expense	1.81	1.66	1.60	1.39	1.48	1.52	1.36	1.29	1.28	1.35
Gains on investment account securities	.02	.02	.04	-.01	-.04	.05	.04	.05	.02	-.01
Income before taxes and extraordinary items	1.98	2.10	2.16	2.20	1.96	1.90	2.06	2.03	2.14	2.13
Taxes	.69	.73	.74	.74	.67	.66	.67	.66	.68	.68
Extraordinary items, net of income taxes	*	*	.06	.01	*	.01	*	.03	*	*
Net income	1.29	1.37	1.47	1.47	1.29	1.25	1.38	1.40	1.45	1.45
Cash dividends declared	1.04	1.10	1.01	1.06	.92	1.33	1.19	1.64	.78	.87
Retained income	.25	.28	.46	.40	.37	-.08	.19	-.25	.67	.58
MEMO: Return on equity	14.42	14.89	15.60	16.11	14.21	12.93	13.75	13.54	13.43	13.34

1. Includes allocated transfer risk reserve.

2. Measured as the sum of large time deposits in domestic offices, deposits booked in foreign offices, subordinated notes and debentures, federal funds purchased and securities sold under repurchase agreements, Federal Home Loan Bank advances, and other borrowed money.

3. Measured as the sum of construction and land development loans secured by real estate; real estate loans secured by nonfarm nonresidential properties or by multifamily residential properties; and loans to finance commercial real estate, construction, and land development activities not secured by real estate.

4. Other real estate owned is a component of other non-interest-earning assets.

5. When possible, based on the average of quarterly balance sheet data reported on schedule RC-K of the quarterly Call Report.

6. Before 1997, large time deposit open accounts were included in other time deposits.

7. Includes provisions for allocated transfer risk.

\* In absolute value, less than 0.005 percent.

n.a. Not available.

MMDA Money market deposit account.

RP Repurchase agreement.

MBS Mortgage-backed securities.

## A.1. Portfolio composition, interest rates, and income and expense, U.S. banks, 1996–2005

E. Banks not ranked among the 1,000 largest by assets

Item	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Balance sheet items as a percentage of average net consolidated assets										
Interest-earning assets	92.45	92.45	92.64	92.55	92.52	92.26	92.22	92.14	92.34	92.31
Loans and leases, net	57.38	58.76	59.11	59.76	62.31	62.67	62.72	62.32	63.81	65.45
Commercial and industrial	9.98	10.16	10.33	10.64	11.09	11.10	10.71	10.42	10.29	10.21
U.S. addressees	9.91	10.08	10.25	10.55	11.02	11.02	10.64	10.37	10.25	10.15
Foreign addressees	.07	.08	.08	.08	.07	.08	.06	.05	.04	.06
Consumer	9.42	8.98	8.46	8.16	7.98	7.42	6.77	6.16	5.45	4.97
Credit card	1.04	.85	.70	.69	.59	.57	.49	.51	.40	.36
Installment and other	8.39	8.14	7.76	7.47	7.39	6.85	6.28	5.64	5.05	4.61
Real estate	34.10	35.55	36.04	36.84	39.29	40.30	41.52	42.31	44.76	46.99
In domestic offices	34.10	35.55	36.04	36.83	39.29	40.30	41.52	42.31	44.76	46.99
Construction and land development	2.61	2.82	3.02	3.28	3.70	4.23	4.51	4.99	6.01	7.46
Farmland	2.55	2.69	2.83	2.95	3.06	3.04	3.08	3.12	3.22	3.25
One- to four-family residential	17.47	18.16	18.04	17.66	18.43	18.24	17.91	17.09	17.20	17.15
Home equity	1.20	1.24	1.21	1.17	1.28	1.37	1.62	1.80	2.12	2.20
Other	16.28	16.92	16.83	16.49	17.15	16.87	16.29	15.30	15.08	14.95
Multifamily residential	.92	.95	.93	.98	1.04	1.06	1.16	1.28	1.41	1.48
Nonfarm nonresidential	10.54	10.93	11.22	11.96	13.06	13.71	14.86	15.82	16.93	17.65
In foreign offices	*	*	*	*	*	*	*	*	*	*
To depository institutions and acceptances of other banks	.21	.20	.14	.14	.12	.12	.10	.09	.07	.05
Foreign governments	*	*	*	.01	.01	*	*	*	*	*
Agricultural production	3.92	4.05	4.27	4.06	3.85	3.76	3.64	3.39	3.25	3.21
Other loans	.69	.67	.67	.67	.69	.67	.65	.66	.68	.70
Lease-financing receivables	.23	.25	.24	.26	.27	.27	.31	.26	.25	.24
LESS: Unearned income on loans	-.27	-.24	-.20	-.15	-.11	-.09	-.07	-.06	-.06	-.05
LESS: Loss reserves <sup>1</sup>	-.90	-.87	-.86	-.87	-.88	-.88	-.90	-.92	-.89	-.87
Securities	29.53	28.24	26.70	26.91	25.40	22.80	23.34	23.46	23.33	21.91
Investment account	29.50	28.21	26.66	26.88	25.38	22.79	23.33	23.43	23.33	21.90
Debt	29.01	27.69	26.12	26.34	24.82	22.49	23.05	23.12	23.06	21.70
U.S. Treasury	7.85	6.70	5.05	3.34	2.12	1.33	1.04	.90	.81	.71
U.S. government agency and corporation obligations	15.67	15.58	15.43	16.89	16.95	15.27	16.07	16.22	16.57	15.63
Government-backed mortgage pools	4.21	4.01	3.90	3.95	3.47	3.78	4.54	4.84	4.75	4.23
Collateralized mortgage obligations	2.46	2.19	2.02	2.00	1.70	1.94	2.30	2.20	1.96	1.70
Other	9.00	9.38	9.51	10.93	11.78	9.56	9.23	9.19	9.85	9.70
State and local government	4.62	4.60	4.80	4.96	4.64	4.51	4.56	4.73	4.67	4.49
Private mortgage-backed securities	.18	.20	.16	.26	.23	.27	.26	.21	.19	.22
Other	.68	.61	.68	.89	.88	1.11	1.12	1.05	.83	.65
Equity	.49	.52	.54	.53	.56	.30	.27	.31	.26	.20
Trading account	.03	.03	.04	.03	.02	.01	.01	.04	.01	.02
Gross federal funds sold and reverse RPs	4.04	3.95	5.12	4.17	3.22	5.01	4.26	4.26	3.33	3.24
Interest-bearing balances at depositories	1.51	1.49	1.72	1.71	1.59	1.78	1.90	2.08	1.86	1.70
Non-interest-earning assets	7.55	7.55	7.36	7.45	7.48	7.74	7.78	7.86	7.66	7.69
Revaluation gains held in trading accounts	*	*	*	*	*	*	*	*	*	*
Other	7.55	7.55	7.36	7.45	7.48	7.74	7.78	7.86	7.66	7.69
Liabilities	89.82	89.63	89.54	89.75	89.88	89.59	89.73	89.58	89.55	89.48
Core deposits	75.76	74.58	73.75	72.74	70.87	69.92	70.04	69.96	69.24	67.68
Transaction deposits	24.88	24.48	24.26	23.87	23.20	22.35	22.66	23.18	23.36	22.71
Demand deposits	13.13	13.09	13.08	12.80	12.64	12.16	12.24	12.58	12.77	12.76
Other checkable deposits	11.75	11.39	11.18	11.07	10.57	10.19	10.42	10.60	10.59	9.95
Savings deposits (including MMDAs)	19.60	19.00	19.05	19.77	19.19	19.38	21.32	22.43	23.24	22.98
Small time deposits	31.29	31.10	30.43	29.11	28.48	28.19	26.05	24.36	22.64	21.99
Managed liabilities <sup>2</sup>	12.99	14.02	14.76	16.09	18.08	18.67	18.79	18.78	19.57	21.04
Large time deposits	9.77	10.51	11.11	11.52	12.51	13.55	13.21	13.07	13.15	14.53
Deposits booked in foreign offices	.11	.10	.07	.08	.05	.06	.07	.06	.07	.06
Subordinated notes and debentures	.02	.01	.01	.01	.02	.02	.04	.03	.04	.03
Gross federal funds purchased and RPs	1.71	1.67	1.49	1.79	2.06	1.55	1.51	1.52	1.76	1.74
Other managed liabilities	1.39	1.73	2.08	2.69	3.44	3.49	3.96	4.09	4.55	4.69
Revaluation losses held in trading accounts	*	*	*	*	*	*	*	*	*	*
Other	1.06	1.02	1.03	.92	.93	1.00	.90	.84	.74	.77
Capital account	10.18	10.37	10.46	10.25	10.12	10.41	10.27	10.42	10.45	10.52
MEMO										
Commercial real estate loans <sup>3</sup>	14.18	14.80	15.27	16.33	17.91	19.15	20.67	22.23	24.50	26.76
Other real estate owned <sup>4</sup>	.20	.16	.13	.11	.11	.12	.14	.15	.14	.13
Mortgage-backed securities	6.85	6.39	6.07	6.22	5.39	5.99	7.10	7.24	6.90	6.15
Federal Home Loan Bank advances	n.a.	n.a.	n.a.	n.a.	n.a.	3.34	3.71	3.87	4.33	4.47
Average net consolidated assets (billions of dollars)	661	647	644	651	655	675	704	742	769	805

## A.1.—Continued

E. Banks not ranked among the 1,000 largest by assets—Continued

Item	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Effective interest rate (percent) <sup>5</sup>										
<i>Rates earned</i>										
Interest-earning assets	8.37	8.50	8.35	8.05	8.44	7.94	6.79	5.94	5.73	6.23
Taxable equivalent	8.50	8.63	8.48	8.18	8.56	8.05	6.91	6.05	5.84	6.33
Loans and leases, gross	9.75	9.80	9.69	9.28	9.51	9.03	7.83	7.08	6.72	7.18
Net of loss provisions	9.47	9.49	9.34	8.89	9.14	8.59	7.39	6.72	6.45	6.95
Securities	6.14	6.26	6.04	5.88	6.15	5.86	5.03	3.87	3.74	3.87
Taxable equivalent	6.52	6.65	6.46	6.29	6.54	6.28	5.43	4.26	4.11	4.24
Investment account	6.14	6.26	6.04	5.89	6.15	5.86	5.02	3.87	3.73	3.87
U.S. Treasury securities and U.S. government agency obligations (excluding MBS)	n.a.	n.a.	n.a.	n.a.	n.a.	5.97	4.80	3.74	3.39	3.53
Mortgage-backed securities	n.a.	n.a.	n.a.	n.a.	n.a.	6.20	5.47	3.58	3.90	4.18
Other	n.a.	n.a.	n.a.	n.a.	n.a.	5.29	4.87	4.43	4.18	4.16
Trading account	6.47	6.33	5.26	3.60	4.01	6.43	15.38	2.89	18.95	7.52
Gross federal funds sold and reverse RPs	5.34	5.51	5.36	4.96	6.25	3.83	1.63	1.08	1.32	3.21
Interest-bearing balances at depositories	5.63	5.62	5.67	5.69	6.38	4.56	2.68	1.96	2.03	3.21
<i>Rates paid</i>										
Interest-bearing liabilities	4.49	4.61	4.60	4.28	4.80	4.40	2.92	2.13	1.87	2.43
Interest-bearing deposits	4.44	4.54	4.53	4.22	4.67	4.32	2.78	2.02	1.75	2.29
In foreign offices	5.34	4.77	5.08	4.34	5.13	3.97	1.67	.85	1.04	2.86
In domestic offices	4.44	4.53	4.53	4.22	4.67	4.32	2.79	2.02	1.75	2.29
Other checkable deposits	2.41	2.46	2.44	2.28	2.47	1.97	1.16	.78	.69	.99
Savings (including MMDAs)	3.26	3.36	3.39	3.21	3.56	2.81	1.72	1.13	1.04	1.53
Large time deposits <sup>6</sup>	5.48	5.53	5.53	5.21	5.89	5.53	3.62	2.78	2.47	3.22
Other time deposits <sup>6</sup>	5.61	5.66	5.63	5.25	5.70	5.60	3.88	2.96	2.55	3.04
Gross federal funds purchased and RPs	5.11	5.22	4.99	4.73	5.69	3.92	1.85	1.31	1.45	2.89
Other interest-bearing liabilities	5.77	6.32	6.45	5.64	6.24	5.74	5.32	4.06	3.67	4.02
Income and expense as a percentage of average net consolidated assets										
Gross interest income	7.77	7.90	7.75	7.48	7.83	7.35	6.31	5.46	5.32	5.78
Taxable equivalent	7.89	8.02	7.87	7.60	7.95	7.45	6.41	5.56	5.42	5.88
Loans	5.68	5.86	5.80	5.62	5.99	5.75	5.01	4.47	4.35	4.76
Securities	1.80	1.76	1.59	1.58	1.57	1.32	1.16	.89	.87	.85
Gross federal funds sold and reverse RPs	.24	.24	.29	.22	.21	.20	.07	.05	.05	.11
Other	.04	.04	.06	.06	.05	.08	.06	.05	.05	.06
Gross interest expense	3.39	3.48	3.46	3.26	3.64	3.34	2.23	1.60	1.41	1.82
Deposits	3.22	3.28	3.25	3.02	3.30	3.08	1.98	1.41	1.22	1.58
Gross federal funds purchased and RPs	.08	.08	.07	.08	.12	.06	.03	.02	.02	.05
Other	.08	.11	.13	.15	.21	.20	.21	.17	.17	.19
Net interest income	4.38	4.42	4.28	4.22	4.20	4.01	4.08	3.86	3.91	3.96
Taxable equivalent	4.50	4.54	4.41	4.35	4.31	4.12	4.19	3.96	4.00	4.06
Loss provisions <sup>7</sup>	.25	.27	.29	.31	.32	.36	.35	.29	.23	.21
Non-interest income	1.42	1.41	1.52	1.44	1.32	1.31	1.39	1.47	1.38	1.34
Service charges on deposits	.44	.44	.42	.42	.43	.44	.45	.43	.43	.40
Fiduciary activities	.19	.20	.23	.26	.21	.25	.27	.28	.32	.33
Trading revenue	*	*	*	*	.01	*	*	*	*	*
Interest rate exposures	*	*	*	*	*	*	*	*	*	*
Foreign exchange rate exposures	*	*	*	*	*	*	*	*	*	*
Other commodity and equity exposures	*	*	*	*	*	*	*	*	*	*
Other	.79	.77	.86	.75	.68	.62	.67	.76	.64	.61
Non-interest expense	3.70	3.69	3.74	3.73	3.58	3.55	3.57	3.56	3.52	3.49
Salaries, wages, and employee benefits	1.77	1.80	1.82	1.82	1.78	1.79	1.82	1.82	1.81	1.80
Occupancy	.49	.49	.49	.49	.47	.47	.46	.45	.45	.44
Other	1.44	1.40	1.43	1.42	1.32	1.29	1.28	1.28	1.26	1.25
Net non-interest expense	2.28	2.28	2.23	2.29	2.26	2.24	2.18	2.09	2.14	2.15
Gains on investment account securities	.01	.01	.02	*	-.01	.04	.05	.04	.01	*
Income before taxes and extraordinary items	1.85	1.89	1.79	1.62	1.61	1.45	1.60	1.53	1.55	1.60
Taxes	.59	.59	.53	.47	.45	.39	.41	.38	.37	.38
Extraordinary items, net of income taxes	*	*	*	*	*	*	-.01	*	*	*
Net income	1.26	1.30	1.26	1.15	1.17	1.06	1.18	1.14	1.17	1.22
Cash dividends declared	.64	.74	.82	.70	.79	.64	.68	.67	.64	.67
Retained income	.62	.56	.44	.45	.38	.42	.49	.47	.54	.55
MEMO: Return on equity	12.37	12.53	12.02	11.26	11.52	10.17	11.46	10.96	11.24	11.58

1. Includes allocated transfer risk reserve.

2. Measured as the sum of large time deposits in domestic offices, deposits booked in foreign offices, subordinated notes and debentures, federal funds purchased and securities sold under repurchase agreements, Federal Home Loan Bank advances, and other borrowed money.

3. Measured as the sum of construction and land development loans secured by real estate; real estate loans secured by nonfarm nonresidential properties or by multifamily residential properties; and loans to finance commercial real estate, construction, and land development activities not secured by real estate.

4. Other real estate owned is a component of other non-interest-earning assets.

5. When possible, based on the average of quarterly balance sheet data reported on schedule RC-K of the quarterly Call Report.

6. Before 1997, large time deposit open accounts were included in other time deposits.

7. Includes provisions for allocated transfer risk.

\* In absolute value, less than 0.005 percent.

n.a. Not available.

MMDA Money market deposit account.

RP Repurchase agreement.

MBS Mortgage-backed securities.

## A.2. Report of income, all U.S. banks, 1996–2005

Millions of dollars

Item	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Gross interest income .....	313,696	338,865	359,675	366,137	423,839	404,406	350,040	329,757	350,028	428,064
Taxable equivalent .....	316,156	341,298	362,140	368,764	426,476	407,093	352,788	332,540	353,011	431,015
Loans .....	239,850	256,141	271,441	278,537	326,800	311,664	269,828	258,130	269,704	328,405
Securities .....	50,631	52,660	56,598	62,116	67,665	63,089	59,316	53,315	58,588	65,883
Gross federal funds sold and reverse repurchase agreements .....	9,272	13,658	14,999	12,330	13,546	12,649	6,223	5,122	5,245	11,012
Other .....	13,944	16,406	16,637	13,155	15,829	17,006	14,672	13,189	16,490	22,764
Gross interest expense .....	150,249	164,692	178,161	174,946	222,159	188,799	118,920	94,471	99,261	162,488
Deposits .....	107,512	117,350	125,217	119,665	151,145	132,352	81,899	62,753	64,001	105,731
Gross federal funds purchased and repurchase agreements .....	16,780	20,439	22,182	21,130	26,860	19,590	9,920	7,590	9,203	19,345
Other .....	25,956	26,903	30,760	34,149	44,155	36,854	27,101	24,128	26,057	37,411
Net interest income .....	163,447	174,173	181,514	191,191	201,680	215,607	231,120	235,286	250,767	265,576
Taxable equivalent .....	165,907	176,606	183,979	193,818	204,317	218,294	233,868	238,069	253,750	268,527
Loss provisions .....	16,395	19,402	21,427	21,186	29,386	43,238	45,278	32,767	23,895	25,581
Non-interest income .....	95,313	105,640	123,668	144,429	153,163	160,925	168,484	183,614	188,216	200,578
Service charges on deposits .....	17,050	18,558	19,769	21,497	23,719	26,873	29,631	31,693	33,459	33,880
Fiduciary activities .....	14,296	16,584	19,268	20,502	22,220	21,989	21,404	22,456	25,102	26,390
Trading revenue .....	7,525	8,018	7,693	10,429	12,235	12,382	10,735	11,446	9,954	14,355
Other .....	56,444	62,480	76,939	92,001	94,988	99,679	106,717	118,019	119,702	125,953
Non-interest expense .....	162,581	171,060	193,833	204,632	216,432	226,027	230,292	243,306	263,364	274,150
Salaries, wages, and employee benefits ..	67,826	72,346	79,538	86,151	89,036	94,209	100,455	108,471	115,281	124,072
Occupancy .....	20,892	22,080	24,164	25,865	26,765	27,945	29,316	31,318	33,258	35,053
Other .....	73,865	76,634	90,129	92,616	100,631	103,875	100,520	103,516	114,825	115,025
Net non-interest expense .....	67,268	65,420	70,165	60,203	63,269	65,102	61,808	59,692	75,148	73,572
Gains on investment account securities .....	1,123	1,825	3,090	250	-2,280	4,625	6,411	5,633	3,792	-220
Income before taxes .....	80,908	91,177	93,016	110,055	106,744	111,891	130,448	148,459	155,515	166,204
Taxes .....	28,447	32,001	31,965	39,211	37,250	37,284	42,956	48,456	50,340	53,652
Extraordinary items, net of income taxes ..	88	56	506	169	-31	-324	-78	427	59	240
<b>Net income .....</b>	<b>52,550</b>	<b>59,230</b>	<b>61,556</b>	<b>71,012</b>	<b>69,463</b>	<b>74,284</b>	<b>87,413</b>	<b>100,431</b>	<b>105,234</b>	<b>112,791</b>
Cash dividends declared .....	39,419	42,801	41,205	52,101	52,547	54,844	67,230	77,757	59,587	64,617
Retained income .....	13,131	16,430	20,351	18,912	16,916	19,438	20,183	22,674	45,647	48,175

# Credit Card Disclosures, Solicitations, and Privacy Notices: Survey Results of Consumer Knowledge and Behavior

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The mandatory dissemination of certain information by financial institutions is a key aspect of consumer protection law. It offers two significant advantages for consumer protection in the financial area over the alternative of direct government intervention into product pricing and content. First, information disclosure is compatible with competition, a significant market force already at work to protect consumers by keeping price rises in check. Because of competition, institutions already have incentives to make their products known, to reveal favorable pricing and product features, and to treat consumers fairly by keeping them generally informed about what they want and need to know. When a financial institution employs these strategies, it generates a good business reputation that will produce referrals and repeat customers. Actions that firms use to accomplish these goals include advertising their prices and supplying clients and potential customers with useful information about product prices and features.

The requirements for disclosures assist in the dissemination of financial information by standardizing concepts and terminology, such as the finance charge and annual percentage rate under the Truth in Lending Act and the annual percentage yield under the Truth in Savings Act. Such standardization advances consumers' knowledge about pricing and features of the financial products and institutions and lowers consumers' transactions costs by making shopping easier. The standard format of required disclosures helps highlight the performance of the best institutions and exposes the inadequacies of the poorer ones. Well-informed shoppers help keep mar-

kets competitive, which benefits buyers of products and services by minimizing the spread between producers' production costs and market price.<sup>1</sup>

The second advantage of information disclosure over direct intervention through mandating specific product pricing or features is that the government need not know, or presume to know, the product feature preferences of all consumers. With effective disclosures, consumers can decide what their preferences are in the tradeoff between price and product features; the success of the disclosure approach to consumer protection does not depend on consumers' preferences being the same. Disclosure requirements may also be less costly for financial institutions to

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1. Researchers have published a significant body of theoretical and empirical work on the benefits of information and disclosure. Among the important articles are George J. Stigler (1961), "The Economics of Information," *Journal of Political Economy*, vol. 69 (June), pp. 213–25; Phillip Nelson (1970), "Information and Consumer Behavior," *Journal of Political Economy*, vol. 78 (March–April), pp. 311–20; George Akerlof (1970), "The Market for Lemons: Qualitative Uncertainty and the Market Mechanism," *Quarterly Journal of Economics*, vol. 84 (August), pp. 488–500; Michael A. Spence (1973), "Job Market Signaling," *Quarterly Journal of Economics*, vol. 87 (August), pp. 355–74; Michael Rothschild (1973), "Models of Market Organization with Imperfect Information: A Survey," *Journal of Political Economy*, vol. 81 (November), pp. 1283–1308; Howard Beales, Richard Craswell, and Steven C. Salop (1981), "The Efficient Regulation of Consumer Information," *Journal of Law and Economics*, vol. 24 (December), pp. 491–539; Joseph E. Stiglitz (1985), "Information and Economic Analysis," *The Economic Journal*, vol. 95, Supplement: Conference Papers, 1985 (March), pp. 21–41; and Pauline M. Ippolito (1988), "The Economics of Information in Consumer Markets: What Do We Know? What Do We Need to Know?" in E. Scott Maynes, ed., *The Frontiers of Research in the Consumer Interest* (Columbia, MO: American Council on Consumer Interests), pp. 235–63. Important government reports include Federal Trade Commission Staff (1979), *Consumer Information Remedies Policy Session* (Washington: Federal Trade Commission); and Board of Governors of the Federal Reserve System (1987), *Annual Percentage Rate Demonstration Project* (Washington: Board of Governors of the Federal Reserve System).



implement and for the government to enforce than consumer protection approaches that limit product features.

### TRUTH IN LENDING ACT AND DISCLOSURES

The Congress in May 1968 passed the Truth in Lending Act, the first in a series of federal consumer protection laws that addressed primarily financial disclosures.<sup>2</sup> This act was designed to protect consumers in credit transactions by requiring clear disclosure of key terms of the credit arrangement and all credit costs. The law was implemented in 1969 by the Federal Reserve Board through Regulation Z, which prescribes uniform methods for computing the cost of credit, for disclosing credit terms, and for resolving errors on certain types of credit accounts. In 1976, the Congress amended the act to cover consumer leasing, and the Federal Reserve implemented Regulation M, which covers the rules of all consumer leasing transactions and includes disclosure of leasing terms.

Credit cards are the most widely used method of generating consumer credit. The credit card industry estimates that more than 1 billion credit cards were in the hands of customers in the United States at the end of 2004.<sup>3</sup> When they use their cards, consumers receive monthly account statements that contain disclosures about credit use, costs, and obligations for payments. Elsewhere on the monthly statements, consumers receive disclosures concerning such items as grace periods, membership fees, minimum finance charges, and procedures for questioning and resolving billing errors. In addition, consumers frequently receive mailed solicitations for new accounts, and these mailings carry disclosures. In recent years, consumers have also begun receiving privacy notices from their financial institutions, and these notices contain disclosures outlining the institutions' privacy policies and information on how customers can "opt out" of certain kinds of information sharing among institutions.

The content, format, and number of disclosures have evolved and changed since passage of the Truth

in Lending Act.<sup>4</sup> As these mandatory disclosures have taken their place in the financial marketplace and as consumer financial services have expanded and evolved, researchers and other observers have been interested in whether consumers use the disclosures they receive and, if so, how they use them. One way to examine consumer knowledge and use of the disclosures is through surveys. For this reason, the Federal Reserve Board has conducted and analyzed targeted, nationally representative consumer surveys in this area since a before-and-after study of the original implementation of the Truth in Lending Act.<sup>5</sup> Nationally representative surveys provide information about consumers' impressions and experiences to supplement institutional knowledge from public com-

4. Various recent legislative and regulatory initiatives concerning credit cards have continued to underscore interest in what consumers know about their accounts, how they use disclosure information, what they think is important in the disclosures, and what information they want to receive. In the legislative area, the Fair and Accurate Credit Transactions (FACT) Act of 2003, which amended the Fair Credit Reporting Act of 1971, provided for additional disclosures to consumers about how they could more easily take their names off solicitation lists for new or additional credit cards, a removal process sometimes also referred to as opting out. This act also required the Federal Reserve Board to undertake a study of credit card solicitations, which the Board completed in December 2004. In April 2005, the Bankruptcy Abuse Prevention and Consumer Protection Act mandated new provisions for the Truth in Lending Act concerning open-end consumer credit, and it required further Board studies of consumers and their credit.

On the regulatory front, in December 2004 the Federal Reserve Board began formal review and updating of Regulation Z, the rule that implements Truth in Lending. The first step in the review process was an Advance Notice of Proposed Rulemaking (ANPR), which asked for comments on a lengthy list of questions about open-end consumer credit. The full review process will take some time and will likely raise many additional questions about how well consumers understand credit products and how they use them, including credit cards. In October 2005, the Federal Reserve reopened the ANPR comment period, asking for public comment on issues raised by Truth in Lending Act amendments in the bankruptcy reform legislation that year. Interagency initiatives to revise privacy notification rules for financial accounts, including credit card accounts, are also under way. In each of these efforts, what consumers know and want to know have been important questions.

5. Robert P. Shay and Milton P. Schober (1973), *Consumer Awareness of Annual Percentage Rates of Charge in Consumer Installment Credit: Before and After Truth in Lending Became Effective*, vol. 1.: Technical Studies of the National Commission on Consumer Finance (Washington: Government Printing Office). For later survey results, refer to Thomas A. Durkin and Gregory E. Elliehausen (1978), *The 1977 Consumer Credit Survey* (Washington: Board of Governors of the Federal Reserve System); Anthony W. Cynak and Glenn B. Canner (1986), "Consumer Experiences with Credit Insurance: Some New Evidence," *Federal Reserve Bank of San Francisco Economic Review* (Summer), pp. 5–20; Gregory E. Elliehausen and Barbara R. Lowrey (1997), *The Cost of Implementing Consumer Financial Regulations: An Analysis of Experience with the Truth in Savings Act*, Staff Study 170 (Washington: Board of Governors of the Federal Reserve System); Thomas A. Durkin (2000), "Credit Cards: Use and Consumer Attitudes, 1970–2000," *Federal Reserve Bulletin*, vol. 86 (September), pp. 623–34; and Thomas A. Durkin (2002), "Consumers and Credit Disclosures: Credit Cards and Credit Insurance," *Federal Reserve Bulletin*, vol. 88 (April), pp. 201–13.

2. Other statutes that focus on financial disclosure are the Real Estate Settlement Procedures Act (1974), the Consumer Leasing Act (1976), and the Truth in Savings Act (1991). The main intent of these laws is to protect consumers by the mandatory disclosure of certain information. Other consumer protection laws also contain important requirements for disclosures, though they are not primarily disclosure statutes; examples include the Fair Credit Reporting Act (1971), the Equal Credit Opportunity Act (1974), and the Electronic Fund Transfer Act (1978).

3. Thomson Financial Media (2005), *Card Industry Directory*, 17th ed. (New York: Thomson Financial Media), p. 16.



ments generated through the regulatory process. Targeted consumer surveys help reduce the need to rely unduly on opinions of interested parties or anecdotal reports for assessments of consumers' disclosure use and their preferences.

In 2004 and 2005, several surveys were undertaken to assess consumers' knowledge of, familiarity with, and attitudes about credit card disclosures, credit card solicitations, and privacy notices received from their financial institutions.<sup>6</sup> The targeted surveys supplemented the comprehensive Surveys of Consumer Finances, which are undertaken every three years and which provide general benchmarks and growth trends for consumer assets, debts, and use of financial services.<sup>7</sup> In each case, the survey goal was to assess the frequency with which consumers examine or consult disclosures and their attitudes toward the disclosures received. If consumers look at the disclosures frequently and are favorably inclined toward their usefulness, then the benefits of informed credit use and of enhanced competition in the market for financial products can follow.

### CREDIT CARD PERIODIC STATEMENTS AND DISCLOSURES

In January 2005, the Federal Reserve Board sponsored a survey about the importance to consumers of various required disclosures for their credit card accounts, consumers' use of the disclosure information provided, and their new accounts and payment of fees. Slightly more than 73 percent of respondents reported holding one or more general-purpose credit cards with a revolving credit feature. The cards are sometimes called bank-type credit cards because they used to be issued only by banks; examples are cards like Discover, MasterCard, and Visa, which are usable

#### 1. Examination frequency of selected disclosure information among holders of bank-type credit cards, 2005

Percent of cardholders

Item	Disclosure information	
	Annual percentage rate	Descriptive material
<i>Frequent examination</i>		
Every month .....	46.6	12.1
Every other month .....	5.6	6.2
Four to five times per year .....	11.3	15.5
Subtotal .....	61.5	33.8
<i>Infrequent examination</i>		
Less often than four to five times per year .....	29.6	57.7
Never (volunteered) .....	8.9	8.6
Subtotal .....	38.5	66.3
<b>Total .....</b>	<b>100.0</b>	<b>100.0</b>

SOURCE: Surveys of Consumers, January 2005.

at a wide variety of outlets and which can generate revolving credit if the user chooses to pay less than the full statement balance.

One line of questioning directly asked consumers with this type of card how often they examined the pricing and other disclosures they received monthly as part of the periodic statements from the card-issuing bank. If the disclosures are examined frequently, especially the pricing disclosures, then the Truth in Lending Act can have a favorable effect on "the informed use of credit," as the Congress intended.<sup>8</sup>

Consumers gave the full range of possible answers to the question on how often they examine the annual percentage rates (APRs). The majority of cardholders (62 percent) said they looked at the APRs on their card accounts at least four times or more per year, timing characterized for discussion here as "frequently" (table 1). More than 40 percent said they looked at the APRs monthly. In contrast, the majority (66 percent) said they looked at the descriptive material, the information often found on the back of statements, fewer than four to five times a year, timing characterized here as "infrequently."

Not surprisingly, the frequency of APR examination correlates directly with the use of cards as credit generators rather than as convenient transaction de-

6. The surveys cited in this article were undertaken for the Federal Reserve Board by the Survey Research Center of the University of Michigan. The center conducted 500 interviews on credit card solicitations and privacy notices in May 2004 and 494 interviews on credit card periodic statements in January 2005.

7. The 1995, 1998, 2001, and 2004 Surveys of Consumer Finances are discussed, respectively, in Arthur B. Kennickell, Martha Starr-McCluer, and Annika E. Sunden (1997), "Family Finances in the U.S.: Recent Evidence from the Survey of Consumer Finances," *Federal Reserve Bulletin*, vol. 83 (January), pp. 1-24; Arthur B. Kennickell, Martha Starr-McCluer, and Brian J. Surette (2000), "Recent Changes in U.S. Family Finances: Results from the 1998 Survey of Consumer Finances," *Federal Reserve Bulletin*, vol. 86 (January), pp. 1-29; Ana M. Aizcorbe, Arthur B. Kennickell, and Kevin B. Moore (2003), "Recent Changes in U.S. Family Finances: Evidence from the 1998 and 2001 Survey of Consumer Finances," *Federal Reserve Bulletin*, vol. 89 (January), pp. 1-32; and Brian K. Bucks, Arthur B. Kennickell, and Kevin B. Moore (2006), "Recent Changes in U.S. Family Finances: Results from the 2001 and 2004 Survey of Consumer Finances," *Federal Reserve Bulletin*, vol. 92, pp. A1-A38, [www.federalreserve.gov/pubs/bulletin/default.htm](http://www.federalreserve.gov/pubs/bulletin/default.htm).

8. The Congress articulated its central goal for Truth in Lending in section 102 of the act: "The Congress finds that economic stabilization would be enhanced and the competition among the various financial institutions and other firms engaged in the extension of consumer credit would be strengthened by the informed use of credit. The informed use of credit results from an awareness of the cost thereof by consumers. It is the purpose of this title to assure a meaningful disclosure of credit terms so that the consumer will be able to compare more readily the various credit terms available to him and avoid the uninformed use of credit."

## 2. Examination frequency of annual percentage rate (APR) and of descriptive material by cardholder group, 2005

Percent of group

Cardholder group	Response
<i>Groups of consumers more likely to examine APR frequently</i>	
Account status	
Have three or more general-purpose revolving cards .....	66.5
Opened new account in last year .....	67.4
Balance	
Balance after last payment positive but less than \$1,500 ....	68.4
Balance after last payment at least \$1,500 but less than \$4,500 .....	74.0
Balance after last payment \$4,500 or more .....	79.7
Revolving balance	
Pay full balance hardly ever .....	79.2
Pay full balance sometimes .....	81.6
<i>Groups of consumers less likely to examine APR frequently</i>	
Account status	
Have one or two general-purpose revolving cards .....	57.4
Did not open new account in last year .....	59.8
Balance	
No balance outstanding after last payment .....	40.8
Revolving balance	
Pay full balance almost always .....	46.7
<i>Groups of consumers more likely to examine descriptive material frequently</i>	
Account status	
Opened new account in last year .....	36.7
Balance	
Balance after last payment positive but less than \$1,500 ....	38.8
Balance after last payment at least \$1,500 but less than \$4,500 .....	37.0
Balance after last payment \$4,500 or more .....	39.7
Revolving balance	
Pay full balance hardly ever .....	39.9
Pay full balance sometimes .....	45.7
<i>Groups of consumers less likely to examine descriptive material frequently</i>	
Account status	
Did not open new account in last year .....	32.9
Balance	
No balance outstanding after last payment .....	23.5
Revolving balance	
Pay full balance almost always .....	26.8

SOURCE: Surveys of Consumers, January 2005.

vices. The survey found that a credit card holder was likely to examine the rate more frequently as credit use increased. Specifically, about 41 percent of cardholders reporting no balance outstanding said they examined the APR frequently; by comparison, about 80 percent of those with an outstanding balance of \$4,500 or more examined the APR frequently (table 2). In general, those with smaller outstanding balances at the time of the interview and those who said they normally pay their balances in full were less likely to examine the APR frequently. These findings seem entirely reasonable because the cost of using credit cards as credit devices would be more important to those using this kind of credit regularly, and so they are more likely to examine APRs. Credit cost is not as likely to be important to those who mostly use their cards as transaction devices.

As noted, the percentage of those who examine the descriptive material frequently is much lower than the percentage of those who examine the APR frequently. The descriptive information tends to be denser than the pricing disclosures, and arguably it is of less

interest to many consumers because it is more general and appears more legalistic. Also, much of it pertains to more-limited circumstances, such as balance computation formulas and service calls for errors or for further information, which are less likely than price comparison to be the objective of consumer shopping. The proportion of cardholders who reported frequent examination of this information did not vary as much according to account usage as APR examination, but the pattern was generally the same. Those who used their credit cards as credit-generating devices examined this material more frequently than those who used their cards as transactions devices. Almost two-fifths of the respondents with balances reported examining this information frequently, but only about one-quarter of those with no balance after their last payment did so.

To ascertain what specific information on their monthly statement consumers consider important, they were asked two open-ended questions: What information did they consider important enough to look at each month? What information is most important? The interviewers recorded up to two replies for each question.

Respondents gave various answers to both questions; however, their replies could be grouped into four categories: cost measures, correctness of credit card statement, measures of personal finances, and miscellaneous (table 3). Seventeen percent replied that cost measures were most important to them, especially interest rates, compared with 29 percent who replied that aspects of statement correctness were most important to them. More than 60 percent replied that the data on the periodic statement related to aspects of their overall personal financial condition were the most important information, especially the balance owed.

As with examination frequency of the APR on the periodic statement, which category of information the respondents considered most important is correlated with whether they use their cards as credit-generating devices or mostly for transactions. Of those with a credit card balance of more than \$1,500, more than one-quarter said that cost measures were the most important information for them; of those with no balance outstanding, less than 10 percent said cost measures were most important. In contrast, among those who replied that correctness measures were most important, the percentage was higher among those with no balance outstanding than the percentage of those with revolving balances. Overall, however, personal financial measures, especially balance owed, were mentioned most often as most important, and

3. Importance of selected disclosure information on periodic statements among holders of bank-type credit cards, and distribution of responses by cardholder group, 2005

Percent

Category of disclosure information	Most important	Important
<i>Costs</i>		
Any mention of costs .....	17.0	40.2
Interest rate .....	13.5	30.1
Specific fees or fees .....	3.2	9.4
Finance charges .....	1.1	5.0
Any mention of costs within cardholder groups		
Pay full balance almost always .....	10.1	30.5
Pay full balance sometimes .....	21.0	57.9
Pay full balance hardly ever .....	25.1	49.5
No balance outstanding .....	7.2	24.0
Balance positive but less than \$1,500 ..	15.5	41.2
Balance at least \$1,500 but less than \$4,500 .....	25.0	49.5
Balance \$4,500 or more .....	27.2	56.9
<i>Correctness of billing statement</i>		
Any mention of correctness .....	29.3	51.4
Purchases, transactions, charges, returns are correct .....	28.2	46.2
Previous payment received .....	1.8	9.1
Account number, name, and so forth are correct .....	*	2.2
Any mention of correctness within cardholder groups		
Pay full balance almost always .....	35.3	53.9
Pay full balance sometimes .....	31.0	56.3
Pay full balance hardly ever .....	19.8	47.5
No balance outstanding .....	40.5	60.8
Balance positive but less than \$1,500 ..	19.7	40.5
Balance at least \$1,500 but less than \$4,500 .....	18.3	48.1
Balance \$4,500 or more .....	26.6	50.3
<i>Personal finances</i>		
Any mention of personal finances .....	61.0	83.3
Balance owed .....	53.5	75.2
Due date .....	5.0	19.5
Itemization; where money was spent ..	2.5	11.6
Minimum payment .....	1.1	3.4
Credit limit; available credit .....	.4	2.1
Keeping track of debt .....	*	.3
Any mention of personal finances within cardholder groups		
Pay full balance almost always .....	61.6	84.7
Pay full balance sometimes .....	53.7	73.2
Pay full balance hardly ever .....	63.6	85.7
No balance outstanding .....	58.5	82.2
Balance positive but less than \$1,500 ..	70.4	86.3
Balance at least \$1,500 but less than \$4,500 .....	66.4	85.1
Balance \$4,500 or more .....	55.2	83.4
<i>Miscellaneous</i>		
Any mention of miscellaneous .....	.9	4.6
Details of and changes in policies .....	.9	2.4
Rebates, incentives, rewards .....	*	1.9
Billing date .....	*	.3
Grace period .....	*	*

NOTE: Components do not sum to totals because some respondents gave more than one response.

\* Percentage too small to be measured.

SOURCE: Surveys of Consumers, January 2005.

the percentage did not vary much with patterns of credit use (third panel of table 3).

The same patterns are visible among those variables that consumers report as being important enough that they look at them monthly, even if they are not the most important information. Notably, 57 percent of those with relatively large outstanding balances on their credit cards reported that they reviewed cost measures at least monthly, whereas 24 percent of

4. Response to question of whether annual percentage rate (APR) or finance charge affected card use decisions among holders of bank-type credit cards, and distribution of responses by cardholder group, 2005

Percent

Group category	APR	Finance charge	Either
All respondents .....	27.3	24.5	39.2
Within cardholder groups			
Pay full balance almost always .....	16.8	21.1	29.5
Pay full balance sometimes .....	50.0	29.5	57.4
Pay full balance hardly ever .....	36.4	29.5	50.0
No balance outstanding .....	15.7	15.2	22.5
Balance positive but less than \$1,500 ..	30.3	28.9	52.8
Balance at least \$1,500 but less than \$4,500 .....	33.6	33.2	51.4
Balance \$4,500 or more .....	41.7	31.7	51.0

SOURCE: Surveys of Consumers, January 2005.

those with no balance outstanding after their last payment reviewed them monthly (first panel of table 3). Again, measures of personal finances are mentioned most often as being consulted monthly, especially total balance owed.

The survey further explored the use of disclosures about APRs and finance charges through direct questions. Toward the end of the interview, consumers were asked specifically whether APRs and finance charge disclosures had affected credit decisions. Not surprisingly, the pattern of responses was similar to that discussed earlier. Those with frequently revolving balances and those with relatively large outstanding balances were much more likely to respond that APRs and finance charges had affected their card use behavior (table 4). When the responses of both groups are combined, about 40 percent of respondents said that either the APR or the finance charge had affected their card use decisions.

The proportions differ sharply within cardholder subgroups, however; the proportion of those with revolving balances who stated that the cost information on their monthly statements had affected their card use decisions was much higher than the proportion of convenience users who said so. More than half of those reporting that they paid the full balance sometimes or hardly ever and those who reported a balance outstanding after making their last payment indicated that the APR, finance charge, or either had affected their card use decisions. When asked how this information had affected their decisions, the most common responses were that it made them decide to pay off their balances more quickly, encouraged them to stop using a particular account or to use the account with the lowest rate, or encouraged them to limit card use altogether (data not in table). When asked the rate on the general-purpose card they used most often, only about 4 percent of those with revolving balances said they did not know the rate,

whereas the others with revolving balances responded with rates within reasonable ranges. These results support the view that Truth in Lending has been important in providing useful information to users of credit cards as credit-generating devices.

The interviewer asked all respondents with general-purpose credit cards whether the distinction made on credit card account statements between a finance charge and other kinds of charges and fees made a difference to them. All respondents to this question, whether answering yes or no, were then asked why they responded the way they did.

Interestingly, 77 percent indicated that the distinction mattered. At first glance, it might seem that this distinction likely would not matter because a fee is a fee regardless what it is called, but respondents indicated that the distinction does matter to them. One possibility is that consumers like to feel comfortable that someone else is keeping an eye on credit card companies, a phenomenon noted in an earlier *Bulletin* article.<sup>9</sup> The government provides that monitorship of credit card companies through the requirements of the Truth in Lending Act, and consumers can use the disclosures to examine fees and how they are classified under the act.

This interest in monitoring fees is apparent in the answers to the question about why they responded in the way they did. For those who felt the distinction was important, the most common reasons given were that they wanted to know specifically what they were paying for and that they wanted to avoid fees (data not in table). The specific fees most commonly mentioned were annual fees and late fees, neither of which is actually classified as a finance charge under Truth in Lending, and avoidance of “unexpected fees,” which was not further specified by type. Absence in the open-ended response of a differentiation between fees by classification suggests that consumers actually do not have much interest in the legal distinctions despite their expression to the contrary. What is apparent, however, is that they want to know the amounts of fees so that they can fully understand what is behind the payments requested on their periodic bills.

Among those who said that the distinction between finance charges and other sorts of fees was not important, the two most common reasons were that they paid off their bills in full, so such distinctions did not matter to them, or that all charges are the same. Thus, the responses of both groups suggest that hair-splitting legal distinctions among categories of

fees are really not so important to consumers as long as the charges are clear and understandable.

The interviewers did not ask further questions about fees like annual fees, late fees, and over-limit fees that are not finance charges under Truth in Lending. But they did ask about experience with fees for cash advances and convenience checks that are considered finance charges under the regulation. About 15 percent of those with bank-type credit cards reported that they had paid either or both of these fees in the past year (data not in table).

The number of bank-type cardholders who reported paying such finance charges is fairly small (15 percent), so a detailed analysis of the financial condition of the consumers within this group is precluded. But it is worth noting that most of those reporting that they had paid these finance charges also said they knew about the charges before the transaction. When asked, most indicated they had learned about the charges from the disclosures given to them.

In contrast, relatively few of those reporting they had paid these finance charges recalled seeing the effect of the charges on the APR on their statements that month. Truth in Lending requires that all finance charges be factored into an “effective” APR that is to be included on each periodic (monthly) statement. In a month in which a finance charge arises from a source other than application of the normal periodic rate to the balance (for example, finance charges for cash advances and for convenience checks), the charge must be factored into the disclosed APR that month as the effective APR (sometimes referred to as the “historical” APR).

Less than one-quarter of the 15 percent of cardholders reporting these charges for cash advances or convenience checks (about 3.5 percent of bank-type cardholders overall) said they noticed any change in the APR in the month of the fee. Because every cardholder paying one of these fees would find a higher APR on the statement that month, the low response does not strongly support the efficacy and usefulness of this disclosure for the majority of cardholders. For some, the change may have been so small in the month in question that it could have gone unnoticed, or the respondents may not have noticed changes that occurred infrequently. Some may have noticed the change at the time it happened but may have forgotten by the time of the interview.

Finally, those who responded affirmatively to a question about opening a new account in the past year were asked a few additional questions about account-opening statement disclosures. This group was asked only a few more questions because of the likelihood

9. Durkin, “Consumers and Credit Disclosures,” p. 208.



that the proportion with new accounts would be relatively small; in a specialized interview, subdividing the group in many interesting ways would not be possible because of its small size. Overall, about 22 percent of respondents with general-purpose credit cards said that they had opened a new credit card account within “the past year or so” (data not in table).

Each respondent with a new account was asked about the use and storage of the account-opening disclosure information. Most indicated that they had read the information at least somewhat carefully and had kept it for later use if needed (data not in table). Some of the respondents may have been thinking of the solicitation disclosures that are delineated in a tabular format rather than the actual account-opening disclosures, but the questioning did not make this differentiation. About three-quarters of those with new accounts said that the disclosures were useful, mostly because they provided information about interest rates or reference information to catch mistakes and make comparisons. Among the limited number of respondents who said that the information was not useful, most said that there was too much information or that it was too confusing or legalistic.

In sum, the response to questions on the use of periodic statements shows that many holders of bank-type credit cards look at the disclosures fairly often. The frequency with which they examine rates and fees is correlated with whether or not they have a revolving balance. Those paying their balances in full each month also tend to look at the statements frequently, but they do so to ensure accuracy of the statements and to assess their personal financial condition. The distinction between finance charges and other fees does not seem especially important despite protests to the contrary. Most of those with revolving balances on their general-purpose credit cards seem broadly aware of APRs, but the small number of responses about the effective APR suggests that infrequent changes do not receive much notice. However, the overall findings do indicate that the goal of the informed use of credit by consumers is being addressed, as the Congress intended.

### CREDIT CARD SOLICITATIONS AND DISCLOSURES

The general findings that reported usefulness of required disclosures on periodic statements is correlated with measures of credit card usage are broadly consistent with the results of another specialized survey of credit card users undertaken in May 2004. This survey focused especially on credit card solicita-

tions rather than on periodic statements. In recent years, prescreened mail solicitations, which employ credit experience information from the files of credit-reporting agencies, have become an important source of new accounts for card issuers; more than 6 billion solicitations were mailed in 2005.<sup>10</sup> Although many of the surveyed consumers do not review carefully the mailings they receive, the requirement that the mailings contain pricing information means that a large volume of information on credit card pricing makes its way regularly into consumers’ mailboxes. The specialized survey focused on consumers’ experience with the receipt of these mailings. Some results from this survey were included in a report to the Congress required in 2004 by the Fair and Accurate Credit Transactions Act of 2003.<sup>11</sup>

The 2004 survey found that 77 percent of respondents had one or more credit cards at that time and that 72 percent had one or more general-purpose credit cards with a revolving feature (bank-type credit cards). Of the cardholder group, more than 96 percent had received prescreened mail solicitations for one or more additional credit cards in the previous six months, and 81 percent of noncardholders had received one or more solicitations. Most respondents receiving solicitations had received more than one per month (table 5). About 50 percent of cardholders and 30 percent of noncardholders had received six or more prescreened solicitations a month over the previous half year. Only a small proportion of either group had received only one prescreened solicitation or none per month during this period.

The survey asked the respondents with credit cards who had received prescreened solicitations for more information about their experiences with the mailings.<sup>12</sup> One question concerned attitudes toward the information in the mailings and asked if it was helpful. About 9 percent indicated they did not know, so they probably did not pay much attention to the information (first panel of table 6). The rest of the respondents were almost evenly divided on whether or not the information received was helpful: About

10. Information Policy Institute (2003), *The Fair Credit Reporting Act: Access, Efficiency & Opportunity: The Economic Importance of Fair Credit Reauthorization*, table 13, p. 57; and Synovate, Mail Monitor (2006), “Mail Monitor Reports Six Billion Card Offers Mailed in U.S. During 2005,” press release, June, <http://core.synovate.com>.

11. Board of Governors of the Federal Reserve System (2004), *Report to the Congress on Further Restrictions on Unsolicited Written Offers of Credit and Insurance* (Washington: Board of Governors of the Federal Reserve System, December).

12. The survey did not ask those without credit cards many follow-up questions about their experiences with solicitations because the small sample size of this group would not permit further classification breakdown of their experiences.

### 5. Cardholders and noncardholders: Credit card solicitations, awareness of opt-out law, and behavior response, 2004

Percent

Consumers receiving solicitations	Cardholders	Noncardholders
Total .....	77.0	23.0
Received solicitations for additional cards in previous six months .....	96.1	80.8
<i>Approximate number of solicitations received monthly</i>		
One or fewer .....	11.8	18.9
Two to five .....	36.7	50.6
Six or more .....	51.5	30.5
<b>Total .....</b>	<b>100.0</b>	<b>100.0</b>
Aware of opt-out law .....	20.8	16.9
<i>Response to awareness</i>		
Opted out .....	20.3	33.3
Thought about opting out .....	38.2	13.9
Did not consider opting out .....	41.6	52.8
<b>Total .....</b>	<b>100.0</b>	<b>100.0</b>

NOTE: Components may not sum to totals because of rounding.  
SOURCE: Surveys of Consumers, May 2004.

40 percent said it was helpful, and slightly less than 50 percent said it was not. Within the two negative-response subgroups, a much higher proportion took the more extreme position that the information was very unhelpful, probably an indicator of frustration with receiving so much junk mail. Regardless, the finding that a significant portion of consumers appeared to be generally familiar with the kind of information in the prescreened solicitations—whether they stated it was helpful or not—is consistent with the view that the prevalence of prescreened solicitations is useful in disseminating pricing information and encouraging competitive conditions in markets for credit cards generally, even if only a small minority of recipients actually responds to a given prescreened solicitation program.

The respondents answering that the information was helpful were asked what specific information was helpful. About two-thirds mentioned interest rates or APRs (second panel of table 6). Some noted that they found particular information on other rates helpful—for example, introductory rates or standard rates. About one-third mentioned specific information about various fees, such as annual fees, balance-transfer fees, and late fees. Again, the findings suggest that many consumers seem to know what the prescreened solicitations contain, which is important for price competition to work, even if they do not respond to, or even focus carefully on, the contents of any given piece of mail that they receive from card issuers.<sup>13</sup>

13. A follow-up question asked both those who said the information was helpful and those who said it was not how it could be made more helpful. Respondents gave a wide variety of answers, but those already favorably inclined toward the information often suggested aspects of

### 6. Credit card solicitations: Opinions on helpfulness of disclosure information, and distribution of responses by cardholder group, 2004

Type of information	Response
<i>Information in general</i>	
Very helpful .....	7.2
Somewhat helpful .....	35.2
Not very helpful .....	17.6
Not at all helpful .....	31.3
Do not know .....	8.7
<i>Information that is helpful</i>	
Interest rates or annual percentage rates (APRs)	
Interest rates or APRs (not further specified) .....	50.6
Interest rates or APRs, introductory .....	11.4
Interest rates or APRs, standard .....	10.1
Interest rates or APRs for balance transfers or cash advances .....	6.4
Interest rates or APRs, fixed versus variable .....	6.7
Any mention of interest rates or APRs <sup>1</sup> .....	68.5
Cardholder group: Any mention of interest rates or APRs as helpful	
No balance outstanding .....	73.6
Balance less than \$1,500 .....	49.6
Balance at least \$1,500 but less than \$4,500 .....	69.4
Balance \$4,500 or more .....	79.3
<i>Fees</i>	
Fees (not further specified) .....	9.0
Annual fees, membership fees .....	14.2
Balance-transfer fees, transactions fees, or both .....	7.5
Late fees, penalty fees .....	7.5
Any mention of fees <sup>1</sup> .....	35.4
Summary: Any mention of interest rates, APRs, or fees <sup>1</sup> ....	80.0
Cardholder group: Any mention of interest rates, APRs, or fees as helpful	
No balance outstanding .....	84.4
Balance less than \$1,500 .....	64.0
Balance at least \$1,500 but less than \$4,500 .....	84.7
Balance \$4,500 or more .....	86.4
<i>Other types of information</i>	
Credit limits, payment policies, grace periods .....	13.3
Benefits, rebates, rewards .....	2.6
Security, privacy .....	*
General mentions ("terms and conditions," "pre-approval qualifications," "services," and so forth) .....	17.6
Any mention of other types of information <sup>1</sup> .....	31.8
Do not know responses .....	3.3

1. The responses to these categories do not sum to totals because respondents could give up to two replies.

\* Less than 0.5 percent.

SOURCE: Surveys of Consumers, May 2004.

Another question asked consumers what they actually do most often with the mailings they receive. Responses indicate that the mailings are not solely or always considered junk mail, even if they are so regarded in many instances. Slightly more than half of respondents (55 percent) said that they throw them away, but the others said they at least open and look at them—but not especially carefully (table 7). Members of the group who said they usually opened the prescreened solicitations were asked a follow-up question about whether they looked for any particular

format and clarity (data not in table). Those unfavorably inclined often indicated either that they did know how the information could be improved or said that fewer mailings should be sent. The possibility is that the latter were not looking for any more credit cards and were frustrated with the frequency of junk mail.



## 7. Disposition of credit card solicitations, and distribution of behavior response by cardholder group, 2004

Percent

Behavior	Response
<i>Respondents receiving solicitations</i>	
Open and glance at them .....	34.2
Open and look more carefully .....	10.0
Subtotal: Open and look at .....	44.6
<i>Cardholder group: Those who open and look at solicitations</i>	
With one general-purpose credit card .....	41.7
With two general-purpose credit cards .....	40.7
With three or more general-purpose credit cards .....	48.7
With no balance outstanding .....	40.9
Balance less than \$1,500 .....	42.4
Balance at least \$1,500 but less than \$4,500 .....	47.5
Balance \$4,500 or more .....	52.9
Receive 1 solicitation per month .....	72.2
Receive 2 to 5 solicitations per month .....	46.8
Receive 6 or more solicitations per month .....	37.1
Throw them away .....	55.4
<b>Total .....</b>	<b>100.0</b>

SOURCE: Surveys of Consumers, May 2004.

information, and if so, what information. About two-thirds gave various answers that mostly focused on pricing information (data not in table). The remaining one-third said that they looked for no particular information. While many consider the mailings junk and tend to rapidly dispose of them, not all consumers throw them away without consulting them. Many are clearly aware of the contents of the mailings they receive; in other words, they have direct access to pricing and product information at a time when they can decide about opening a new credit card account.<sup>14</sup>

As with attention to different aspects of periodic statements, behavior with respect to solicitations varied by credit use. Those with more cards and those with larger outstanding balances were more likely to examine the mailings than those with fewer cards and those with smaller balances. This finding suggests that active credit users are more likely to be looking for cards that have more-favorable credit terms than those of their current card accounts. Also noteworthy is that those who indicated receiving solicitations infrequently were also more likely to open and at least glance at the documents. This finding may indicate that some of them may have been poor credit risks in the past and for this reason receive infrequent solicitations, so the ones they do receive are of special interest to them.

The survey also asked respondents about removing their names from prescreened solicitation lists. About 20 percent of both cardholders and noncard-

holders answered that they had heard of a federal law in this area. In turn, about 20 percent of cardholders and 33 percent of noncardholders who said they knew of the federal law had placed their names on an opt-out list (lower panel of table 5). This response means that about 4 percent to 6 percent of respondents had placed their names on the opt-out list.<sup>15</sup> Because the survey found that only about 20 percent of consumers were aware of their right under federal law to opt out from prescreened solicitations, increased awareness may lead more consumers to do so. For consumers aware of the law, a larger proportion of those with credit cards than those without (38 percent versus 14 percent) said that they had thought about placing their names on the opt-out list but had not yet done so.

Consumers in the group aware of the federal law were also asked how they had heard of it. Most mentioned their information was from the media, especially television, newspapers, and magazines (data not in table). Some consumers also mentioned family, acquaintances, and other sources. Less than one-tenth of those with credit cards and aware of the law indicated that they learned of the right to opt out from the prescreened mail solicitation. With passage of additional time since the May 2004 survey on solicitations and opting out, one possibility is that a higher proportion of recipients would be aware of opt-out rights today than at the time of the survey.

Finally, a factor in an empirical finding from earlier surveys may explain why the proportion of consumers opting out was not higher in 2004 than it was, given that the number of those who knew of their opt-out rights was considerably higher than the number of those who actually opted out. In particular, earlier surveys found that consumers seem to maintain strong feelings about what other consumers know or do not know and how they behave. This phenomenon, seen in earlier survey results, is characterized as the “other guy effect,” whereby consumers indicate that they are better informed and likely to be more responsible than unknown “others.”<sup>16</sup> Because many feel that their own private finances are under better control than those of consumers in general, they may feel that opting out is unnecessary.

14. Responses to a further question in the survey revealed that about 9 percent of those with credit cards and receiving solicitations in the past six months had responded to a solicitation from some card issuer during that time period (data not in table).

15. This figure is approximately the same proportion of opt-outs indicated by a review of a large sample of credit-reporting agency files at approximately the same time. For more information on that study, refer to Board of Governors, *Report to the Congress on Further Restrictions on Unsolicited Written Offers of Credit and Insurance*, pp. 17–27.

16. Durkin, “Credit Cards: Use and Consumer Attitudes,” pp. 628–30 and pp. 632–33; and Durkin, “Consumers and Credit Disclosures,” pp. 204–6.

# 8. Distribution of responses of cardholders and noncardholders regarding opt-out law and government prohibition of credit card solicitations, 2004

Percent

Attitude toward government intervention	Cardholders	Noncardholders	All
Response by group .....	77.0	23.0	100.0
<i>Federal opt-out law</i>			
Good idea .....	82.1	74.4	80.1
Bad idea .....	16.7	20.6	17.7
Do not know .....	1.3	4.9	2.1
<b>Total .....</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<i>Government should prohibit solicitations</i>			
Yes .....	26.9	49.1	31.8
No .....	70.8	49.1	65.2
Do not know .....	2.3	1.9	2.1
<b>Total .....</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

NOTE: Components may not sum to totals because of rounding.

SOURCE: Surveys of Consumers, May 2004.

The May 2004 survey also found evidence of the “other guy effect.” When asked directly whether they think that pre-approved offers of credit cards cause other people, in general, to use too much credit, about 85 percent said yes. When asked alternatively whether pre-approved offers have led them to use too much credit, only 15 percent agreed. But most respondents also did not want the government to take specific actions to rectify the difficulty with excessive credit use that they perceived others might be facing. After questions about voluntarily placing their name on an opt-out list, all respondents (cardholders and noncardholders) were asked for their views on the opt-out law and on government intervention regarding pre-screened solicitations.<sup>17</sup>

Their responses to these questions exhibit a distinct preference for an opt-out law, even if most do not personally employ it, and for no government intervention in their opt-out decisions. About 80 percent said that a federal opt-out law is a good idea; the proportion was somewhat higher among cardholders than noncardholders (table 8). But almost two-thirds said they prefer that the government not prohibit pre-screened solicitations, even though a majority said they do not open and peruse the ones they receive. Again, this proportion is higher for cardholders than noncardholders (70 percent versus 49 percent).

These findings suggest that the inconvenience associated with receiving the mailings is overall not too great for consumers, even though many apparently consider the mailings junk. Although cardholders are

most likely to receive prescreened solicitations for credit cards and are more likely than noncardholders to say that an opt-out list is a good idea, they largely believe that the government should not prohibit such solicitations. Presumably, this feeling is associated with the view that information about new products, features, and pricing is worthwhile—even if it is used only occasionally. Most consumers prefer the availability of an opt-out list, and they also prefer to be the one to choose whether or not to place their names on the list.

In sum, most consumers receive written offers of credit, and a significant portion appear to be at least somewhat familiar with the contents of the mailings, including a minority who were aware of the opt-out law. Among the more than 40 percent of respondents who said that the information in credit card solicitations is helpful, a large majority cited the pricing information as helpful. Only a relatively small proportion had actually acted on the opt-out information and had their names placed on the opt-out list maintained by credit-reporting agencies, popularly known as credit bureaus. Only a small percentage of consumers (15 percent) acknowledged that pre-approved offers of credit cards had led them to overuse credit, but a large majority of consumers (85 percent) believed the solicitations caused other consumers to overuse credit. Nonetheless, the majority of respondents indicated they did not want the government to restrict prescreened solicitations, presumably because they did not want to restrict their own opportunities to receive future offers, even if they mostly responded by disposing of them.

## PRIVACY NOTICES AND DISCLOSURES

Also in May 2004, consumers were surveyed about their knowledge, attitudes, and behavior regarding the privacy policies of their financial institutions. The survey was designed to obtain a benchmark indication of consumers’ responses to these notices and a basis for comparison should the format of such notices change measurably in the future.

As might be expected, consumers responded overwhelmingly that privacy policies were important to them, but they gave various reasons why. They indicated that they did not often use privacy notices for direct comparisons between policies of institutions. This latter finding is not surprising, given the receipt frequency of these notices and their sometimes dense appearance.

Survey results indicated that consumers are generally aware of privacy policies at financial institutions, a finding that is not surprising because those with

17. Specifically, the first question was “Do you think it is a good idea or a bad idea that there is a federal law that permits you to put your name on a list and then credit card companies cannot send you these offers?” This question was followed immediately by a related question: “Do you think the government should prohibit credit card companies from sending pre-approved offers for credit cards?”

### 9. Responses regarding privacy notices of financial institutions, 2004

Percent

Question	Response			Total
	Yes	No	Do Not Know	
Awareness of federal privacy law for financial institutions .....	73	27	*	100
Receipt of privacy notices from financial institutions .....	78	22	*	100
<i>Knowledge that main depository institution has an opt-out policy</i>				
All respondents .....	67	7	26	100
Those recalling receipt of privacy notices .....	76	5	19	100

\* Less than 0.5 percent.

SOURCE: Surveys of Consumers, May 2004.

accounts at financial institutions have received them, possibly many. About three consumers in four were aware of a federal law in this area and had received privacy notices from their financial institutions (table 9). About two in three recalled that their main depository financial institution has an opt-out policy concerning information sharing with other companies. Among those in this group who recalled receiving notices, this proportion was three in four. While the response may well contain many guesses, it does indicate that the awareness that such a law exists is widespread.

Concerning attitudes toward financial privacy and privacy policies, consumers appear to regard the privacy policies of financial institutions as generally important to them (table 10). A large majority of users of financial institutions regard the protection of privacy as very important, and they generally believe that their own institutions protect their privacy well. A somewhat smaller proportion of consumers replied that the privacy policy is a key criterion for choosing financial institutions.

Among those respondents who recalled receiving privacy notices from financial institutions, 24 percent

thought that privacy notices were “very useful” (second panel of table 10), and 21 percent reported that they were “very confident” that they understood the policies. When asked in a follow-up question why they thought that the statements were useful or not, two-thirds of those who said the notices were useful gave various reasons, but the responses were grouped around a smaller number of themes (data not in table). About 12 percent cited specific features or uses of the notices: explaining rights, enabling them to opt out, or helping them evaluate institutions. Another 16 percent were more vague, noting how the information kept them up to date or provided useful general information or details. Another 30 percent mentioned consumer protections, such as prevention from information misuse by the institution or from identity theft. About one-quarter mentioned general customer awareness, peace of mind, and usefulness for any future problems. About 4 percent said they did not know why they felt the notices were useful; the other 10 percent gave other various answers. Among those who reported the notices were not useful, the majority gave reasons such as too much information, inundation, junk mail, and unhappiness with “legalese.”

Concerning behavior with respect to privacy notices received, most consumers who recalled receiving them reported that they generally open and at least glance at them (table 11). Only about 14 percent reported that they threw away the notices without consulting them or filed them for possible later use. Most of those who threw away the notices without even glancing at them did so because they felt the notices were pretty much the same or because they just did not have time or interest in them (data not in table).

Those who at least open and glance at the notices were asked whether they found any particular information important. About 3 percent declined to answer the question, and another 4 percent said they did not know. A majority (57 percent) said no information

### 10. Attitudes regarding privacy notices of financial institutions, 2004

Percent

Topic	Very	Somewhat	Not very	Not at all	Do not know	Total
Importance that primary financial institution protects personal information about accounts .....	88	9	2	*	*	100
Likelihood of transferring institutions if primary institution did not protect personal financial information adequately .....	70	17	6	6	1	100
Adequacy of current institution's protection of personal financial information .....	60	32	2	1	5	100
Importance of institution's privacy policy compared with other reasons for choosing financial institutions ..	48	36	12	3	1	100
<i>Among respondents who recalled receiving privacy notices</i>						
Usefulness of privacy notices .....	24	43	19	14	1	100
Confidence in understanding privacy policies .....	21	52	20	6	1	100

NOTE: Components may not add to totals because of rounding.

\* Less than 0.5 percent.

SOURCE: Surveys of Consumers, May 2004.

# 11. Behavior response to receipt of privacy notices and to question regarding use of privacy notices to compare institutions, 2004

Percent

Behavior	Response
Open and look carefully at notices .....	29.0
Open and glance at notices .....	57.0
Throw them away .....	10.0
Other (file for later reference) .....	4.0
Do not know .....	*
<b>Total</b> .....	<b>100.0</b>
<i>Privacy notices used to make comparisons</i>	
Yes .....	5.0
No .....	95.0
<b>Total</b> .....	<b>100.0</b>

\* Less than 0.5 percent.

SOURCE: Surveys of Consumers, May 2004.

was particularly important, and the rest offered a variety of answers that mostly focused simply on knowing that the institution would limit access to personal information.

Only about one consumer in twenty reported using the notice to make specific comparisons among institutions, however (second panel of table 11). Furthermore, less than 10 percent who said they had not used the notices for comparisons said they planned to do so in the future (data not in table). Because most consumers are generally satisfied with the privacy policies of their current institutions as they understand them, infrequent use for comparisons is not inconsistent with stated importance of privacy policies. If more consumers were concerned about the policies of their own institutions, presumably more of them would use the notices to seek replacement institutions. The findings indicate that consumers do not review closely the notices they receive, but that lack of attention does not stem from a perception of their inability to understand them.

Finally, the survey asked respondents the meanings of the terms *affiliate* and *opt out*, which are sometimes used in privacy notices or in discussions about financial privacy. What was evident from the responses to these questions was that consumers assign various meanings to these two terms, especially to the term *affiliate*. Slightly more than 40 percent thought the term meant a formal relationship through some sort of joint ownership (table 12). One possibility is that they acquired this meaning by examining privacy notices, but general knowledge and experience is also a likely source. Educational level is also associated with correctly defining the term. Slightly more than one-third of respondents with a high-school education or less attached the meaning of a joint or combined ownership relationship to *affiliate*, but more than half of college graduates did so. In contrast, more than one-third of those with only a high-school education

# 12. Accuracy of definitions of selected terms in privacy notices and confidence levels in understanding privacy notices by level of education, 2004

Percent

Affiliate term: Definition and confidence level	Response
Definition referring to aspects of joint ownership <sup>1</sup> .....	43.4
By education level .....	
High-school education or less .....	34.3
Some college .....	38.4
College graduate or more .....	50.7
By confidence level in understanding privacy notices .....	
Very confident .....	55.2
Somewhat confident .....	40.5
Not very confident .....	39.1
Not at all confident .....	31.8
Definition referring to other sorts of formalized relationships <sup>2</sup> .....	18.7
By education level .....	
High-school education or less .....	12.4
Some college .....	23.6
College graduate or more .....	20.4
By confidence level in understanding privacy notices .....	
Very confident .....	15.3
Somewhat confident .....	19.0
Not very confident .....	21.1
Not at all confident .....	23.9
Definition referring to other sorts of organizations <sup>3</sup> .....	27.7
By education level .....	
High-school education or less .....	34.6
Some college .....	33.0
College graduate or more .....	21.3
By confidence level in understanding privacy notices .....	
Very confident .....	17.9
Somewhat confident .....	30.6
Not very confident .....	29.9
Not at all confident .....	34.1
Do not know or no answer .....	10.2
By education level .....	
High-school education or less .....	18.8
Some college .....	5.0
College graduate or more .....	7.6
By confidence level in understanding of privacy policies .....	
Very confident .....	11.6
Somewhat confident .....	10.0
Not very confident .....	9.9
Not at all confident .....	10.2

or less gave generalized answers that did not fit common definitions of *affiliate*, but only 21 percent of college graduates did so. “Do not know” responses were much more common among those with less than a high-school education.

Little relation existed between answers to the question about the meaning of *affiliate* and responses to the question about the usefulness of privacy notices. Cross-tabulation of the *affiliate* definition with the response on notice usefulness showed little variation among groups of consumers (data not in table). Cross-tabulation of correct definition of the term *affiliate* with confidence in understanding the notices (last line of table 10) revealed a correlation, one slightly higher than the one from the cross-tabulation of the term and response on usefulness. But the correlation was not as strong as the one between correct definition and education level. Thus, understanding of the terminology, at least at the time of the interview, was more dependent on educational level than on specific attitudes expressed toward experiences with the notices.



12. Accuracy of definitions of selected terms in privacy notices and confidence levels in understanding privacy notices by level of education, 2004—*Continued*

<i>Opt out</i> term: Definition and confidence level	Response
Definition referring to requesting no sharing of information <sup>4</sup> ..	75.2
By education level	
High-school education or less .....	62.7
Some college .....	74.8
College graduate or more .....	82.7
Other definitions <sup>5</sup> .....	12.6
By education level	
High-school education or less .....	12.6
Some college .....	11.6
College graduate or more .....	13.2
Do not know or no answer .....	12.1
By education level	
High-school education or less .....	24.6
Some college .....	13.5
College graduate or more .....	4.1

NOTE: *Affiliate* means any company that controls, is controlled by, or is under common control with another company. *Opt out* means a direction by the consumer that you not disclose nonpublic personal information about that consumer to a nonaffiliated third party other than as permitted. Definitions come from the Board of Governors of the Federal Reserve System (2000), "Regulation P: Privacy of Consumer Financial Information," *Federal Reserve Regulatory Service*, 6-2253 and 6-2300 respectively (November).

1. Examples are employees; people within the company; their own banking group; part of their family of companies; parts of their company; companies in the corporation; another entity owned by the parent company; in their network; same ownership; same corporation; branches; satellite banks; joint ventures; sister banks; brother banks; parent company; holding company; subsidiaries; companies they might own; off-shoot companies; organizations connected with, related to, involved with, under the umbrella of the bank; and institutions affiliated to or working with the bank to offer services (for example, loan department, mortgage company, credit card companies owned by the bank, insurance company, and subcontractors).

2. Examples are people, companies, organizations, banks, institutions they work with or deal with, "anybody they do business with," investment companies, stockbrokers, stock markets, and reciprocal market agreements.

3. Examples are other banks, credit unions, lending institutions, other institutions, someone in their industry, counterparts, credit card companies, outside vendors, third-party companies, other organizations, other companies, other businesses, competitors, marketers, companies or businesses they would give or sell your information to, people they sell their lists to, institutions they swap loans with, government agencies, any business of their choosing, and "whoever they want."

4. Examples were requests in writing that the institution not disclose information to affiliates, choice to participate, option to participate or not, and do not want them to share information with affiliates.

5. Examples were have them not disclose financial standing, get on "do not call" list, get on or off a list (not further specified), they could offer selected information for release, you can get out of giving them information, choose not be part of that affiliation, and be left out or dropped.

SOURCE: Surveys of Consumers, May 2004.

Concerning the meaning of *opt out* in the context of privacy notices, about three-quarters of respondents answered correctly that the term meant a request that information about them not be shared. As with *affiliate*, correctness of the response also varied by education.

It is not possible to determine from the answers the respondents gave whether their understanding of *opt out* was influenced in some way by the privacy notices they had received. Nonetheless, reasonable understanding of the meaning of the term seems fairly widespread at the time of the interview. Here again, the correlation with education was greater than with specific measures of attitudes toward usefulness of the notices. In future studies, another measurement may discover whether privacy notices and general usage of the term among the public, including its use in other areas like credit card solicitations, has had a long-term effect on understanding of the term.

## CONCLUSION

Surveys of consumers regarding their knowledge of, attitudes toward, and use of various required disclosures about consumer financial services indicate that many consumers are aware of the disclosures, have generally favorable attitudes toward them, and often use them for the purposes envisioned by their original sponsors. That is not to say that the responses were not diverse, however; the responses probably always will be as long as individuals have diverse backgrounds, educations, experiences, and needs. Consumers who use their cards to generate credit tend to review more frequently the disclosures of credit costs than those who mainly use their cards as convenient payment devices. This pattern also appears to hold true for the disclosures in credit card solicitations. Those using the cards as credit-generating devices are more likely to review information on annual percentage rates than those using cards primarily to make payments. Consumers also indicate that institutional privacy policies are important to them, but they tend not to examine the notices they receive closely for the most part. Those with more education are more likely to understand the terms *affiliate* and *opt out* in the context of a privacy notice. Overall, the survey responses suggest that the disclosures contribute to the informed use of credit by consumers and enhance the competitiveness of consumer credit markets, as envisioned by the sponsors of the disclosure laws.





# Higher-Priced Home Lending and the 2005 HMDA Data

(Table 8 revised September 18, 2006)

*Robert B. Avery, Kenneth P. Brevoort, and Glenn B. Canner, of the Division of Research and Statistics, prepared this article. Caitlin G. Coslett and Sean M. Wallace provided research assistance.*

Since 1975, the Home Mortgage Disclosure Act (HMDA) has required most mortgage lending institutions with offices in metropolitan areas to disclose to the public information about the geographic location and other characteristics of the home loans they originate or purchase during each calendar year. Disclosure of home-lending activity is intended to help the public determine whether institutions are adequately serving their communities' housing finance needs, to facilitate enforcement of the nation's fair lending laws, and to guide public- and private-sector investment activities. Although the act is intended to help achieve important public policy goals, the law itself does not include mandates or restrictions on lending—that is, it does not direct lenders to make loans to particular areas or persons, nor does it direct them to make certain kinds of loans or to refrain from certain loan terms or practices.

Taken together, the nearly 8,850 lenders currently covered by the law account for an estimated 80 percent of home lending nationwide. Consequently, HMDA data likely provide a representative picture of most home lending in the United States. The information thus provided is rich, but it is limited: The data reveal a great deal about what the lending patterns are but relatively little about what causes the patterns. Nonetheless, by drawing attention to these patterns, the data promote further analysis and discussion that can deepen understanding of their causes and encourage marketplace efficiency by fostering competition.

The Congress has amended HMDA on several occasions to extend the reach of the law to more institutions and to expand the types of information that must be disclosed. The most sweeping legislative amendments occurred in 1989; they required the disclosure of application and loan-level information for home loans, including the disposition of applications and the income, sex, and race or ethnicity of the individuals applying for credit. Analysis of this infor-

mation has prompted widespread public discussion about the fairness of mortgage lending decisions, as the disclosures revealed wide disparities in the rates of approval of loan applications across racial and ethnic lines. The disclosures triggered debate about the proper interpretation of the data and about the meaningfulness of the disparities in the disposition of loan applications and in lending patterns.<sup>1</sup> The disclosures also led many lenders to strengthen their fair lending compliance programs and to expand their outreach to underserved communities.

Periodically, the Federal Reserve Board reviews each of the regulations that it promulgates, including Regulation C, which implements HMDA.<sup>2</sup> As a result of the Board's most recent review of Regulation C, a number of important changes were made to the reporting requirements, changes that substantially increase the types and the amount of information made available about home lending (for details, refer to the appendix).<sup>3</sup> The Board stated that the revisions were intended to keep the regulation in step with recent developments in mortgage markets and with the revised standards of classification for the collection of information on race and ethnicity as established by the Office of Management and Budget (OMB).<sup>4</sup>

The 2004 HMDA data, the first to reflect the recent revisions to Regulation C, were released to the public by individual lending institutions in the spring of 2005. In September 2005, the Federal Financial Institutions Examination Council (FFIEC) made publicly available various summary reports (statistical tables) pertaining to each lender and lending activity in each

1. Refer, for example, to John Goering and Ron Wienk, eds. (1996), *Mortgage Lending, Racial Discrimination, and Federal Policy* (Washington: Urban Institute Press).

2. Refer to Home Mortgage Disclosure Act (12 U.S.C. §§ 2801-11), Regulation C (12 C.F.R. pt. 203), and the staff commentary accompanying Regulation C (12 C.F.R. pt. 203, Supp. I).

3. The final revisions to Regulation C were issued on February 15, 2002, and June 27, 2002.

4. Since 2003, HMDA data have used the newly established OMB standards for defining metropolitan and micropolitan statistical areas. Refer to OMB (2000), "Standards for Defining Metropolitan and Micropolitan Statistical Areas," notice of decision, *Federal Register*, vol. 65 (December 27), pp. 82228-38.

metropolitan statistical area, along with a comprehensive data file that included all the reported information (except the dates of loan applications and of credit decisions).<sup>5</sup> At that time, the staff of the Federal Reserve Board prepared the first comprehensive assessment of the expanded data, which was published as an article in the *Federal Reserve Bulletin*.<sup>6</sup>

The most important change made to Regulation C is the requirement that lenders disclose pricing information for loans with prices above designated thresholds; such loans are referred to here as “higher-priced loans.” The new pricing data allow a better understanding of lending activity in the higher-priced segment of the mortgage market, a market segment that has grown substantially over the past decade or so in response to improvements in information processing technology and in the ability of lenders to measure and price for credit risk.

Greater understanding of the market and an improved ability to monitor the activities of individual lenders in the higher-priced market segment are important because the expansion of such lending, though affording some consumers greater access to credit, has been accompanied by a variety of concerns. The concerns relate to the appropriateness of loan terms and lending practices, constraints on consumer shopping and on access to the full range of credit opportunities, the competitiveness of the higher-priced market, and the potential for unequal treatment of borrowers on the basis of race, ethnicity, or some other characteristic protected by law.

A review of the 2004 HMDA data found that, in the aggregate, less than one-fifth of borrowers took out higher-priced loans. However, the data also showed that the incidence (measured as the proportion of borrowers) of higher-priced lending varied substantially across racial and ethnic lines: Blacks and Hispanic whites were more likely, and Asians less likely, to have received higher-priced loans than non-Hispanic whites. Information included in the HMDA data on borrower or loan characteristics, such as income and amount borrowed, was insufficient to account fully for the variation in loan pricing across groups. Many factors routinely used by lenders to underwrite and price loans—including loan-to-value

(LTV) ratios, debt-to-income (DTI) ratios, and measures of borrower credit history (for example, a credit history score)—are not included in the HMDA data and, consequently, cannot be accounted for in an analysis of pricing differences that relies on these data alone.

Differences in loan-pricing outcomes, such as those revealed in the HMDA data, have increased concern about the fairness of the lending process. Lenders are responsible for ensuring compliance with fair lending laws, and the expanded HMDA data may both encourage and facilitate improved compliance efforts. The regulatory agencies charged with enforcement of the fair lending laws also use the expanded data to facilitate enforcement activities.

This article reviews the 2005 HMDA data, which have just been released to the public. The 2004 article covered a wide range of topics, including ways in which the expanded data might be used to aid fair lending enforcement, but this article is more limited: The focus here is primarily on the loan-pricing aspects of the data, including those that permit an assessment of the effects of the changing interest rate situation in 2004 and 2005 on the disclosure of higher-priced lending. To identify the effects on lending patterns of changing interest rates, the analysis presented here uses adjusted sets of the 2004 and 2005 HMDA data in an attempt to distinguish the loans that exceeded the pricing thresholds solely because of a changed interest rate situation from other higher-priced loans. This section of the analysis relies on monthly surveys of loan terms and pricing conducted by Freddie Mac and the Federal Housing Finance Board to help gauge the effects of changing interest rates over the period.

The analysis indicates that the substantial narrowing of the difference between short- and long-term interest rates in 2005 compared with 2004 not only increased the overall share of reported loans that exceeded the pricing thresholds established by Regulation C but also affected to some degree the gap in loan-pricing outcomes among groups of borrowers sorted by their race or ethnicity.

The analysis further reveals that changes in interest rates substantially affected the types and the proportions of loans that exceeded the price-reporting thresholds. Because of a combination of (1) the procedure specified in Regulation C for determining which loans are higher priced and (2) the rules governing how annual percentage rates (APRs) are calculated for adjustable-rate loans, adjustable-rate loans were much more likely than fixed-rate loans with similar risk profiles to be below the HMDA price-reporting thresholds in 2004 but were about as

5. Individual lenders covered by HMDA are required to make their own data available to the public beginning on March 31 of the year after the calendar year for which the data apply. However, the data made available at that time have not been systematically checked by the supervisory agencies for errors or omissions, as have the HMDA data released by the FFIEC in September each year.

6. Refer to Robert B. Avery, Glenn B. Canner, and Robert E. Cook (2005), “New Information Reported under HMDA and Its Application in Fair Lending Enforcement,” *Federal Reserve Bulletin*, vol. 91 (Summer), pp. 344–94.

likely as fixed-rate loans to be above the threshold by the end of 2005. One consequence of this changed relationship is that certain populations—such as those residing in the western part of the country—that used adjustable-rate loans relatively more often than fixed-rate loans likely witnessed a relatively larger increase in reported higher-priced lending in 2005.

### LOAN PRICING IN THE MORTGAGE MARKET

Over the past decade or so, the mortgage market has changed markedly. Before that, mortgage lenders offered consumers a relatively limited array of loan products at prices (interest rates, points, and fees) that varied not by the creditworthiness of the borrower but by loan type (for example, conventional or government-backed), loan characteristic (for example, amount borrowed, term to maturity, or LTV ratio), type of structure securing the loan (for example, traditional “site built” home or factory-manufactured unit), and ownership status (owner-occupied or nonowner-occupied). Effectively, borrowers either did or did not meet the underwriting criteria for a particular product. Those who met the criteria paid about the same price; those who did not were denied credit.

Advances in technology, better access to information on the credit histories of individuals, increased competition, and the maturation of a robust secondary market for loans representing the full spectrum of credit risks have helped spur remarkable changes in the mortgage market. Most prominent has been credit pricing based explicitly on risk. Today, much more so than in the past, differences in the creditworthiness of different borrowers can lead to different prices for the same product.<sup>7</sup> Applicants who are less creditworthy or who are unwilling or unable to document their creditworthiness or income are increasingly less likely to be turned down for a loan; rather, they are offered credit at higher prices.<sup>8</sup> Explicit risk-based pricing has expanded opportunities for homeownership and has allowed individuals, including those who are otherwise credit constrained, to more readily purchase homes or to borrow against the equity they have accumulated in their homes.

Borrowers in the higher-priced market generally fall into one of two market segments—“subprime” or

“near prime.” Individuals in the subprime category typically pay the highest prices because they pose greater credit or prepayment risk or are otherwise more costly to serve. In practice, the dividing line between these two “nonprime” market segments can be somewhat amorphous, as can the line between the prime and nonprime markets. Moreover, the thresholds that separate these market segments can change as market interest rates move, as lenders’ appetites for interest rate or credit risk change, and as technological improvements allow for more-precise risk assessment.

Estimates of the annual volume of nonprime lending vary, but all sources agree that the nonprime market segment has grown substantially in recent years. One source estimates that from 1994 to 2005, the dollar volume of subprime loans increased from about \$35 billion to more than \$600 billion. Further, subprime lending is no longer a minor portion of the mortgage market. Subprime loans are estimated to have accounted for 20 percent of all mortgage originations in 2005, up from less than 5 percent in 1994.<sup>9</sup>

### Concerns about Loan Pricing

As price flexibility has emerged in the mortgage market, so have concerns about the fairness of pricing outcomes. Such considerations generally fall into three broad categories: In the first category are concerns about possible discrimination based on the race or ethnicity of the borrower. These concerns are heightened because, for some loans, prices are determined on an individual basis and not strictly according to credit risk, cost factors, or competitive conditions.

In the second category are concerns about whether borrowers in the higher-priced segment of the loan market have sufficient resources (for example, time, information, and financial experience) to shop effectively for the loan terms most appropriate to their circumstances. These concerns relate to both borrower and lender behavior. For example, some borrowers may not shop or negotiate for the best available rates and terms because they need funds immediately and are focused primarily on the amount they can borrow and the size of the monthly payment, not on the interest rate, fees, or other loan features.

7. Refer to Souphala Chomsisengphet and Anthony Pennington-Cross (2006), “The Evolution of the Subprime Mortgage Market,” Federal Reserve Bank of St. Louis, *Review*, vol. 88 (January/February), pp. 31–56.

8. Refer, for example, to Darryl E. Getter (2006), “Consumer Credit Risk and Pricing,” *Journal of Consumer Affairs*, vol. 40 (Summer), pp. 41–63.

9. Estimates pertain to mortgages backed by one- to four-family homes. Estimates are based on information from Inside Mortgage Finance Publications (2005 and earlier years), *Mortgage Market Statistical Annual* (Bethesda, Md.: IMFP), [www.imfpubs.com](http://www.imfpubs.com); and on information from LoanPerformance, [www.loanperformance.com](http://www.loanperformance.com), a subsidiary of First American Real Estate Solutions, [www.firstamres.com/jsp/index.jsp](http://www.firstamres.com/jsp/index.jsp).

And some lenders may engage in aggressive “push” marketing that may confuse borrowers about the cost and terms of loans.

Finally, concerns have been raised about whether competition is adequate to ensure that borrowers in the higher-priced segment of the loan market are provided with the full range of credit opportunities. Some believe that prime-market lenders are not present, or do not offer or promote their prime products sufficiently, in certain geographic markets, including neighborhoods that have larger minority populations. In this view, limited access to prime lenders and the products they offer diminishes the opportunities for borrowers in affected communities to obtain lower-priced loans. These concerns are extraordinarily complex and beyond the scope of this article. The Federal Reserve Board’s recent hearings on home equity lending sought to collect more information about these and other concerns raised by the rapid growth of the higher-priced segment of the market.<sup>10</sup>

### *Determining What Pricing Information Is Reported*

In 2002, the Federal Reserve Board amended Regulation C to require the disclosure of pricing information for higher-priced loans. In establishing the loan-pricing disclosure rule, the Board sought to select thresholds that would limit regulatory burdens by focusing data reporting on only those loans in the higher-priced segment of the market.<sup>11</sup>

Specifically, for loans with spreads above designated thresholds, revised Regulation C requires the reporting of the spread between the APR on a loan

and the rate on Treasury securities of comparable maturity. The thresholds for reporting differ by lien status: 3 percentage points for first liens and 5 percentage points for junior, or subordinate, liens.<sup>12</sup> The different thresholds for first and junior liens are intended to reflect differences in the credit risk and other features of the loans in these two different markets. To better interpret the reported pricing information, the Board has also required institutions to report the lien status for each loan.

In limiting the reporting of price information to only the higher-priced segment of the market, the Board weighed the costs and benefits of more-expansive data collection and reporting and determined not to adopt more-expansive reporting requirements. The Board also chose to refer to loans with prices that exceed the reporting threshold as “higher-priced loans” rather than as “subprime loans.” The correspondence between subprime loans and loans with prices exceeding the threshold is not precise. The Board’s regulation sets the price-reporting thresholds in such a way that the number or proportion of loans reported as higher priced can vary from year to year even if the size and the share of the subprime market have stayed the same.

### *Reasons for Loan-Price Variation*

Mortgage pricing is complex and reflects a wide range of factors. Many of these factors are easily quantifiable and objectively measured. Some, however, are less readily quantified—for example, the extent of negotiations, if any, between lender and borrower. The expanded HMDA data include few of the factors that may help explain variations in the prices of reported loans. Even if all of the readily quantifiable factors were included in the data, they would not necessarily fully explain loan pricing because some factors are difficult to measure.

Important factors not included in the HMDA data include the costs of raising the funds to be lent; considerations related to credit risk, such as those reflected in the borrower’s credit history, LTV ratio, or DTI ratio; prepayment risk (the risk that a loan will

10. For more information about the hearings, refer to Board of Governors of the Federal Reserve System (2006), “Board to Hold Four Public Hearings on the Home Equity Lending Market,” press release, May 1, [www.federalreserve.gov/boarddocs/press/bcreg/2006](http://www.federalreserve.gov/boarddocs/press/bcreg/2006).

11. When the Board amended HMDA to expand data reporting, it also established transition rules for compliance with Regulation C. The transition rules provide that for loans with application dates before January 1, 2004, lenders need not report pricing information. As a consequence of the transition rules, some indeterminate proportions of higher-priced loans are reported with the same code as loans that did not meet the threshold requirements. The inability to distinguish higher-priced loans from others that were originated in 2004 and 2005 but with application dates before January 1, 2004, means that users of the data need to take this limitation into account when assessing the data. The effects of the transition rule were significant for assessments of the 2004 data but are of much less importance for analysis of the 2005 data. Nonetheless, to identify which applications had dates before January 1, 2004, the FFIEC added a flag to the 2005 “loan/application register” (LAR) data it makes available to the public. The LAR is a register that is prepared annually by each lender covered by HMDA and that includes data on each of the items reported under HMDA. For the analysis of loan pricing that follows here, we exclude all loans with application dates before January 1, 2004.

12. In calculating the rate spread, the lender uses the Treasury yield for securities of a comparable maturity as of the fifteenth day of a given month depending on when the interest rate was set on the loan. For such a calculation, the rule directs lenders to use the fifteenth day of a given month for any loan on which the interest rate was set on or after that day through the fourteenth day of the next month. The relevant date to use is the date the interest rate on the loan was determined, which is often, but not always, set pursuant to a lock-in agreement between the borrower and the lender. The APR used in the calculations is the one calculated and disclosed to the consumer under section 226.18 of Regulation Z (12 C.F.R. pt. 226).



be prepaid before the term of the loan); overhead expenses, such as those related to providing offices and to compensating staff for finding prospective borrowers and underwriting loans; loan-servicing costs; and possibly the extent of negotiations between creditor and borrower. Market conditions and competition also bear on pricing, as local economic conditions—including, importantly, those of local housing markets—can influence the demand and supply of credit.<sup>13</sup> Finally, the legal situation in a state, including foreclosure rules, may affect loan pricing by constraining to a greater or lesser degree the ability of lenders to recover and dispose of the collateral used to back loans that are in default.

Mortgages are typically priced at a spread above the yields on Treasury securities or on other, similar instruments or indexes of funding costs that correspond to the time a loan is expected to be outstanding. Each of the factors noted earlier may influence the magnitude of the spread. Elevated credit risk for loans in the higher-priced mortgage market results in substantially higher default and foreclosure rates and costs and, consequently, in higher price levels. Prepayment risk is also greater for higher-priced loans not only because borrowers in the higher-priced market have an incentive to refinance when interest rates fall (as do borrowers in the lower-priced market segment) but also because they have an incentive to prepay when their credit history improves to the point that they qualify for lower-priced credit.<sup>14</sup> Because credit and prepayment risks are higher for loans in the higher-priced segment of the market, such risks tend to vary more in this market segment.

Lenders active in the higher-priced market may also face a cost structure different from that faced by lenders focused on the lower-priced segment of the market. Lenders focused on the higher-priced market segment may face steeper funding costs, may incur higher marketing expenses, and may have a much

lower flow-through rate—that is, the number of applications processed to successfully extend a loan may be higher for such lenders than for lenders that deal primarily with borrowers with few credit problems or with the ability to make large down payments.

### Discretionary, or Flexible, Pricing

Some creditors provide their loan officers and agents working on their behalf (for example, mortgage brokers or loan correspondents) with rate sheets that indicate the creditors' baseline prices by loan product (for example, conventional loans of various types), owner-occupancy status, loan characteristic (for example, amount of loan, prepayment penalty option, term to maturity, or LTV ratio), and borrower creditworthiness (as reflected in, for example, a credit history score or DTI ratio).

Rate sheets vary across lenders. For some lenders, the rate on the sheet is a “sticker” price; for others, it is the minimum accepted price; and for still others, it is the actual target price. Some lenders have a single rate sheet for the entire organization (for each loan product); others have different rate sheets for different geographic markets that reflect local market competition and costs. Rate sheets can change daily with changes in basic economic conditions, such as market interest rates.

Loan rates paid by borrowers can deviate from the interest rates shown on sheets for many reasons. For example, the rates on the sheets may not reflect differences in loan origination costs. Also, in some cases, loan officers and brokers are allowed to deviate from prices on rate sheets as market conditions, including the extent of competition, warrant or allow. Deviations may also occur because of negotiated outcomes. Loan officers or brokers may benefit from pricing flexibility through higher compensation by obtaining a price above the rate stated on a rate sheet (or above prices obtained by others).

Borrowers differ in their propensity to negotiate—for example, borrowers with less experience in the mortgage market, such as first-time homebuyers, may be less likely than experienced borrowers to negotiate. These differences in negotiating propensities may be correlated with race, ethnicity, or sex. For example, minorities are disproportionately first-time homebuyers.

Discretionary, or flexible, pricing may be a legitimate business practice. Properly developed, monitored, and administered, discretionary pricing programs may help to ensure that markets allocate resources in an efficient way. However, when loan officers have latitude in deviating from rate sheets or

13. For example, in areas that have experienced sustained rapid increases in home prices, more prospective borrowers may rely on mortgage products intended to minimize initial monthly payment burdens, such as adjustable-rate loans. Also, differences in prepayment propensities may result in pricing differences across states.

14. Refer, for example, to Office of Thrift Supervision, Office of Research and Analysis (2000), “What about Subprime Mortgages?” *Mortgage Market Trends*, vol. 4 (June), pp.1–13. Borrowers with higher-priced loans may also prepay more frequently than borrowers with other loans if they have a greater propensity to extract equity through a cash-out refinance. Such may be the case if borrowers with higher-priced loans have fewer alternative sources of funds to address pressing financial problems. Also, borrowers with higher-priced loans may prepay more often if, over time, they become more aware of less-expensive credit opportunities. Refer to Anthony Pennington-Cross (2003), “Credit History and the Performance of Prime and Nonprime Mortgages,” *Journal of Real Estate Finance*, vol. 27 (November), pp. 279–301.



in determining which rate sheet applies to each borrower, the lender runs the risk that differential treatment on a basis prohibited by law may arise. For this reason, the Interagency Fair Lending Examination Procedures provide that discretionary pricing should be considered an examination “risk factor” when a lender’s risk for engaging in pricing discrimination is evaluated.<sup>15</sup>

### Variations in Loan-Processing Channels

The delivery channels through which borrowers obtain loans vary across lenders, and such variation may affect loan pricing. On the one hand, underwriting and pricing may be centrally controlled even though applications for credit may begin through different channels, such as the Internet, the mail, or a visit to a bank office. On the other hand, in complex financial organizations with numerous bank branches, multiple affiliates (both bank and nonbank), decentralized loan production offices, and third-party brokerage operations, each application may be subject to a different underwriting and pricing regime depending on its point of initiation.

The 2004 HMDA pricing data suggested that the delivery channel through which a borrower obtains a loan may matter. For example, the incidence of higher-priced lending was significantly higher for borrowers who lived outside the assessment areas of lenders covered by the Community Reinvestment Act of 1977 (CRA) than for those who lived inside these areas.<sup>16</sup> The HMDA data do not provide a reason for this pattern, but several explanations that warrant further research are possible. For example, the difference may be due, at least in part, to a reliance on different delivery channels for loans within and outside these lenders’ assessment areas.

Differences in the incidence of higher-priced lending across groups may also arise if different channels tend to serve different customer groups. For example, mortgage brokers or loan correspondents that originate loans on behalf of a depository institution (commercial bank, savings association, or credit union) may focus on the subprime market, while the deposi-

tory institution may offer a broader range of mortgage products through its retail branch network. If mortgage brokers or loan correspondents that focus on the subprime market tend to work disproportionately with borrowers from minority neighborhoods, then the depository institution’s overall pricing pattern may show a higher incidence of higher-priced lending for minorities than for whites.

### GENERAL FINDINGS FROM THE 2005 HMDA DATA

For 2005, lenders covered by HMDA reported information on roughly 30.2 million home-loan applications—11.7 million for purchasing one- to four-family homes, 15.9 million for refinancing existing home loans, 2.5 million for improving one- to four-family dwellings, and the balance for loans on multi-family dwellings for five or more families (table 1).<sup>17</sup> These applications resulted in some 15.6 million loan extensions. Lenders also reported information on about 5.9 million loans they purchased from other institutions and on some 397,000 requests for pre-approvals of home-purchase loans that either were turned down by the lender at the time the pre-approval was sought or were granted but not acted on by the applicant (data not shown in table). The total number of reported applications and purchased loans increased about 2.8 million, or 7 percent, from 2004; most of the increase was for applications for home-purchase loans. The number of applications for loans to refinance an existing loan fell about 1 percent, likely because of an increase in interest rates in 2005.

From the 2005 HMDA data, the FFIEC prepared disclosure statements for 8,848 HMDA-reporting institutions—3,904 commercial banks, 974 savings institutions, 2,047 credit unions, and 1,923 mortgage companies (table 2). Of the mortgage companies, 70 percent were independent entities—that is, institutions that were neither subsidiaries of depository institutions nor affiliates of bank holding companies (data derived from table). The disclosure statements consisted of 78,193 distinct reports, each covering the lending activity of a particular institution in each metropolitan statistical area (MSA) in which it had a home or branch office (table 1, last column). The total

15. Refer to [www.ffiec.gov/PDF/fairlend.pdf](http://www.ffiec.gov/PDF/fairlend.pdf).

16. The assessment areas of lenders covered by the CRA include principally the locales in which a lender has its main or branch offices and its deposit-taking automated teller machines. For a more complete definition of CRA assessment areas, refer to the Federal Reserve Board’s Regulation BB, section 228.41. Also refer to Robert B. Avery, Glenn B. Canner, Shannon C. Mok, and Dan S. Sokolov (2005), “Community Banks and Rural Development: Research Relating to Proposals to Revise the Regulations That Implement the Community Reinvestment Act,” *Federal Reserve Bulletin*, vol. 91 (Spring), pp. 202–35.

17. In recent years, many lending institutions have developed programs to respond to prospective homebuyers’ need to provide sellers with evidence that they are likely to qualify for financing once a contract for sale has been signed. Such programs review requests for pre-approvals of home-purchase loans and typically provide a prospective homebuyer with a binding written commitment to finance a purchase (subject to certain conditions). The application counts shown in table 1 exclude information reported on pre-approvals that did not result in a loan.

## 1. Home loan and reporting activity of home lenders covered under HMDA, 1990–2005

Number								
Year	Applications received for home loans on one- to four-family properties, and home loans purchased from other lenders (millions)						Reporters	Disclosure reports <sup>2</sup>
	Applications				Loans purchased	Total <sup>1</sup>		
	Home purchase	Refinance	Home improvement	Total <sup>1</sup>				
1990 .....	3.27	1.07	1.16	5.51	1.15	6.66	9,332	24,041
1991 .....	3.26	2.11	1.18	6.55	1.36	7.91	9,358	25,934
1992 .....	3.54	5.24	1.23	10.01	1.98	12.00	9,073	28,782
1993 .....	4.52	7.72	1.40	13.64	1.80	15.44	9,650	35,976
1994 .....	5.20	3.80	1.69	10.69	1.48	12.17	9,858	38,750
1995 .....	5.51	2.70	1.75	9.96	1.28	11.24	9,539	36,611
1996 .....	6.33	4.54	2.14	13.01	1.82	14.83	9,328	42,946
1997 .....	6.75	5.39	2.16	14.30	2.08	16.38	7,925	47,416
1998 .....	7.96	11.42	2.04	21.43	3.23	24.65	7,836	57,294
1999 .....	8.43	9.37	2.05	19.85	3.01	22.86	7,832	56,966
2000 .....	8.28	6.54	1.99	16.81	2.40	19.21	7,713	52,776
2001 .....	7.69	14.29	1.85	23.83	3.77	27.59	7,631	53,066
2002 .....	7.40	17.48	1.53	26.41	4.83	31.24	7,771	56,506
2003 .....	8.15	24.60	1.51	34.26	7.23	41.49	8,121	65,808
2004 .....	9.79	16.10	2.20	28.13	5.14	33.27	8,853	72,246
2005 .....	11.67	15.90	2.54	30.17	5.87	36.04	8,848	78,193

NOTE: Here and in all subsequent tables except tables 3 and 5, for 2004 and 2005, applications exclude requests for pre-approval that were denied by the lender or were accepted by the lender but not acted upon by the borrower. In this article, applications are defined as being for a loan on a specific property; they are thus distinct from requests for pre-approval, which are not related to a specific property.

1. Applications for multifamily homes are included only in the "total" columns; for 2005, these applications numbered nearly 57,700.

2. A report covers the mortgage lending activity of a lender in a single metropolitan statistical area in which it had an office during the year.

SOURCE: Here and in subsequent tables and figures except as noted, Federal Financial Institutions Examination Council, data reported under the Home Mortgage Disclosure Act ([www.ffiec.gov/hmda](http://www.ffiec.gov/hmda)).

number of reporting institutions was little changed from 2004, as was the distribution of reporters by type of institution.

### Lender Specialization

Mortgage companies, as distinct from depository institutions, received more than 60 percent of all the home-loan applications reported in the 2005 HMDA data, although such companies accounted for only about one-fifth of the reporting institutions (table 3). Among mortgage companies, those affiliated (either directly or indirectly) with a depository institution

tended to be very active lenders: The 576 mortgage company affiliates processed 24 percent of the applications in 2005.

Different types of lending institutions tend to specialize in different types of home loans, although less so than in the past. The most notable change has been the diminished role that mortgage companies play in originating government-backed loans. In 2005, mortgage companies accounted for nearly 64 percent of government-backed originations. As recently as 2002, their share of originations of this type had been 83 percent. Depository institutions extended 71 percent of reported home-improvement loans and about 88 percent of multifamily loans (data not shown in tables). Commercial banks accounted for about half the loans for manufactured homes in 2005.

### 2. Distribution of home lenders covered by HMDA, by type of institution, 2005

Type	Number	Percent
Depository institution		
Commercial bank .....	3,904	44.1
Savings institution .....	974	11.0
Credit union .....	2,047	23.1
All .....	6,925	78.2
Mortgage company		
Independent .....	1,347	15.2
Affiliated <sup>1</sup> .....	576	6.5
All .....	1,923	21.7
<b>All institutions .....</b>	<b>8,848</b>	<b>100</b>

1. Subsidiary of a depository institution or an affiliate of a bank holding company.

### Activity and Size of Lender

Although the number of lending institutions covered by HMDA is large, most of these institutions, whether measured by asset size or by some measure of lending activity (such as the number of reported applications or loans), are small (table 3). For 2005, 60 percent of the reporting institutions each provided information on fewer than 250 loans or applications, accounting for

## 3. Distribution of home lenders covered by HMDA, by type of lender and the number of applications they receive, 2005

Type of lender, and subcategory (asset size in millions of dollars, or affiliation)	Number of applications					
	1–99		100–249		250–999	
	Percent of type <sup>1</sup>	Percent of subcategory <sup>2</sup>	Percent of type <sup>1</sup>	Percent of subcategory <sup>2</sup>	Percent of type <sup>1</sup>	Percent of subcategory <sup>2</sup>
Depository institution						
Commercial bank						
Less than 250 .....	78.8	58.7	66.0	30.4	27.4	10.1
250–999 .....	17.9	25.0	29.8	25.8	60.6	41.7
1,000 or more .....	3.3	12.6	4.1	9.6	12.1	22.4
All .....	100	41.8	100	26.6	100	21.2
Savings institution						
Less than 250 .....	84.6	40.4	70.3	38.0	25.2	18.4
250–999 .....	11.8	7.2	27.3	18.9	65.1	61.3
1,000 or more .....	3.6	5.2	2.4	3.9	9.8	21.4
All .....	100	22.6	100	25.6	100	34.7
Credit union						
Less than 250 .....	96.1	63.6	84.4	26.7	34.8	9.5
250–999 .....	3.8	9.1	14.6	16.7	58.7	58.0
1,000 or more .....	.1	.9	1.0	4.7	6.5	25.2
All .....	100	49.2	100	23.5	100	20.2
All depository institutions						
Less than 250 .....	85.2	58.5	71.6	29.9	28.8	10.8
250–999 .....	12.6	18.4	25.3	22.6	61.0	48.7
1,000 or more .....	2.2	9.2	3.1	7.6	10.1	22.6
All .....	100	42.0	100	25.6	100	22.8
Mortgage company						
Independent .....	41.2	11.4	73.3	13.1	79.4	28.4
Affiliated .....	58.8	38.2	26.7	11.1	20.6	17.2
All .....	100	19.5	100	12.5	100	25.0
All institutions .....	...	37.1	...	22.7	...	23.3
MEMO						
All applications, by number reported by lender .....	...	.5	...	1.1	...	3.4

NOTE: Refer to table 2, note 1, and general note to table 1.

1. Distribution sums vertically.

2. Distribution sums horizontally.

... Not applicable.

just 1.6 percent of all the reported data. At the other end of the spectrum, 6 percent of reporting institutions each provided information on 5,000 or more loans or applications, but these few highly active lenders accounted for 88 percent of all the reported data.

Asset size is available only for depository institutions. Asset size and lending activity are highly correlated. For example, the 707 depository institutions with assets of \$1 billion or more reported 86 percent of all applications reported by depositories, whereas the 4,236 HMDA-reporting depository institutions with assets of less than \$250 million accounted for only about 5 percent of the applications (percentages derived from table 3).

Many HMDA reporters are affiliated with each other. If individual HMDA reporters are aggregated to their highest level of corporate organization (such as a bank holding company), the concentration of mortgage lending nationwide is evident. The twenty-five organizations reporting the largest number of applications and loans accounted for 54 percent of the 2005 data, a proportion essentially unchanged from 2004 (data not shown in tables).

### DISPOSITION OF APPLICATIONS, SELECTED CATEGORIES OF LOAN PRODUCTS, AND THE SECONDARY MARKET

The HMDA data provide opportunities to categorize applications and loans in a wide variety of ways. For the analysis here, applications were grouped into twenty-five product categories based on loan and property type, purpose of the loan, and lien and owner-occupancy status.<sup>18</sup> For each product category, information is provided on the number of total and pre-approval applications, application denials, originated loans, loans with prices above the thresholds, loans covered by the Home Ownership and Equity Protection Act of 1994, and the mean and median APR spreads for loans priced above certain thresholds (table 4).

Because the transition rules regarding the reporting of data create problems for assessing some of the

18. Applications in which the lender reported that the race, ethnicity, or sex of the applicant or co-applicant was "not applicable" were assumed to have been made by businesses (including trusts) rather than by individuals.

3. Distribution of home lenders covered by HMDA, by type of lender and the number of applications they receive, 2005—*Continued*

Type of lender, and subcategory (asset size in millions of dollars, or affiliation)	Number of applications						MEMO	
	1,000–4,999		5,000 or more		Any		Number of lenders	Percent of applications
	Percent of type <sup>1</sup>	Percent of subcategory <sup>2</sup>	Percent of type <sup>1</sup>	Percent of subcategory <sup>2</sup>	Percent of type <sup>1</sup>	Percent of subcategory		
Depository institution								
Commercial bank								
Less than 250	6.2	.8	1.2	0	57.7	100	2,254	1.0
250–999	32.4	7.4	2.5	.2	30.8	100	1,204	1.6
1,000 or more	61.5	37.9	96.3	17.5	11.4	100	446	19.0
All	100	7.0	100	2.1	100	100	3,904	21.6
Savings institution								
Less than 250	12.0	2.8	3.4	.4	47.3	100	461	.5
250–999	38.9	11.7	5.1	.8	36.9	100	359	.7
1,000 or more	49.1	34.4	91.5	35.1	15.8	100	154	11.8
All	100	11.1	100	6.1	100	100	974	12.9
Credit union								
Less than 250	3.0	.3	0	0	74.3	100	1,521	.5
250–999	50.4	16.2	0	0	20.5	100	419	.8
1,000 or more	46.7	58.9	100	10.3	5.2	100	107	1.1
All	100	6.6	100	.5	100	100	2,047	2.5
All depository institutions								
Less than 250	6.6	.8	2.0	.1	61.2	100	4,236	2.0
250–999	38.4	10.0	3.3	.3	28.6	100	1,982	3.1
1,000 or more	55.0	40.3	94.7	20.2	10.2	100	707	31.9
All	100	7.5	100	2.2	100	100	6,925	37.0
Mortgage company								
Independent	82.5	30.0	68.3	17.2	70.1	100	1,347	39.5
Affiliated	17.6	14.9	31.7	18.6	30.0	100	576	23.5
All	100	25.5	100	17.6	100	100	1,923	63.0
All institutions	...	11.4	...	5.5	...	100	8,848	100
MEMO								
All applications, by number reported by lender	...	7.1	...	88.0	...	100	...	100

2004 and 2005 data on loan pricing, as they do for assessing the data on manufactured homes and pre-approvals, the analysis that follows excludes “transition” applications—that is, those submitted before January 1, 2004 (data on these applications are shown as memo items in tables 4 and 5). Otherwise, information is given on all applications reported under HMDA.

### Disposition of Applications

HMDA data are the only publicly available source of information on the disposition of individual applications for home loans. Because the data include information on the race, ethnicity, and sex of applicants as well as the type and purpose of the loan and the location of the property, the disposition of applications can be assessed along many dimensions.

The HMDA data for 2005 indicate that lenders approve most of the applications they receive, although the proportion approved or denied varies somewhat by loan purpose and product and by lien status. In general, denial rates are notably higher for refinancings and for home-improvement loans than for home-purchase loans, perhaps because of the prequalification and financial counseling activities that many

prospective borrowers go through before purchasing a home (table 4). Denial rates are lower for government-backed loans than for conventional loans and are especially high for loans to purchase manufactured homes. Requests for pre-approval are denied at a higher rate than applications initiated through a pre-approval program (table 5).

Compared with denial rates in 2004, those in 2005 are slightly higher for conventional home-purchase and refinance loans and are either unchanged or slightly lower for other loan products. Overall, the denial rate for all loans in 2005 was 27.1 percent, compared with 26.5 percent in 2004.

### Conventional and Government-Backed Loans

As in 2004, most applications (about 95 percent in 2005) for loans to purchase owner-occupied one- to four-family homes (either site-built or manufactured) were for conventional loans—that is, non-government-backed loans (table 4). The remainder were for government-backed forms of credit, mostly those involving the Federal Housing Administration (FHA).

The share of all HMDA-reported loans backed by the FHA has been declining over the past several years,

## 4. Disposition of applications for home loans, and origination and pricing of loans, by type of home and type of loan, 2005

Type of home and loan	Applications				Loans originated				
	Number submitted	Acted upon by lender			Number	Loans with annual percentage rate (APR) spread above the threshold <sup>1</sup>			
		Number	Number denied	Percent denied		Number	Percent	Distribution, by percentage points of APR spread	
								3–3.99	4–4.99
<b>ONE- TO FOUR-FAMILY NONBUSINESS RELATED<sup>3</sup></b>									
<i>Owner occupied</i>									
<i>Site built</i>									
Home purchase									
Conventional									
First lien	6,838,946	5,922,478	969,271	16.4	4,399,445	1,080,344	24.6	27.0	35.4
Junior lien	1,930,805	1,701,237	304,874	17.9	1,215,902	604,924	49.8	...	...
Government backed									
First lien	554,607	494,785	61,859	12.5	408,618	3,654	.9	76.3	13.0
Junior lien	1,157	941	106	11.3	789	29	3.7	...	...
Refinance									
Conventional									
First lien	12,752,498	9,637,488	3,176,225	33.0	5,518,481	1,418,459	25.7	27.4	31.7
Junior lien	1,449,919	1,205,491	359,090	29.8	720,380	217,570	30.2	...	...
Government backed									
First lien	247,768	212,745	42,752	20.1	150,000	1,349	.9	42.8	41.2
Junior lien	433	331	50	15.1	257	24	9.3	...	...
Home improvement									
Conventional									
First lien	932,159	712,434	252,675	35.5	399,723	104,930	26.3	34.6	29.2
Junior lien	1,090,972	954,402	400,022	41.9	461,296	82,013	17.8	...	...
Government backed									
First lien	3,547	3,082	768	24.9	2,003	110	5.5	52.7	13.6
Junior lien	3,440	2,972	753	25.3	1,867	1,116	59.8	...	...
Conventional or government-backed, unsecured	325,391	315,102	149,744	47.5	143,716	...	...	...	...
<i>Manufactured</i>									
Conventional, first lien									
Home purchase	386,286	367,166	193,285	52.6	99,964	58,304	58.3	26.8	24.7
Refinance	233,159	190,832	103,360	54.2	69,807	38,482	55.1	30.0	30.0
Other	131,221	119,064	48,584	40.8	60,264	12,957	21.5	17.2	18.0
<i>Nonowner occupied<sup>4</sup></i>									
Conventional, first lien									
Home purchase	1,548,496	1,361,256	241,699	17.8	1,010,518	205,020	20.3	41.5	27.5
Refinance	1,053,842	888,321	249,826	28.1	557,262	125,333	22.5	30.7	29.6
Other	440,842	386,483	118,046	30.5	235,844	112,909	47.9	3.6	2.4
<b>BUSINESS RELATED<sup>3</sup></b>									
Conventional, first lien									
Home purchase	72,619	62,161	4,377	7.0	52,601	6,194	11.8	53.5	23.4
Refinance	59,831	48,215	4,913	10.2	38,694	5,366	13.9	36.6	24.3
Other	31,417	25,969	3,645	14.0	19,277	4,235	22.0	3.1	.9
<b>MULTIFAMILY<sup>5</sup></b>									
Conventional, first lien									
Home purchase	27,132	24,867	2,354	9.5	21,526	1,283	6.0	43.8	25.1
Refinance	24,262	21,840	2,192	10.0	18,872	1,198	6.3	47.5	24.6
Other	6,144	5,403	598	11.1	4,605	230	5.0	22.6	10.0
<b>Total</b>	<b>30,146,893</b>	<b>24,665,065</b>	<b>6,691,068</b>	<b>27.1</b>	<b>15,611,711</b>	<b>4,086,033</b>	<b>26.2</b>	<b>21.6</b>	<b>24.3</b>

NOTE: Excludes transition-period applications (those submitted before 2004) and transition-period loans (those for which the application was submitted before 2004).

1. APR spread is the difference between the APR on the loan and the yield on a comparable-maturity Treasury security. The threshold for first-lien loans is a spread of 3 percentage points; for junior-lien loans, it is a spread of 5 percentage points.

2. Loans covered by the Home Ownership and Equity Protection Act of 1994, which does not apply to home-purchase loans.

3. Business-related applications and loans are those for which the lender reported that the race, ethnicity, and sex of the applicant or co-applicant are “not applicable”; all other applications and loans are nonbusiness related.

4. Includes applications and loans for which occupancy status was missing.

5. Includes business-related and nonbusiness-related applications and loans for owner-occupied and nonowner-occupied properties.

... Not applicable.



4. Disposition of applications for home loans, and origination and pricing of loans, by type of home and type of loan, 2005—*Continued*

Loans originated						MEMO					
Loans with annual percentage rate (APR) spread above the threshold <sup>1</sup>						Transition-period applications (those submitted before 2004)					
Distribution, by percentage points of APR spread			APR spread (percentage points)		Number of HOEPA-covered loans <sup>2</sup>	Number submitted	Number denied	Percent denied	Loans originated		Number of HOEPA-covered loans <sup>2</sup>
5–6.99	7–8.99	9 or more	Mean	Median					Number	Percent with APR spread above threshold	
34.0	3.4	.2	4.8	4.7	...	9,178	718	9.5	5,367	2.6	...
72.7	25.9	1.4	6.5	6.3	...	449	36	10.9	222	9.0	...
8.8	1.4	.5	3.8	3.3	...	972	124	21.1	302	.3	...
51.7	34.5	13.8	7.1	7.0	...	2	0	0	0	0	...
35.9	4.4	.6	4.8	4.7	15,602	4,382	630	21.8	1,447	9.7	1
59.9	30.9	9.2	7.0	6.7	7,225	206	19	14.7	80	10.0	1
11.9	3.9	.1	4.3	4.5	19	332	66	34.2	49	2.0	0
54.2	41.7	4.2	6.9	6.8	1	0	0	0	0	0	0
30.3	5.0	.9	4.7	4.5	1,873	92	7	9.3	54	11.1	0
43.8	31.4	24.8	7.7	7.4	5,726	31	10	71.4	4	0	0
24.5	9.1	...	4.5	3.9	1	1	0	0	0	0	0
42.7	27.8	29.6	8.1	7.4	472	0	0	0	0	0	0
...	...	...	...	...	...	5	1	50.0	0	0	...
31.3	12.4	4.7	5.4	4.9	...	89	10	11.9	51	11.8	...
30.6	7.0	2.4	5.0	4.7	1,760	87	14	21.2	24	20.8	0
27.5	21.9	15.4	6.5	5.9	1,059	85	14	20.9	30	6.7	0
27.7	2.8	.5	4.5	4.3	...	1,599	159	12.1	903	4.8	...
34.9	4.2	.5	4.8	4.7	1,534	634	90	21.4	251	15.5	0
48.7	32.6	12.7	7.0	6.8	470	77	14	23.0	36	30.6	0
16.7	4.2	2.1	4.4	3.9	...	1,778	123	8.0	1,084	1.6	...
32.1	5.4	1.7	4.8	4.6	134	641	80	17.3	167	1.8	1
60.0	29.3	6.7	6.7	6.5	92	361	62	23.2	73	6.8	1
29.0	1.8	.3	4.5	4.2	...	59	3	5.7	46	0	...
24.6	3.2	.1	4.4	4.1	5	62	3	5.3	34	2.9	0
56.1	8.7	2.6	5.4	5.3	7	9	0	0	8	12.5	0
<b>41.8</b>	<b>10.2</b>	<b>2.0</b>	<b>5.3</b>	<b>5.1</b>	<b>35,980</b>	<b>21,131</b>	<b>2,183</b>	<b>13.5</b>	<b>10,232</b>	<b>4.4</b>	<b>4</b>

from about 16 percent in 2000 to less than 3 percent in 2005 (data not shown in tables). Of all first-lien home-purchase loans reported in 2005, the FHA share was 5 percent. New, more flexibly underwritten conventional loan products are attracting borrowers who, in the past, might otherwise have sought FHA backing, particularly those borrowers seeking loans with high LTV ratios. Also, in some areas, high and rapidly rising

home prices have diminished borrower interest in the FHA program as FHA insurance limits have fallen behind increases in local home values. In some parts of the country, FHA-insured products account for a negligible share of the market. In the metropolitan division that includes San Francisco, for example, only two of the roughly 23,000 first-lien home-purchase loans were FHA-insured in 2005.

## 5. Home-purchase lending that began with a request for pre-approval: Disposition and pricing, by type of home, 2005

Type of home	Requests for pre-approval			Applications preceded by requests for pre-approval <sup>1</sup>			Loan originations whose applications were preceded by requests for pre-approval		
	Number acted upon by lender	Number denied	Percent denied	Number submitted	Acted upon by lender		Number	Loans with annual percentage rate (APR) spread above the threshold <sup>2</sup>	
					Number	Number denied		Number	Percent
<b>ONE- TO FOUR-FAMILY NONBUSINESS RELATED<sup>3</sup></b>									
Owner occupied									
<i>Site built</i>									
Conventional									
First lien	834,824	205,707	24.6	548,224	484,423	38,343	409,856	62,189	15.2
Junior lien	137,063	25,952	18.9	100,161	90,799	5,991	77,428	22,986	29.7
Government backed									
First lien	94,105	28,830	30.6	64,370	57,719	4,948	48,774	902	1.8
Junior lien	186	35	18.8	156	130	17	111	4	3.6
<i>Manufactured</i>									
Conventional, first lien	43,042	22,200	51.6	40,178	34,042	19,715	8,980	6,363	70.9
Other	4,958	1,837	37.1	3,375	3,027	564	2,181	163	7.5
Nonowner occupied <sup>4</sup>									
Conventional, first lien	121,816	21,453	17.6	86,844	75,387	7,917	61,782	10,355	16.8
Other	16,600	2,322	14.0	14,375	12,009	1,131	9,659	5,830	60.4
<b>BUSINESS RELATED<sup>3</sup></b>									
Conventional, first lien	5,197	1,619	31.2	3,784	2,619	263	2,239	420	18.8
Other	1,107	91	8.2	1,061	810	63	705	272	38.6
<b>MULTIFAMILY<sup>5</sup></b>									
Conventional, first lien	420	43	10.2	402	299	33	248	29	11.7
Other	79	7	8.9	77	57	5	45	14	31.1
<b>Total</b>	<b>1,259,397</b>	<b>310,096</b>	<b>24.6</b>	<b>863,007</b>	<b>761,321</b>	<b>78,990</b>	<b>622,008</b>	<b>109,527</b>	<b>17.6</b>

NOTE: Excludes transition-period requests for pre-approval (those submitted before 2004). Refer to general note to table 1.

1. These applications are included in the total of 30,146,893 reported in table 4.

2. Refer to table 4, note 1.

3. Business-related applications and loans are those for which the lender

reported that the race, ethnicity, and sex of the applicant or co-applicant are “not applicable”; all other applications and loans are nonbusiness related.

4. Includes applications and loans for which occupancy status was missing.

5. Includes business-related and nonbusiness-related applications and loans for owner-occupied and nonowner-occupied properties.

... Not applicable.

### Owner-Occupancy Status

Some believe that part of the strength in housing markets over the past several years is due to a growing number and share of home sales to investors or individuals purchasing second homes, as distinct from buyers who intend to make the units being purchased their primary residence. HMDA data can be used to document the role of investors and second-home buyers in the housing market because the data indicate whether the property to which an application or loan relates is intended as the borrower’s principal dwelling (that is, as an owner-occupied unit).<sup>19</sup> A limitation to using mortgage lending information to gauge the activity of investors and second-home

buyers is that a portion of these buyers do not use mortgages; rather, they pay cash for the properties or take out commercial loans. (Of course, some owner-occupants also purchase homes solely with cash.) In 2005, lenders covered by HMDA reported on roughly 3 million applications for nonowner-occupied properties (data derived from table 4). About half of these applications were conventional first liens for home purchase.

The HMDA data indicate that the share of reported lending for nonowner-occupied purposes remained steady from 1990 through the mid-1990s, primarily in the range of 4.5 percent to 6.0 percent (whether measured in number of loans or dollar amount of loans), and then began rising (table 6). In 2005, the nonowner-occupied share of the home-purchase loan market in terms of number of loans was about 17 percent and in terms of dollar amount of loans was roughly 16 percent. Both figures rose from 2004, when the shares were 15 percent and 13 percent respectively.

19. An investment property is a nonowner-occupied dwelling that is intended to be continuously rented. Some nonowner-occupied units—vacation homes and second homes—are for the primary use of the owner and would thus not be considered investment properties. The HMDA data do not, however, distinguish between these two types of nonowner-occupied dwellings.

5. Home-purchase lending that began with a request for pre-approval: Disposition and pricing, by type of home, 2005—*Continued*

Loan originations whose applications were preceded by requests for pre-approval							MEMO Applications with transition-period requests for pre-approval (request submitted before 2004)				
Loans with annual percentage rate (APR) spread above the threshold <sup>2</sup>											
Distribution, by percentage points of APR spread					APR spread (percentage points)		Number submitted	Number denied	Percent denied	Loans originated	
3–3.99	4–4.99	5–6.99	7–8.99	9 or more	Mean spread	Median spread				Number	Percent with APR spread above threshold

The extent of lending for nonowner-occupied properties varies considerably by geography (figure 1). Some of the states with the highest incidence of such lending in 2005 included Florida, Nevada, Hawaii, South Carolina, and Vermont, all of which have

significant second-home markets. Each of these states has also experienced elevated shares of lending for nonowner-occupied properties for the past several years.

## 6. Home-purchase loans on nonowner-occupied site-built homes as a share of all first-lien home-purchase loans on one- to four-family homes, by number and dollar amount of loans, 1990–2005

Percent

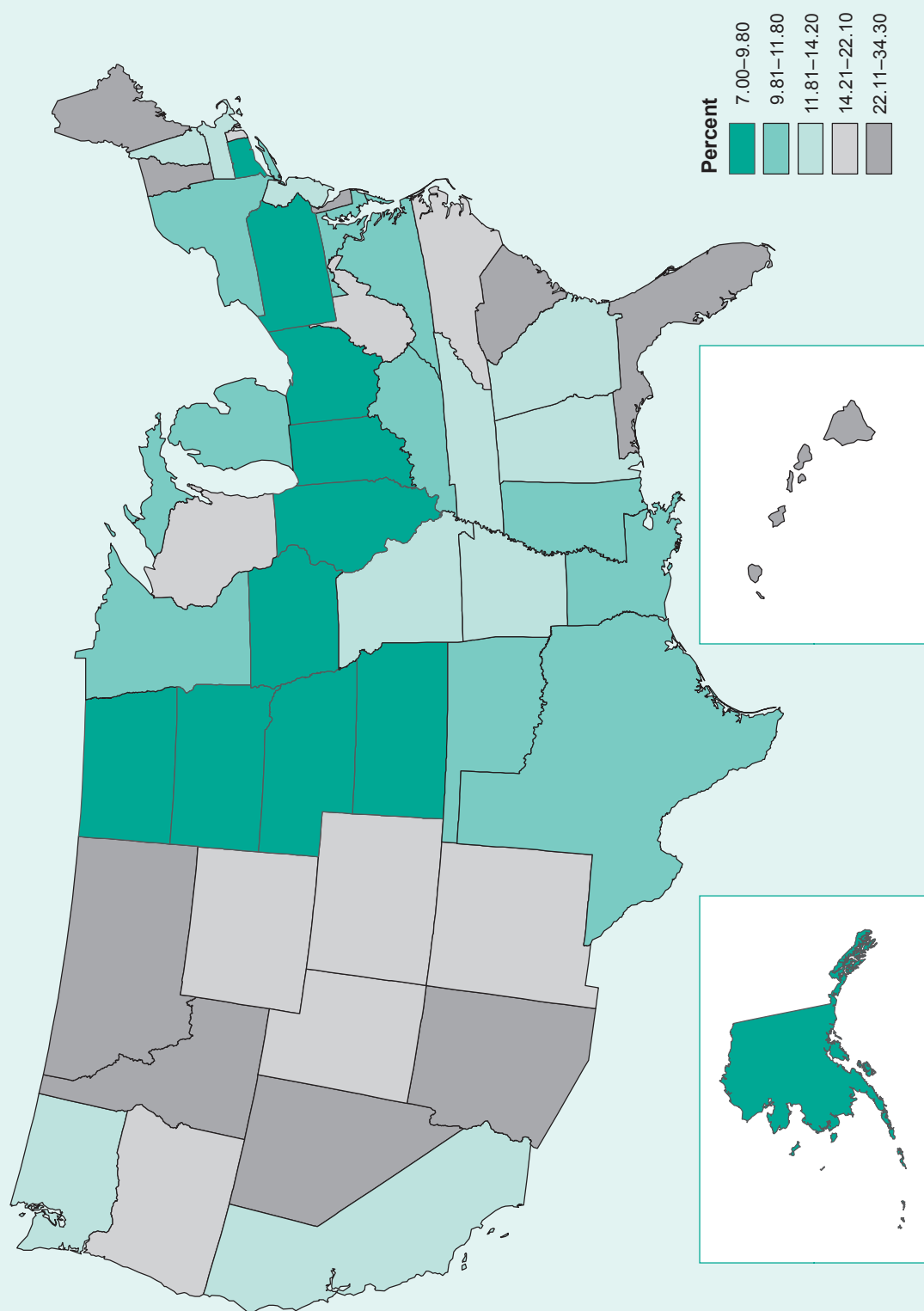
Year	Number	Dollar amount
1990 .....	6.6	5.9
1991 .....	5.6	4.5
1992 .....	5.2	4.0
1993 .....	5.1	3.8
1994 .....	5.7	4.3
1995 .....	6.4	5.0
1996 .....	6.4	5.1
1997 .....	7.0	5.8
1998 .....	7.1	6.0
1999 .....	7.4	6.4
2000 .....	8.0	7.2
2001 .....	8.6	7.6
2002 .....	10.5	9.2
2003 .....	11.9	10.6
2004 .....	14.9	13.1
2005 .....	17.3	15.7

*Piggyback Lending*

The expanded HMDA data provide an opportunity to measure the extent to which homebuyers are simultaneously obtaining first- and junior-lien loans. Such simultaneous borrowing has been a feature of the conventional mortgage marketplace for some time but has grown in importance in recent years as lenders have marketed products intended to offer consumers an alternative to private mortgage insurance (PMI) or, in some cases, a line of credit that may be used for a variety of purposes. Simultaneous borrowing of this type is often referred to as a “piggyback” loan or an “80-10-10” loan.

Many first-time homebuyers have few assets available to satisfy down-payment and closing-cost requirements, and thus they can ordinarily qualify for a mortgage only with a high LTV ratio and some type of mortgage backing that protects the lender in case

1. Incidence of nonowner-occupied lending for first-lien home-purchase loans on one- to four-family, site-built homes, by state and by quintile, 2005



of default. Other borrowers have the financial capacity to make a large down payment but prefer not to do so. Traditionally, lenders and secondary-market purchasers have sought protection in case of borrower default for loans with high LTV ratios. PMI reduces a lender's credit risk by insuring against losses associated with borrower default up to a contractually established percentage of the claim amount. PMI premiums are paid by the borrower, usually as an add-on to the monthly mortgage payment.

Typically, PMI is required on conventional loans with LTV ratios above 80 percent. Over the past few years, lenders have become more active in self-insuring by waiving PMI requirements if a borrower simultaneously takes out a first-lien loan with an LTV ratio of 80 percent or more and a junior-lien loan at a higher price to cover the remaining portion of the loan. The combined loans are often competitive on a price basis with a single loan involving PMI and offer the borrower a tax advantage because the interest payments on the junior-lien loan are generally tax-deductible, whereas the PMI premiums are not.

Piggyback loans are not identified as such in the HMDA data. However, the data provide a basis for identifying piggyback loans if one assumes that two conventional home-purchase loans involving properties in the same census tract, from the same lender, with identical time of application and closing, and with the same owner-occupancy status, borrower income, race or ethnicity, and sex involved the same borrower and the same home. Since 2004, the identification process has been improved by the addition of lien status, which earlier could only be approximated by comparing the size of loans that were matched. For 2005, we estimate that about 85 percent of the junior-lien home-purchase loans for owner-occupied properties can be matched to a first-lien loan by this process.<sup>20</sup>

The expanded HMDA data document the importance of the junior-lien home-purchase loan market. For 2005, lenders reported on a total of 1.37 million junior-lien loans used for the purpose of home purchase, up 74 percent from 2004 (data not shown in tables). The vast majority of junior-lien loans are conventional loans: Only a very small number (fewer than 1,000 nationwide) of the junior-lien loans issued in 2005 involved government-backed forms of credit (table 4). Overall, for 2005, we estimate that 22 percent of the reported first-lien home-purchase loans on owner-occupied site-built homes for one to four

families involved a junior-lien or piggyback loan reported by the *same* lender, up from nearly 14 percent in 2004 (table 7).

Piggyback lending varies by borrower income and race or ethnicity as well as by geography and loan characteristic.<sup>21</sup> Minority borrowers, borrowers with middle or upper incomes, and borrowers who purchased homes in lower-income census tracts are more likely to use piggyback loans to purchase homes than non-Hispanic whites or lower-income borrowers.<sup>22</sup> The apparent inconsistency between the results for borrower income and those for census-tract income appears to be driven by the relatively high incidence of the use of piggyback loans by middle- and upper-income borrowers purchasing homes in lower-income areas. Piggyback lending is also related to the amount borrowed, as larger first-lien loans are more likely to be associated with piggyback lending than are smaller loans. Regionally, piggyback lending is most common in the western region of the country and is particularly frequent in California, Nevada, and Colorado.

Piggyback lending is closely related to the location of a property relative to the lender's assessment areas as defined by the CRA. Borrowers who are obtaining loans to purchase homes in the CRA assessment areas of their lenders are much less likely to use piggyback loans than are borrowers purchasing homes outside of their lenders' assessment areas or borrowers obtaining loans from lenders not covered by the CRA (independent mortgage companies and credit unions).<sup>23</sup> Although the HMDA data do not provide

21. Only loans with complete information on census-tract characteristics are included in the analysis.

22. The income category of a borrower is relative to the median family income of the area (MSA or statewide non-MSA) in which the property being purchased is located, and the income category of a census tract is the median family income of the tract relative to that of the area (MSA or statewide non-MSA) in which the tract is located: "Low" is less than 50 percent of the median; "moderate" is 50 percent to 79 percent (in this article, "lower income" encompasses the low and moderate categories); "middle" is 80 percent to 119 percent; and "upper" is 120 percent or more. For loans with two or more applicants, HMDA-covered lenders report data on only two. Income for two applicants is reported jointly.

For tables 7 and 12, *minority* means that the applicant or co-applicant is Hispanic or has given at least one nonwhite race. For other tables, we use a different taxonomy. Applicants are placed under only one category for race and ethnicity, generally according to the race and ethnicity of the person listed first on the application. However, under race, the application is designated as *joint* if one applicant reported the single designation of white and the other reported one or more minority races. If the application is not joint but more than one race is reported, the following designations are made: If at least two minority races are reported, the application is designated as *two or more minority races*; if the first person listed on an application reports two races, and one is white, the application is categorized under the minority race.

23. Larger commercial banks and savings associations covered by the CRA (generally those with assets of \$1 billion or more) are

20. Date information collected under HMDA, which is critical to the accuracy of the matching process, is not made available to the public but is available to the agencies that oversee HMDA reporting (including the Federal Reserve Board).



an explanation for this finding, one possibility is the availability of special low-down-payment lending programs for homebuyers purchasing homes in lenders' CRA assessment areas, programs that would tend to diminish the need for a junior-lien loan to provide a source of down payment when purchasing a home.

The incidence of piggyback lending varies across neighborhoods according to the distribution of credit scores among those with outstanding mortgages, the distribution of educational attainment levels of neighborhood residents, and the proportion of minority residents in the neighborhood.<sup>24</sup> The incidence of piggyback lending is higher in areas that have larger proportions of mortgage borrowers with low credit scores and that have larger minority populations and is smaller in areas that have larger proportions of residents with more than a high-school education. These three relationships generally hold regardless of the level of census-tract income (data not shown in table).

### Loans for Manufactured Homes

Until the release of the 2004 data, users of HMDA data had no certain way to identify which applications and loans involved manufactured homes.<sup>25</sup> To help overcome this limitation, the Department of Housing and Urban Development (HUD) produced annually a list of reporting institutions (typically about twenty) that it believed were primarily in the business of extending such credit.<sup>26</sup> Users of the HMDA data often relied on the HUD list to identify, albeit imperfectly, loans and applications related to manufactured homes. This practice had its own limitations: It could not be used to identify applications and loans related to manufactured homes reported by lenders not on the HUD list, and data users often assumed that all loans by lenders on the list were for manufactured homes when some were not. The expanded HMDA data resolve this problem by including a code to identify applications and loans for manufactured homes.

required to identify the census tracts in their CRA assessment areas as of the end of each calendar year. That information was used to determine which loans in the HMDA data were for properties within the lenders' CRA assessment areas. When lenders were part of a bank or thrift holding company, the combined assessment areas of all banks in the holding company were used for the analysis.

24. The distribution of credit scores for mortgage borrowers by census tract relates to *all* individuals with an outstanding mortgage loan as of the end of 2004. Nonetheless, we believe it is likely to be representative of the credit-score distribution of 2005 borrowers. The data were provided by one of the three national credit-reporting agencies.

25. As distinct from site-built homes, most manufactured homes are assembled in factories and shipped to a home site.

26. Refer to [www.huduser.org/datasets/manu.html](http://www.huduser.org/datasets/manu.html).

### 7. Incidence of piggyback lending for home-purchase loans on owner-occupied, one- to four-family, site-built homes, and the incidence of such lending that involved a higher-priced first-lien loan, by characteristic of borrower and of census tract and by amount of loan, type of lender, and location of property, 2004 and 2005

Percent

Characteristic and status	Share of loans that are piggyback		Share of piggyback loans involving higher-priced first liens	
	2004	2005	2004	2005
<b>BORROWER</b>				
<i>Income ratio (percent of area median)</i>				
Less than 80 .....	11.9	18.9	25.6	61.9
80–100 .....	15.9	24.6	21.7	56.4
100 or more .....	14.3	21.9	16.1	50.9
Not reported <sup>1</sup> .....	8.3	19.4	4.7	20.9
Total .....	13.9	21.8	19.6	53.6
<i>Minority status</i>				
Minority .....	20.7	32.6	26.8	69.7
Non-Hispanic white .....	11.4	17.7	15.2	41.2
Missing <sup>2</sup> .....	13.3	18.2	16.9	51.4
Total .....	13.9	21.8	19.6	53.6
<i>Sex</i>				
Female .....	15.1	24.8	24.3	59.6
Male .....	16.2	25.9	22.7	58.6
Joint <sup>3</sup> .....	11.5	16.8	13.3	42.4
Total <sup>4</sup> .....	13.9	21.8	19.6	53.6
<b>AMOUNT OF LOAN (THOUSANDS OF DOLLARS)</b>				
Less than 100 .....	10.7	16.7	33.3	65.6
100–250 .....	15.1	23.6	18.9	51.8
250 or more .....	13.9	21.6	13.6	51.5
Total .....	13.9	21.8	19.6	53.6
<b>TYPE OF LENDER, BY PROPERTY LOCATION</b>				
Depository within assessment area <sup>5</sup> ..	6.2	9.8	5.0	15.0
Depository outside of assessment area ..	12.1	19.5	23.0	56.0
Lender not covered by CRA <sup>6</sup> .....	22.2	32.2	21.0	60.3
Total <sup>4</sup> .....	13.9	21.8	19.6	53.6
<b>LOCATION OF PROPERTY, BY FREDDIE MAC REGION<sup>7</sup></b>				
Northeast .....	10.3	18.6	18.5	47.6
Southeast .....	11.2	19.8	23.0	54.9
North Central .....	9.0	16.4	25.9	53.5
Southwest .....	15.6	24.0	21.3	47.6
West .....	21.9	28.8	16.0	59.1
Total <sup>4</sup> .....	13.9	21.8	19.6	53.6
<b>CENSUS TRACT OF PROPERTY</b>				
<i>Income ratio (percent of area median)</i>				
Less than 80 .....	18.7	29.4	27.3	67.6
80–119 .....	14.1	22.2	20.7	55.2
120 or more .....	11.8	18.0	13.3	41.1
Total <sup>4</sup> .....	13.9	21.8	19.6	53.6
<i>Racial or ethnic composition (minorities as percentage of population)</i>				
Less than 10 .....	9.0	15.0	17.1	42.0
10–50 .....	14.5	22.4	17.6	50.3
50–100 .....	22.3	33.6	25.9	70.3
Total <sup>4</sup> .....	13.9	21.8	19.6	53.6
<i>Location</i>				
Central city .....	13.7	21.7	19.2	52.7
Noncentral city .....	15.5	23.8	19.9	54.9
Rural or only state known .....	8.0	13.4	21.7	51.5
Total <sup>4</sup> .....	13.9	21.8	19.6	53.6

7. Incidence of piggyback lending for home-purchase loans on owner-occupied, one- to four-family, site-built homes, and the incidence of such lending that involved a higher-priced first-lien loan, by characteristic of borrower and of census tract and by amount of loan, type of lender, and location of property, 2004 and 2005—*Continued*  
Percent

Characteristic and status	Share of loans that are piggyback		Share of piggyback loans involving higher-priced first liens	
	2004	2005	2004	2005
<i>Credit score of borrowers (percent of mortgage borrowers with scores below 600)<sup>8</sup></i>				
20 or more .....	16.1	27.4	35.8	70.6
10–19 .....	15.6	24.4	22.1	57.7
Less than 10 .....	12.4	18.7	13.2	43.7
Total <sup>4</sup> .....	13.9	21.8	19.6	53.6
<i>Educational attainment of residents (percent of adults with high-school education or less)</i>				
30 or less .....	12.2	18.2	11.5	36.8
31–60 .....	14.4	22.6	20.2	54.7
More than 60 .....	15.3	24.6	28.8	68.7
Total <sup>4</sup> .....	13.9	21.8	19.6	53.6
<i>Real price appreciation of real estate<sup>9</sup></i>				
Less than zero .....	15.7	24.1	20.2	58.2
0–20 .....	12.4	20.1	20.3	51.4
More than 20 .....	12.4	19.6	17.9	46.7
Total <sup>4</sup> .....	13.9	21.8	19.6	53.6

NOTE: For definitions of piggyback lending and higher-priced loan, refer to text.

Excludes transition-period loans (those for which the application was submitted before 2004). For definition of income categories for borrower and census tract, refer to text note 22. Census tract is for the property securing the loan. The term *minority* means Hispanic or Latino ethnicity or any race other than white for either the borrower or the coborrower. Census-tract data reflect the 2000 decennial census; they also reflect definitions for metropolitan statistical areas established by the Office of Management and Budget in June 2003 and used in HMDA for the first time in the 2004 data.

1. Information for income was not reported.

2. Information for the characteristic was missing on the application.

3. On the applications for these loans, one applicant reported “male,” and the other reported “female.” For female and for male, only sole applicants were considered.

4. Excludes loans for which the information for the characteristic was missing on the application.

5. Includes lending by nonbank affiliates in the CRA assessment area of the depository institution.

6. Includes credit unions and mortgage companies not affiliated with a depository institution or with a bank or thrift holding company.

7. Freddie Mac defines its regions as follows: *Northeast*: N.Y., N.J., Pa., Del., Md., D.C., Va., W.V., P.R., Maine, N.H., Vt., Mass., R.I., Conn., V.I.; *Southeast*: N.C., S.C., Tenn., Ky., Ga., Ala., Fla., Miss.; *North Central*: Ohio, Ind., Ill., Mich., Wis., Minn., Iowa, N.D., S.D.; *Southwest*: Texas, La., N.M., Okla., Ark., Mo., Kan., Colo., Neb., Wyo.; *West*: Calif., Ariz., Nev., Ore., Wash., Utah, Idaho, Mont., Hawaii, Alaska, Guam.

8. Includes all borrowers with an outstanding mortgage regardless of the year in which the loan was taken out.

9. Based on the change in median home values for a constant 2000-defined geography.

SOURCE: For Freddie Mac data, *Primary Mortgage Market Survey*; for census-tract characteristics, the 1990 and 2000 decennial censuses; for credit-score data, one of the three national credit-reporting agencies.

The 2005 HMDA data indicate that roughly 4,400 lenders extended more than 256,000 manufactured-home loans, a loan volume up slightly from that in 2004. Among these lenders, the ten that extended the largest number of manufactured-home loans ac-

counted for 29 percent of the loans, and the top twenty accounted for 39 percent (data not shown in tables).

Loans for manufactured homes entail more credit risk than do most other forms of secured credit extended to consumers. Lender caution is reflected in the very high denial rates on applications for loans backed by manufactured homes. As noted, past HMDA data did not distinguish applications for manufactured homes from those for site-built properties. Analysis of the HUD list of manufactured-home loan specialists suggested that such lenders had very high denial rates and that, for lenders offering both manufactured-home loans and other home loans, a distorted picture of their propensity to deny credit could easily be drawn. The 2005 data document the importance of distinguishing applications for manufactured homes from those for site-built properties. For example, denial rates for applications for conventional first-lien home-purchase loans on manufactured homes were 52.6 percent in 2005, compared with 16.4 percent for such applications related to the purchase of one- to four-family site-built homes (table 4).

Manufactured housing also differs from site-built homes in that it serves relatively more lower-income households but fewer minorities. Of those obtaining loans to purchase manufactured homes, 38 percent were of lower income, whereas of those borrowing to purchase site-built homes, about 20 percent had lower incomes (table 8). On average, minority borrowers have lower incomes than do non-Hispanic white borrowers, but only about 15 percent of manufactured-home purchasers were members of a racial or ethnic minority group, whereas about 28 percent of purchasers of site-built homes were minorities.

### Secondary-Market Activity

HMDA data document the importance of the secondary market for home loans. Of the 21.5 million home loans originated or purchased in 2005 by lenders covered by HMDA, 14.9 million, or nearly 70 percent, were sold in 2005 (data not shown in tables).<sup>27</sup>

Prominent in the secondary market are government-sponsored enterprises (GSEs)—in particular, Fannie Mae and Freddie Mac. For the most part, the purchases of Fannie Mae and Freddie Mac in 2005

27. The HMDA data tend to undercount somewhat the volume of secondary-market sales. One reason is that, for example, some loans originated in 2005 will be sold to a secondary-market institution in 2006 or later and thus will never be reported as a sale. Another is that, as with other HMDA data, about 20 percent of home loans originated in 2005 were extended by lenders not covered by HMDA.

# 8. Distribution of home-purchase loans for one- to four-family owner-occupied homes, by characteristic of borrower and of census tract and by type of home, 2005

**Note:** Data revised on Sept. 18, 2006, to correct computational errors.

Characteristic and status	Site-built		Manufactured		Total		MEMO Number
	Percent of characteristic <sup>1</sup>	Percent of status <sup>2</sup>	Percent of characteristic <sup>1</sup>	Percent of status <sup>2</sup>	Percent of characteristic <sup>1</sup>	Percent of status	
BORROWER <sup>3</sup>							
<i>Income ratio (percent of area median)</i>							
Less than 50 .....	3.7	93.0	10.4	7.0	3.9	100	181,818
50–79 .....	15.9	95.6	27.4	4.4	16.2	100	765,134
80–119 .....	27.1	97.1	30.7	2.9	27.2	100	1,281,742
120 or more .....	53.3	98.5	31.5	1.6	52.7	100	2,483,787
Total <sup>4</sup> .....	100	97.4	100	2.6	100	100	4,712,481
<i>Race</i>							
American Indian or Alaska Native .....	.7	95.8	1.2	4.2	.7	100	36,064
Asian .....	5.1	99.8	.4	.2	4.9	100	244,143
Black or African American .....	7.7	98.4	4.6	1.6	7.6	100	375,188
Native Hawaiian or other Pacific Islander .....	.5	98.2	.4	1.8	.5	100	26,045
White .....	75.1	97.1	85.9	2.9	75.3	100	3,730,468
Two or more minority races .....	.1	97.0	.1	3.0	.1	100	2,453
Joint .....	1.3	97.9	1.0	2.1	1.3	100	61,723
Missing <sup>5</sup> .....	9.7	98.3	6.4	1.7	9.6	100	475,141
Total .....	100	97.4	100	2.6	100	100	4,951,225
<i>Ethnicity</i>							
Hispanic or Latino .....	12.3	98.4	7.6	1.6	12.2	100	602,774
Not Hispanic or Latino .....	76.5	97.2	84.1	2.8	76.7	100	3,798,888
Joint <sup>6</sup> .....	1.3	97.8	1.1	2.2	1.3	100	64,609
Missing <sup>5</sup> .....	9.9	98.1	7.3	1.9	9.8	100	484,954
Total .....	100	97.4	100	2.6	100	100	4,951,225
<i>Minority status</i>							
Minority .....	27.8	98.6	15.4	1.4	27.5	100	1,360,100
Non-Hispanic white .....	61.8	96.8	77.0	3.2	62.2	100	3,080,720
Missing <sup>5</sup> .....	10.4	98.1	7.6	1.9	10.3	100	510,405
Total .....	100	97.4	100	2.6	100	100	4,951,225
CENSUS TRACT OF PROPERTY							
<i>Income ratio (percent of area median)</i>							
Less than 50 .....	1.7	99.4	.4	.6	1.7	100	81,222
50–79 .....	13.6	97.0	16.1	3.0	13.7	100	668,547
80–119 .....	49.7	96.4	72.2	3.6	50.3	100	2,461,940
120 or more .....	35.1	99.2	11.2	.8	34.5	100	1,687,639
Total <sup>4</sup> .....	100	97.5	100	2.5	100	100	4,899,348
<i>Racial or ethnic composition (minorities as percentage of population)</i>							
Less than 10 .....	32.1	96.5	45.3	3.5	32.4	100	1,589,295
10–19 .....	22.8	97.7	21.0	2.3	22.8	100	1,114,804
20–49 .....	28.0	97.8	24.9	2.2	27.9	100	1,366,972
50–79 .....	10.4	98.3	6.8	1.7	10.3	100	505,574
80–100 .....	6.7	99.2	2.0	.8	6.6	100	324,229
Total <sup>4</sup> .....	100	97.5	100	2.5	100	100	4,900,874
<i>Location</i>							
Central city .....	38.6	98.9	16.3	1.1	38.0	100	1,866,761
Noncentral city .....	52.3	97.7	48.4	2.3	52.2	100	2,562,936
Rural or only state known .....	9.1	90.9	35.3	9.1	9.8	100	479,951
Total <sup>4</sup> .....	100	97.5	100	2.5	100	100	4,909,648

NOTE: Excludes transition-period loans (those for which the application was submitted before 2004). For definition of income categories for borrower and census tract, refer to text note 22. Census tract is for the property securing the loan. Categories for race and ethnicity reflect the revised standards established in 1997 by the Office of Management and Budget (OMB). The term *minority* means Hispanic or Latino ethnicity or any race other than white for both the borrower and the coborrower. Census-tract data reflect the 2000 decennial census; they also reflect definitions for metropolitan statistical areas established by the OMB in June 2003 and used in HMDA for the first time in the 2004 data.

1. Distribution sums vertically.
2. Distribution sums horizontally.
3. For details on the identification of borrower income, race, and ethnicity, refer to text note 22.
4. Excludes loans for which the information for the characteristic was missing on the application.
5. Information for the characteristic was missing on the application.
6. On the applications for these loans, one applicant reported "Hispanic or Latino," and the other reported "not Hispanic or Latino."

consisted of conventional first-lien loans originated to purchase homes or to refinance existing loans. These two GSEs accounted for 28 percent of *all* loans purchased by all secondary-market institutions as reported in the HMDA data. Fannie Mae and Freddie Mac, however, focus on the purchase of conventional home loans within size limits established each year

by the Federal Housing Finance Board. Among such loans, these two GSEs accounted for about 32 percent of the purchased conventional conforming loans.<sup>28</sup>

28. Conforming loans are loans that are within the loan-size limits determined by the Federal Housing Finance Board and that meet other requirements used by Freddie Mac and Fannie Mae to determine

Moreover, mortgage loans purchased by Fannie Mae and Freddie Mac are largely resold in the form of mortgage-backed securities.

Other types of purchasing institutions active in the secondary market include private securitization pools (12 percent of all loans sold); mortgage, finance, and insurance companies (13 percent); depository institutions (6 percent); Ginnie Mae (3 percent); affiliates of institutions covered by HMDA (16 percent); and “other” purchasers (22 percent).<sup>29</sup>

### *THE 2005 HMDA DATA ON LOAN PRICING*

The expanded HMDA data allow analysis of loan pricing along a number of dimensions, including by loan product, across lenders and markets, and by financial and personal characteristics of borrowers. The results of this analysis have implications for fair lending enforcement and CRA supervision activities and for consumer financial education efforts. The release of the 2005 HMDA data adds a time dimension to the analysis that can be undertaken because data users now have two years of loan-pricing information at their disposal. However, caution is warranted, as the different interest rate situations in 2004 and 2005 affected the reported pricing data in important ways.

#### *The Interest Rate Situation and the Reporting of Higher-Priced Loans*

Year-to-year changes in the number or proportion of loans with prices that exceed the thresholds for reporting price information under HMDA must be interpreted with great care. It is tempting to assume that a change in the incidence of higher-priced lending from one year to the next simply reflects changes in the volume of subprime lending activity. This simple interpretation ignores a number of factors that may influence the incidence of *reported* higher-priced lending. An important consideration is the difference between the criteria used to distinguish loans that are reportable under HMDA as higher priced and the factors that truly reflect the elevated credit risks or costs associated with subprime lending. The difference means that there is

not a direct correspondence between higher-priced and subprime lending.

Three factors may lead to changes in the reporting of higher-priced lending. The first is lenders’ business practices, particularly lenders’ willingness or ability to bear credit risk. For example, an increase in competitive conditions in the higher-credit-risk portion of the market has driven down margins and encouraged lenders to offer a wider range of products.

The second factor that may affect the reporting of higher-priced lending is consumers’ borrowing practices or credit-risk profiles. Changes in borrower credit-risk profiles can alter the incidence of subprime lending even when the interest rate situation is stable. Such changes reflect real fluctuations in economic behavior or conditions rather than an artifact of the HMDA reporting criteria. The credit-risk profile of the population of borrowers can vary as changes in general economic conditions encourage one group or another to be relatively more active in the homebuying or refinancing markets or to alter the types of refinancings that are undertaken (for example, the share that involves cashing out equity). The credit-risk profiles of borrowers may also be affected by local economic conditions. For example, when local house prices are high relative to incomes or rise rapidly, more borrowers may have to stretch financially to qualify for loans, and the result is an increase in the pool of borrowers with high DTI or LTV ratios, both of which are related to elevated credit risk.

The third factor is the interest rate situation—specifically, the relationship between short- and long-term interest rates. Generally, interest rate changes can significantly affect whether loans are reported as higher priced but are less likely to affect the credit-risk component of loan pricing. The credit-risk component can be affected if interest rate movements influence the loan-product mix that borrowers use: In some years, for example, adjustable-rate loans may be relatively more attractive than fixed-rate loans.

#### *The Interest Rate Situation and the Yield Curve*

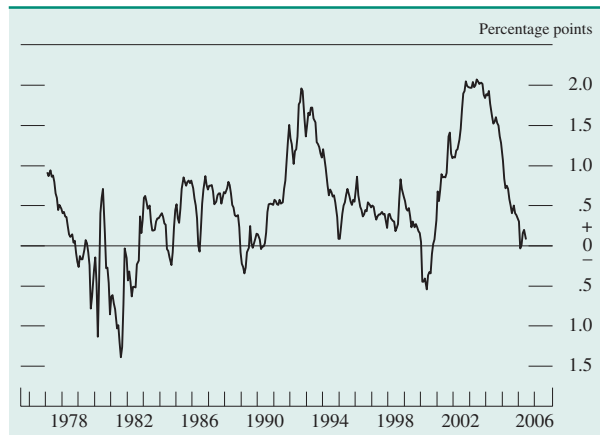
The yield curve displays how the yield on financial instruments, such as U.S. Treasury securities, varies with maturity and, therefore, reflects the relationship between short- and long-term interest rates. The yield curve is typically upward sloping—that is, short-term rates are typically lower than long-term rates. It usually has such a slope because longer-term investments ordinarily involve greater risk (credit risk, market interest rate risk, and inflation premium), and consequently investors require a higher return to be willing to invest their funds for longer periods.

which loans they may purchase. Loan-size limits for 2005, by property size, were as follows: one-family unit, \$359,650; two-family unit, \$460,400; three-family unit, \$556,500; and four-family unit, \$691,600. Limits are 50 percent higher in Alaska, Hawaii, the Virgin Islands, and Guam.

29. The “other” category includes depository institution holding companies and subsidiaries of depository institutions that are neither depository institutions themselves nor affiliates of mortgage or finance companies.



## 2. Spread between interest rates on thirty-year and five-year Treasury bonds, 1977–2006



NOTE: After March 2002, the spread is between twenty-year and five-year Treasury bonds.

SOURCE: Federal Financial Institutions Examination Council, "FFIEC Rate Spread Calculator," [www.ffiec.gov/ratespread/default.aspx](http://www.ffiec.gov/ratespread/default.aspx).

Over the past twenty years, longer-term rates (for example, the average annual yield on thirty-year Treasury securities) have almost always exceeded shorter-term rates (for example, the average annual yield on five-year Treasuries), a pattern illustrated by the positive difference in these rates over time (figure 2). Sometimes, however, the yield curve is relatively flat—that is, short-term rates are close to long-term rates; occasionally, the yield curve inverts, and short-term rates rise above long-term rates. A review of the rate spreads between five-year and thirty-year Treasury securities over the past two decades indicates that 2003 and 2004 were somewhat unusual years by historical standards because the yield curve was particularly steep during this time, and consequently the gap between longer- and shorter-term rates was particularly large.

Changes in the shape of the yield curve affect the reporting of higher-priced loans under HMDA. Because most mortgages prepay in a relatively short period (well before the stated term of the loan is reached), lenders use relatively short-term interest rates to set mortgage rates. For example, lenders often price thirty-year mortgages according to interest rates on maturities of fewer than ten years, and they frequently price certain loan products, such as adjustable-rate mortgages, on the basis of much shorter terms than those for fixed-rate loans. But for most loans, Regulation C requires lenders to use longer-term rates (for terms of twenty years or more) to determine whether to report a loan as higher priced because the stated maturity of most loans, particularly first-lien loans, exceeds twenty years. Thus, a change from one year to the next in the relationship between

short- and long-term rates can cause a change in the proportion of loans that are reported as higher priced, all other things being equal.

For example, if short-term rates rise relative to long-term rates, then the number and proportion of loans reported as higher priced will increase even if all other factors that may influence the number and proportion of higher-priced loans, such as the business practices of lenders and the credit-risk profiles and borrowing practices of borrowers, remain constant. Conversely, if short-term rates fall relative to long-term rates, then the number and proportion of loans reported as higher priced will fall even if all other possibly influential factors remain constant.

## Changes in the Yield Curve from 2004 to 2005

The yield curve at the start of 2004 (the first year lenders were subject to the price disclosure provisions of HMDA) was upward sloping: In mid-January, for example, the yield on five-year Treasuries was 2.97 percent, and the yield on thirty-year Treasuries was 4.87 percent. Over the course of the year, the difference narrowed as shorter-term rates rose and longer-term rates fell slightly. By early January 2005, the yield on five-year Treasuries had risen to 3.71 percent, and the yield on thirty-year Treasuries had fallen to 4.72 percent. Shorter-term interest rates continued to rise through 2005 (4.33 percent at the end of December), while longer-term rates were essentially unchanged (4.75 percent). Thus, although at the beginning of 2004 short-term rates were well below long-term rates, by the end of 2005 short- and long-term rates were much closer.

Because of the changes in the relationship between short- and long-term interest rates, the gap between the effective interest rate (measured by the APR on the loan) on most mortgages and the HMDA threshold for reporting higher-priced loans narrowed markedly between 2004 and 2005. For example, for loans priced during the week of January 15, 2004, the average APR on conventional first-lien fixed-rate thirty-year prime loans reported by Freddie Mac was 5.72.<sup>30</sup> As a result, a gap of 215 basis points, or 2.15 percentage points, separated the APR of the

30. Data are from Freddie Mac's *Primary Mortgage Market Survey* (PMMS). We calculated the effective rate (or APR) on the basis of interest rates and points reported in the survey for conventional first-lien fixed-rate thirty-year prime loans. Since April 1971, Freddie Mac has surveyed lenders weekly to determine the average thirty-year fixed rate offered to prime consumers during the Tuesday of the surveyed week. Currently, 125 lenders are surveyed each week, and the mix of lender types—thrifts, commercial banks, and mortgage lending companies—is roughly proportional to the level of mortgage business that each type commands nationwide. Over time, the PMMS



typical prime loan priced that week and the HMDA reporting threshold. By December 15, 2005, the gap between the calculated APR and the HMDA threshold had narrowed to 140 basis points. Although factors other than interest rate changes may also have influenced the proportion of higher-priced loans reported under HMDA, this example clearly demonstrates that even if such factors (including business practices or consumer credit-risk profiles) had remained the same, the proportion of higher-priced loans reported under HMDA would have increased in 2005.

Although the year is not complete, the yield curve for 2006 has experienced further flattening and, if other conditions remain the same, will likely result in an even greater incidence of higher-priced lending as defined by Regulation C. Through mid-July 2006, the gap between the calculated APR on conventional first-lien fixed-rate thirty-year prime loans reported by Freddie Mac and the HMDA threshold had decreased to about 120 basis points.

### The Interest Rate Situation and the Relative APRs of Fixed- and Adjustable-Rate Loans

The Federal Reserve Board's Regulation Z requires that, in calculating the APR for adjustable-rate loans, lenders assume that the interest rate situation at the time of origination will continue for the term of the loan. When the yield curve is steep, it suggests that the market expects short-term interest rates to rise, yet the APR calculation for adjustable-rate loans assumes that interest rates will stay the same.<sup>31</sup> Because of this regulatory construct, when the yield curve is positively sloped, the APRs for adjustable-rate loans tend to be lower than those for fixed-rate loans of similar term and credit risk.

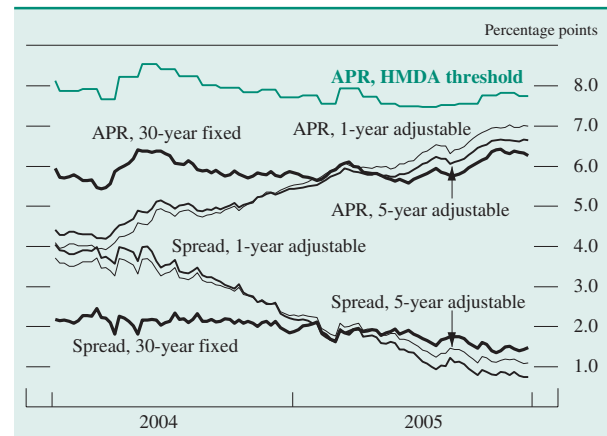
Thus, the flattening of the yield curve over the 2004–05 period had two effects. First, as noted earlier, it narrowed the gap between the longer-term rates used for the HMDA reporting threshold and the shorter-term rates used for pricing loans. Second, the flattening narrowed the APR gap between adjustable- and fixed-rate loans because, as short-term interest rates increased, it reduced the effect of the comparatively low APR calculations for adjustable-rate loans.<sup>32</sup>

has expanded to include other types of loans. For more information, refer to [www.freddiemac.com/pmms/pmms\\_archives.html](http://www.freddiemac.com/pmms/pmms_archives.html).

31. Under Regulation Z, borrowers are provided a variety of disclosures explaining the possibility of a rise in loan rates, the possible size of the increase, and the circumstances under which an increase might occur.

32. The flattening of the yield curve actually had a third effect: It also caused a general increase in the interest rates on adjustable-rate mortgages. This rise in real rates for adjustable-rate loans may have affected borrower behavior.

### 3. HMDA price-reporting threshold, interest rates for fixed- and adjustable-rate loans, and spreads between the threshold and such rates, 2004–05



NOTE: For explanation of HMDA price-reporting threshold, refer to text. Threshold and annual percentage rates (APRs) are for conventional first-lien thirty-year prime loans.

SOURCE: APRs are estimated from Freddie Mac, *Primary Mortgage Market Survey*.

The likely result of the flattening of the yield curve was an increase in the proportion of adjustable-rate loans that exceeded the HMDA price-reporting thresholds. The increase occurred because many relatively high-rate adjustable-rate loans that would not have been reported as higher priced in 2004 because of comparatively low APRs were reported that way in 2005.

To illustrate this effect, we show the APRs of the prime thirty-year fixed-rate loans, the prime one-year adjustable-rate loans, and the prime five-year adjustable-rate loans reported in the Freddie Mac mortgage interest rate survey for 2004–05 (figure 3).<sup>33</sup> The bottom three lines of the figure represent the differences (gaps) between the effective rates (APRs) reported by Freddie Mac and the HMDA reporting threshold. As noted earlier, the reporting gap between the typical prime thirty-year fixed-rate loan and the reporting threshold narrowed from 215 basis points at the beginning of 2004 to 140 basis points at the end of 2005. For one-year adjustable-rate loans, the gap narrowed much more, from 404 basis points at the beginning of 2004 to only 75 basis points at the end of 2005.

Although the differences between the APRs on fixed- and adjustable-rate loans and the reporting threshold decreased for both types of loans, the

33. The Freddie Mac series for five-year adjustable rates did not begin until January 1, 2005. For 2004, we show estimates for five-year adjustable rates based on a statistical model using the one-year adjustable rates and thirty-year fixed rates reported in Freddie Mac's *Primary Mortgage Market Survey* and the one- and five-year rates for Treasury securities.

decrease for adjustable-rate loans was much larger. Thus, the gap between the APRs on fixed- and adjustable-rate loans, which was substantial at the beginning of 2004, had been virtually eliminated by the beginning of 2005. This finding suggests that, as an artifact of regulation, geographic areas with different percentages of fixed-rate versus adjustable-rate loans might have shown different incidences of higher-rate loans in 2004. That is, in 2004, areas with larger shares of adjustable-rate loans likely had fewer higher-priced loans than areas with larger shares of fixed-rate loans. This effect should have been much smaller in 2005 (and in the first half of 2006) because interest rates on adjustable- and fixed-rate loans were closer together.

### The Interest Rate Situation and Junior-Lien Loans

The effects of the changing yield curve are reflected primarily among first-lien loans, which typically have long terms to maturity. The effect on junior-lien loans is likely much less, as these loans typically have maturities considerably shorter than those of first-lien loans and are priced accordingly. Also, the HMDA price-reporting threshold for junior-lien loans is set 2 percentage points higher than that for first-lien loans, a fact that may make the price reporting for junior-lien loans less sensitive to changes in the yield curve.

### Real Incidence of Higher-Priced Lending

Changes in the incidence of higher-priced lending caused by the yield curve effects described earlier are to a large extent an artifact of the way Regulation C defines a higher-priced loan. That is, they reflect changes in the way the threshold and APRs (particularly for adjustable-rate loans) are computed and not necessarily changes in the business practices of lenders or in the credit-risk profiles or preferences of consumers. It is difficult to speculate on the importance of the latter two factors in explaining changes in the “real” incidence of higher-priced lending over time.

The 2004–05 period was characterized by a relatively robust housing market without equity declines or economic downturns. However, rapidly rising home prices in several areas of the country may have put upward pressure on LTV and DTI ratios, particularly for first-time homebuyers, many of whom stretched financially to buy homes. These changes may have increased the proportion of homebuyers who obtained higher-priced loans. The effects may

have differed geographically, as rates of home-price appreciation and the levels of home prices varied across the country. Analysis of HMDA data provides support for this conjecture, as it shows a positive correlation between the rate of house-price appreciation in a state and the loan-to-income ratio of homebuyers.<sup>34</sup>

Industry sources provide some support for the view that the incidence of higher-priced lending experienced a real increase from 2004 to 2005. Most of the increase seems to have taken place in the near-prime, or “alt-A,” market. For example, Inside Mortgage Finance Publications reports that from 2004 to 2005, the subprime share of the overall market rose somewhat, from 18.5 percent to 20 percent.<sup>35</sup> But over the same period, the near-prime portion of the market rose substantially more, from 7 percent to 13 percent.

### Incidence of Higher-Priced Lending

Most loans reported in 2005 were not higher priced as defined under Regulation C, although the incidence of higher-priced lending was significantly greater in 2005 than in 2004. For 2005, 26.2 percent of *all* reported loans (excluding loans with application dates before 2004) were higher priced (table 4). This percentage represents an increase of nearly 70 percent over the 15.5 percent rate in 2004.

The incidence of higher-priced lending varies considerably across loan products. First, in almost all cases, government-backed loans—insured by the Federal Housing Administration (FHA) or guaranteed by the Veterans Administration (VA)—have much lower incidences of higher-priced lending than do comparable conventional loan products. For example, in 2005, among first-lien home-purchase loans for site-built homes, 24.6 percent of conventional loans had APRs above the pricing threshold versus only 0.9 percent of government-backed loans. Second, with few exceptions, first-lien loans have a lower incidence of higher-priced lending than do junior-lien loans for the same purposes. For example, in 2005 the incidence of higher-priced lending for conventional first-lien refinance loans was 25.7 percent, whereas for comparable junior-lien loans it was 30.2 percent. Third, manufactured-home loans exhibit the greatest incidence of higher pricing across all loan products, a

34. Data on house-price appreciation are from the Office of Federal Housing Enterprise Oversight (OFHEO). OFHEO estimates and makes publicly available a quarterly house-price index for single-family detached homes. The index uses data from Fannie Mae and Freddie Mac on conventional loan transactions. For details, refer to [www.ofheo.gov/hpiabout.asp](http://www.ofheo.gov/hpiabout.asp).

35. Estimates are derived from Inside Mortgage Finance Publications, *Mortgage Market Statistical Annual 2006*.

result consistent with the elevated credit risk associated with such lending. For 2005, nearly 60 percent of the conventional first-lien loans used to purchase manufactured homes were higher priced.

In the secondary market, the vast majority of the purchases by Fannie Mae and Freddie Mac involved loans with prices below the thresholds for reporting price information under HMDA (data not shown in tables). In total, institutions reporting under HMDA indicated that 3 percent of their loan sales to these two GSEs had involved higher-priced loans and that Fannie Mae had purchased the bulk of the loans.<sup>36</sup> Other secondary-market purchasers were active in buying higher-priced loans, which accounted for more than half the sales of private securitization pools; about one-third the sales of insurance companies, mortgage bankers, finance companies, and credit unions; and about one-third the sales of “other” purchasers.

### *Rate Spreads for Higher-Priced Loans*

There is considerable variation across loan products in the incidence of higher-priced lending, but variation across products in mean and median APR spreads as reported in the HMDA data is much smaller. For example, for 2005, the mean APR spreads reported for higher-priced conventional first-lien loans for the purchase or refinancing of an owner-occupied site-built home were both about 4.8 percent (table 4). Reflecting, at least in part, the changing interest rate situation, the levels of the average spreads for these two large loan product categories were both about 70 basis points higher in 2005 than in 2004.

Because the threshold for reporting is set higher for junior liens than for first liens, higher-priced junior-lien products have higher mean and median spreads than do higher-priced first-lien loans. However, unlike the average spreads for first-lien loans, those for junior liens rose little between 2004 and 2005. As noted earlier, the typical junior-lien loan has a term to maturity that is much shorter than that for first-lien loans, and so its funding cost typically depends more on shorter-term sources of funds; consequently, the flattening of the yield curve had much less effect on price reporting for junior-lien products. In fact, the mean spreads reported for the refinancing of junior-lien loans were actually somewhat lower in 2005 than in 2004.

Loans for manufactured homes differ from other loan products in that they generally have the highest

mean spreads. As with the pricing of junior-lien loans, prices on loans for manufactured homes were little changed from 2004, an indication that most of these loans have shorter terms to maturity than do most first-lien loans.

Although the changes in the means and the medians are consistent with an upward shift in the distribution of reported interest rates from 2004 to 2005, the changes in the distribution of spreads for higher-priced loans are somewhat puzzling. In 2004, for conventional first-lien products, almost 60 percent of the higher-priced loans fell within 1 percentage point of the reporting threshold, and the percentage declined in each subsequent pricing segment (refer to segment ranges—such as 3–3.99, 4–4.99, and so on—in table 4). The pattern was similar to the truncated upper tail of a normal (bell-shaped) distribution—that is, the distribution was monotonically declining. For 2005, the pattern was quite different. Only about 27 percent of the higher-priced loans fell within 1 percentage point of the reporting threshold, and the percentage increased in the next two pricing segments before declining thereafter. This nonmonotonic pattern is not what one would expect if the changes in interest rates in 2004–05 uniformly shifted the distribution of loan rates. The pattern is not a consequence of reporting by any one (highly active) lender or for any one loan product or area of the country. Interestingly, this pattern does not hold for junior liens, which exhibited the same declining segment share of a truncated normal curve for 2005 as they did for 2004.

As in 2004, only a very small proportion of the higher-priced first-lien loans reported in 2005 had spreads that exceeded 7 percentage points. Similarly, only a small proportion of most types of junior-lien loans had spreads of 9 percentage points or more. For example, among the higher-priced conventional first-lien loans used to purchase owner-occupied site-built homes, only 3.6 percent had spreads that exceeded 7 percentage points (in 2004, the share of loans of this type with rate spreads exceeding 7 percentage points was 1.4 percent). Among the conventional junior-lien loans, only those for home improvement had large proportions (about 25 percent) with rate spreads above 9 percentage points.

### *Pre-Approval Programs and Loan Pricing*

Since 2004, the HMDA data have included information about certain types of requests for pre-approval of home-purchase loans. But for purposes of report-

36. The role of Fannie Mae and Freddie Mac in the higher-priced portion of the loan market is incompletely measured in the HMDA data, as the data reflect only their purchases of loans.

ing under Regulation C, pre-approval programs pertain only to requests for home-purchase loans, and consequently the data do not include pre-approval information for applications involving a refinance or home-improvement loan.

As with the 2004 data, the data for 2005 indicate that the incidence of higher-priced lending is notably lower for conventional loans for site-built homes that were initiated through a pre-approval program than for all such loans. For example, for conventional loans secured by a first lien on a site-built home, the incidence of higher-priced lending for loans initiated through a pre-approval program was 15.2 percent (table 5), whereas the rate for all similar first-lien conventional loans was 24.6 percent (table 4). The pattern differs for conventional loans to purchase manufactured homes: Loans initiated through a pre-approval program were more likely to be higher priced. Perhaps those who seek pre-approvals for manufactured homes are more likely to be stretching financially and feel a need to provide prospective sellers with some assurance that they will qualify for credit.

For borrowers who received higher-priced loans for site-built homes, the data do not suggest any meaningful differences in actual prices paid, as the mean and median spreads were quite similar whether or not a borrower went through a pre-approval program. For those obtaining loans to buy manufactured homes, the mean and median spreads were about 100 basis points higher for loans initiated through pre-approval programs.

### *Differences among Lenders in the Propensity to Make Higher-Priced Loans*

As in 2004, most of the nearly 8,500 lenders covered by HMDA reported extending few if any higher-priced loans in 2005: Nearly 3,200 lenders made no such loans, and an additional 2,000 reported only between one and nine higher-priced loans (data not shown in tables). Toward the other end of the spectrum, about 1,120 lenders reported making at least 100 higher-priced loans; these more-active lenders accounted for 98 percent of all reported higher-priced loans. Moreover, the ten lenders with the largest volume of higher-priced loans extended 59 percent of all such loans, a share that had increased from 38 percent in 2004.

Lenders extending large numbers of higher-priced loans can be quite different from other lenders in business orientation. Some lenders focus on the higher-priced segment of the market and extend

nearly all their loans to near-prime or subprime borrowers. However, many institutions serve a broader market, including borrowers from the prime and nonprime market segments. If one considers a lender that devotes 60 percent or more of its business to higher-priced lending a “specialist” in this business segment, then among the roughly 1,120 lenders reporting at least 100 higher-priced conventional home loans, 346, or 4 percent of all reporting institutions, can be characterized as specialists. It should be kept in mind that the HMDA data can be used to gauge a lender’s business focus only roughly, as some prime loans will exceed the HMDA price-reporting threshold and some subprime loans may not reach the threshold.

### *Loans Covered by HOEPA*

Under the Home Ownership and Equity Protection Act of 1994 (HOEPA), certain types of mortgage loans that have rates or fees above specified levels require additional disclosures to consumers and are subject to certain restrictions on loan terms.<sup>37</sup> Under the 2002 revisions to Regulation C, the HMDA data indicate whether a loan is subject to the protections of HOEPA.

Coverage under HOEPA is determined by a two-part test that considers both the APR and the dollar amount of points and fees. The APR portion of the coverage test is similar to the method used to determine which loans are higher priced under HMDA. The difference relates to the rules for choosing the specific Treasury security to use for determining coverage under the two regulations. In the case of HMDA, determining which loans are higher priced requires using the Treasury security of comparable maturity for the fifteenth day of the month preceding the date on which the loan rate was set. For HOEPA, the APR portion of the coverage test requires using the Treasury security of comparable maturity for the fifteenth day of the month preceding the month in which the application was received. Another difference is that the APR spreads for determining HOEPA coverage are 8 percent and 10 percent for first- and junior-lien loans respectively.

Before the release of the 2004 data, little information was publicly available about the extent of HOEPA-related lending or the number or type of institutions involved in this activity. Although the

37. HOEPA, which is implemented by the Federal Reserve Board’s Regulation Z, applies to home-refinance loans and other nonpurchase loans secured by a consumer’s principal dwelling.



expanded HMDA data provide important new information, the data fail to capture all HOEPA-related lending. Some HOEPA loans are extended by institutions not covered by HMDA, and some HOEPA loans made by HMDA-covered institutions are not reported under Regulation C, which implements HMDA. Most notably, if the proceeds of a home-secured loan are not used to refinance an existing home loan or to finance home improvement, then the loan may be covered by HOEPA but is not reportable under Regulation C.<sup>38</sup> The extent of HOEPA-related lending not reported under HMDA is unknown.

### Incidence of HOEPA-Related Lending

For 2005, more than 1,300 lenders reported nearly 36,000 loans covered by HOEPA, an increase of 53 percent from 2004 (table 4). As in 2004, most lenders did not report extending any HOEPA loans in 2005. For 2005, HOEPA-related lending appears to have been quite concentrated: The ten lenders that reported the largest number of HOEPA originations accounted for 70 percent of all reported HOEPA loans (data not shown in tables). At the other extreme, 730 institutions reported making only one or two HOEPA loans.

Although the incidence of HOEPA-related lending was up significantly over that reported in 2004, such lending still accounted for a very small proportion of the market. HOEPA loans accounted for less than one-half of 1 percent of all the originations of home-secured refinance or home-improvement loans reported for 2005 (data derived from table 4). The volume of HOEPA-related lending, like that of higher-priced lending, was affected by the flattening of the yield curve from 2004 to 2005. However, it is impossible to determine precisely how much of the increased volume of HOEPA-related lending was due to changes in interest rates because, as noted earlier, HOEPA coverage is based not only on APR levels but also on the dollar amount of loan points and fees.

### Characteristics of HOEPA-Related Lending

For 2005, the vast majority of HOEPA loans involved conventional loan products: Only a very small percentage of such loans were government backed. About 60 percent of the reported HOEPA loans

involved conventional first-lien loans (of these, more than 80 percent were for refinancings), and about 40 percent involved conventional junior-lien loans (more than half of these were for refinancings).

Reported HOEPA lending varies among borrowers sorted by borrower income, race, and ethnicity and among census tracts sorted by census-tract income, population, and location. However, the data do not indicate that HMDA-reportable HOEPA lending is focused primarily on lower-income or minority individuals or on those residing in lower-income neighborhoods or neighborhoods with high concentrations of minority individuals. For example, although reported HOEPA loans were extended to borrowers in all income groups, nearly two-thirds were extended to middle- and upper-income borrowers (data not shown in tables). Similarly, more than 70 percent of the reported HOEPA loans were extended to non-Hispanic white borrowers. Most of the homes securing HOEPA loans were in middle- or upper-income areas, and a large proportion were in areas where the minority population was less than 20 percent of the census-tract population.

### PRICING ANALYSIS USING ADJUSTED 2004 AND 2005 DATA

As discussed earlier, the flattening of the yield curve over the 2004–05 period affected the proportion of loans reported as higher priced because of the way the price-reporting threshold and the adjustable-rate APR are determined. The size of these effects cannot be quantified precisely with the limited information available in the HMDA data. However, we can compute rough estimates of the magnitude of the yield curve effects on the incidence of higher-priced lending, although our estimates likely understate the effects.

### Effects on Loan Pricing of the Method for Setting the HMDA Price-Reporting Threshold

To estimate the effect on loan pricing of the way the HMDA price-reporting threshold is determined, we use an adjusted set of the 2004 and 2005 HMDA data that enables us to identify those loans that exceeded the pricing thresholds *solely* because of a change in the interest rate situation. We separate all reported higher-priced loans into two groups: (1) those that would have been reported under any interest rate situation that prevailed during the 2004–05 period and (2) those that were reported only because of the interest rate situation that existed at the time the loan

38. For example, if a homeowner takes out a HOEPA-covered loan to pay off outstanding credit card debt or some other type of consumer credit and the loan does not involve the refinancing of an existing home loan or home improvement, then the loan is not covered by Regulation C and is thus not required to be part of an institution's HMDA reporting.



was made. In separating the higher-priced loans, we assume that a nonprime borrower would receive a loan rate that is no less than a constant markup over the rate on a “prime mortgage” and that this markup (discussed below) is independent of interest rates. Thus, our exercise is to determine how much above the interest rate for a prime mortgage a cutoff would need to be set such that a loan priced above the cutoff would have been reported under any interest rate situation prevailing in 2004–05. To conduct the exercise, we must determine the prime rate that would apply to each loan. In reality, the prime rate can vary from day to day and from product to product, depending on the term of the mortgage, the type of rate (fixed or adjustable), the date the loan price was set, the geographic location in which the loan was made, and other factors.

The only portion of this information that is explicitly included in the HMDA data is location. Nevertheless, the necessary information can be approximated. Almost 80 percent of first-lien prime mortgages have a fixed rate of interest, according to LoanPerformance, and most of these have a thirty-year term to maturity.<sup>39</sup> The date the loan price was set (the lock date) is not reported in the HMDA data, but the application and origination dates are recorded. We approximate the loan terms and the lock dates for all conventional first-lien mortgages by assuming that they are all thirty-year fixed-rate mortgages and that the day on which the mortgage pricing was set is halfway between the date of application and the date the loan was originated.<sup>40</sup> Because terms vary so much for junior-lien loans, we conduct this exercise only for first-lien loans.

To estimate the prime rate, we use the weekly Freddie Mac *Primary Mortgage Market Survey*. The survey reports the average contract rates and points for all loans and the margin for adjustable-rate loans.<sup>41</sup> We use this information to estimate the average APR for adjustable- and fixed-rate loans prevailing each week. We calculate the “adjusted spread” for each loan in the HMDA data as the difference between the estimated prime fixed APR

and the applicable HMDA threshold in effect on the date the loan was estimated to have locked.

We estimate that a loan with an adjusted spread of 228 or more basis points above prime would have been reported as higher priced regardless of the date of origination during 2004–05—that is, 228 basis points is the minimum spread for a loan to have been reported as higher priced during this period. Loans with adjusted spreads between 140 basis points and 228 basis points would have been reported as higher priced if originated on some days during the period but not on others. Loans with adjusted spreads below 140 basis points would not have been reported under any circumstances during this time frame.

We compute incidences and APR spreads for 2004 and 2005 that have been “spread adjusted” for changes in the yield curve. These figures are computed in exactly the same way as the overall incidences and mean APR spreads, as shown in tables 4 and 5, except that those loans with adjusted spreads below 228 basis points are deemed not to be higher priced. And the adjusted spreads are spreads above the markup over the rate on a prime mortgage rather than spreads above the yield on a comparable-maturity Treasury security. By construction, the adjusted spreads for higher-priced loans have a minimum of 228 basis points instead of 300.

Overall, the incidence of higher-priced lending for conventional home-purchase loans on owner-occupied site-built homes was 11.5 percent in 2004 and 24.6 percent in 2005, an increase of 13.1 percentage points (table 9). The spread-adjusted estimates for the same period were 10.4 percent and 21.5 percent respectively, an increase of 11.1 percentage points. This comparison suggests that 2 percentage points, or roughly 15 percent, of the total difference in reported higher-priced lending for this product can be attributed solely to the flattening of the yield curve. For refinancings for similar properties, about 2 percentage points of the 10.2 percent increase in higher-priced lending for refinance loans can be attributed solely to the yield curve.

Estimated mean APR spreads are also lower after spread adjustment for the two conventional loan products. The mean APR spreads for conventional first-lien home-purchase loans, and for conventional first-lien refinance loans, on owner-occupied site-built homes were both about 4.8 percentage points before spread adjustment and 3.7 percentage points and 3.8 percentage points respectively using the spread-adjusted 2005 data. The unadjusted spreads increase about 70 basis points, and the adjusted spreads increase about 40 basis points.

39. Data from LoanPerformance suggest that about 90 percent of the first-lien loans extended in 2004 and 2005 had a term of thirty years.

40. Within the HMDA data for 2004, the median time between the date of application and the date of loan origination for conventional first-lien home-purchase loans was thirty days; for 2005, the comparable figure was twenty-eight days. For refinancings, the median numbers of days for 2004 and 2005 were twenty-seven and twenty-six respectively. Less than 10 percent of home-purchase loans had a difference in dates of application and origination of more than ninety days. For refinancings, less than 10 percent had differences in dates of application and origination of more than sixty days.

41. The margin for an adjustable-rate loan is the markup above the interest rate established by the index (such as the rate for a Treasury security) used to set the base rate for the loan.

9. Incidence of higher-priced lending for first-lien loans, and the mean and median APR spreads for such loans, unadjusted and adjusted for changes in interest rates, by type of home and type of loan, 2004 and 2005

Percentage points except as noted

Type of home and loan	Loans with annual percentage rate (APR) spread above the threshold <sup>1</sup>											
	2004						2005					
	Spread unadjusted			Spread adjusted			Spread unadjusted			Spread adjusted		
	Incidence (percent)	APR spread		Incidence (percent)	APR spread		Incidence (percent)	APR spread		Incidence (percent)	APR spread	
		Mean	Median		Mean	Median		Mean	Median		Mean	Median
<b>ONE- TO FOUR-FAMILY NONBUSINESS RELATED<sup>2</sup></b>												
Owner occupied												
Site built												
Home purchase												
Conventional												
First lien .....	11.5	4.1	3.8	10.4	3.3	3.1	24.6	4.8	4.7	21.5	3.7	3.6
Government backed												
First lien .....	1.3	4.2	3.9	1.2	3.5	3.1	.9	3.8	3.3	.4	3.7	3.0
Refinance												
Conventional												
First lien .....	15.5	4.2	3.9	14.2	3.4	3.1	25.7	4.8	4.7	22.4	3.8	3.7
Government backed												
First lien .....	1.5	3.9	3.6	1.4	3.2	2.8	.9	4.3	4.5	.6	3.7	3.4
Home improvement												
Conventional												
First lien .....	21.9	4.4	4.0	20.3	3.7	3.3	26.3	4.7	4.5	21.5	3.8	3.6
Government backed												
First lien .....	3.8	4.7	4.0	3.7	3.9	3.2	5.5	4.5	3.9	3.9	3.9	3.5
Manufactured												
Conventional, first lien												
Home purchase ....	57.1	5.7	5.2	55.5	4.9	4.5	58.3	5.4	4.9	50.4	4.5	4.0
Refinance .....	47.8	5.0	4.6	45.8	4.2	3.8	55.1	5.0	4.7	46.7	4.1	3.7
Nonowner occupied <sup>3</sup>												
Conventional, first lien												
Home purchase ....	12.2	4.1	3.8	11.1	3.4	3.0	20.3	4.5	4.3	15.3	3.7	3.5
Refinance .....	14.0	4.2	3.9	12.9	3.5	3.2	22.5	4.8	4.7	18.8	3.8	3.7
<b>BUSINESS RELATED<sup>2</sup></b>												
Conventional, first lien												
Home purchase ....	9.4	4.4	4.0	8.5	3.7	3.3	11.8	4.4	3.9	8.3	3.7	3.2
Refinance .....	10.3	4.4	4.1	9.3	3.7	3.3	13.9	4.8	4.6	10.9	3.9	3.7
<b>MULTIFAMILY<sup>4</sup></b>												
Conventional, first lien												
Home purchase ....	4.5	4.1	3.7	4.1	3.4	3.0	6.0	4.5	4.2	4.3	3.7	3.7
Refinance .....	4.8	4.1	3.8	4.4	3.4	3.0	6.3	4.4	4.1	4.6	3.7	3.5
<b>Total<sup>5</sup></b> .....	<b>15.5</b>	<b>4.8</b>	<b>4.3</b>	<b>14.5</b>	<b>4.3</b>	<b>3.6</b>	<b>26.2</b>	<b>5.3</b>	<b>5.1</b>	<b>23.4</b>	<b>4.6</b>	<b>4.2</b>

NOTE: For definition of higher-priced lending and explanation of spread adjustment, refer to text.

1. APR spread is the difference between the APR on the loan and the yield on a comparable-maturity Treasury security. The threshold for first-lien loans is a spread of 3 percentage points.

2. Business-related applications and loans are those for which the lender

reported that the race, ethnicity, and sex of the applicant or co-applicant are "not applicable"; all other applications and loans are nonbusiness related.

3. Includes applications and loans for which occupancy status was missing.

4. Includes business-related and nonbusiness-related applications and loans for owner-occupied and nonowner-occupied properties.

5. Total is for all secured loans, including junior liens not shown in table.

### Effects of APR Calculations on Pricing of Adjustable-Rate Loans

The spread adjustments just described address only the effect that the flattening of the yield curve had on the gap between the HMDA reporting threshold and the interest rate at which long-term mortgages are typically priced, approximated by the Freddie Mac prime APR for thirty-year fixed-rate loans. Our spread adjustment reflects what the yield curve effect would

have been if all first-lien loans reported in the HMDA data had been thirty-year *fixed-rate* mortgages. However, many loans included in the HMDA data are adjustable-rate loans, and, as noted earlier, the flattening of the yield curve also affected the gap between the calculated APRs on adjustable-rate mortgages and the calculated APRs on fixed-rate mortgages. At the beginning of 2004, a one-year adjustable-rate loan would have been treated comparably for purposes of HMDA price reporting to a thirty-year fixed-rate

10. Incidence of higher-priced lending for states grouped by the share of loans originated that had an adjustable rate, and the change in the incidence of such lending, unadjusted and adjusted for changes in interest rates, by type of loan and by quintile or state, 2005

Percent except as noted

Quintile <sup>1</sup> or state	Home purchase				Refinance			
	2005		Change, 2004–05 (percentage points)		2005		Change, 2004–05 (percentage points)	
	Spread unadjusted	Spread adjusted	Spread unadjusted	Spread adjusted	Spread unadjusted	Spread adjusted	Spread unadjusted	Spread adjusted
Lowest .....	23.4	19.7	7.8	5.2	33.1	28.0	7.8	4.3
Second lowest .....	25.0	21.5	10.0	7.6	30.0	25.7	9.5	6.5
Middle .....	21.3	18.8	9.8	8.2	28.2	24.4	10.7	8.1
Second highest .....	23.5	20.2	12.1	10.0	26.5	22.9	11.2	8.9
Highest .....	24.8	22.0	14.0	12.3	26.2	22.9	10.4	8.5
California <sup>2</sup> .....	31.4	28.7	23.5	22.0	19.0	17.3	10.3	9.6
<b>Total</b> .....	<b>24.8</b>	<b>21.8</b>	<b>13.2</b>	<b>11.2</b>	<b>26.0</b>	<b>22.6</b>	<b>10.3</b>	<b>8.2</b>

NOTE: For definition of higher-priced lending and explanation of spread adjustment, refer to text.

1. Based on share of loans originated in 2005 that had an adjustable rate.

2. California is shown separately because it accounts for a large number of loans and has a high incidence of adjustable-rate lending.

SOURCE: For share of adjustable-rate loans originated, LoanPerformance (www.loanperformance.com).

mortgage (of the same term to maturity) with an adjusted spread 200 basis points lower (refer to figure 3). By the beginning of 2005, this gap had been virtually eliminated. The implication of this narrowing of the gap is that, relative to fixed-rate loans, fewer adjustable-rate loans would have met the HMDA price-reporting thresholds in 2004 than in 2005.

Fully quantifying this effect would be difficult even if the HMDA data distinguished fixed- from adjustable-rate loans. As shown in figure 3, applying the same method to one-year adjustable-rate loans that we employed for fixed-rate loans would necessitate using an adjusted threshold of about 400 basis points above the APR on the Freddie Mac prime one-year adjustable-rate loan. This approach would potentially exclude a large share of the higher-priced adjustable-rate loans reported under HMDA and would reflect only changes at the higher end of the subprime market.

To provide some rough approximations as to what the effect might have been, we use information on the mix of adjustable- and fixed-rate loans for each state as derived from the LoanPerformance database. States are arrayed into quintiles based on the percentage of loans originated in 2005 that had an adjustable rate (table 10). California, which would have been placed in the quintile with the highest percentage of adjustable-rate mortgages, is treated as a special category and shown separately. For each quintile, we calculate the average incidence (spread unadjusted and spread adjusted) of higher-priced lending for 2004 and 2005. For home-purchase loans, the analysis indicates that states with high levels of adjustable-rate lending had both relatively low levels of higher-priced lending in 2004 and larger increases in such lending from 2004 to 2005 (refer to data under

“Change, 2004–05” in home-purchase section of table), patterns that would have been predicted as resulting from the narrowing of the adjustable-fixed APR gap. It is noteworthy that the average spread-unadjusted incidence of higher-priced home-purchase lending for each of the five quintiles for 2005 was almost the same, an indication that the distortions caused by the difference in APRs between adjustable- and fixed-rate loans had been virtually eliminated during 2005.<sup>42</sup>

California shows the same pattern as other states with a high percentage of adjustable-rate home-purchase loans, as it witnessed a significant increase in the spread-unadjusted incidence of higher-priced lending from 2004 to 2005. California’s spread-unadjusted incidence of higher-priced lending in 2005 (31.4 percent) is substantially higher than that of other states with a large proportion of adjustable-rate loans, but this finding may be due not just to the flattening of the yield curve but also to the effects of borrowers stretching financially because of high home prices in California. The pattern for refinancing is different in California because large increases in home values are likely to benefit rather than hurt refinancers.

### *Effects of Yield Curve Changes on Pricing of Adjustable- and Fixed-Rate Loans*

To a limited extent, we can assess the differential effect of the flattening of the yield curve on the

42. The patterns are not as pronounced for refinance loans, perhaps because other factors are more relevant. The rank order of the five quintiles is as predicted, as is the narrowing of differences from 2004 to 2005; but unlike the results for home-purchase lending, some differences remain in 2005.

incidence of higher-priced lending among adjustable- and fixed-rate loans using individual loan data. The Monthly Interest Rate Survey (MIRS) of the Federal Housing Finance Board is a monthly survey of major lenders that collects detailed information on each conventional single-family nonfarm loan used to purchase a home closed during the last five business days of each month.<sup>43</sup> The survey includes enough information to calculate an APR for each loan, to determine whether it is an adjustable- or fixed-rate loan, and, among the adjustable-rate loans, to identify the type of loan.

The focus of the survey is on conventional prime rate loans. For 2004, the data for one-year adjustable-rate loans included near-prime loans. But starting with the data for February 2005, most of the near-prime loans were excluded from the sample. Thus, we limit the analysis of the one-year adjustable-rate loans to those made before February 2005.

For the first few months of 2004, the percentage of one-year adjustable-rate loans included in the MIRS data that we estimate would have been reported as higher priced under HMDA was only about 1 percent. This percentage began to rise substantially in the middle of 2004, and by the end of the year the portion had risen to more than 18 percent. It appears that, at least within the MIRS data, the increase in the incidence of loans that would have been reported as higher priced under HMDA was driven almost entirely by the narrowing of the gap between the calculated APRs on adjustable- and fixed-rate loans. The distribution of rates of one-year adjustable-rate loans in the MIRS data *relative to the APRs* of the Freddie Mac prime one-year adjustable-rate loans remained unchanged—that is, their movements mirrored each other.

The percentage of thirty-year fixed-rate loans in the MIRS data that we estimate would have been reported as higher priced under HMDA was little changed during the course of 2004 but rose, from about

1 percent to almost 4 percent, during 2005 (the thirty-year fixed-rate loans were not pruned to exclude near-prime loans).

The patterns for the thirty-year fixed-rate and the one-year adjustable-rate loans in the MIRS data are consistent with what one would expect from the yield curve changes shown in figure 3. We emphasize that because the MIRS data do not include a full sampling of near-prime and subprime loans, the incidence of loans in the sample that would have been reported as higher priced under HMDA is not representative of all the loans included in the HMDA data. Nevertheless, the analysis here suggests that the flattening of the yield curve had a significantly larger effect on the reporting of adjustable-rate loans as higher priced than on the reporting of fixed-rate loans as higher priced. Therefore, our earlier estimate of the effect of the flattening of the yield curve is likely understated, perhaps substantially.

### *Differences in Pricing across Geographies*

The HMDA data allow analysis of higher-priced lending along geographic lines. The analysis can be conducted by region of the country, metropolitan area, or census tract.

#### *Region of the Country*

Interest rates on prime home loans vary across regions. For example, for 2005, there is a difference of 12 basis points between the average prime rate for the region with the highest rates (the North Central region) and that for the region with the lowest rates (the Southeast) as reported by Freddie Mac in its survey of interest rates (table 11). This variation likely reflects differences across regions in such factors as prepayment rates, foreclosure laws, origination costs, or degree of competition.

The variation in the incidence of higher-priced lending across regions in both the 2004 and 2005 HMDA data is much larger than might be expected given the difference in prime rate variation and does not show the same rank ordering. For example, the Northeast region shows the lowest incidence of higher-priced lending for home-purchase loans in the 2005 HMDA data and the West region the highest. Further, the variation in the incidence of higher-priced lending across regions is 9 percentage points, a sizable difference. The large differences in the incidences of higher-priced lending across regions suggest that the regions differ considerably in terms of borrower credit-risk characteristics or other factors.

43. Information collected includes the contract interest rate, fees, loan terms (for example, the LTV ratio and the term to maturity), property value, property type (newly constructed or previously occupied unit), loan type (fixed or adjustable rate), and type of lender (savings association, mortgage company, or commercial bank). The data also include an estimated effective interest rate. For adjustable-rate loans, the survey includes information on the annual limit (the “cap”) on how much the interest rate may increase, the margin, and the index used to set the contract interest rate. The survey excludes FHA-insured and VA-guaranteed loans, multifamily loans, and mobile-home loans and is limited to home-purchase loans. Refer to Federal Housing Finance Board, [www.fhfb.gov](http://www.fhfb.gov).

The data in the survey reflect the shares of lending by lender size and lender type as reported in the HMDA data. Although the scope of the survey varies from month to month, it typically covers about 20,000 loans and about 100 lenders.



11. Interest rates for thirty-year home-purchase loans, and the spread-unadjusted incidence of higher-priced lending for such loans, by region of the country, 2004 and 2005

Percent

Region <sup>1</sup>	30-year APR <sup>2</sup>		Spread-unadjusted incidence	
	2004	2005	2004	2005
Northeast .....	5.90	5.94	9.3	19.1
Southeast .....	5.86	5.87	14.0	26.1
North Central ...	5.96	5.99	12.7	23.9
Southwest .....	5.89	5.92	15.8	26.9
West .....	5.89	5.89	8.7	28.2
<b>Total .....</b>	<b>5.90</b>	<b>5.92</b>	<b>11.7</b>	<b>24.8</b>

NOTE: For definition of higher-priced lending and explanation of spread adjustment, refer to text.

1. Defined by Freddie Mac as follows: *Northeast*: N.Y., N.J., Pa., Del., Md., D.C., Va., W.V., P.R., Maine, N.H., Vt., Mass., R.I., Conn., V.I.; *Southeast*: N.C., S.C., Tenn., Ky., Ga., Ala., Fla., Miss.; *North Central*: Ohio, Ind., Ill., Mich., Wis., Minn., Iowa, N.D., S.D.; *Southwest*: Texas, La., N.M., Okla., Ark., Mo., Kan., Colo., Neb., Wyo.; *West*: Calif., Ariz., Nev., Ore., Wash., Utah, Idaho, Mont., Hawaii, Alaska, Guam.

2. Annual percentage rate (APR) is the average for the year.

SOURCE: APRs are estimated from Freddie Mac, *Primary Mortgage Market Survey*.

## Metropolitan Area

Analysis of loan-pricing patterns for 2004 revealed that the incidence of higher-priced lending for home-purchase loans varied widely across regions of the country and MSAs.<sup>44</sup> The 2005 data reveal a similar pattern, with some notable differences. A review of home-purchase lending at the level of the MSA indicates that, as compared with the 2004 pricing patterns, areas of the country with the highest incidence of higher-priced lending are not primarily in the southern and southwestern regions of the country but also include a number of MSAs in California (figure 4). The presence of several MSAs in California on the list of areas with a relatively high incidence of higher-priced lending may reflect the effects of rapid house-price increases, which result in more borrowers in these areas stretching financially to purchase homes. The fact that California MSAs tended to have relatively high proportions of higher-priced lending in 2005 but did not in 2004 may also be due to the relatively more frequent use in these areas of adjustable-rate loan products that are priced off of extremely short-term sources of funds, a practice that would, because of the flattening of the yield curve, tend to result in large increases from 2004 to 2005 in the number of loans with prices reported

above the APR thresholds established by Regulation C.

The great variation in the incidence of higher-priced lending across MSAs is seen in a simple comparison. If one focuses on the incidence of higher-priced lending among conventional first-lien home-purchase loans on owner-occupied, one- to four-family, site-built homes, the MSA in the continental United States with the lowest incidence of higher-priced lending for this product is Ithaca, New York, at 4 percent; the MSA with the highest incidence is McAllen-Edinburg-Pharr, Texas, at 53 percent.

Assessment of the reasons for the wide variation in the incidence of higher-priced lending for home-purchase loans across MSAs finds a close association between the proportion of individuals in an MSA county with low credit scores and the incidence of higher-priced lending in that area.<sup>45</sup> Other factors positively related to a greater incidence of higher-priced lending across MSAs include the percentage of the MSA's adult population with less than a high-school education, rates of unemployment, and the racial or ethnic makeup of the MSA. Areas with higher unemployment rates and larger minority populations are more likely to have higher incidences of higher-priced lending.

The geographic pattern in the incidence of higher-priced lending for refinancings is similar to the pattern for home-purchase loans, although the proportions of loans with prices above the reporting thresholds are generally higher for refinancings. The findings for MSAs along the Pacific Coast, and in the state of California in particular, are noteworthy because they differ from the general pattern: The incidences of higher-priced lending for refinancings in the MSAs in this area are typically much lower than those for home-purchase loans and for refinance loans in other areas. As noted earlier, this pattern may reflect, at least in part, the need for many homebuyers in this region, which has experienced rapid house-price appreciation, to stretch financially to purchase homes, while those refinancing have generally benefited from increased home equity as a result of home-price appreciation and consequently tend to pose less credit risk.

## Census Tract

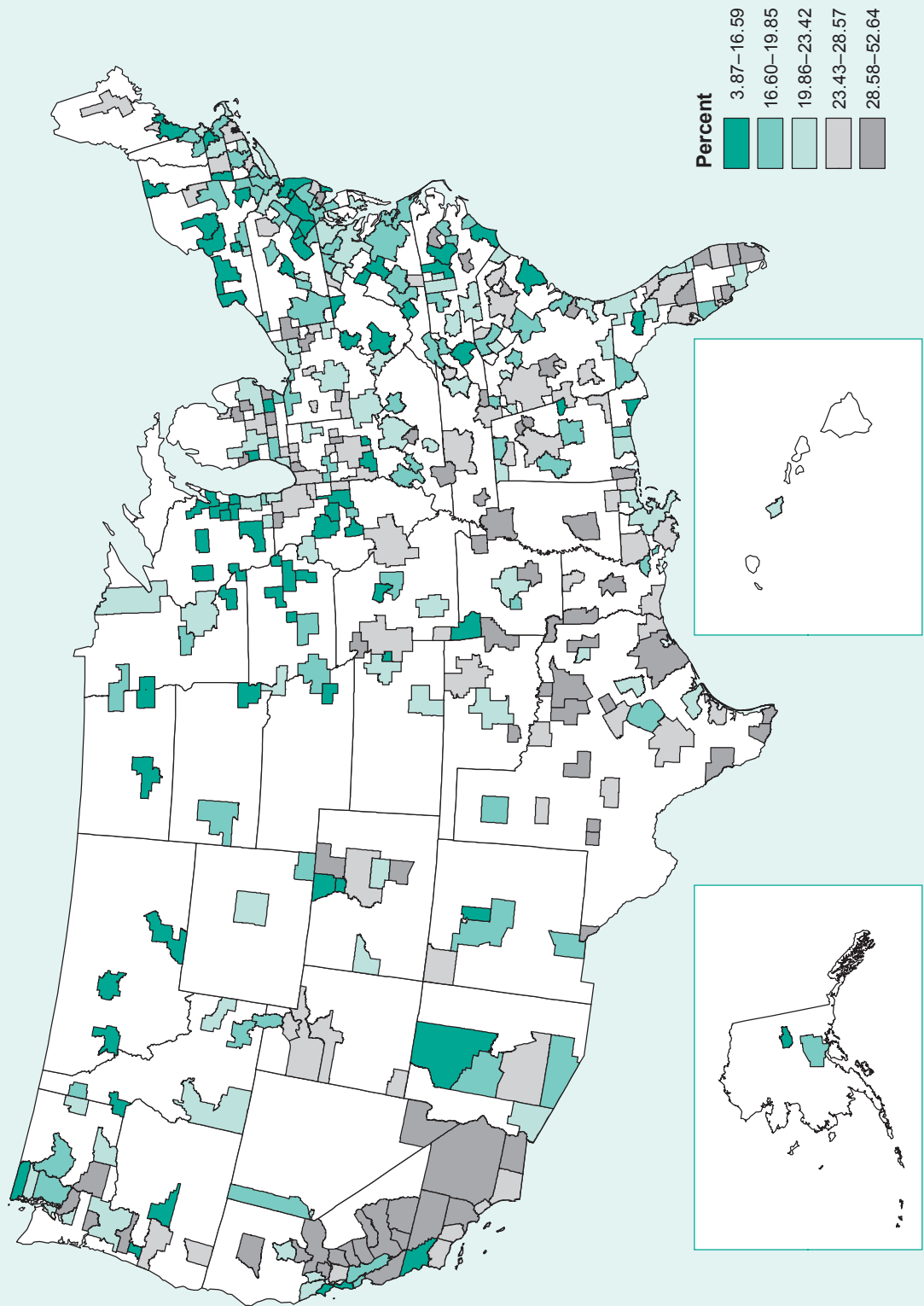
The incidence of higher-priced lending varies considerably across census tracts, with similar patterns for home-purchase loans (table 12.A.) and refinance

44. Reporting institutions are required to report all their lending in MSAs as well as in the nonmetropolitan portions of states. However, because institutions operating exclusively in nonmetropolitan areas are not covered by HMDA, loans in such areas are underrepresented in the data. For this reason, the geographic analysis here is focused on MSAs.

45. The distribution of credit scores by geography is also considered in Matt Fellowes (2006), "Credit Scores, Reports, and Getting Ahead in America," Survey Series (Washington: Brookings Institution, May).



4. Incidence of higher-priced lending for conventional first-lien home-purchase loans on owner-occupied, one- to four-family, site-built homes, by metropolitan statistical area and by quintile, 2005



12. Incidence of higher-priced lending, unadjusted and adjusted for changes in interest rates, for loans on one- to four-family homes, and the change in such incidence, by characteristic of borrower, loan, and census tract and by type of lender and location of property, 2005

A. Home purchase, owner-occupied site-built home  
Percent except as noted

Characteristic and status	Conventional, first lien					
	Number of loans		Incidence			
	2005	Percentage change, 2004–05	2005		Change, 2004–05 (percentage points)	
			Spread unadjusted	Spread adjusted	Spread unadjusted	Spread adjusted
BORROWER						
<i>Income ratio (percent of area median)</i>						
Less than 80 .....	988,156	5.6	31.9	28.1	14.9	12.5
80–100 .....	1,079,629	12.1	28.1	24.9	14.9	13.0
100 or more .....	2,014,029	26.9	20.3	18.1	12.4	11.1
Not reported <sup>1</sup> .....	176,941	25.8	17.4	9.6	8.1	1.4
Total .....	4,258,755	17.4	24.8	21.8	13.2	11.2
<i>Minority status</i>						
Minority .....	1,162,532	28.8	40.6	36.3	21.3	19.0
Non-Hispanic white .....	2,726,119	12.7	17.3	14.7	8.5	6.8
Missing <sup>2</sup> .....	370,104	21.5	31.0	28.0	18.7	16.9
Total .....	4,258,755	17.4	24.8	21.8	13.2	11.2
<i>Sex</i>						
Female .....	1,001,191	20.1	30.9	27.4	15.5	13.4
Male .....	1,452,993	23.6	31.9	28.1	16.7	14.3
Joint <sup>3</sup> .....	1,804,571	11.6	15.8	13.6	8.6	7.1
Total <sup>4</sup> .....	4,258,755	17.4	24.8	21.8	13.2	11.2
LOAN						
<i>Amount (thousands of dollars)</i>						
Less than 100 .....	731,341	3.6	37.2	32.7	15.2	12.2
100–250 .....	2,169,777	12.3	24.1	21.0	13.3	11.3
250 or more .....	1,357,637	37.4	19.4	17.2	13.4	12.0
Total .....	4,258,755	17.4	24.8	21.8	13.2	11.2
<i>Status</i>						
Piggyback <sup>5</sup> .....	927,451	84.2	53.6	48.5	33.9	31.8
Not piggyback .....	3,331,304	6.7	16.8	14.3	6.4	4.8
Total <sup>4</sup> .....	4,258,755	17.4	24.8	21.8	13.2	11.2
TYPE OF LENDER, BY PROPERTY LOCATION						
Depository within assessment area <sup>6</sup> .....	1,108,769	8.5	7.0	5.1	2.6	1.2
Depository outside of assessment area .....	1,535,824	11.7	23.5	20.6	12.8	10.7
Lender not covered by CRA <sup>7</sup> .....	1,614,162	31.3	38.4	34.3	19.5	17.6
Total <sup>4</sup> .....	4,258,755	17.4	24.8	21.8	13.2	11.2
LOCATION OF PROPERTY, BY FREDDIE MAC REGION <sup>8</sup>						
Northeast .....	915,573	13.6	19.1	16.6	9.8	8.2
Southeast .....	907,695	23.3	26.1	23.0	12.1	10.1
North Central .....	753,081	12.8	23.9	20.3	11.2	8.7
Southwest .....	635,200	20.2	26.9	23.3	11.1	8.6
West .....	1,047,206	17.9	28.2	25.5	19.5	18.0
Total <sup>4</sup> .....	4,258,755	17.4	24.8	21.8	13.2	11.2

loans (table 12.B.). Higher-priced lending is most common in census tracts with lower incomes, high percentages of minorities, depreciating real home values, low educational attainment, low credit scores, and high application denial rates. The variations across most of these categories are quite considerable. For example, in 2005, the incidence of higher-priced lending for home-purchase loans averaged 47 percent for census tracts in the category with the largest percentage of mortgage borrowers with low credit scores, compared with an incidence of only 16 percent for census tracts with a low percentage of mortgage borrowers with low credit scores

(table 12.A.). Almost 40 percent of borrowers in census tracts with a low percentage of adults with schooling beyond high school had higher-priced loans, compared with 13 percent in tracts with a high percentage of residents with more than a high-school education.

These relationships appear to be robust and persist even when we control for other factors. For example, if a comparison is made for census tracts with similar income levels and minority percentages but with varying educational attainment and credit scores, wide differences in the incidence of higher-priced lending persist. The fact that the relationship between

12. Incidence of higher-priced lending, unadjusted and adjusted for changes in interest rates, for loans on one- to four-family homes, and the change in such incidence, by characteristic of borrower, loan, and census tract and by type of lender and location of property, 2005—*Continued*

A. Home purchase, owner-occupied site-built home—*Continued*

Percent except as noted

Characteristic and status	Conventional, first lien					
	Number of loans		Incidence			
	2005	Percentage change, 2004–05	2005		Change, 2004–05 (percentage points)	
			Spread unadjusted	Spread adjusted	Spread unadjusted	Spread adjusted
CENSUS TRACT OF PROPERTY						
<i>Income ratio (percent of area median)</i>						
Less than 80 .....	640,985	24.3	41.6	37.2	20.4	17.9
80–119 .....	2,099,773	19.2	26.6	23.3	13.8	11.7
120 or more .....	1,517,997	12.6	15.3	13.2	8.7	7.3
Total <sup>4</sup> .....	4,258,755	17.4	24.8	21.8	13.2	11.2
<i>Racial or ethnic composition (minorities as percentage of population)</i>						
Less than 10 .....	1,395,467	14.5	17.5	14.9	8.3	6.6
10–50 .....	2,159,244	17.9	23.2	20.3	12.7	10.8
50–100 .....	704,044	22.0	44.4	39.9	23.5	21.2
Total <sup>4</sup> .....	4,258,755	17.4	24.8	21.8	13.2	11.2
<i>Location</i>						
Central city .....	2,263,107	16.6	23.3	20.4	12.7	10.9
Noncentral city .....	1,622,306	17.8	26.8	23.7	14.3	12.5
Rural or only state known .....	373,342	21.4	25.8	21.8	10.3	7.4
Total <sup>4</sup> .....	4,258,755	17.4	24.8	21.8	13.2	11.2
<i>Credit score of borrowers (percent of mortgage borrowers with scores below 600)<sup>9</sup></i>						
20 or more .....	567,150	28.5	47.1	42.0	18.1	15.1
10–19 .....	1,453,580	22.7	29.6	26.0	15.2	13.0
Less than 10 .....	2,238,025	11.9	16.1	13.9	9.8	8.4
Total <sup>4</sup> .....	4,258,755	17.4	24.8	21.8	13.2	11.2
<i>Educational attainment of residents (percent of adults with high-school education or less)</i>						
30 or less .....	1,117,002	9.3	13.0	11.2	7.8	6.6
31–60 .....	2,388,381	19.1	25.6	22.5	13.7	11.7
More than 60 .....	753,372	25.9	39.9	35.3	18.0	15.2
Total <sup>4</sup> .....	4,258,755	17.4	24.8	21.8	13.2	11.2
<i>Denial rate for loan type (percent of applicants denied credit)</i>						
10 or less .....	1,178,823	–13.4	12.6	10.7	6.1	4.9
11–20 .....	2,161,489	25.5	23.9	20.8	12.0	10.2
More than 20 .....	918,443	69.4	42.9	38.4	18.5	16.0
Total <sup>4</sup> .....	4,258,755	17.4	24.8	21.8	13.2	11.2
<i>Real price appreciation of real estate<sup>10</sup></i>						
Less than zero .....	1,913,712	16.5	27.3	24.2	15.3	13.5
0–20 .....	1,089,984	18.1	23.9	20.7	11.7	9.7
More than 20 .....	1,255,059	18.4	21.9	19.0	11.0	9.1
Total <sup>4</sup> .....	4,258,755	17.4	24.8	21.8	13.2	11.2

NOTE: For definition of higher-priced loans and explanation of spread adjustment, refer to text.

Excludes transition-period loans (those for which the application was submitted before 2004). For definition of income categories for borrower and census tract, refer to text note 22. Census tract is for the property securing the loan. The term *minority* means Hispanic or Latino ethnicity or any race other than white for either the borrower or the coborrower. Census-tract data reflect the 2000 decennial census; they also reflect definitions for metropolitan statistical areas established by the Office of Management and Budget in June 2003 and used in HMDA for the first time in the 2004 data.

1. Information for income was not reported on the application.

2. Information for the characteristic was missing on the application.

3. On the applications for these loans, one applicant reported “male,” and the other reported “female.” For female and for male, only sole applicants were considered.

4. Excludes loans for which the information for the characteristic was missing on the application.

5. For definition of piggyback, refer to text.

6. Includes lending by nonbank affiliates in the CRA assessment area of depository institution.

7. Includes credit unions and mortgage companies not affiliated with a depository institution or bank or thrift holding company.

8. Freddie Mac defines its regions as follows: *Northeast*: N.Y., N.J., Pa., Del., Md., D.C., Va., W.V., P.R., Maine, N.H., Vt., Mass., R.I., Conn., V.I.; *Southeast*: N.C., S.C., Tenn., Ky., Ga., Ala., Fla., Miss.; *North Central*: Ohio, Ind., Ill., Mich., Wis., Minn., Iowa, N.D., S.D.; *Southwest*: Texas, La., N.M., Okla., Ark., Mo., Kan., Colo., Neb., Wyo.; *West*: Calif., Ariz., Nev., Ore., Wash., Utah, Idaho, Mont., Hawaii, Alaska, Guam.

9. Includes all borrowers with an outstanding mortgage regardless of the year in which the loan was taken out.

10. Based on the change in median home values for a constant 2000-defined geography.

SOURCE: For Freddie Mac data, *Primary Mortgage Market Survey*; for census-tract characteristics, the 1990 and 2000 decennial censuses; for credit-score data, one of the three national credit-reporting agencies.

the denial rate and the incidence of higher-priced lending persists after credit scores of tracts are controlled for is noteworthy. Certainly, a portion of the

high correlation between the incidence of higher-priced lending and elevated denial rates is due to both factors being related to borrower indicators of ele-

12. Incidence of higher-priced lending, unadjusted and adjusted for changes in interest rates, for loans on one- to four-family homes, and the change in such incidence, by characteristic of borrower, loan, and census tract and by type of lender and location of property, 2005—*Continued*

B. Refinance, owner-occupied site-built home  
Percent except as noted

Characteristic and status	Conventional, first lien					
	Number of loans		Incidence			
	2005	Percentage change, 2004–05	2005		Change, 2004–05 (percentage points)	
			Spread unadjusted	Spread adjusted	Spread unadjusted	Spread adjusted
BORROWER						
<i>Income ratio (percent of area median)</i>						
Less than 80 .....	1,410,566	–7.2	35.2	30.8	12.0	9.3
80–100 .....	1,481,181	–3.1	29.4	25.7	11.8	9.6
100 or more .....	2,226,956	–.1	20.1	17.5	9.4	7.7
Not reported <sup>1</sup> .....	275,362	–6.3	7.3	4.8	4.3	2.1
Total .....	5,394,065	–3.2	26.0	22.6	10.3	8.2
<i>Minority status</i>						
Minority .....	1,291,246	4.5	35.5	31.5	14.4	12.2
Non-Hispanic white .....	3,433,488	–5.5	21.1	18.0	8.1	6.1
Missing <sup>2</sup> .....	669,331	–4.9	32.5	28.9	12.6	10.4
Total .....	5,394,065	–3.2	26.0	22.6	10.3	8.2
<i>Sex</i>						
Female .....	1,213,093	4.8	31.2	27.5	11.3	9.1
Male .....	1,539,606	4.5	30.3	26.6	11.9	9.8
Joint <sup>3</sup> .....	2,641,366	–10.2	21.1	18.0	8.5	6.5
Total <sup>4</sup> .....	5,394,065	–3.2	26.0	22.6	10.3	8.2
LOAN						
<i>Amount (thousands of dollars)</i>						
Less than 100 .....	1,101,140	–23.9	33.4	28.7	9.2	5.9
100–250 .....	2,709,682	–5.6	26.8	23.3	12.2	10.0
250 or more .....	1,583,243	26.4	19.3	17.1	11.3	10.1
Total .....	5,394,065	–3.2	26.0	22.6	10.3	8.2
TYPE OF LENDER, BY PROPERTY LOCATION						
Depository within assessment area <sup>6</sup> .....	1,433,289	–14.8	9.2	6.6	3.5	1.4
Depository outside of assessment area .....	1,920,562	–1.8	24.8	21.2	9.9	7.4
Lender not covered by CRA <sup>7</sup> .....	2,040,214	5.6	38.9	35.1	13.9	12.3
Total <sup>4</sup> .....	5,394,065	–3.2	26.0	22.6	10.3	8.2
LOCATION OF PROPERTY, BY FREDDIE MAC REGION <sup>8</sup>						
Northeast .....	1,318,512	.6	25.1	21.9	10.5	8.4
Southeast .....	910,382	7.2	31.5	27.3	9.1	6.3
North Central .....	967,734	–13.1	28.2	24.0	11.7	8.7
Southwest .....	559,113	–16.4	31.5	27.1	10.3	7.3
West .....	1,638,324	.5	20.3	18.2	10.4	9.4
Total <sup>4</sup> .....	5,394,065	–3.2	26.0	22.6	10.3	8.2

vated credit risk. However, the persistence of this pattern when credit scores are controlled for suggests that high denial rates may also increase the per-loan costs of loan origination and thus may influence pricing across census tracts.<sup>46</sup>

### *Differences in Pricing by Characteristic of Borrower, Loan, and Lender*

There is considerable variation in the incidence of higher-priced lending by borrower, loan, and lender

characteristics (tables 12.A. and 12.B.). Lower-income borrowers, borrowers with loan amounts below \$100,000, borrowers using piggyback loans or loans from lenders not covered by the CRA, and minority borrowers all show elevated levels of higher-priced lending in the 2005 HMDA data. These factors reflect more than census-tract characteristics, as they show the same variation within census tracts of similar incomes. For example, the incidence of higher-priced lending for home-purchase loans averaged about 37 percent for loans below \$100,000 but only 19 percent for loans of at least \$250,000. Although HMDA data do not contain sufficient information to explain the latter pattern, one hypothesis is that some of the variation may be due to the fact that individuals who borrow small amounts may be more likely to have riskier credit attributes, such as lower credit

46. The HMDA data indicate that such a relationship may hold, as lenders who serve mainly borrowers in the higher-priced market have origination rates that are about 20 percent lower than those of lenders who serve primarily borrowers receiving loans with rates below the HMDA price-reporting thresholds.

12. Incidence of higher-priced lending, unadjusted and adjusted for changes in interest rates, for loans on one- to four-family homes, and the change in such incidence, by characteristic of borrower, loan, and census tract and by type of lender and location of property, 2005—*Continued*

B. Refinance, owner-occupied site-built home—*Continued*

Percent except as noted

Characteristic and status	Conventional, first lien					
	Number of loans		Incidence			
	2005	Percentage change, 2004–05	2005		Change, 2004–05 (percentage points)	
			Spread unadjusted	Spread adjusted	Spread unadjusted	Spread adjusted
CENSUS TRACT OF PROPERTY						
Income ratio (percent of area median)						
Less than 80 .....	896,846	5.0	39.6	35.1	13.2	10.6
80–119 .....	2,798,392	–6	27.4	23.7	10.3	8.0
120 or more .....	1,698,827	–10.7	16.4	14.1	7.8	6.3
Total <sup>4</sup> .....	5,394,065	–3.2	26.0	22.6	10.3	8.2
Racial or ethnic composition (minorities as percentage of population)						
Less than 10 .....	1,770,723	–7.6	22.4	19.0	8.6	6.3
10–50 .....	2,516,983	–2.7	23.6	20.5	9.7	7.7
50–100 .....	1,106,359	3.6	37.1	33.1	14.0	11.9
Total <sup>4</sup> .....	5,394,065	–3.2	26.0	22.6	10.3	8.2
Location						
Central city .....	2,947,231	–2.7	24.3	21.1	10.3	8.3
Noncentral city .....	1,911,159	–4.2	27.1	23.8	11.0	8.9
Rural or only state known .....	535,675	–1.9	30.9	26.4	8.4	5.3
Total <sup>4</sup> .....	5,394,065	–3.2	26.0	22.6	10.3	8.2
Credit score of borrowers (percent of mortgage borrowers with scores below 600) <sup>9</sup>						
20 or more .....	758,118	5.0	47.8	42.2	12.8	9.4
10–19 .....	1,835,281	2.6	30.8	26.8	11.4	8.9
Less than 10 .....	2,800,666	–8.5	16.8	14.5	8.0	6.6
Total <sup>4</sup> .....	5,394,065	–3.2	26.0	22.6	10.3	8.2
Educational attainment of residents (percent of adults with high-school education or less)						
30 or less .....	1,220,761	–14.3	13.4	11.6	6.8	5.6
31–60 .....	3,037,703	–1	26.2	22.8	10.4	8.3
More than 60 .....	1,135,601	2.7	38.7	33.8	11.9	9.0
Total <sup>4</sup> .....	5,394,065	–3.2	26.0	22.6	10.3	8.2
Denial rate for loan type (percent of applicants denied credit)						
20 or less .....	915,057	–39.1	11.6	10.1	5.7	4.7
21–40 .....	3,441,463	5.3	25.2	21.9	9.3	7.4
More than 40 .....	1,037,545	29.9	41.3	35.9	8.5	5.2
Total <sup>4</sup> .....	5,394,065	–3.2	26.0	22.6	10.3	8.2
Real price appreciation of real estate <sup>10</sup>						
Less than zero .....	2,679,049	.4	26.2	23.1	10.9	9.1
0–20 .....	1,279,137	–4.5	27.1	23.3	10.1	7.6
More than 20 .....	1,435,879	–8.1	24.5	21.0	9.5	7.2
Total <sup>4</sup> .....	5,394,065	–3.2	26.0	22.6	10.3	8.2

NOTE: Refer to notes to table 12.A.

scores.<sup>47</sup> Another hypothesis is that small loans are more expensive on a per-dollar basis to originate and thus are more likely to be higher priced.

As in 2004, the data for 2005 continue to show a much lower incidence of higher-priced lending by

lenders that are covered by the CRA and that lend in their assessment areas than is shown by the same lenders when they make loans outside of their assessment areas. Although the HMDA data do not contain sufficient information to enable us to determine the causes of this pattern, several hypotheses are possible. As noted earlier, one possible explanation for at least part of the assessment-area effect may be that the channel through which loans are originated matters. Loans extended to borrowers outside an institution's assessment area may be more likely to come through mortgage brokers, who may price differently

47. The hypothesized relationship between credit scores and loan amounts is borne out in the credit records of a nationally representative sample of credit files obtained by the Federal Reserve Board from one of the three national credit-reporting agencies. Refer to Robert B. Avery, Paul S. Calem, and Glenn B. Canner (2004), "Credit Report Accuracy and Access to Credit," *Federal Reserve Bulletin*, vol. 90 (Summer), pp. 297–322.



or who operate in areas with different market conditions than those faced by institutions that originate loans directly. Another possible factor is that these brokers serve markets or individuals who are more costly to serve or whose credit profiles are weaker, and the brokers price accordingly.

### *Differences in Pricing by Race, Ethnicity, and Sex of Borrower*

Analysis of the 2004 HMDA data revealed substantial disparities in the incidence of higher-priced lending across racial and ethnic lines and further showed that such differences could not be fully explained by factors included in the HMDA data. The 2005 data show similar patterns.

Because of its importance, we look at the incidence of higher-priced lending by race, ethnicity, and sex in a more detailed way than in previous sections. The analysis is more detailed in three respects. First, we examine pricing patterns for specific racial, ethnic, and gender groups. Second, we examine the incidence of higher-priced lending (both spread unadjusted and spread adjusted for changes in the yield curve) and the APR spreads (also spread unadjusted and spread adjusted) paid by those receiving higher-priced loans. Third, and most important, we examine whether these patterns persist when other factors included in the HMDA data are accounted for. We restrict our analysis to conventional first-lien home-purchase and refinance loans on owner-occupied, one- to four-family, site-built homes, as these are by far the largest two loan product categories in the HMDA data.<sup>48</sup> In 2005, home-purchase and refinance loan products involved roughly 4.4 million and 5.5 million loans respectively.

The HMDA data do not include many of the factors considered in credit underwriting and pricing. However, our analysis can include some variables likely related to the loan-pricing process. Specifically, the HMDA data allow an accounting for property location (for example, same metropolitan area), income relied on for underwriting, loan amount, and time of year the loan was made as well as presence of a co-applicant. To the extent that some of these HMDA factors are not used directly in loan underwriting or pricing, they are included in the analysis as proxies for at least some of the factors that are considered.

For example, accounting for borrower income and for loan amount is a measure of the financial burden associated with the loan payments, as larger loans relative to income imply higher monthly payment burdens (if we assume that housing values are proportionate to income, higher loan-to-income ratios may also reflect higher LTVs). Because we are focusing on specific loan products, we are already controlling in broad terms for loan type and purpose, type of property securing the loan, lien status, and owner-occupancy status.

In comparing lending outcomes across racial and ethnic groups, one can match for the sex of the applicant and co-applicant. Accounting for sex in the analysis is intended to better distinguish pricing issues related purely to the race or ethnicity of the borrower from those that may be related to sex. In assessing lending outcomes by sex, one can match for race and ethnicity.

The analysis focuses on both the incidence of higher-priced lending and the mean APR spreads paid by borrowers with higher-priced loans, and we compare these outcomes across eleven groups—nine racial or ethnic groups and the two sexes. Comparisons of average outcomes for each group are made both before and after modifying the results for differences in the borrower-related factors cited earlier (income; loan amount; location—MSA—of the property; presence of a co-applicant; and, in the comparisons by race and ethnicity, sex) and for differences in borrower-related factors *plus* the specific lending institution used by the borrower. Excluded from the pricing analysis are applicants residing outside the fifty states and the District of Columbia, applications deemed to be business related, and applications filed during the transition period. Otherwise, the sample includes all 2005 HMDA loans for the two loan product categories we examine. Our method of controlling for these factors is to group borrowers into cells, as we did in our 2005 article assessing the 2004 HMDA data.<sup>49</sup>

Comparisons for lending outcomes across groups are discussed in the following sections. The comparisons are of three types: unmodified (or “gross”), modified for borrower-related factors (or “borrower modified”), and modified for borrower-related factors plus lender (or “lender modified”). For purposes of presentation, the borrower- and lender-modified outcomes shown in the tables are normalized so that, *for the base comparison group* (non-Hispanic whites in the case of comparison by race and ethnicity, and males in the case of comparison by sex), the mean at

48. In the analysis of the 2004 HMDA data, we assessed pricing patterns for a broader group of loan products than is presented here. We also examined patterns for borrowers grouped by income, census-tract income, type of lender, and disposition of loan. We do not present the corresponding analysis for 2005 because the patterns are largely unchanged from 2004.

49. For a description of our approach, refer to Avery, Canner, and Cook, “New Information Reported under HMDA,” pp. 387–88.

each modification level is the same as the gross mean. Consequently, the borrower- and lender-modified outcomes for any other group represent the expected average outcome if the members of that group had the same distribution of control factors as that of the base comparison group.

### Incidence of Higher-Priced Lending by Race and Ethnicity

The 2005 HMDA data, like the 2004 data, indicate that black and Hispanic borrowers are more likely, and Asians borrowers less likely, to obtain loans with prices above the pricing thresholds than are non-Hispanic white borrowers. These relationships hold for both loan products and persist when the incidence is spread adjusted for the effects of the flattening of the yield curve (table 13, sections labeled “Spread adjusted”). Gross differences in the incidence of higher-priced lending between non-Hispanic whites, on the one hand, and blacks or Hispanic whites, on the other, are large, but these differences are substantially reduced after controlling for borrower-related factors plus lender. Most of the reduction in the difference in the incidence across groups comes from adding the control for lender to the control for borrower-related factors, an indication that the pricing differences within a given lender are typically smaller than the differences among loans across lenders.<sup>50</sup>

For 2005, for conventional home-purchase loans, the gross mean incidence of higher-priced lending was 54.7 percent for blacks and 17.2 percent for non-Hispanic whites, a difference of 37.5 percentage points (table 13.A.). Borrower-related factors included in the HMDA data accounted for about one-fifth of the difference. Adding to this modification the control for lender reduces the remaining gap to 10 percentage points. By comparison, in 2004, the unmodified mean incidence of higher-priced lending for conventional first-lien home-purchase loans was 32.4 percent for blacks and 8.7 percent for non-Hispanic whites, a difference of 23.7 percentage points. Borrower-related factors accounted for about one-fourth of the difference. Adding to this modification the control for lender reduced the remaining gap to 7 percentage points.

For 2005, for refinancings, the gross difference between blacks and non-Hispanic whites is 28.3 percentage points; the difference is reduced to 6.2 percentage points after controlling for borrower-related factors plus lender; most of the reduction in differences comes from the addition of the control for lender (table 13.B.). By comparison, in 2004, the gross difference between blacks and non-Hispanic whites was 21.7 percentage points; the difference was reduced to 4.7 percentage points after controlling for borrower-related factors plus lender, and about two-thirds of that reduction came from the addition of the control for lender.

The picture for Asians differs greatly from that for blacks or Hispanic whites: Compared with non-Hispanic whites, Asians have a *lower* gross mean incidence of higher-priced lending for home-purchase and refinance loans. The gap is affected some by controlling for borrower-related factors plus lender; for home-purchase loans, the incidence of higher-priced lending remains lower for Asians than for non-Hispanic whites; for refinancings, the gap is essentially eliminated. Hispanic whites show a pattern similar to that of blacks but with smaller differences relative to non-Hispanic whites.

One of the more notable pricing patterns that emerges is much narrower gaps across racial and ethnic groups for refinancings as compared with home-purchase lending. This pattern occurs despite the fact that the gross incidence of higher-priced lending is higher for refinancings for at least some groups, including non-Hispanic whites. Also, the gap between blacks and non-Hispanic whites is notably larger than that for other minority groups.

### Rate Spreads by Race and Ethnicity

The 2005 data, like the data for 2004, indicate that among borrowers with higher-priced loans, the gross mean prices paid by black and Hispanic white borrowers are about the same as those paid by non-Hispanic white borrowers (table 14). Asian borrowers with higher-priced loans also paid about the same price, on average, as non-Hispanic whites with higher-priced loans. These relationships are consistent for both types of loans.

### Pricing Differences by Sex

The 2005 HMDA data reveal little difference in pricing when borrowers are distinguished by sex. For example, sole female borrowers generally have a slightly lower incidence of higher-priced lending than sole male borrowers for home-purchase loans

50. Racial and ethnic differences in higher-priced lending vary substantially across loan product categories (data not shown in tables). For government-backed loan products, small proportions of borrowers have higher-priced loans, and no meaningful differences appear across racial and ethnic groups. At the other extreme, the majority of borrowers for manufactured homes have higher-priced loans, and for this product significant differences appear across racial and ethnic groups (although the differences are smaller than for some other products). These relationships persist after controlling for borrower-related factors and for borrower-related factors plus lender.

13. Incidence of higher-priced lending, unadjusted and adjusted for changes in interest rates, and unmodified and modified for borrower- and lender-related factors, for loans on one- to four-family homes, by type of loan and by race, ethnicity, and sex of borrower, 2004 and 2005

A. Home purchase, owner-occupied site-built home  
Percent except as noted

Race, ethnicity, and sex	Conventional, first lien							
	2004				2005			
	Number of loans	Unmodified incidence	Modified incidence, by modification factor		Number of loans	Unmodified incidence	Modified incidence, by modification factor	
			Borrower-related	Borrower-related plus lender			Borrower-related	Borrower-related plus lender
	Spread unadjusted							
<i>Race</i>								
American Indian or Alaska Native . . .	28,107	18.1	17.2	11.8	27,766	35.3	29.5	21.8
Asian . . . . .	199,359	5.9	7.4	8.1	237,383	16.6	15.8	16.6
Black or African American . . . . .	232,688	32.4	26.7	15.7	312,451	54.7	47.0	27.2
Native Hawaiian or other Pacific Islander . . . . .	20,293	15.7	16.3	11.1	23,450	34.8	30.4	21.0
Two or more minority races . . . . .	2,613	22.9	22.2	12.2	2,112	30.4	28.7	20.8
Joint . . . . .	47,299	6.9	10.8	9.4	51,881	18.2	23.0	19.0
Not available . . . . .	390,136	13.4	16.8	11.1	431,159	32.4	33.6	21.6
<i>Ethnicity</i>								
Hispanic white . . . . .	301,915	20.3	16.6	11.6	464,634	46.1	34.2	21.9
Non-Hispanic white . . . . .	2,476,255	8.7	8.7	8.7	2,789,265	17.2	17.2	17.2
<i>Sex</i>								
One male . . . . .	1,129,781	15.3	15.3	15.3	1,392,947	31.7	31.7	31.7
One female . . . . .	850,213	15.3	14.4	15.0	1,021,006	30.8	29.8	30.8
Two males . . . . .	38,170	9.5	9.5	9.5	44,278	23.1	23.1	23.1
Two females . . . . .	31,083	10.4	9.0	9.8	36,140	24.7	22.4	23.9
	Spread adjusted							
<i>Race</i>								
American Indian or Alaska Native . . .	28,107	16.4	15.6	10.8	27,766	31.2	25.6	18.3
Asian . . . . .	199,359	5.1	6.7	7.4	237,383	14.5	13.4	14.1
Black or African American . . . . .	232,688	30.0	24.6	14.4	312,451	50.1	42.6	23.3
Native Hawaiian or other Pacific Islander . . . . .	20,293	13.9	14.9	10.3	23,450	30.9	26.9	17.6
Two or more minority races . . . . .	2,613	20.2	19.2	10.5	2,112	27.7	25.9	17.7
Joint . . . . .	47,299	6.1	9.7	8.5	51,881	15.9	20.0	16.2
Not available . . . . .	390,136	12.1	15.4	10.1	431,159	29.3	30.1	18.5
<i>Ethnicity</i>								
Hispanic white . . . . .	301,915	17.8	14.8	10.3	464,634	40.8	29.6	18.2
Non-Hispanic white . . . . .	2,476,255	7.9	7.9	7.9	2,789,265	14.6	14.6	14.6
<i>Sex</i>								
One male . . . . .	1,129,781	13.8	13.8	13.8	1,392,947	27.9	27.9	27.9
One female . . . . .	850,213	13.9	13.0	13.5	1,021,006	27.2	26.4	27.3
Two males . . . . .	38,170	8.5	8.5	8.5	44,278	19.7	19.7	19.7
Two females . . . . .	31,083	9.5	8.2	8.9	36,140	21.8	19.6	20.6

NOTE: Excludes transition-period loans (those for which the application was submitted before 2004). For definition of higher-priced lending and explanations of spread adjustment and of modification factors, refer to text. Categories for race and ethnicity reflect the revised standards established in 1997 by the Office of Management and Budget. The term *minority* means Hispanic or Latino ethnicity or any race other than white for both the borrower and the

coborrower. For method of allocation into racial and ethnic categories and definitions of categories, refer to text note 22. Loans taken out jointly by a male and female are not tabulated here because they would not be directly comparable with loans taken out by one borrower or by two borrowers of the same sex.

after accounting for borrower-related factors plus lender but a slightly higher incidence for refinancings (table 13). Similarly, few if any differences are revealed in the average prices (mean APR spreads) paid by those receiving higher-priced loans (table 14).

### Effects of the Yield Curve on Pricing Differences across Racial and Ethnic Groups

An important question is whether the flattening of the

yield curve had a different effect across racial and ethnic groups and consequently affected the observed gaps in loan pricing from 2004 to 2005. Evidence suggests that such differential yield curve effects exist but were likely not large. For example, for conventional home-purchase lending, the borrower- and lender-modified gap between black and non-Hispanic whites was 7.0 percentage points in 2004 and 10.0 percentage points in 2005 (table 13.A.). The comparable spread-adjusted gaps are 6.5 percentage points for 2004 and 8.7 percentage points for 2005. The fact that

13. Incidence of higher-priced lending, unadjusted and adjusted for changes in interest rates, and unmodified and modified for borrower- and lender-related factors, for loans on one- to four-family homes, by type of loan and by race, ethnicity, and sex of borrower, 2004 and 2005—*Continued*

B. Refinance, owner-occupied site-built home

Percent except as noted

Race, ethnicity, and sex	Conventional, first lien							
	2004				2005			
	Number of loans	Unmodified incidence	Modified incidence, by modification factor		Number of loans	Unmodified incidence	Modified incidence, by modification factor	
			Borrower-related	Borrower-related plus lender			Borrower-related	Borrower-related plus lender
	Spread unadjusted							
<i>Race</i>								
American Indian or Alaska Native . . .	44,503	20.2	21.0	14.7	37,213	28.9	32.1	24.1
Asian . . . . .	207,114	5.9	9.7	12.1	165,011	15.2	18.9	21.1
Black or African American . . . . .	391,524	34.6	29.5	17.6	441,299	49.3	45.0	27.2
Native Hawaiian or other								
Pacific Islander . . . . .	31,381	16.4	18.6	14.5	31,453	28.4	32.2	24.3
Two or more minority races . . . . .	5,089	21.1	22.4	15.0	3,650	28.6	29.5	24.2
Joint . . . . .	67,199	10.4	14.7	13.5	61,200	19.3	26.2	22.4
Not available . . . . .	827,590	19.3	25.4	15.3	752,573	32.2	38.0	24.5
<i>Ethnicity</i>								
Hispanic white . . . . .	378,826	19.3	18.5	14.3	478,381	33.8	31.5	23.6
Non-Hispanic white . . . . .	3,698,309	12.9	12.9	12.9	3,496,425	21.0	21.0	21.0
<i>Sex</i>								
One male . . . . .	1,360,350	18.6	18.6	18.6	1,424,721	30.3	30.3	30.3
One female . . . . .	1,173,835	19.8	18.5	18.7	1,229,138	31.1	30.0	30.4
Two males . . . . .	40,012	12.1	12.1	12.1	37,442	21.2	21.2	21.2
Two females . . . . .	43,208	17.3	14.5	13.4	41,572	27.0	23.5	22.5
	Spread adjusted							
<i>Race</i>								
American Indian or Alaska Native . . .	44,503	18.3	19.3	13.3	37,213	25.1	27.9	20.6
Asian . . . . .	207,114	5.2	8.9	11.1	165,011	13.4	16.1	18.1
Black or African American . . . . .	391,524	32.3	27.5	16.3	441,299	43.9	39.9	23.3
Native Hawaiian or other								
Pacific Islander . . . . .	31,381	14.8	17.0	13.2	31,453	25.3	28.5	20.9
Two or more minority races . . . . .	5,089	18.7	20.4	13.8	3,650	25.5	25.7	20.2
Joint . . . . .	67,199	9.4	13.5	12.3	61,200	16.6	22.6	19.2
Not available . . . . .	827,590	17.8	23.6	14.1	752,573	28.6	33.8	20.9
<i>Ethnicity</i>								
Hispanic white . . . . .	378,826	17.4	16.8	13.0	478,381	30.1	27.4	20.2
Non-Hispanic white . . . . .	3,698,309	11.8	11.8	11.8	3,496,425	17.9	17.9	17.9
<i>Sex</i>								
One male . . . . .	1,360,350	17.0	17.0	17.0	1,424,721	26.8	26.8	26.8
One female . . . . .	1,173,835	18.2	16.9	17.2	1,229,138	27.4	26.4	26.8
Two males . . . . .	40,012	11.0	11.0	11.0	37,442	18.2	18.2	18.2
Two females . . . . .	43,208	16.0	13.3	12.2	41,572	23.4	20.2	19.4

NOTE: Refer to note to table 13.A.

both spread-adjusted gaps are lower than the comparable unadjusted figures suggests that to the extent that the yield curve changes affected the measurement of racial and ethnic pricing differences, they tended to widen gaps rather than narrow them.

### Denial Rates by Race, Ethnicity, and Sex

Analyses of the HMDA data from different years consistently find that denial rates vary across applicants grouped by race or ethnicity (table 15). For each loan product category in 2005, American Indians,

blacks, and Hispanic whites had higher denial rates than non-Hispanic whites; blacks generally had the highest rates, and Hispanic whites had rates about halfway between those for blacks and those for non-Hispanic whites. The pattern was less consistent for Asians, who had higher denial rates than non-Hispanic whites for some loan products but lower rates for others.

These patterns reflect gross differences in lending outcomes but do not account for differences in economic or financial circumstances that may vary across groups. To account for the subset of these factors included in the HMDA data, we conducted

14. Mean APR spreads, unadjusted and adjusted for changes in interest rates, and unmodified and modified for borrower- and lender-related factors, for higher-priced loans on one- to four-family homes, by type of loan and by race, ethnicity, and sex of borrower, 2004 and 2005

A. Home purchase, owner-occupied site-built home

Percentage points except as noted

Race, ethnicity, and sex	Conventional, first lien							
	2004				2005			
	Number of higher-priced loans	Unmodified mean spread	Modified mean spread, by modification factor		Number of higher-priced loans	Unmodified mean spread	Modified mean spread, by modification factor	
			Borrower-related	Borrower-related plus lender			Borrower-related	Borrower-related plus lender
Spread unadjusted								
<i>Race</i>								
American Indian or Alaska Native . . .	5,101	4.0	4.1	4.1	9,799	4.6	4.8	4.8
Asian . . . . .	11,771	3.8	4.0	4.0	39,471	4.6	4.7	4.7
Black or African American . . . . .	75,427	4.2	4.2	4.2	171,009	5.0	4.9	4.9
Native Hawaiian or other								
Pacific Islander . . . . .	3,186	4.0	4.1	4.1	8,162	4.6	4.8	4.8
Two or more minority races . . . . .	598	4.1	4.3	4.1	641	4.8	4.9	4.8
Joint . . . . .	3,242	4.0	4.1	4.1	9,468	4.6	4.8	4.8
Not available . . . . .	52,094	4.1	4.1	4.1	139,740	4.9	4.9	4.8
<i>Ethnicity</i>								
Hispanic white . . . . .	61,248	3.9	4.0	4.1	214,415	4.6	4.7	4.8
Non-Hispanic white . . . . .	216,409	4.1	4.1	4.1	479,338	4.7	4.7	4.7
<i>Sex</i>								
One male . . . . .	173,166	4.0	4.0	4.0	441,919	4.8	4.8	4.8
One female . . . . .	130,250	4.1	4.0	4.0	313,959	4.8	4.8	4.8
Two males . . . . .	3,632	4.1	4.1	4.1	10,213	4.5	4.5	4.5
Two females . . . . .	3,246	4.1	4.0	4.1	8,943	4.7	4.6	4.5
Spread adjusted								
<i>Race</i>								
American Indian or Alaska Native . . .	4,603	3.2	3.3	3.3	8,658	3.6	3.8	3.8
Asian . . . . .	10,222	3.1	3.3	3.3	34,340	3.5	3.7	3.7
Black or African American . . . . .	69,867	3.4	3.4	3.4	156,504	3.9	3.9	3.8
Native Hawaiian or other								
Pacific Islander . . . . .	2,824	3.2	3.4	3.4	7,243	3.5	3.8	3.8
Two or more minority races . . . . .	528	3.3	3.5	3.4	586	3.7	3.8	3.8
Joint . . . . .	2,885	3.3	3.4	3.3	8,247	3.6	3.7	3.8
Not available . . . . .	47,071	3.3	3.4	3.4	126,398	3.8	3.9	3.8
<i>Ethnicity</i>								
Hispanic white . . . . .	53,750	3.2	3.3	3.3	189,768	3.6	3.7	3.8
Non-Hispanic white . . . . .	195,778	3.3	3.3	3.3	408,297	3.7	3.7	3.7
<i>Sex</i>								
One male . . . . .	156,146	3.3	3.3	3.3	388,632	3.7	3.7	3.7
One female . . . . .	117,763	3.3	3.3	3.3	277,536	3.8	3.7	3.7
Two males . . . . .	3,246	3.3	3.3	3.3	8,706	3.5	3.5	3.5
Two females . . . . .	2,944	3.3	3.3	3.4	7,874	3.6	3.5	3.5

NOTE: Spread-unadjusted APR is the difference between the APR on the loan and the yield on a comparable-maturity Treasury security. Spread-adjusted APR is the difference between the APR on the loan and the estimated APR reported by Freddie Mac for a thirty-year fixed-rate loan in its *Primary Mortgage Market Survey*. Excludes transition-period loans (those for which the application was submitted before 2004). For definition of higher-priced lending and explanation of modification factors, refer to text. Categories for race and

ethnicity reflect the revised standards established in 1997 by the Office of Management and Budget. The term *minority* means Hispanic or Latino ethnicity or any race other than white for both the borrower and the coborrower. For method of allocation into racial and ethnic categories and definitions of categories, refer to text note 22. Loans taken out jointly by a male and female are not tabulated here because they would not be directly comparable with loans taken out by one borrower or by two borrowers of the same sex.

an analysis analogous to that undertaken in the pricing discussion.<sup>51</sup>

With few exceptions, controlling for borrower-related factors in the HMDA data reduces the differences among racial and ethnic groups. Accounting for

the specific lender used by the applicant almost always reduces differences further, although large differences remain between non-Hispanic whites and most of the other racial and ethnic groups. For example, for conventional first-lien home-purchase loans, the gross mean denial rate was 27.5 percent for blacks and 12.3 percent for non-Hispanic whites, a difference of 15.2 percentage points. Accounting for income, loan amount, and other borrower-related

51. The sample rules used for the denial rate analysis are identical to those used for the pricing analysis except that transition-period applications were not excluded.



14. Mean APR spreads, unadjusted and adjusted for changes in interest rates, and unmodified and modified for borrower- and lender-related factors, for higher-priced loans on one- to four-family homes, by type of loan and by race, ethnicity, and sex of borrower, 2004 and 2005—*Continued*

B. Refinance, owner-occupied site-built home

Percentage points except as noted

Race, ethnicity, and sex	Conventional, first lien							
	2004				2005			
	Number of higher-priced loans	Unmodified mean spread	Modified mean spread, by modification factor		Number of higher-priced loans	Unmodified mean spread	Modified mean spread, by modification factor	
			Borrower-related	Borrower-related plus lender			Borrower-related	Borrower-related plus lender
	Spread unadjusted							
<i>Race</i>								
American Indian or Alaska Native . . .	8,977	4.1	4.2	4.1	10,770	4.8	4.8	4.8
Asian . . . . .	12,250	3.9	4.1	4.1	25,119	4.7	4.8	4.8
Black or African American . . . . .	135,467	4.3	4.3	4.3	217,351	5.0	5.0	4.9
Native Hawaiian or other . . . . .								
Pacific Islander . . . . .	5,153	4.1	4.2	4.2	8,945	4.8	4.8	4.8
Two or more minority races . . . . .	1,072	4.0	4.1	4.1	1,043	4.9	4.9	4.8
Joint . . . . .	6,973	4.1	4.2	4.2	11,815	4.7	4.8	4.8
Not available . . . . .	159,741	4.2	4.2	4.2	242,666	5.0	5.0	4.8
<i>Ethnicity</i>								
Hispanic white . . . . .	73,181	4.0	4.1	4.2	161,713	4.8	4.8	4.8
Non-Hispanic white . . . . .	476,034	4.2	4.2	4.2	733,290	4.8	4.8	4.8
<i>Sex</i>								
One male . . . . .	252,618	4.1	4.1	4.1	432,386	4.9	4.9	4.9
One female . . . . .	232,583	4.2	4.2	4.1	382,071	4.9	4.9	4.9
Two males . . . . .	4,833	4.2	4.2	4.2	7,937	4.8	4.8	4.8
Two females . . . . .	7,479	4.3	4.2	4.2	11,208	4.8	4.8	4.8
	Spread adjusted							
<i>Race</i>								
American Indian or Alaska Native . . .	8,160	3.4	3.4	3.4	9,354	3.8	3.8	3.8
Asian . . . . .	10,867	3.2	3.4	3.4	22,074	3.6	3.8	3.8
Black or African American . . . . .	126,314	3.5	3.5	3.5	193,660	3.9	3.9	3.9
Native Hawaiian or other . . . . .								
Pacific Islander . . . . .	4,630	3.3	3.4	3.4	7,943	3.7	3.8	3.8
Two or more minority races . . . . .	951	3.2	3.3	3.4	929	3.9	3.9	3.9
Joint . . . . .	6,343	3.3	3.4	3.4	10,139	3.7	3.8	3.8
Not available . . . . .	147,619	3.5	3.5	3.4	215,508	4.0	4.0	3.8
<i>Ethnicity</i>								
Hispanic white . . . . .	65,733	3.3	3.4	3.4	143,893	3.7	3.8	3.8
Non-Hispanic white . . . . .	436,611	3.4	3.4	3.4	625,890	3.8	3.8	3.8
<i>Sex</i>								
One male . . . . .	231,756	3.4	3.4	3.4	381,119	3.9	3.9	3.9
One female . . . . .	214,180	3.4	3.4	3.4	336,179	3.9	3.9	3.9
Two males . . . . .	4,402	3.5	3.5	3.5	6,821	3.8	3.8	3.8
Two females . . . . .	6,897	3.5	3.5	3.4	9,713	3.8	3.8	3.8

NOTE: Refer to note to table 14.A.

factors in the HMDA data reduces the difference 3.1 percentage points. Controlling for borrower-related factors plus lender further reduces the gap to 7.0 percentage points. The reduction for conventional first-lien refinance loans is similar. The gross difference between denial rates for blacks and those for non-Hispanic whites is 15.9 percentage points, a difference cut in half when modified for borrower-related factors plus lender.

With regard to the sex of applicants, sole male applicants typically have higher denial rates than females do, but in general, the sizes of the differences by sex are small. Controlling for borrower-related

factors plus lender generally has only a small effect on differences in denial rates.

### *Limitations of the HMDA Data in Accounting for Differences across Groups*

Like the 2004 data, the data for 2005 show large differences in the incidence of higher-priced lending between minorities and non-Hispanic whites. Analysis indicates that the information in the HMDA data—that is, the data modified for borrower-related factors plus lender—is insufficient to account fully for racial or ethnic differences in the incidence of

15. Denial rates on applications, unmodified and modified for borrower- and lender-related factors, for loans on owner-occupied, one- to four-family, site-built homes, by type of loan and by race, ethnicity, and sex of applicant, 2005

Percent except as noted

Race, ethnicity, and sex	Conventional, first lien							
	Home purchase				Refinance			
	Number of applications acted upon by lender	Unmodified denial rate	Modified denial rate, by modification factor		Number of applications acted upon by lender	Unmodified denial rate	Modified denial rate, by modification factor	
			Borrower-related	Borrower-related plus lender			Borrower-related	Borrower-related plus lender
<i>Race</i>								
American Indian or Alaska Native ..	41,081	22.4	21.5	17.4	76,922	39.9	40.8	34.1
Asian .....	325,881	15.8	14.4	14.3	257,577	23.6	30.0	31.2
Black or African American .....	512,130	27.5	24.4	19.3	953,323	43.1	42.5	35.2
Native Hawaiian or other Pacific Islander .....	33,931	19.6	17.3	16.2	54,290	30.9	37.1	32.8
Two or more minority races .....	3,052	20.1	19.2	15.7	6,782	36.6	39.0	33.5
Joint .....	65,752	12.5	15.3	13.6	96,179	27.6	34.8	30.5
Not available .....	672,062	22.5	22.2	17.1	1,824,626	47.7	49.3	34.8
<i>Ethnicity</i>								
Hispanic white .....	669,703	21.3	18.0	16.0	807,409	30.5	33.7	31.6
Non-Hispanic white .....	3,490,403	12.3	12.3	12.3	5,482,979	27.2	27.2	27.2
<i>Sex</i>								
One male .....	1,944,385	18.9	18.9	18.9	2,671,069	36.2	36.2	36.2
One female .....	1,410,239	18.3	17.6	18.0	2,187,420	34.1	33.1	34.3
Two males .....	59,548	17.5	17.5	17.5	63,351	31.9	31.9	31.9
Two females .....	48,745	17.5	16.1	16.1	71,160	33.0	30.3	30.7

NOTE: Includes transition-period applications (those submitted before 2004). For explanation of modification factors, refer to text. Categories for race and ethnicity reflect the revised standards established in 1997 by the Office of Management and Budget. The term *minority* means Hispanic or Latino ethnicity or any race other than white for both the borrower and the coborrower. For

method of allocation into racial and ethnic categories and definitions of categories, refer to text note 22. Applications made jointly by a male and female are not tabulated here because they would not be directly comparable with applications made by one applicant or by two applicants of the same sex.

higher-priced lending; significant differences remain unexplained. Similar patterns are shown in racial or ethnic differences in denial rates.

The unexplained differences may stem from credit-related factors not available in the HMDA data, such as measures of credit history, LTV and DTI ratios, and differences in loan products. Differential costs of loan origination may also bear on the differences in pricing. Differences in pricing and underwriting outcomes may also reflect discriminatory treatment of minority groups. Further research is needed to assess the extent to which credit- or cost-related factors account for the unexplained differences in loan pricing and denial rates.

### CONCLUDING THOUGHTS

Much of the attention paid to the 2005 HMDA data will likely focus on loan pricing and, in particular, on the significant increase in the reported incidence of higher-priced lending relative to that reported in 2004. For example, the incidence of higher-priced lending for conventional first-lien home-purchase loans on owner-occupied, one- to four-family, site-built homes rose from 11.5 percent in 2004 to 24.6 percent in 2005. At least three effects contrib-

uted to this increased incidence of higher-priced lending.

The first effect was driven by the flattening of the yield curve and its relationship to fixed-rate loans. The gap between the APRs on thirty-year fixed-rate mortgages and the yield on the thirty-year Treasury security used to compute the threshold for higher-priced loan reporting under HMDA narrowed over the 2004–05 period. This narrowing was primarily driven by rising mortgage rates, though the yield on the thirty-year Treasury security did fall slightly during the period. This increase in mortgage rates affected all mortgage borrowers.

The second effect was a combination of the flattening of the yield curve and an artifact of the way APRs on adjustable-rate loans are determined. The APRs used to determine whether adjustable-rate loans met the threshold for being reported as higher priced under HMDA were artificially low in 2004 because of the nature of the formula used to construct APRs for such loans and the interest rate situation that prevailed during the year. By the beginning of 2005, this effect had been largely eliminated because of the flattening yield curve. For the same credit-risk characteristics, adjustable-rate loans would have had higher APRs in 2005 than in 2004, and consequently

some of them would have surpassed the HMDA threshold in 2005, whereas a loan with the same risk characteristics would not have been reported as higher priced in 2004.

The third factor influencing the incidence of higher-priced lending was borrower- or lender-specific and reflected changes in the risk characteristics of lending. Evidence indicates that changes in risk characteristics varied across geographic regions, largely because of substantial house-price appreciation in some locales, and likely caused more borrowers to stretch financially to obtain loans. The substantial growth in piggyback lending from 2004 to 2005—more than 84 percent—is consistent with financial stretching. Indeed, the increase in the number of higher-priced piggyback loans in 2005 accounted for more than half of the increase in the number of all higher-priced loans.

Allocating the increase in the incidence of higher-priced lending across these three effects is difficult. We estimate that 2 percentage points of the 13.1 percentage point increase in the incidence of higher-priced lending for conventional first-lien home-purchase loans on owner-occupied, one- to four-family, site-built homes can be attributed to the first effect, the narrowing of the gap between mortgage rates for fixed-rate loans and the HMDA price-reporting threshold. Although we are unable to estimate the share of the increased incidence attributable to the other two effects, our comparison of changes in the incidence of higher-priced lending in areas with different mixes of adjustable- and fixed-rate mortgages suggests that the second effect, the reduction in the distortion in the APR calculation for adjustable-rate loans, could be substantial.

## APPENDIX: REQUIREMENTS OF REGULATION C

Under the Home Mortgage Disclosure Act (HMDA), lenders use a “loan/application register” (HMDA/LAR) to report information annually to their federal supervisory agencies for each application and loan acted on during the calendar year. Lenders must make their HMDA/LARs available to the public by March 31 following the year to which the data relate, and they must remove the two date-related fields to help preserve applicants’ privacy.<sup>52</sup>

Only lenders that have offices (or, for nondepository institutions, are deemed to have offices) in metropolitan areas are required to report under

HMDA. However, if a lender is required to report, it must report information on all of its applications and loans in all locations, including nonmetropolitan areas.

The Federal Reserve Board’s Regulation C requires lenders to report the following information on home-purchase and home-improvement loans and on the refinancing of such loans:

### *For each application or loan*

- application date and the date an action was taken on the application
- action taken on the application
  - approved and originated
  - approved but not accepted by the applicant
  - denied (with the reasons for denial—voluntary for some lenders)
  - withdrawn by the applicant
  - file closed for incompleteness
- pre-approval program used (for home-purchase loans only)
- loan amount
- borrower income relied on in loan underwriting
- loan type
  - conventional
  - insured by the Federal Housing Administration
  - guaranteed by the Veterans Administration
  - backed by the Farm Service Agency or Rural Housing Service
- pre-approval status
- lien status
  - first lien
  - junior lien
  - unsecured
- loan purpose
  - home purchase
  - refinance
  - home improvement
- type of purchaser (if the lender subsequently sold the loan)

### *For each applicant or co-applicant*

- race
- ethnicity
- sex

### *For each property*

- location, by state, county, and census tract
- type
  - one- to four-family dwelling
  - manufactured home
  - multifamily property (dwelling with five or more units)

52. Lenders must make their date-modified register available to the public for a period of three years.

- occupancy status (owner-occupied or nonowner-occupied)

Information is also reported on home loans purchased by an institution during the calendar year. Under the

2002 revisions to Regulation C, additional items became subject to reporting beginning with the data collected for 2004.

# Financial Services Used by Small Businesses: Evidence from the 2003 Survey of Small Business Finances

*Traci L. Mach and John D. Wolken, of the Board's Division of Research and Statistics, prepared this article. Courtney M. Carter, John A. Holmes, and Lieu N. Hazelwood provided research assistance.*

Small businesses—nonfarm entities with fewer than 500 employees—are an integral part of the U.S. economy. They account for about half of private-sector output, employ more than half of private-sector workers, and have generated 60 percent to 80 percent of net new jobs annually over the past decade.<sup>1</sup> Given the significant role of small businesses in the national economy, understanding trends in the types and sources of financing they use is important for economic research and policymaking, especially because small businesses typically finance their operations quite differently than large corporations do. For example, a small business often relies on the personal resources and credit history of the firm's owners to access credit.

Newly available data from the Federal Reserve Board's 2003 Survey of Small Business Finances (SSBF) provide detailed information on the use of credit and other financial services by these firms. The SSBF is the most comprehensive source of information available on the characteristics of small businesses and their owners; no other survey provides the breadth and detail of information for a nationally representative sample of such firms. Moreover, policymakers and researchers can compare the newest SSBF data with results from the previous surveys, which cover 1987, 1993, and 1998. Most of the

changes reported in this article are for the period between the 1998 and 2003 surveys.<sup>2</sup>

The latest survey gathered data from 4,240 firms selected to be representative of small businesses operating in the United States at the end of 2003.<sup>3</sup> As in previous surveys, the data show that most businesses were very small and were located in urban areas. Also as in previous surveys, the percentage of firms involved in the provision of business and professional services increased somewhat, whereas the percentages of firms engaged in manufacturing and in retail and wholesale trade declined. Among firms that were corporations, those organized under subchapter S of the U.S. Internal Revenue Code (S corporations) continued to grow as a proportion of all small businesses relative to those organized under subchapter C (C corporations).<sup>4</sup>

2. The 1987 and 1993 surveys were called the National Survey of Small Business Finances. For summaries of the earlier surveys, refer to the following articles: Gregory E. Elliehausen and John D. Wolken (1990), "Banking Markets and the Use of Financial Services by Small and Medium-Sized Businesses," *Federal Reserve Bulletin*, vol. 76 (October), pp. 801–17; Rebel A. Cole and John D. Wolken (1995), "Financial Services Used by Small Businesses: Evidence from the 1993 National Survey of Small Business Finances," *Federal Reserve Bulletin*, vol. 81 (July), pp. 629–67; and Marianne P. Bitler, Alicia M. Robb, and John D. Wolken (2001), "Financial Services Used by Small Businesses: Evidence from the 1998 Survey of Small Business Finances," *Federal Reserve Bulletin*, vol. 87 (April), pp. 183–205. Information on the availability of the SSBF data as well as technical information, data from previous surveys, and a bibliography of research using the SSBF are available on the website of the Federal Reserve Board, at [www.federalreserve.gov/pubs/oss/oss3/nssbftoc.htm](http://www.federalreserve.gov/pubs/oss/oss3/nssbftoc.htm).

3. Interviewing began in mid-2004 and for the most part was completed by year-end. Firms were asked to report balance sheet and income data for the firm's fiscal year that ended between May 1, 2003, and April 30, 2004; other data were reported as of the date of the interview. Results from the 2003 survey are referred to in this article as 2003 data. Further information on the survey's methodology is in appendix A.

4. The organizational forms have different rules about liability and taxes. In sole proprietorships (hereafter, proprietorships) the owners receive all the income from the business and bear full liability for its obligations. Partnerships must have more than one owner. As in proprietorships, the partners receive all the income from the business and, in general, are fully liable for its obligations. Corporations are separate legal entities, and the owners' liability is limited to the amount of their original equity investment. The primary difference

1. These proportions are relative to the nonfarm sector and are from "Frequently Asked Questions" at the website of the U.S. Small Business Administration (SBA), Office of Advocacy, <http://app1.sba.gov/faqs/faqIndexAll.cfm?areaid=24>. For research purposes, the SBA Office of Advocacy defines a small business as an independent firm having fewer than 500 employees. For purposes of contracting with the federal government, small businesses are defined by the SBA Office of Size Standards, and the definition varies by industry and in some cases is by dollar value of sales or of assets rather than number of employees. This article will in some instances also use sales or assets to define subsets of small businesses.



The financial affairs of small business in 2003 were conducted in a financial marketplace whose elements—including regulations, technology, and organizational structures—have changed markedly since the Federal Reserve Board's first small business survey. For example, state and federal restrictions on interstate branching and banking have been relaxed, certain financial institutions are now permitted to offer a wider range of financial services, lenders employ complex credit-scoring models to evaluate would-be borrowers, and mergers and acquisitions have produced a financial industry with fewer but larger organizations.

In this changing financial marketplace, small businesses have been diversifying their providers of financial services. Nondepository institutions have become increasingly important sources of financial services to small businesses; more than half reported using nondepository sources in 2003, compared with about 40 percent in 1998. Among these sources, finance companies and leasing companies were important suppliers of credit and financial management services, especially for the largest small businesses, and brokerage firms were important suppliers of brokerage and trust and pension services. Nonetheless, commercial banks continued to be, by a wide margin, the supplier most commonly used by small businesses for checking and savings accounts, for loans other than leases and vehicle loans, and for financial management services other than brokerage and trust and pension services. They were the second most commonly reported provider of vehicle loans and trust and pension services.

The types of credit used by small businesses have also been changing. The percentage of firms that had outstanding vehicle loans and credit lines increased between the 1998 and 2003 surveys; the use of capital leases declined somewhat; and the use of equipment loans, mortgages, and other loans remained about the same. The use of personal credit cards for business purposes remained roughly constant, whereas the use of business credit cards increased substantially.

This article focuses on some of the major results from the 2003 SSBF for broad subgroups of small businesses.<sup>5</sup> Understanding and explaining many of

the findings may require a more-detailed and in-depth analysis than is possible in this article. To facilitate additional research, a micro-level data set for public use will be released shortly after the publication of this article.<sup>6</sup> These data will permit a rigorous analysis that takes into account characteristics of the businesses, their owners, and local banking markets. Researchers will be able to study many aspects of small business finance, including, for example, how the proximity of financial institutions affects the mix of financial products the firm uses, which characteristics of firms and owners affect the ability of small businesses to obtain credit, and how lending patterns vary with these characteristics.

### *ECONOMIC AND FINANCIAL SERVICES ENVIRONMENT*

In 1998 the economy was in its seventh year of sustained economic expansion. The annual unemployment rate had fallen to 4.5 percent; the consumer price index rose 1.6 percent, gross domestic product grew 4.4 percent, and productivity in the nonfarm business sector increased 2.7 percent.

In 2003 the economic climate for small businesses was quite different than in 1998. A recession in 2001 was followed by a sluggish recovery. By the end of 2003, the pace of economic activity was picking up, although many small businesses were likely still feeling some effects from the subpar performance in the preceding few years. Many small businesses had failed, and those that had weathered the period were probably facing declining revenues. Health-care costs had increased sharply, venture capital opportunities had declined, and banks had instituted new fees and raised existing fees and balance requirements. At the same time, interest rates in 2003 were lower than they had been in decades; these low rates made relatively low cost new loans available and provided opportunities for substantial savings from refinancing.

These differences in the overall economy between the two most recent surveys are reflected in the problems reported by firms (table 1). In 2003, poor sales topped the list, particularly among the smallest firms. In 1998, firms reported that their most important problems were competition from other firms and the quality of labor. The quality of labor remained a commonly reported concern in 2003, especially among firms with ten or more employees. The 2003 survey also recorded a marked increase in the percentage of

between the two types of corporations is how they are taxed: S corporations are not subject to corporate income tax, whereas C corporations are. S corporations are legally constrained to have fewer than seventy-five shareholders, are restricted to one class of stock, and must pass all firm income to the owners at the end of each fiscal year.

5. Space limitations prevent the inclusion of standard errors for all the statistics presented here. Although we do not directly address the statistical significance of the results, the article highlights findings that are significant or are interesting in a broader context.

6. The data will be available on the Federal Reserve Board's website, at [www.federalreserve.gov/pubs/oss/oss3/nssbftoc.htm](http://www.federalreserve.gov/pubs/oss/oss3/nssbftoc.htm)

## 1. Most important problem reported by small businesses, by number of employees in firm, 1998 and 2003 surveys

Percent

Problem	1998				2003			
	9 or fewer	10–49	50–99	100–499	9 or fewer	10–49	50–99	100–499
Taxes .....	7.2	5.5	2.8	4.0	5.4	6.1	1.5	2.9
Inflation .....	.4	.4	.3	.3	1.9	3.7	2.9	2.2
Poor sales .....	7.6	6.5	7.6	7.1	20.9	13.7	15.4	12.3
Financing and interest rates .....	6.9	6.7	4.2	3.2	6.5	3.5	3.0	1.5
Cost of labor .....	3.2	6.2	14.8	9.7	1.2	1.9	4.1	2.6
Government regulations and red tape ..	6.9	6.0	7.4	8.9	4.1	4.9	8.2	5.0
Competition from larger firms .....	11.0	12.6	9.7	15.6	3.3	4.5	5.1	4.0
Quality of labor .....	10.2	23.7	25.6	24.4	4.8	15.3	13.8	15.1
Cost and availability of insurance ....	2.3	2.5	.3	.1	8.5	14.9	13.7	14.6
Other .....	44.3	29.9	27.4	26.7	43.4	31.5	32.3	39.8
Total .....	100	100	100	100	100	100	100	100

NOTE: In this article, *number of employees* consists of full- and part-time workers, counted equally, and owners who work in the firm; it excludes workers employed temporarily or under other nonstandard work arrangements (refer to table 5). Here and in subsequent tables except as noted, percentages are weighted to adjust for differences in sampling and response rates; the weighted

data reflect the population of small businesses rather than sample measures (more information is available in the appendix). Also here and in subsequent tables, components may not sum to totals because of rounding, or because some firms did not answer or answered “Do not know,” or, in a few cases, because values for some variables are missing.

firms reporting the cost and availability of insurance as their most important problem.

### CHARACTERISTICS OF SMALL BUSINESSES

Like its predecessors, the 2003 SSBF collected a wide variety of information about firms and owners, including the firm’s size, primary industry, and organizational structure and the owners’ race, ethnicity, sex, and extent of participation in the firm (table 2).

The composition of small businesses has remained largely unchanged between the 1998 and 2003 surveys. The large majority continued to be very small and owner-managed. More than 80 percent of firms employed fewer than ten workers, and less than 3 percent employed fifty or more.<sup>7</sup> More than 70 percent of firms had annual sales of less than \$500,000, and more than 80 percent had assets of less than \$500,000. Finally, more than 85 percent conducted business out of a single location, and the vast majority of owners (94 percent) managed day-to-day activities themselves.

In 2003, 47 percent of all small businesses were corporations (31 percent were S corporations and 16 percent were C corporations), 45 percent were proprietorships, and the remaining 9 percent were partnerships. The proportion of S corporations relative to C corporations has grown since 1993, when they accounted for 20 percent and 30 percent, respectively, of all small businesses. A portion of this shift may be attributable to the Small Business Job Protec-

tion Act of 1996, which liberalized the rules for subchapter S qualification.<sup>8</sup>

Service industries (both business and professional services) accounted for the largest fraction—46 percent—of small businesses’ primary activities, and 18 percent of all firms were primarily in retail trade. This distribution is similar to that in 1998; between the two surveys, small increases were observed in business and professional services and small decreases in manufacturing and retail and wholesale trade.

The geographic distribution of the firms corresponded closely to the distribution of the population: 35 percent in the South, 24 percent in the West, 21 percent in the Midwest, and 20 percent in the Northeast.<sup>9</sup> About 79 percent of firms had their headquarters or main office in an urban area, and the remaining 21 percent were in rural areas. The vast majority of the firms (95 percent) conducted business primarily within the United States, and the remaining 5 percent operated internationally.

### Number and Ownership Shares of Small Business Owners

Information on the owners of the firm was collected differently for the 2003 survey than it had been

7. The number of employees includes paid and unpaid workers and owners who work in the firm; part-time and full-time workers are each counted as one. For example, if a total of two part-time workers, one full-time worker, and an owner work in the firm, the firm is considered to have four employees.

8. The act increased the number of permitted shareholders from thirty-five to seventy-five; allowed an “electing small business trust” with multiple beneficiaries to qualify as an S corporation shareholder; allowed charitable organizations and qualified retirement plans (but not individual retirement accounts) to be S corporation shareholders; and allowed corporations with subsidiaries to become S corporations (and provided that wholly owned subsidiaries could be considered part of the S corporation for federal income tax purposes).

9. In 2003, 36 percent of the population was in the South, 23 percent in the West, 22 percent in the Midwest and 19 percent in the Northeast. Geographic areas of the United States cited in this article are as defined by the U.S. Census Bureau ([www.census.gov/geo/www/us\\_regdiv.pdf](http://www.census.gov/geo/www/us_regdiv.pdf)).

## 2. Number and population proportion of small businesses in survey sample, by selected characteristics of firms, 2003 survey

Characteristic	Number in sample <sup>1</sup>	Percentage of population	MEMO 1998 percentage of population <sup>2</sup>
<b>All firms</b> .....	<b>4,240</b>	<b>100</b>	<b>100</b>
<i>Number of employees</i>			
0-1 .....	640	20.6	21.9
2-4 .....	1,167	40.0	41.5
5-9 .....	632	20.2	19.6
10-19 .....	389	10.6	8.8
20-49 .....	566	6.0	5.6
50-99 .....	444	1.7	1.6
100-499 .....	402	1.0	1.2
<i>Sales (thousands of dollars)</i>			
Less than 25 .....	430	14.6	16.3
25-49 .....	289	9.9	9.4
50-99 .....	350	11.6	14.3
100-249 .....	598	19.8	21.9
250-499 .....	459	14.3	13.3
500-999 .....	441	12.2	10.2
1,000-2,499 .....	532	10.0	8.1
2,500-4,999 .....	338	3.6	3.3
5,000-9,999 .....	319	2.3	1.6
10,000 or more .....	483	1.7	1.7
<i>Assets (thousands of dollars)</i>			
Less than 25 .....	934	31.3	34.8
25-49 .....	372	12.5	12.8
50-99 .....	447	13.5	14.2
100-249 .....	573	15.9	15.7
250-499 .....	401	10.0	9.0
500-999 .....	361	7.1	6.1
1,000-2,499 .....	439	5.8	4.3
2,500-4,999 .....	279	1.9	1.7
5,000 or more .....	434	2.0	1.4
<i>Organizational form</i>			
Proprietorship .....	1,347	44.5	49.4
Partnership .....	344	8.7	7.0
S corporation .....	1,548	31.0	23.9
C corporation .....	1,001	15.8	19.8
<i>Standard Industrial Classification</i>			
Construction and mining .....	440	11.8	11.9
Manufacturing .....	499	7.1	8.3
Transportation .....	171	3.8	3.7
Wholesale trade .....	288	5.9	7.2
Retail trade .....	821	18.4	19.0
Insurance and real estate .....	262	7.2	6.5
Business services .....	934	25.1	24.8
Professional services .....	823	20.7	18.5
<i>Years under current ownership</i>			
0-4 .....	686	20.6	22.4
5-9 .....	822	22.1	22.8
10-14 .....	666	16.0	19.2
15-19 .....	596	12.6	12.9
20-24 .....	512	10.9	8.9
25 or more .....	957	17.9	14.0

previously. In the past, characteristics of owners were collected only for the owner with the largest share, and respondents were asked whether a majority of firm owners were Hispanic, nonwhite, or female. The 2003 survey followed the lead taken by the U.S. Census Bureau in its Survey of Business Owners and collected demographic information on up to three owners.<sup>10</sup> Respondents were asked to report first on the individual with the largest ownership share (re-

10. Further information on the Census Bureau survey is available at [www.census.gov/sbo/index.html](http://www.census.gov/sbo/index.html).

## 2.—Continued

Characteristic	Number in sample <sup>1</sup>	Percentage of population	MEMO 1998 percentage of population <sup>2</sup>
<i>Census area of main office</i>			
Northeast .....	756	19.8	18.9
New England .....	247	6.0	5.2
Middle Atlantic .....	509	13.8	13.7
Midwest .....	1,015	21.1	21.8
East North Central .....	652	14.2	14.6
West North Central .....	363	6.9	7.2
South .....	1,386	34.7	32.7
South Atlantic .....	747	18.9	16.9
East South Central .....	231	5.3	5.5
West South Central .....	408	10.5	10.4
West .....	1,083	24.4	26.6
Mountain .....	344	7.6	6.6
Pacific .....	739	16.8	20.0
<i>Urbanization at main office</i>			
Urban .....	3,350	79.4	79.9
Rural .....	890	20.6	20.1
<i>Number of offices</i>			
One .....	3,235	86.0	87.8
Two .....	474	9.4	8.6
Three or more .....	531	4.6	3.6
<i>Sales area</i>			
Primarily within the United States .....	3,995	95.4	95.5
International or global <sup>3</sup> .....	245	4.6	4.5
<i>Management</i>			
By owner .....	3,794	94.3	92.5
Hired .....	387	5.8	7.5
<i>Race, ethnicity, and sex of majority owners</i>			
Nonwhite or Hispanic .....	484	13.1	14.6
Non-Hispanic white .....	3,697	86.6	85.4
White .....	3,853	91.0	90.7
Black .....	119	3.7	4.1
Asian, Native Hawaiian, or other Pacific Islander .....	170	4.2	4.4
American Indian or Alaska Native .....	58	1.3	.8
Hispanic .....	149	4.2	5.6
Non-Hispanic .....	4,032	95.8	94.4
Female .....	783	22.4	24.3
Male .....	2,923	64.8	72.0
Ownership divided equally by sex .....	475	12.8	3.7

1. Unweighted.

2. The percentages reported here are final and may differ slightly from the preliminary data reported in Bitler, Robb, and Wolken (2001), "Financial Services Used by Small Businesses."

3. *International* refers to sales areas outside the United States; *global* refers to combined U.S. and international sales areas.

ferred to in this article as the first owner); if that individual did not have a controlling interest in the company (an ownership share of at least 51 percent), information was also collected on up to two additional owners.

This new method confirmed the implicit assumption under which previous information was collected about firm owners: Small businesses are very closely held. The average firm had only three owners, and the owner with the largest share held an 81.5 percent interest in the firm (table 3). The largest differences in ownership dispersion of the firms can be seen across

### 3. Number of owners and average ownership shares of principal owners, by number of employees and organizational form of the firm, 2003 survey

Characteristic	Number of owners		Ownership share (percent)	
	Median	Average	First owner	Second owner
<b>All firms</b> .....	<b>1</b>	<b>3.0</b>	<b>81.5</b>	<b>44.3</b>
<i>Number of employees</i>				
0–1 .....	1	1.2	94.6	48.3
2–4 .....	1	1.6	82.5	46.5
5–19 .....	2	2.4	75.2	44.0
20–49 .....	2	8.7	69.7	38.6
50–99 .....	2	43.8	66.2	35.9
100–499 .....	3	13.0	62.9	30.2
<i>Organizational form</i>				
Proprietorship .....	1	1.2	93.6	50.0
Partnership .....	2	2.9	52.3	42.9
S corporation .....	2	2.0	76.6	44.5
C corporation .....	2	10.2	73.0	41.0

NOTE: The survey designates the owner with the largest share as the first owner, and the owner with the second-largest share as the second owner.

organizational type and firm size. Among partnerships, the average firm had 2.9 owners, and the partner with the largest share controlled 52.3 percent of the firm. Compared with partnerships, C corporations had more owners (10.2 on average), but the largest owner held a larger share of the firm (73.0 percent). S corporations had 2 owners on average, with the largest shareholder controlling 76.6 percent of the firm.

The average number of owners increased with the number of employees: The smallest firms (0–1 employees) had an average of 1.2 owners; intermediate-sized firms (5–19 employees and 20–49 employees) had 2.4 and 8.7 owners respectively; and the largest firms (100–499 employees) had 13 owners. The ownership share of the first owner decreased as the number of owners increased, from 94.6 percent among the smallest firms to 62.9 percent among the largest.

### Race, Ethnicity, and Sex of Small Business Owners

The race, ethnicity, and sex of the ownership of a small business in the survey were defined by the weighted sum of the characteristics of the firms' owners.<sup>11</sup> Unlike in previous years, owners were allowed to identify themselves as being of more than one race, and therefore firms could be classified as being of more than one race. For firms in which less than 100 percent of the ownership was reported, characteristics were scaled up by a factor that made the reported ownership equal 100 percent. If the

11. Characteristics of each owner were weighted by the owner's share in the business.

characteristic was 51 percent or more, the firm was determined to be of that group.<sup>12</sup>

In 2003, 13.1 percent of firms were owned by nonwhite or Hispanic individuals (table 2); the share is statistically lower than that recorded by the 1998 survey (14.6 percent). The shares for nonwhite groups alone did not change by a statistically significant amount: The share for blacks and the share for Asians each held at roughly 4 percent;<sup>13</sup> the share for American Indians and Alaska Natives held at roughly 1 percent. However, the share of Hispanic-owned firms fell a statistically significant amount, from 5.6 percent to 4.2 percent (refer to appendix B for a discussion of changes in the estimated rates of non-white and Hispanic ownership).

The largest change in ownership composition in 2003 was among firms owned equally by males and females. The proportion of such firms rose sharply, from 3.7 percent in 1998 to 12.8 percent in 2003, although part of this increase may stem from changes in how the question was asked.<sup>14</sup> This increase is reflected in the decline in the percentage of firms that were owned by males, from 72.0 percent to 64.8 percent; the percentage of firms owned by females also declined between the two surveys, but much less—from 24.3 percent to 22.4 percent.

Firms owned by females, nonwhites, or Hispanics differed in several ways from firms owned by males, whites, or non-Hispanics (table A.1). As seen in

12. For example, consider a firm in which the total reported shares summed to 75 percent. The largest owner held 40 percent of the firm and identified himself as both white and nonblack, as Hispanic, and as male; the second owner held 25 percent of the firm and identified herself as both white and black, as non-Hispanic, and as female; and the third owner held 10 percent of the firm and identified himself as both nonwhite and black, as non-Hispanic, and as male. The ownership-weighted characteristics of the owners were 87 percent white, 46 percent black, 53 percent Hispanic, and 67 percent male. The firm would be deemed to be white, Hispanic, and male (but not black because the ownership-weighted percentage of black ownership was less than 51 percent). Here is how the firm's share of Hispanic ownership would be calculated in this example:

$$[(1 \times .40) + (0 \times .25) + (0 \times .10)] \times (1/.75) \times 100 = 53 \text{ percent.}$$

The first term,  $1 \times .40$ , is the product of an indicator of the first owner's Hispanic status (1, indicating Hispanic) times the first owner's share (40 percent). The second term is the product of an indicator of the second owner's Hispanic status (0, indicating non-Hispanic) times the second owner's share, and the third term is the product of an indicator of the third owner's Hispanic status times the third owner's share. The sum of the three terms are then multiplied by the reciprocal of the total shares reported  $(.40 + .25 + .10) = .75$  so that the total shares will sum to 100 percent. Last, the adjusted sum is multiplied by 100 to convert the value to percent.

13. Throughout this article, the term "Asian" is used for convenience to refer to individuals who characterized themselves as being in the category "Asian, Native Hawaiian, or other Pacific Islander."

14. This increase is likely to be at least partially attributable to the fact that equal ownership was a "volunteered" response rather than specifically asked about in 1998. In 2003 this statistic was derived from the reported ownership shares.



#### 4. Use of computers by small businesses and type of use, by number of employees, industry, and age of firm, 1998 and 2003 surveys

Percent

Characteristic	1998						2003					
	Uses computers	Type of use among users					Uses computers	Type of use among users				
		Online banking	Internet access	Applications for loans or credit	Administration	Other		Online banking	Internet access	Applications for loans or credit	Administration	Other
<b>All firms .....</b>	<b>76.2</b>	<b>15.0</b>	<b>75.3</b>	<b>5.3</b>	<b>95.8</b>	<b>45.6</b>	<b>85.9</b>	<b>46.8</b>	<b>90.9</b>	<b>12.9</b>	<b>96.6</b>	<b>77.0</b>
<i>Number of employees</i>												
0–1 .....	63.2	17.4	74.6	5.8	95.1	46.2	80.3	42.4	88.7	12.1	95.0	73.0
2–4 .....	72.3	12.2	74.6	4.9	94.4	43.6	82.1	42.3	89.9	12.4	95.2	74.4
5–19 .....	86.5	14.1	73.5	5.8	97.0	46.3	91.2	49.3	91.9	13.5	98.4	80.2
20–49 .....	94.1	19.1	81.8	4.5	97.9	51.5	97.6	61.6	94.5	15.3	99.2	83.3
50–99 .....	94.2	34.6	89.4	2.8	98.8	48.2	98.3	65.1	97.3	12.4	99.4	83.9
100–499 .....	96.5	36.9	91.0	3.6	99.5	47.3	100.0	77.7	98.9	13.4	99.2	90.1
<i>Standard Industrial Classification</i>												
Construction and mining ..	67.9	11.9	72.3	3.0	97.4	29.5	85.3	42.2	87.0	9.4	97.4	65.3
Manufacturing .....	87.6	16.5	75.7	3.9	92.7	51.1	90.7	54.1	99.1	14.0	96.4	84.3
Transportation .....	85.1	25.8	75.1	5.2	97.9	46.4	82.1	43.1	81.4	14.0	98.8	69.1
Wholesale trade .....	84.6	17.4	72.6	5.3	98.0	50.9	90.9	48.9	88.9	12.5	96.5	70.2
Retail trade .....	61.4	10.3	66.7	5.7	95.3	45.3	73.2	47.4	87.0	13.4	98.2	75.1
Insurance and real estate ..	90.1	18.2	83.5	5.4	96.1	38.3	94.7	47.3	96.1	14.6	98.6	80.2
Business services .....	70.4	16.3	73.2	5.9	96.2	51.9	83.0	50.0	90.7	13.5	93.1	81.0
Professional services .....	89.5	13.9	82.7	6.0	94.8	45.1	95.7	42.7	93.6	12.9	97.9	79.6
<i>Years under current ownership</i>												
0–4 .....	78.3	14.1	77.0	7.5	94.5	51.6	87.9	56.2	92.8	15.8	97.1	80.0
5–9 .....	78.3	15.7	78.9	5.6	96.1	48.3	88.5	49.7	91.0	12.7	97.3	76.5
10–14 .....	77.5	14.6	74.4	4.0	94.9	45.5	84.8	44.9	93.7	13.7	96.3	78.3
15–19 .....	76.6	16.1	77.7	4.4	96.1	42.1	85.9	46.1	93.8	14.4	96.1	79.8
20–24 .....	76.6	15.2	72.1	3.3	97.0	40.8	88.1	40.4	86.3	8.9	96.5	74.9
25 or more .....	65.6	14.8	65.3	4.7	97.8	36.0	79.2	36.9	86.6	10.6	95.8	71.4

previous surveys, the female-owned firms tended to be younger and smaller in terms of employment, sales, and assets than those owned by males. They were also more likely to organize as proprietorships and less likely to organize as S corporations than male-owned firms. Female-owned firms were more likely to be engaged in professional and business services than male-owned firms and less likely to be engaged in construction, mining, and manufacturing.

Relative to white, non-Hispanic firms, nonwhite or Hispanic firms were younger and smaller in employment, sales, and assets and were more often organized as proprietorships. Similarly, nonwhite or Hispanic firms were also more likely to be engaged in business services and less likely to be engaged in construction and mining and insurance and real estate businesses.

#### Computer Use within the Firm

Use of a computer within a firm is one indicator of the extent of the firm's adoption of technological advances. In the 1998 survey, which was the first SSBF to ask firms about their use of computers, 76.2 percent reported using them (table 4). By 2003, the proportion had increased to 85.9 percent. Among the firms using computers, the proportion that used them for online banking rose between the two surveys from 15.0 percent to 46.8 percent; likewise, the proportion

that used computers to apply for credit or loans also rose substantially, from 5.3 percent to 12.9 percent.

With the rise in prevalence of computer use came a rise in incidence and a narrowing in the variation of incidence across firm age and size. For example although the incidence of use still varied with the number of employees, the range in 2003—80 percent to 100 percent—was higher and narrower than that in 1998—63 percent to 97 percent. And although incidence of use varies inversely with firm age, the range of incidence by age also rose and narrowed between the two surveys.

#### Nonstandard Work Arrangements

The use of nonstandard work arrangements has been on the rise since at least the mid-1990s. For example, estimates from the February 1995 Current Population Survey indicate that 12.1 million workers (or 9.8 percent of the total) were independent contractors, on-call workers, temporary agency workers, or workers provided through contract firms.<sup>15</sup> By 2005, estimates indicate that 14.8 million workers, or 10.7

15. Anne E. Polivka (1996), "Contingent and Alternative Work Arrangements, Defined," *Monthly Labor Review*, October, pp. 3–9. The Current Population Survey, conducted monthly by the U.S. Census Bureau for the U.S. Bureau of Labor Statistics, covers about 50,000 households ([www.bls.census.gov/cps/cpsmain.htm](http://www.bls.census.gov/cps/cpsmain.htm)).



### 5. Use of nonstandard work arrangements by small businesses during a typical pay period, and types of arrangements, by number of employees and industry, 2003 survey

Percent except as noted

Characteristic	Any nonstandard arrangement	Paid day laborers	Temporary agency employees	Leased employees	Contractors or consultants	Average number of nonstandard employees
<b>All firms .....</b>	<b>45.7</b>	<b>9.8</b>	<b>7.6</b>	<b>2.9</b>	<b>40.2</b>	<b>4.9</b>
<i>Number of employees</i>						
0-1 .....	33.6	6.9	2.5	1.5	30.0	4.1
2-4 .....	43.8	10.9	4.2	1.8	39.0	3.3
5-19 .....	52.3	10.4	11.0	4.3	45.7	4.4
20-49 .....	57.0	10.5	18.3	5.6	48.8	7.6
50-99 .....	62.0	7.3	28.4	6.8	52.4	23.1
100-499 .....	74.6	10.3	38.6	8.9	59.1	21.9
<i>Standard Industrial Classification</i>						
Construction and mining .....	69.4	19.4	10.4	4.4	62.1	5.1
Manufacturing .....	50.7	7.8	14.2	2.1	42.6	4.5
Transportation .....	56.1	8.3	7.1	6.1	52.3	5.3
Wholesale trade .....	43.3	9.2	12.1	2.7	32.6	3.6
Retail trade .....	30.8	9.2	4.6	2.2	25.4	4.7
Insurance and real estate .....	56.0	9.2	6.3	2.8	52.2	6.0
Business services .....	41.7	10.5	6.1	2.9	37.0	5.9
Professional services .....	44.0	5.6	7.5	2.3	40.0	3.5

percent of total employment, fell into one of these groups.<sup>16</sup>

For the 2003 survey, the SSBF asked respondents for the first time about the use of nonstandard work arrangements. After a series of questions on the use of standard employees (both paid and unpaid), respondents were asked whether, during a typical pay period, they used any paid day laborers, temporary agency employees, workers from an employee-leasing firm, or contractors. About half of the firms reported using at least one of these arrangements.

The use of nonstandard work arrangements varied substantially by firm size. In general, the larger the firm, the more likely it was to have employed at least one worker in each of the nonstandard arrangements (table 5). Across all firm sizes, contractors and consultants were the most common types of nonstandard workers reported, a result consistent with statistics calculated from the employee side (refer to text notes 15 and 16). About 30 percent of the smallest firms used contractors and consultants, and about 59 percent of the very largest firms did so. Among firms using any nonstandard workers, the number generally increased with firm size.

The use of nonstandard work arrangements varied substantially by firm industry. At the extremes, nearly 70 percent of firms involved in construction and mining reported some type of nonstandard arrangement, whereas only 31 percent of retail trade firms reported doing so. Across all industries, contractors and consultants again were the most common types of nonstandard workers reported; by industry, the pro-

portion of firms that used contractors and consultants ranged from 25 percent in retail trade to 62 percent in construction and mining.

### TYPES OF FINANCIAL SERVICES USED BY SMALL BUSINESSES

Firms were asked which of fourteen financial services they used at up to twenty institutions.<sup>17</sup> The financial services can be grouped into three broad categories: (1) *liquid asset accounts*, which are checking and savings-type accounts, (2) *credit lines, loans, and capital leases*, which are lines of credit, mortgages used for business purposes, motor vehicle loans, equipment loans, capital leases, and miscellaneous or "other" loans, and (3) *financial management services*, which are transaction services, credit card and debit card processing services, cash management services, credit-related services, brokerage services, and trust and pension services. *Loans from owners, credit cards, and trade credit* are discussed separately and are not included in the tabulations for "any financial service" because no information was collected about the providers of these services.

Nearly all small businesses (about 96 percent) used at least one financial service in 2003, a finding

16. U.S. Bureau of Labor Statistics (2005), "Contingent and Alternative Employment Arrangements, February 2005," press release, July 27, [www.bls.gov/news.release/conemp.nr0.htm](http://www.bls.gov/news.release/conemp.nr0.htm).

17. For this article, use of a financial service was measured by the percentage of small businesses using that service. Data on use that are based on dollar amounts or numbers of accounts will be available at a later date. However, previous analysis has shown that conclusions based on dollar amounts or on number of accounts are usually qualitatively very similar to conclusions based on percentages of firms. Further discussion is in Rebel A. Cole, John D. Wolken, and R. Louise Woodburn (1996), "Bank and Nonbank Competition for Small Business Credit: Evidence from the 1987 and 1993 National Surveys of Small Business Finances," *Federal Reserve Bulletin*, vol. 83 (November), pp. 983-95.

## 6. Use of selected financial services by small businesses, by selected characteristics of firms, 2003 survey

A. Any service; liquid asset accounts; credit lines, loans, and capital leases

Percent

Characteristic	Any service <sup>1</sup>	Liquid asset account			Credit line, loan, or capital lease						
		Any	Checking	Savings	Any	Credit line	Loan			Capital lease	Other
							Mortgage	Vehicle	Equipment		
<b>All firms</b>											
2003 .....	96.4	95.0	94.6	22.1	60.4	34.3	13.3	25.5	10.3	8.7	10.1
1998 .....	96.1	94.4	94.0	22.2	55.0	27.7	13.2	20.5	9.9	10.6	9.8
<i>Number of employees</i>											
0-1 .....	88.9	85.9	85.0	15.4	42.1	19.4	5.6	17.4	4.3	4.0	7.1
2-4 .....	96.9	95.1	94.8	18.6	53.9	27.2	12.6	22.0	5.2	6.6	7.1
5-9 .....	99.8	99.4	99.2	25.7	72.7	43.1	15.8	30.8	13.6	11.6	13.3
10-19 .....	100.0	99.8	99.8	30.9	77.4	50.2	19.2	35.9	21.1	12.1	16.5
20-49 .....	100.0	99.9	99.9	33.3	82.7	57.5	21.4	36.2	26.3	16.0	15.7
50-99 .....	100.0	98.7	98.5	41.1	87.4	68.0	18.6	36.5	27.6	22.9	16.5
100-499 .....	100.0	100.0	100.0	36.5	93.8	82.3	28.0	35.9	32.6	27.9	18.6
<i>Sales (thousands of dollars)</i>											
Less than 25 .....	81.4	76.7	75.3	10.8	29.4	12.3	5.3	10.2	*	*	6.0
25-49 .....	97.2	94.1	93.7	19.6	45.6	14.1	8.9	17.3	*	5.8	8.9
50-99 .....	97.6	96.7	96.2	16.7	49.5	24.2	10.1	23.0	7.4	3.6	5.3
100-249 .....	98.9	98.3	98.3	19.1	59.9	29.2	13.3	21.9	8.0	9.1	9.1
250-499 .....	99.6	99.2	98.9	22.9	70.7	39.8	19.1	27.9	10.0	10.4	12.5
500-999 .....	100.0	99.4	99.4	27.4	80.0	47.8	15.6	38.7	16.7	12.9	14.4
1,000-2,499 .....	100.0	99.0	99.0	37.2	76.4	56.6	18.9	35.5	21.4	13.1	12.5
2,500-4,999 .....	100.0	99.2	99.1	30.3	79.9	65.2	14.6	37.2	19.1	15.1	15.0
5,000-9,999 .....	100.0	100.0	100.0	34.7	90.4	65.6	22.3	49.4	28.4	16.3	14.1
10,000 or more .....	100.0	99.8	99.8	39.1	90.7	83.8	16.3	33.3	23.2	20.9	18.1
<i>Assets (thousands of dollars)</i>											
Less than 25 .....	90.0	86.8	86.2	13.3	39.0	16.2	4.3	16.2	3.3	5.2	6.1
25-49 .....	98.2	97.9	97.7	17.4	57.2	31.0	6.8	23.5	6.5	8.3	5.5
50-99 .....	99.8	98.5	98.0	22.9	66.2	32.8	13.8	26.9	9.1	9.4	13.4
100-249 .....	99.1	98.4	98.4	25.9	67.2	37.1	16.3	31.4	12.5	7.9	10.3
250-499 .....	99.7	99.1	98.6	29.7	78.1	48.5	22.4	32.3	17.6	12.3	12.9
500-999 .....	100.0	99.7	99.7	27.5	79.0	55.7	23.8	30.5	16.5	12.0	19.7
1,000-2,499 .....	100.0	100.0	100.0	38.7	82.1	62.2	27.3	39.5	24.6	12.5	12.2
2,500-4,999 .....	100.0	96.0	95.9	41.8	88.1	64.8	27.6	34.5	26.7	20.6	21.4
5,000 or more .....	100.0	100.0	100.0	32.8	80.3	66.6	28.8	28.0	17.9	15.9	14.0
<i>Organizational form</i>											
Proprietorship .....	93.0	90.5	89.9	17.2	52.4	24.2	11.1	21.5	6.9	5.5	9.5
Partnership .....	97.3	95.7	95.7	22.1	57.1	28.7	20.5	20.4	10.4	8.9	6.2
S corporation .....	99.5	98.9	98.8	24.1	70.0	43.8	15.4	31.3	11.9	11.7	12.5
C corporation .....	99.6	99.4	99.1	32.1	66.2	47.2	11.3	28.2	16.6	12.0	9.7
<i>Standard Industrial Classification</i>											
Construction and mining .....	96.5	95.0	95.0	23.9	70.8	44.6	13.6	43.9	16.5	6.3	7.5
Manufacturing .....	97.7	97.2	96.9	27.3	70.0	47.8	18.0	27.3	17.6	10.9	10.5
Transportation .....	99.5	98.3	98.3	31.3	79.1	36.5	9.5	42.9	16.0	9.3	20.0
Wholesale trade .....	98.8	96.7	96.3	22.7	62.6	49.5	13.1	30.1	7.1	7.8	9.6
Retail trade .....	97.4	96.3	96.3	17.6	58.9	32.8	14.7	19.7	9.2	7.3	14.0
Insurance and real estate .....	96.3	95.5	95.1	28.6	59.2	28.8	23.1	21.1	*	5.3	5.4
Business services .....	94.9	93.2	92.4	19.9	56.4	28.4	11.2	25.0	7.9	7.4	10.1
Professional services .....	95.9	93.9	93.5	22.0	54.1	29.4	10.1	17.3	10.2	13.5	8.1
<i>Years under current ownership</i>											
0-4 .....	96.1	94.3	93.8	16.8	61.8	30.2	13.3	21.2	7.0	11.0	15.4
5-9 .....	95.8	94.4	93.9	20.0	60.0	30.2	11.7	24.9	11.1	7.1	12.8
10-14 .....	98.1	96.5	96.1	25.7	60.4	35.1	14.6	28.0	10.8	10.4	7.7
15-19 .....	94.7	92.5	92.4	20.3	61.4	40.0	12.5	28.8	11.4	9.4	7.5
20-24 .....	96.0	94.6	94.6	22.8	58.1	33.9	13.7	25.2	12.6	8.4	5.4
25 or more .....	97.8	97.0	96.8	28.6	60.2	39.3	14.5	26.9	10.4	6.3	7.7

essentially the same as in 1998 (table 6.A). In general, use increased with firm size, and nearly all firms with at least five employees, or with sales of at least \$250,000, or with assets of at least \$50,000 used some financial service. About 11 percent of firms with one worker used no financial service in 2003.<sup>18</sup>

Proprietorships were less likely than corporations or partnerships to use any financial service. The difference may be due to the tendency of many proprietorships to commingle business and personal finances; for example, the owners may use personal

18. An alternative to incidence as a measure of intensity of use is the number of distinct services (which range from 0 to 14 for each source)

across all financial suppliers for each firm. The average number of services used by small businesses in 2003 was 3.9. One-half of the firms used 3 or fewer services, one-third used 2 or fewer, one-fourth used 5 or more, and 2.5 percent used 10 or more.

## 6.—Continued

A. Any service; liquid asset accounts; credit lines, loans, and capital leases  
Percent

Characteristic	Any service <sup>1</sup>	Liquid asset account			Credit line, loan, or capital lease						
		Any	Checking	Savings	Any	Credit line	Loan			Capital lease	Other
							Mortgage	Vehicle	Equipment		
<i>Census area of main office</i>											
Northeast .....	95.5	94.9	94.9	19.2	57.8	33.8	11.5	21.4	9.1	7.6	9.6
New England .....	97.9	97.5	97.5	18.3	62.3	35.5	13.6	28.2	10.8	6.9	10.7
Middle Atlantic .....	94.4	93.8	93.8	19.7	55.9	33.0	10.6	18.5	8.3	7.9	9.2
Midwest .....	98.4	96.5	96.1	26.8	67.0	41.1	17.1	26.5	12.3	9.6	9.7
East North Central .....	98.0	95.8	95.3	26.3	67.1	39.4	19.2	25.7	10.6	10.1	11.0
West North Central .....	99.3	98.1	97.8	27.8	66.7	44.4	12.9	28.2	15.9	8.5	7.0
South .....	96.5	94.7	94.1	17.7	61.8	31.9	14.1	28.9	10.4	7.8	10.5
South Atlantic .....	97.5	95.9	94.8	17.6	63.9	31.3	13.9	32.0	10.5	8.5	9.1
East South Central .....	94.9	93.1	93.1	20.9	57.0	31.0	9.2	21.3	9.5	6.4	14.9
West South Central .....	95.5	93.3	93.3	16.2	60.5	33.3	16.8	27.1	10.7	7.4	10.9
West .....	95.4	94.1	93.8	26.8	54.8	32.2	10.2	23.1	9.4	10.0	10.3
Mountain .....	95.6	94.2	93.8	23.4	62.4	36.4	14.5	28.9	11.9	9.2	14.1
Pacific .....	95.4	94.0	93.8	28.4	51.4	30.3	8.3	20.5	8.2	10.4	8.6
<i>Urbanization at main office</i>											
Urban .....	96.5	95.0	94.6	22.4	60.2	33.8	12.2	24.9	9.4	9.4	10.1
Rural .....	96.2	95.1	94.9	21.3	61.5	36.2	17.6	27.9	13.7	6.0	10.4
<i>Number of offices</i>											
One .....	95.9	94.4	94.0	21.0	58.1	31.8	12.9	24.9	9.7	7.7	9.0
Two .....	99.2	98.4	98.1	27.5	70.4	45.5	13.2	27.4	11.5	14.1	18.5
Three or more .....	100.0	99.2	99.2	32.7	82.7	56.8	21.0	33.9	18.4	17.2	14.8
<i>Sales area</i>											
Primarily within the United States .....	96.4	95.0	94.6	22.1	60.8	34.4	13.5	25.7	10.4	8.7	10.1
International or global .....	97.1	94.3	94.3	23.8	51.8	32.2	8.4	22.6	8.6	8.7	11.5
<i>Management</i>											
By owner .....	96.2	94.7	94.3	21.5	59.9	34.1	12.7	25.5	10.1	8.4	10.0
Hired .....	99.9	99.9	99.9	31.8	68.3	35.1	21.5	26.5	13.7	12.6	11.6
<i>Race, ethnicity, and sex of majority owners</i>											
Nonwhite or Hispanic .....	95.5	92.8	92.0	17.8	54.8	25.6	11.6	25.7	5.5	5.9	12.5
Non-Hispanic white .....	96.5	95.3	95.0	22.8	60.9	35.5	13.3	25.4	11.0	9.0	9.6
White .....	96.5	95.1	94.8	22.5	61.0	35.4	13.1	25.7	10.7	8.9	9.6
Black .....	91.7	89.8	88.0	19.5	47.5	12.1	10.6	25.4	*	8.9	11.9
Asian, Native Hawaiian, or other Pacific Islander .....	99.1	97.4	97.4	17.6	52.4	28.1	12.8	19.5	6.3	*	14.9
American Indian or Alaska Native .....	92.7	90.9	88.5	*	63.1	35.5	*	28.2	*	*	*
Hispanic .....	94.9	90.4	90.4	17.5	61.1	31.6	13.6	33.3	5.8	6.7	11.9
Non-Hispanic .....	96.5	95.2	94.8	22.3	60.3	34.3	13.2	25.2	10.5	8.8	10.0
Female .....	92.3	89.6	89.0	19.9	47.6	23.4	10.7	19.6	8.4	7.2	7.3
Male .....	97.4	96.3	96.0	22.0	64.4	38.1	13.0	27.7	11.0	9.1	11.1
Ownership divided equally by sex .....	98.6	97.8	97.6	26.3	62.3	32.9	18.8	25.1	10.1	9.0	10.1

NOTE: For definitions of services, refer to text; for definition of sales areas, refer to table 2, note 3.

1. Memo items in table 6.B are excluded from these data.

\*Fewer than fifteen observations.

savings and checking accounts for business purposes.<sup>19</sup> Also, firms whose ownership was black, American Indian or Alaska Native, Hispanic, or female were less likely to use any financial service than were firms whose ownership was white, non-Hispanic, or male.

19. Respondents were asked to count as a business service any personal account that was used at least 50 percent of the time for business purposes. Most of the firms that reported using no financial services were extremely small; it is possible that the owners of those firms used personal accounts for business purposes but did so less than 50 percent of the time.

### Liquid Asset Services

Most small businesses (95 percent) had a checking account in 2003, the same percentage as used any liquid asset account, that is, a checking or savings account (table 6.A).<sup>20</sup> Because a checking account

20. Checking accounts were defined as accounts with unlimited check-writing privileges and included those in credit unions (share draft accounts). Money market accounts, including money market deposit accounts, were considered to be checking accounts only if they offered unlimited check-writing privileges. Savings accounts were defined as passbook savings, credit union share accounts, certificates

## 6. Use of selected financial services by small businesses, by selected characteristics of firms, 2003 survey

## B. Financial management services

Percent

Characteristic	Financial management service							MEMO				
	Any	Trans- action	Credit and debit card processing	Cash manage- ment	Credit- related	Brokerage	Trust and pension	Nontraditional credit				Traditional and non- traditional credit
								Loan from owner	Credit card		Trade credit	
									Personal	Business		
<i>All firms</i>												
2003 .....	64.7	38.9	37.2	6.7	5.0	5.6	17.2	30.3	46.7	48.1	60.1	92.9
1998 .....	49.8	41.1	n.a.	5.2	3.1	4.3	12.6	28.1	46.0	34.1	61.9	89.5
<i>Number of employees</i>												
0–1 .....	41.5	25.2	16.1	2.7	*	2.6	8.0	25.7	48.6	32.0	35.7	83.8
2–4 .....	59.6	35.0	33.7	3.8	4.1	5.0	10.3	27.0	48.1	45.7	55.9	93.3
5–9 .....	77.4	45.1	47.9	8.3	6.9	7.9	20.5	33.3	47.8	56.8	71.6	96.6
10–19 .....	84.4	49.9	57.3	8.1	4.9	7.0	29.2	31.3	45.6	59.7	80.4	97.3
20–49 .....	90.1	61.0	56.3	15.6	9.0	7.1	41.9	36.0	34.4	61.8	85.0	99.8
50–99 .....	88.3	61.3	51.5	37.8	15.8	12.8	59.5	32.9	34.6	63.5	88.5	98.3
100–499 .....	96.1	70.3	50.2	50.1	26.7	13.3	68.4	28.4	32.2	71.5	85.4	98.9
<i>Sales (thousands of dollars)</i>												
Less than 25 .....	36.3	23.2	15.4	*	*	*	*	22.3	48.1	25.7	27.7	79.2
25–49 .....	49.7	30.5	24.5	*	*	*	7.5	33.5	51.7	34.1	40.2	89.2
50–99 .....	49.6	29.1	25.6	*	*	*	10.5	34.9	46.5	41.0	46.3	91.4
100–249 .....	62.6	34.3	37.5	3.7	4.6	4.4	10.1	28.1	49.9	48.2	61.0	94.5
250–499 .....	74.7	43.9	48.3	7.4	4.2	6.7	15.6	27.7	49.4	54.9	70.0	96.3
500–999 .....	81.2	49.4	53.9	8.4	7.6	7.1	20.7	27.7	44.1	62.5	82.2	98.4
1,000–2,499 .....	87.2	51.8	48.8	9.2	5.9	9.4	40.5	36.3	40.9	63.6	79.3	98.7
2,500–4,999 .....	92.2	58.4	56.7	17.2	15.1	12.6	47.6	38.7	39.7	61.9	87.6	100.0
5,000–9,999 .....	91.7	65.2	39.2	19.7	14.1	15.7	52.6	26.9	30.8	63.3	83.6	99.5
10,000 or more .....	94.9	75.2	50.4	50.5	27.5	17.9	68.4	30.0	35.8	68.9	89.8	99.9
<i>Assets (thousands of dollars)</i>												
Less than 25 .....	43.2	25.1	20.8	2.7	*	2.4	6.5	23.8	47.3	35.9	38.4	85.5
25–49 .....	60.3	37.0	32.3	*	*	*	11.6	28.1	47.4	48.1	57.6	93.5
50–99 .....	70.5	42.6	43.5	4.2	3.5	5.3	14.8	28.1	51.4	47.5	64.8	95.4
100–249 .....	75.5	42.7	48.9	5.7	5.5	7.4	18.7	31.5	43.8	53.4	68.1	96.0
250–499 .....	77.4	43.7	48.6	8.5	6.4	9.2	23.3	34.1	43.8	61.4	76.2	98.9
500–999 .....	84.9	52.1	52.2	7.5	11.8	10.1	30.0	37.8	47.7	53.6	76.2	96.7
1,000–2,499 .....	83.0	53.2	48.8	16.4	13.5	9.7	37.4	31.8	50.5	64.7	84.5	99.0
2,500–4,999 .....	88.2	62.7	49.3	22.2	19.6	12.2	48.1	30.3	35.5	61.9	86.0	99.1
5,000 or more .....	95.5	78.6	36.3	51.5	25.3	16.1	56.7	34.6	33.6	55.8	85.2	98.5
<i>Organizational form</i>												
Proprietorship .....	52.3	30.4	28.3	3.1	2.1	3.5	10.1	25.2	52.3	35.1	46.9	88.3
Partnership .....	70.4	44.4	34.7	7.6	6.6	9.5	13.1	25.2	41.7	46.9	58.5	93.9
S corporation .....	74.9	45.6	47.1	8.5	6.8	5.5	22.4	31.3	43.6	61.6	71.2	97.4
C corporation .....	76.8	46.9	44.5	12.6	8.6	9.7	29.0	31.1	39.6	58.9	76.1	96.8
<i>Standard Industrial Classification</i>												
Construction and mining .....	45.5	28.4	13.9	4.2	6.1	3.1	15.2	28.3	44.7	52.1	80.5	95.0
Manufacturing .....	67.2	45.1	36.5	10.0	11.9	5.1	19.7	39.8	47.1	54.8	76.0	97.0
Transportation .....	56.7	33.5	37.5	8.4	13.2	*	14.0	28.3	41.4	51.8	60.7	96.9
Wholesale trade .....	73.6	44.6	48.2	7.5	8.2	5.9	22.5	34.1	46.7	54.4	72.2	94.1
Retail trade .....	82.4	46.8	72.1	4.9	3.4	2.4	11.5	38.2	47.9	45.0	67.4	91.4
Insurance and real estate .....	63.4	40.9	9.3	15.3	6.9	13.6	19.9	17.7	47.4	43.0	45.9	89.8
Business services .....	62.3	35.7	38.5	6.1	3.4	3.9	11.6	27.4	45.2	47.0	52.5	91.5
Professional services .....	61.7	38.6	24.8	5.6	2.1	9.9	27.4	26.2	48.9	47.1	46.8	93.5
<i>Years under current ownership</i>												
0–4 .....	59.4	38.3	37.9	4.5	4.3	3.1	8.5	34.4	45.2	46.6	47.8	91.1
5–9 .....	68.9	42.8	40.7	5.8	5.5	2.9	14.3	28.9	44.6	49.7	61.0	93.1
10–14 .....	67.8	39.7	39.4	7.0	5.3	7.5	20.4	30.5	49.8	48.7	63.0	94.3
15–19 .....	67.0	38.7	38.0	9.0	4.0	6.8	21.1	32.1	48.5	52.3	62.3	92.6
20–24 .....	63.0	37.3	33.9	6.8	3.2	7.8	23.7	28.1	46.9	50.7	62.8	92.1
25 or more .....	62.5	35.4	31.7	8.1	6.6	8.1	20.9	27.2	46.6	43.1	67.0	94.5

of deposit, and other time deposits; also considered to be savings accounts were money market accounts that were limited in either the number or the amount of checks that could be written. In comparison with small businesses, 91.4 percent of households in 2004 had some type of transaction account (checking account, savings account, money market deposit account, money market mutual fund, or call account at a brokerage). More information is available in Brian K.

(including a share draft account at a credit union) is a vehicle for paying suppliers and depositing sales receipts, it is not surprising that the reported use of

Bucks, Arthur B. Kennickell, and Kevin B. Moore (2006), "Recent Changes in U.S. Family Finances: Evidence from the 2001 and 2004 Survey of Consumer Finances," *Federal Reserve Bulletin*, vol. 92, pp. A1–A38.

## 6.—Continued

B. Financial management services  
Percent

Characteristic	Financial management service							MEMO				
	Any	Trans- action	Credit and debit card processing	Cash manage- ment	Credit- related	Brokerage	Trust and pension	Nontraditional credit				Traditional and non- traditional credit
								Loan from owner	Credit card		Trade credit	
									Personal	Business		
<i>Census area of main office</i>												
Northeast .....	65.2	39.6	33.6	4.9	3.4	4.5	18.9	34.9	45.1	44.7	59.3	92.6
New England .....	67.2	42.3	35.5	3.7	3.1	*	21.5	41.7	53.1	48.0	69.7	98.5
Middle Atlantic .....	64.3	38.4	32.7	5.4	3.5	5.1	17.7	32.2	41.7	43.2	54.9	90.1
Midwest .....	67.2	38.2	38.4	10.0	6.3	6.8	22.1	28.1	46.3	50.9	65.8	94.6
East North Central .....	64.7	37.6	36.7	9.7	6.4	8.6	21.8	30.0	40.8	53.2	63.8	94.6
West North Central .....	72.4	39.5	41.9	10.6	6.1	3.0	22.9	24.5	57.5	46.1	70.0	94.6
South .....	65.0	40.0	38.8	6.5	5.7	5.0	14.3	29.4	45.0	47.0	59.6	92.5
South Atlantic .....	68.9	41.5	43.3	6.7	5.6	4.5	15.9	29.5	44.9	53.9	61.3	94.3
East South Central .....	58.0	34.4	33.8	7.0	5.4	5.2	13.7	26.6	37.1	41.4	57.4	88.1
West South Central .....	61.7	40.0	33.2	5.8	6.0	5.7	11.6	30.3	49.0	37.3	57.5	91.4
West .....	61.9	37.5	37.0	5.4	4.1	6.4	15.6	30.1	50.7	50.2	56.4	92.4
Mountain .....	64.2	43.3	38.3	7.2	5.5	5.1	11.8	25.4	50.8	53.4	61.2	94.3
Pacific .....	60.8	34.9	36.4	4.6	3.4	7.0	17.3	32.8	50.7	48.7	54.1	91.5
<i>Urbanization at main office</i>												
Urban .....	65.1	39.5	37.2	6.8	4.7	6.0	17.7	31.9	46.4	49.6	58.4	93.0
Rural .....	63.3	36.6	37.4	6.3	6.1	4.4	14.9	23.0	47.8	42.6	66.6	92.8
<i>Number of offices</i>												
One .....	62.2	36.4	35.9	5.7	4.2	5.3	15.6	30.3	46.9	46.4	58.0	92.1
Two .....	78.2	50.4	44.2	7.0	9.3	6.2	21.8	29.0	44.6	56.9	71.8	97.8
Three or more .....	85.6	61.9	48.0	24.7	11.3	9.9	36.7	32.9	45.9	62.9	74.9	99.4
<i>Sales area</i>												
Primarily within the United States .....	64.1	38.2	36.9	6.7	4.8	5.7	16.7	29.7	46.3	48.2	60.4	92.9
International or global .....	77.2	53.1	44.2	5.0	8.4	5.2	27.4	40.7	53.6	46.0	53.3	92.9
<i>Management</i>												
By owner .....	63.7	38.2	36.4	6.1	4.7	5.4	16.3	30.3	47.2	48.0	59.2	92.6
Hired .....	80.4	50.7	49.1	14.7	9.2	10.2	29.2	30.7	39.4	49.7	72.3	99.0
<i>Race, ethnicity, and sex of majority owners</i>												
Nonwhite or Hispanic .....	62.3	35.7	38.1	3.9	4.8	4.7	10.5	36.6	39.9	46.7	48.6	90.6
Non-Hispanic white .....	64.9	39.6	36.9	7.1	5.0	5.6	18.1	29.8	47.9	48.3	61.9	93.1
White .....	64.8	39.5	36.9	6.9	4.9	5.7	17.9	30.2	47.4	48.4	61.4	93.2
Black .....	51.8	31.7	29.2	*	*	*	*	35.2	30.5	36.1	34.8	86.1
Asian, Native Hawaiian, or other Pacific Islander .....	71.2	37.7	51.2	5.0	7.7	3.9	10.5	31.6	48.0	53.4	56.4	92.5
American Indian or Alaska Native .....	51.3	28.4	28.2	*	*	*	*	*	51.4	39.7	51.4	87.4
Hispanic .....	64.7	39.1	34.8	*	*	8.0	14.6	39.0	35.3	50.5	49.1	92.3
Non-Hispanic .....	64.6	38.9	37.2	6.9	5.1	5.5	17.2	30.0	47.2	48.0	60.5	93.0
Female .....	61.6	38.6	36.0	6.3	2.7	3.6	10.2	35.9	49.2	42.9	46.9	88.2
Male .....	64.6	38.4	36.2	6.9	6.0	6.6	19.9	29.8	45.1	49.8	64.0	93.8
Ownership divided equally by sex .....	69.9	41.8	43.7	5.7	3.6	4.6	14.7	26.6	50.6	48.5	62.9	96.9

NOTE: Refer to notes to table 6.A.

n.a. Not available.

... Not applicable.

“any service” (96 percent) nearly matches the reported use of “any liquid asset account.”

For business savings accounts, firm size seems to play a significant role in usage, with the smallest firms the least likely to have savings accounts. Less than one-fifth of firms with four or fewer workers had savings accounts, compared with more than one-third of firms with twenty or more workers. By

organizational form, corporations were the most likely type of firm to have a savings account. Firms owned by non-Hispanic whites were more likely than nonwhite or Hispanic firms to have a savings account, and male-owned businesses or businesses owned equally by males and females were more likely than were female-owned firms to have a business savings account.



### *Credit Lines, Loans, and Capital Leases*

More than 60 percent of small businesses reported outstanding credit in the form of a credit line, a loan, or a capital lease (table 6.A). Overall, the incidence of credit lines, loans, and capital leases increased from 55 percent to more than 60 percent between 1998 and 2003.

As in 1998, the most widely used types of credit in 2003 were credit lines and vehicle loans.<sup>21</sup> The importance of these two credit types seems to be growing. The share of firms with lines increased from 28 percent to 34 percent, and the share with vehicle loans rose from 21 percent to 26 percent. The incidences of mortgages, equipment loans, and “other” loans were similar to their 1998 levels; leases declined somewhat.<sup>22</sup> The increase in the percentage of firms with lines may be due in part to commercial banks’ increased use of credit-scoring models for that type of loan.<sup>23</sup> Alternatively, the increase may have been due to differences in the economic environment. For example, 2002 and 2003 were years of historically low interest rates. The low rates may have stimulated increased loan demand among small businesses.

The incidence of lines, loans, and leases increased with firm size. More than 90 percent of the largest firms (100–499 employees or at least \$5 million in sales) had one of these types of credit in 2003, compared with fewer than 50 percent of the firms with 1 employee or with less than \$100,000 in sales. Corporations were more likely than other types of firms to have had outstanding loans in 2003. Firms in services (business or professional) had fewer outstanding loans than those in other industries, perhaps because they require less inventory and equipment.

Credit incidence did not appear to vary systematically with the age of the business, even though

depository institutions typically require borrowers to have several years of financial history to qualify for credit. The youngest firms (those under current ownership fewer than five years) reported nearly the same incidence of borrowing as did more mature firms. However, a somewhat different picture emerges when specific types of credit are examined. The youngest firms were least likely to have outstanding lines, vehicle loans, and equipment loans. They were also the most likely to have had leases and “other” loans. It may be that the hypothesis regarding young firms and depository institutions does not apply equally to all loan types, or that other factors, such as personal relationships with financial institutions, may offset to some degree the lack of information available for younger firms.

The incidence of lines, loans, and leases also varied somewhat with owner characteristics, such as race, ethnicity, and sex. In 2003, 61 percent of white-owned businesses had outstanding credit. In contrast, about 48 percent of either black-owned or female-owned businesses and 52 percent of Asian-owned firms had outstanding credit. Firms owned equally by men and women appear to be most similar to male-owned businesses in their reported use of lines, loans, and leases.

Incidence also varied by credit type for these firm types. For each credit type, female-owned businesses were less apt to have credit than were male-owned firms. Black-owned firms were less likely than white-owned firms to have had lines of credit, mortgages, and equipment loans. Black-owned firms had about the same incidence of vehicle loans and capital leases but reported a higher incidence of “other” loans.

Non-Hispanic-owned firms and Hispanic-owned firms were equally likely to have outstanding credit, although the incidence varied by type of credit. Non-Hispanic firms were more likely than Hispanic-owned firms to have equipment loans and leases, whereas Hispanic-owned firms were more likely to have vehicle and “other” loans. Some of the differences by owner race, ethnicity, and sex may be attributable to differences in firm characteristics, such as size.<sup>24</sup>

21. In this article, use of a credit line refers to the availability of a credit line and not necessarily to the borrowing of funds from the line. Survey information on outstanding credit-line balances will be available at a later date.

22. The majority of “other” loans were loans that could not be classified as credit lines, mortgages, equipment loans, vehicle loans, or capital leases. Such loans were most likely term loans, and roughly 70 percent of them were unsecured.

23. Although statistics on the use of credit scoring by commercial banks are somewhat dated (W. Scott Frame, Aruna Srinivasan, and Lynn Woosley, 2001, “The Effect of Credit Scoring on Small Business Lending,” *Journal of Money, Credit, and Banking*, vol. 33, August, pp. 813–25), some indirect evidence is available from data gathered under the Community Reinvestment Act. These data indicate that between 1998 and 2003, the growth in the number of small business loans has been far greater than growth in the dollar amount of small business loans, which suggests that much of the growth in business loans has been in smaller loans. Small lines of credit are likely to be one of the types of credit most amenable to credit scoring.

24. Research on this topic using multivariate analysis is available in, for example, Ken S. Cavalluzzo, Linda C. Cavalluzzo, and John D. Wolken (2002), “Competition, Small Business Financing, and Discrimination: Evidence from a New Survey,” *Journal of Business*, vol. 75 (October), pp. 641–79; and Ken S. Cavalluzzo and John D. Wolken (2005), “Small Business Loan Turndowns, Personal Wealth, and Discrimination,” *Journal of Business*, vol. 78 (November), pp. 2153–77.

### Financial Management Services

In the 2003 survey, financial management services covered six broad categories of service, one more than in previous surveys. The 2003 categories were transaction services, credit card and debit card processing, cash management, credit-related services, brokerage services, and trust and pension services.<sup>25</sup> Nearly two-thirds of firms used at least one financial management service in 2003, compared with one-half of firms in 1998 (table 6.B). Part of the increase is likely due to the difference between the two surveys in the wording of the questions. In 1998, transaction services included credit card (but not debit card) processing. In 2003, credit card processing was removed from transaction services and added to a new service category that consisted of credit card and debit card processing. Consequently, direct comparisons of “any” financial management service or of transaction services with earlier surveys is difficult.<sup>26</sup> In particular, the decline in the use of transaction services, from 41 percent to 39 percent, probably reflects, at least in part, the change in the definition of that category.

### Overall Results

The evidence generally points to a growing importance for financial management services. An increase in incidence was recorded for each of the financial management services whose definitions were constant across surveys: for cash management services, from 5 percent to 7 percent; for credit-related services, from 3 percent to 5 percent; for brokerage services, from 4 percent to 6 percent; and for trust and pension services, from 13 percent to 17 percent.

The most widely used financial management service in 2003 continued to be transaction services

(39 percent) followed closely by credit and debit card processing (37 percent). Trust and pension services were used by nearly 20 percent of firms, whereas cash management, credit-related, and brokerage services were each used by roughly 5 percent of firms. As was true for liquid asset services and for lines, loans, and leases, the use of financial management services increased with firm size. For the smallest firms (as measured by employment) just over 40 percent of firms used any financial management service, 25 percent used transaction services, 16 percent used card processing, and only a very small portion used other financial management services. In contrast, 96 percent of the largest firms (100–499 employees) used at least one financial management service; the most common was transaction services (70 percent), followed closely by trust and pension services (68 percent). Cash management and card processing services were used by 50 percent of the largest firms.

The proportion of proprietorships that used financial management services (52 percent) was smaller than that of firms with other organizational forms (70–77 percent); proprietorships may not need these services as much because they tend to be small and more likely than other types of firms to commingle personal and business accounts.

Firms differed in their use of financial management services by race, with black-owned firms and firms owned by American Indians or Alaska Natives somewhat less likely to have used financial management services than white non-Hispanic-owned firms. Female-owned firms were somewhat less likely to have used credit-related, brokerage, and trust and pension services than male-owned firms. Hispanic-owned and Asian-owned firms used one or more financial-management services with about the same frequency as firms owned by non-Hispanic whites. However, differences in use exist among these groups for specific financial management categories. For example, Asian-owned firms were more likely to have used card processing and credit-related services than were white-owned firms. Hispanic-owned firms were less likely to have used trust and pension services than were non-Hispanic-owned firms. These differences could be related to firm size and industry classification.

### Transaction and Card Processing Services

Although the collection of information on transaction services and card processing changed in 2003, the data exist to measure whether a firm used a transaction service or a card processor. In the 2003 survey,

25. These categories cover the following specific services—*Transaction services*: the provision of paper money and coins, depositing or clearing checks or drafts from business customers, the collection of night deposits, and wire transfers. *Credit card and debit card processing services*: the processing of credit card receipts, of signature-based debit (check-card) transactions, and of PIN-based debit transactions (credit card processing was previously combined with transaction services but was asked about separately in the 2003 survey). *Cash management services*: the provision of sweep accounts, zero-balance accounts, lockbox services, and other services designed to automatically invest liquid funds in liquid, interest-bearing assets. *Credit-related services*: the provision of banker’s acceptances, letters of credit, and factoring. *Trust and pension services*: the provision of 401(k) plans, pension funds, and business trusts. *Brokerage services*: brokering the purchase and sale of stocks, bonds, and other securities.

26. A comparison of the services in the 1998 transactions services category to similar services from the 2003 survey is discussed later, in the section “Transaction and Card Processing Services.”

7. Use of transaction services and credit card processing by small businesses, by number of employees, 1998 and 2003 surveys

Percent

Number of employees	2003			1998 transaction service
	Transaction service	Credit card processing	Transaction service and credit card processing	
<b>All firms</b> .....	<b>38.9</b>	<b>35.6</b>	<b>56.2</b>	<b>41.1</b>
0-1 .....	25.2	14.7	34.3	28.1
2-4 .....	34.9	32.1	51.9	35.7
5-19 .....	46.8	49.0	69.9	53.3
20-49 .....	61.0	55.4	80.8	59.2
50-99 .....	61.3	50.8	76.2	56.8
100-499 .....	70.3	49.4	79.8	70.3

NOTE: In the 2003 survey, credit card processing was separate from transaction services; in the 1998 survey, transaction services included credit card processing. For further details, refer to text.

respondents who reported using a credit or debit card processor were asked to identify which services they received. The responses make it possible to separate firms that used credit card processing from those that used only debit card processing. The data indicate that if the 2003 question were asked exactly as it had been in 1998, growth in transaction services would have been observed. In 2003, 56 percent of all firms reported using transaction services or credit card processing (a category of service comparable to that asked in 1998), up from the 41 percent of firms who reported doing so in 1998 (table 7). The use of transaction services increased with firm size, with more than three-fourths of the largest firms using them in 2003.

8. Use of credit and debit card processing services by small businesses and specific type and number of services used, by number of employees and industry, 2003 survey

Percent except as noted

Characteristic	Any card processing service	Type and median number of services used among users of card processing services			
		Credit card processing	Debit card processing, by type of transaction		Median number used (of three)
			Signature	PIN <sup>1</sup>	
<b>All firms</b> .....	<b>37.2</b>	<b>95.6</b>	<b>48.8</b>	<b>26.6</b>	<b>2</b>
<i>Number of employees</i>					
0-1 .....	16.1	91.1	51.7	17.1	1
2-4 .....	33.7	95.3	49.4	25.8	2
5-19 .....	51.1	95.8	48.9	30.8	2
20-49 .....	56.3	98.4	49.2	22.3	2
50-99 .....	51.5	98.7	33.1	21.9	1
100-499 .....	50.1	98.6	34.4	19.0	1
<i>Standard Industrial Classification</i>					
Construction and mining .....	13.9	86.5	24.9	18.8	1
Manufacturing .....	36.5	94.8	31.6	16.8	1
Transportation .....	37.4	81.8	43.2	20.7	1
Wholesale trade .....	48.2	100.0	26.2	19.3	1
Retail trade .....	72.1	96.8	61.8	33.7	2
Insurance and real estate .....	9.3	81.9	42.5	22.1	1
Business services .....	38.5	98.2	47.3	28.3	2
Professional services .....	24.8	93.7	49.1	18.8	2

1. PIN Personal identification number.

Among small businesses, 37 percent used a card processing service (table 8). The majority of these businesses used a credit card processor (96 percent). The usage pattern varied across firm industry. For example, 72 percent of retail trade firms used some type of card processor, but only 9 percent of insurance agents and real estate firms did so. The pattern by type of processor used, however, was the same for all types of firms; credit card processors were always the most common, followed by processors for signature debit card and PIN debit card transactions. Usage also increased with the size of the firm: 16 percent of the very smallest firms (0-1 employees) used credit or debit card services or both, compared with 50 percent of the largest firms (100-499 employees).

*Owner Loans, Credit Cards, and Trade Credit*

In addition to using credit lines, loans, and capital leases, many small businesses obtain financing by borrowing from the firm's owners (owner loans), borrowing via credit cards, or borrowing from suppliers of goods and services (trade credit).

These alternative forms of credit are different from lines, loans, and leases in a number of ways. For example, owner loans are clearly not arm's-length transactions. In the case of credit cards, the interest rates charged may exceed the interest rates for other types of loans; moreover, credit cards, unlike typical loans, provide a convenient means of paying bills and tracking expenses. Trade credit is generally used in connection with the purchase of goods and services

from a specific supplier, whereas funds from lines, loans, and leases are often available for general purposes and are not restricted to purchases from a single supplier. Also, when outstanding trade credit balances are not repaid in a relatively short period, the finance charges may exceed those on other loans.

### Loans from Owners

Of the small businesses that could have received loans from owners (that is, those that were organized as corporations or partnerships), the proportion with such loans rose slightly between the 1998 and 2003 surveys, from 28 percent to 30 percent (table 6.B).

Because they generally have fewer credit options, smaller firms might seem more likely than larger firms to borrow from their owners. This was not the case in 2003. The incidence of owner loans differed across size groups with no specific pattern except that the smallest size groups (0–1 employee, less than \$25,000 in sales, or less than \$25,000 in assets) were the least likely to have reported owner loans. Only about one-fourth of the smallest firms reported owner loans, versus 30 percent for all small businesses.

### Credit Cards

Small businesses were somewhat more likely to have used credit cards in 2003 than in 1998. The percentage that used personal credit cards (47 percent in 2003) remained about the same, but the percentage that used business credit cards increased from 34 percent to 48 percent.

Credit cards are a convenient means of making payments and tracking expenses. Anecdotal evidence suggests that many smaller and newer businesses also use credit cards as a source of credit, even though they may have higher interest rates than other forms of credit. Lenders sometimes ration credit to high-risk firms. Thus, firms just starting out and those having little credit history may be perceived as high risk and may therefore rely on credit cards as a substitute for other types of loans. The descriptive statistics on the use of credit cards are only somewhat consistent with this hypothesis. Personal credit card use was highest among the smallest firms, averaging about 50 percent. But even among the largest firms, about 33 percent reported using personal credit cards for business expenses. In contrast, the use of business credit cards generally increased with firm size—roughly one-third of the smallest firms used them, compared with about three-fifths of the larger firms.

The use of personal credit cards did decline somewhat with firm age, but the use of business credit

cards did not appear to be related to age. Proprietorships were the organizational form most likely to have used personal credit cards and the least likely to have used business cards, but proprietorships are also generally smaller than other organizational forms. Use of credit cards did not vary much by industry—transportation firms were the least likely to use personal credit cards, and insurance and real estate firms and retail trade firms the least likely to use business credit cards. By owner characteristic, non-Hispanic white-owned businesses were more likely to use personal credit cards and just about as likely to use business credit cards as Hispanic-owned or nonwhite-owned businesses. Relative to male-owned firms, female-owned firms were more likely to use personal credit cards and less likely to use business credit cards.

As indicated earlier, some firms may use credit cards simply for the convenience of making payments and tracking expenses. In 2003, 73 percent of personal credit card users and 71 percent of business credit card users reported that they paid their statement balance in full by the payment-due date. For these businesses, credit cards appear to be used primarily for transactional convenience.

### Trade Credit

A firm receives trade credit when its suppliers collect payment after, rather than at the time of, the receipt of goods or services. Most trade credit is extended to firms for a very short period (thirty or sixty days) and is always granted in connection with specific purchases. Businesses use trade credit to reduce transaction costs and sometimes as a form of financing. Allowing available funds to be used for other purposes is one way that trade credit reduces the transaction cost that businesses would incur if they had to make payment at the time of receipt. If the firm does not pay the bill for the goods or services on time, trade credit becomes a form of financing. Because the interest rates charged on overdue balances can be quite high, it is reasonable to expect that the firms using trade credit for longer-term financing purposes would have had difficulty obtaining credit from other sources.<sup>27</sup>

Trade credit was used by 60 percent of small businesses in 2003, an incidence of use that exceeds that for all other financial services except checking. In

27. Firms were asked to report on the monthly penalty they would be charged if they paid after the due date. The average rate reported was a little more than 1 percent. The median, 75th percentile, and 90th percentile were 1 percent, 1.5 percent, and 2 percent respectively.



## 9. Use of selected suppliers of financial services by small businesses, by selected characteristics of firms, 2003 survey

Percent

Characteristic	Any supplier	Depository				Nondepository										
		Any	Com- mercial bank	Thrift institu- tion <sup>1</sup>	Credit union	Any	Primarily financial					Other nondepository				
							Any	Finance com- pany or factor	Broker- age or pension firm	Leasing com- pany	Insur- ance or mort- gage com- pany	Any	Card or check pro- cessing firm <sup>2</sup>	Gov- ernment	Family and in- divid- uals	Other <sup>3</sup>
<i>All firms</i>																
2003 .....	96.4	95.9	86.5	13.8	8.1	54.1	40.3	25.2	14.9	4.5	5.4	24.3	13.4	1.2	6.6	5.5
1998 .....	96.1	95.2	87.3	9.2	5.9	39.9	31.0	15.5	11.3	7.0	3.7	15.6	4.0	1.0	6.2	5.6
<i>Number of employees</i>																
0-1 .....	88.9	87.2	71.6	14.2	9.6	35.6	25.7	16.4	8.1	*	3.0	3.0	14.7	6.8	*	4.0
2-4 .....	96.9	96.4	86.2	13.9	9.2	47.1	33.4	20.8	10.6	3.0	4.2	21.2	12.5	*	5.5	4.3
5-9 .....	99.8	99.5	92.8	13.5	6.6	66.9	48.5	30.8	18.2	6.2	5.3	33.2	18.5	*	9.2	7.0
10-19 .....	100.0	100.0	95.1	14.2	7.1	71.4	57.3	34.5	25.2	7.5	6.1	32.3	18.2	*	10.2	8.6
20-49 .....	100.0	100.0	97.8	13.0	4.4	75.9	62.6	40.3	27.5	7.0	14.9	30.5	16.3	3.4	7.7	7.2
50-99 .....	100.0	99.9	98.7	9.2	*	86.4	78.0	46.0	36.4	13.3	18.6	33.0	14.2	*	4.6	14.8
100-499 .....	100.0	100.0	96.8	17.0	*	82.6	75.6	42.1	40.9	14.1	16.7	30.7	11.6	4.8	10.9	11.7
<i>Sales (thousands of dollars)</i>																
Less than 25 .....	81.4	80.0	65.5	12.3	9.0	24.7	13.7	9.2	4.4	*	*	13.5	6.7	*	5.2	*
25-49 .....	97.2	96.1	78.0	19.3	14.0	42.7	28.4	17.5	9.9	*	*	19.8	10.4	*	6.4	*
50-99 .....	97.6	96.0	84.9	13.2	9.6	43.8	28.7	17.7	10.3	*	*	18.6	9.4	*	5.3	*
100-249 .....	98.9	98.9	89.8	13.0	8.1	49.4	34.9	22.1	9.0	4.3	4.1	22.8	13.4	*	6.7	3.4
250-499 .....	99.6	99.4	91.8	14.7	7.0	63.8	45.8	26.8	16.1	5.5	7.1	29.1	16.9	*	8.4	6.2
500-999 .....	100.0	99.8	94.6	12.4	6.4	72.0	57.0	38.4	17.4	7.4	5.9	36.2	21.0	*	8.6	8.2
1,000-2,499 .....	100.0	99.6	94.4	15.4	5.4	71.8	60.7	34.5	29.7	8.5	7.4	29.7	18.3	*	5.0	9.9
2,500-4,999 .....	100.0	100.0	98.4	10.4	*	77.3	68.3	46.9	31.3	5.0	14.4	27.3	11.8	4.5	7.5	8.6
5,000-9,999 .....	100.0	99.9	99.4	10.7	*	89.0	79.9	55.5	41.2	8.1	13.4	27.5	9.0	*	6.1	13.8
10,000 or more .....	100.0	100.0	96.3	11.8	*	84.1	79.7	42.6	48.8	14.6	17.2	30.8	13.0	3.0	7.2	12.9
<i>Assets (thousands of dollars)</i>																
Less than 25 .....	90.0	89.0	73.0	13.7	8.9	35.7	23.7	15.5	6.5	2.2	2.2	16.9	8.0	*	5.1	3.6
25-49 .....	98.2	97.7	89.6	15.9	6.9	43.5	30.0	20.3	10.1	*	*	18.3	12.3	*	*	*
50-99 .....	99.8	99.4	90.5	11.0	12.7	59.8	41.9	27.1	14.3	3.8	6.1	26.8	15.6	*	9.5	4.4
100-249 .....	99.1	98.7	92.6	11.4	6.6	62.6	44.8	26.2	17.2	5.3	5.5	29.8	19.9	*	5.0	6.3
250-499 .....	99.7	99.3	94.2	15.2	6.2	71.0	55.0	32.2	19.9	10.2	5.3	34.5	19.8	*	9.3	8.2
500-999 .....	100.0	100.0	95.5	16.4	9.1	66.3	56.6	34.5	22.3	5.4	8.9	32.4	15.4	*	12.1	8.4
1,000-2,499 .....	100.0	100.0	95.2	15.4	5.3	79.3	69.4	44.3	33.7	8.6	13.1	27.8	11.0	*	7.8	10.4
2,500-4,999 .....	100.0	100.0	94.9	14.0	*	79.6	74.1	48.2	32.9	10.1	20.4	30.0	10.6	*	6.1	11.8
5,000 or more .....	100.0	98.5	97.8	19.1	*	74.9	71.1	39.3	40.3	7.8	16.5	21.7	8.5	2.4	5.7	9.6
<i>Organizational form</i>																
Proprietorship .....	93.0	92.0	78.5	15.9	11.1	44.3	31.3	20.1	9.8	2.2	4.4	19.8	10.3	*	6.8	3.8
Partnership .....	97.3	96.9	89.6	14.0	9.1	49.8	35.1	20.3	13.1	4.4	4.9	22.4	11.9	*	*	7.1
S corporation .....	99.5	99.2	93.2	12.5	5.0	64.0	48.9	30.8	18.3	7.3	5.5	29.9	17.6	2.3	7.4	6.5
C corporation .....	99.6	99.4	94.1	10.4	5.3	64.3	51.7	30.9	23.6	5.4	8.2	27.1	14.6	1.4	6.1	7.1
<i>Standard Industrial Classification</i>																
Construction and mining .....	96.5	96.2	86.7	13.3	9.1	51.4	45.0	34.3	10.6	4.8	5.7	14.8	5.2	*	3.4	4.4
Manufacturing .....	97.7	97.7	90.6	11.6	8.1	59.2	42.6	24.5	16.8	6.1	4.7	30.6	13.5	2.4	10.6	7.8
Transportation .....	99.5	99.5	90.9	10.0	15.7	61.9	47.5	38.4	6.3	6.6	5.8	27.1	11.0	*	13.1	6.7
Wholesale trade .....	98.8	97.7	92.0	10.5	*	62.7	47.8	31.0	21.7	3.2	5.8	27.7	17.8	*	5.2	6.8
Retail trade .....	97.4	97.1	88.4	15.7	5.6	59.4	31.9	22.3	8.7	4.3	4.9	39.8	28.3	1.9	7.8	6.1
Insurance and real estate .....	96.3	96.0	90.2	18.3	7.8	46.4	43.3	19.3	21.2	*	12.2	8.3	*	*	*	*
Business services .....	94.9	94.0	82.0	14.2	9.6	49.9	35.3	23.4	11.3	3.4	4.4	24.3	13.9	.8	7.2	4.9
Professional services ..	95.9	95.1	85.0	12.7	7.4	53.0	46.0	22.9	24.3	5.7	4.5	17.8	7.5	*	5.4	5.7
<i>Years under current ownership</i>																
0-4 .....	96.1	95.0	83.5	14.2	9.3	51.1	31.8	23.3	5.5	4.3	3.3	29.1	15.7	*	9.5	5.3
5-9 .....	95.8	95.4	86.5	12.2	7.7	56.2	39.6	25.9	12.4	4.6	4.7	27.7	15.0	*	8.0	6.8
10-14 .....	98.1	97.7	88.5	12.4	10.5	58.4	45.8	26.5	20.9	5.9	4.4	22.6	12.6	*	4.3	5.9
15-19 .....	94.7	94.1	83.6	15.7	5.3	54.7	44.8	27.1	18.8	3.4	6.5	23.3	15.4	*	5.3	4.9
20-24 .....	96.0	95.3	85.1	15.7	6.6	55.4	45.1	25.3	18.8	4.8	8.2	21.4	12.5	*	5.0	4.6
25 or more .....	97.8	97.3	90.9	14.0	8.0	49.7	40.0	23.8	18.5	3.8	7.1	18.5	8.6	1.2	5.5	4.6

1998, 62 percent of small businesses reported using trade credit. Use generally increased with firm size, rising from about one-third of the smallest firms to more than 85 percent of the largest firms. Young firms, proprietorships, and firms owned by nonwhites, Hispanics, or females were less likely than others to use this service. The differences between these groups of

firms and other groups are similar to the differences in use between smaller and larger firms.

The use of trade credit was most common among firms in construction, manufacturing, and wholesale and retail trade—industries for which nonlabor expenses, such as those for equipment and inventory, are large relative to labor costs. Among industries for



## 9.—Continued

Percent

Characteristic	Any supplier	Depository				Nondepository										
						Primarily financial						Other nondepository				
		Any	Com- mercial bank	Thrift institu- tion <sup>1</sup>	Credit union	Any	Any	Finance com- pany or factor	Broker- age or pension firm	Leasing com- pany	Insur- ance or mort- gage com- pany	Any	Card or check pro- cessing firm <sup>2</sup>	Govern- ment	Family and in- divid- uals	Other <sup>3</sup>
<i>Census area of main office</i>																
Northeast .....	95.5	94.6	77.4	28.4	6.3	54.9	40.2	26.1	17.6	3.1	4.6	25.2	14.8	*	6.9	4.7
New England .....	97.9	97.5	63.9	51.7	*	53.2	40.7	28.8	16.6	4.0	6.1	23.9	16.5	*	*	*
Middle Atlantic .....	94.4	93.4	83.2	18.3	6.2	55.6	40.0	25.0	18.1	2.8	3.9	25.8	14.1	*	7.1	5.7
Midwest .....	98.4	98.1	92.4	7.8	9.5	55.2	41.9	22.9	17.8	5.2	5.8	24.1	13.0	2.6	4.7	6.2
East North Central ..	98.0	97.6	91.2	9.6	9.8	55.8	43.1	21.5	19.0	5.9	5.4	24.8	12.2	*	5.3	6.3
West North Central ..	99.3	99.3	94.7	4.0	8.9	54.0	39.3	25.8	15.4	3.7	6.7	22.6	14.8	*	3.5	6.0
South .....	96.5	95.8	89.0	9.8	7.0	55.7	40.8	27.4	11.6	5.3	5.9	24.8	13.9	.7	7.0	5.3
South Atlantic .....	97.5	96.7	88.8	12.3	5.6	60.0	44.9	30.1	12.5	6.0	6.4	26.6	15.9	*	6.3	5.7
East South Central ..	94.9	94.9	89.5	*	*	45.7	33.2	21.6	11.0	4.3	4.7	19.6	9.5	*	*	4.4
West South Central ..	95.5	94.7	89.1	7.7	7.1	52.9	37.1	25.7	10.2	4.6	5.5	24.0	12.4	*	8.3	5.1
West .....	95.4	94.9	85.2	12.8	10.0	50.1	38.3	23.1	14.9	3.7	4.9	23.0	11.9	1.3	7.5	5.7
Mountain .....	95.6	94.8	90.0	7.1	9.5	52.1	37.9	26.5	10.3	2.1	4.6	24.7	11.3	*	9.8	5.8
Pacific .....	95.4	95.0	83.0	15.4	10.2	49.2	38.5	21.5	17.0	4.5	5.1	22.3	12.2	.6	6.5	5.7
<i>Urbanization at main office</i>																
Urban .....	96.5	95.9	86.2	14.2	7.7	55.4	41.9	25.7	15.8	4.8	5.5	25.1	13.7	1.3	6.7	6.0
Rural .....	96.2	95.9	87.5	12.2	9.9	48.7	34.3	23.0	11.7	3.3	4.8	21.3	12.5	.8	6.4	3.3
<i>Number of offices</i>																
One .....	95.9	95.4	85.5	14.0	7.8	52.0	38.4	24.6	13.7	3.6	5.2	23.1	13.3	.8	6.0	5.1
Two .....	99.2	98.7	90.8	14.3	10.0	68.9	50.6	28.7	19.0	9.2	4.8	34.6	16.7	*	11.5	7.0
Three or more .....	100.0	99.2	96.3	9.0	11.0	62.7	54.0	28.8	29.0	10.5	10.0	25.5	9.3	2.4	7.4	8.8
<i>Sales area</i>																
Primarily within the United States .....	96.4	95.9	86.7	13.8	8.1	53.8	40.1	25.0	14.7	4.4	5.3	24.0	13.2	1.2	6.5	5.5
International or global .....	97.1	95.9	82.8	14.0	7.8	60.1	45.5	28.5	19.2	4.8	7.1	29.6	17.7	*	9.3	4.6
<i>Management</i>																
By owner .....	96.2	95.6	86.0	13.6	8.2	53.0	39.3	24.6	14.3	4.4	5.0	24.0	13.2	1.2	6.7	5.2
Hired .....	99.9	99.9	93.4	16.7	7.6	69.3	56.2	34.5	24.7	5.3	10.5	28.9	16.9	*	5.3	8.9
<i>Race, ethnicity, and sex of majority owners</i>																
Nonwhite or Hispanic ..	95.5	94.9	85.8	12.0	7.4	53.3	35.3	25.7	10.9	2.1	4.9	27.5	15.0	*	7.8	5.1
Non-Hispanic white ...	96.5	95.9	86.5	14.0	8.2	53.7	40.6	24.7	15.3	4.8	5.3	23.6	13.1	1.2	6.4	5.5
White .....	96.5	95.9	86.3	13.9	8.4	53.9	40.6	25.0	15.3	4.6	5.4	23.7	13.2	1.2	6.4	5.5
Black .....	91.7	91.7	81.0	13.7	*	46.2	36.0	28.9	*	*	*	20.6	*	*	*	*
Asian, Native Hawaiian, or other Pacific Islander .....	99.1	97.3	93.6	13.0	*	59.8	33.9	22.9	12.3	*	*	36.2	23.8	*	*	*
American Indian or Alaska Native ....	92.7	92.7	81.5	*	*	45.0	22.7	18.7	*	*	*	*	*	*	*	*
Hispanic .....	94.9	94.9	82.4	*	*	54.7	40.0	28.9	15.1	*	7.6	25.4	14.1	*	*	*
Non-Hispanic .....	96.5	95.9	86.6	13.9	8.0	53.9	40.3	25.0	14.9	4.6	5.2	24.2	13.4	1.3	6.6	5.5
Female .....	92.3	91.4	79.8	13.9	8.2	45.0	30.5	20.3	10.5	3.4	2.7	23.9	14.2	1.1	6.5	3.7
Male .....	97.4	96.8	88.2	13.2	8.1	57.1	44.0	26.8	17.0	4.8	6.1	24.4	12.9	1.2	6.9	6.1
Ownership divided equally by sex ....	98.6	98.6	89.1	16.8	8.2	53.8	38.6	25.1	12.1	4.6	6.4	24.3	14.4	*	5.3	5.1

NOTE: For definition of sales areas, refer to table 2, note 3.

1. Savings bank or savings association.

2. Includes credit and debit card processing firms.

3. Includes business firms, suppliers, and venture capital firms.

\* Fewer than fifteen observations.

which labor's share of costs is high, such as business and professional services, the use of trade credit was somewhat less common.

As indicated earlier, trade credit can be used for transaction purposes and for financing. Some of the use patterns (for example, variation by industry) are more consistent with the transaction hypothesis. Among the firms that reported using trade credit in 2003, 59 percent reported that they always paid the debt by the due date. The firms that did not always

pay on time paid late only about 30 percent of the time, which suggests that, even for these firms, the major use of trade credit was for transaction purposes.

### SUPPLIERS OF FINANCIAL SERVICES USED BY SMALL BUSINESSES

The suppliers of financial services to small businesses consist of *depository institutions*—commercial banks,

thrift institutions (savings banks and savings associations), and credit unions—and *nondepository institutions*. Nondepositories consist of *primarily financial nondepositories*—finance companies and factors, brokerage and pension firms, leasing companies, and insurance and mortgage companies—and *other nondepositories*—credit card and check processing firms, government sources, family and individuals, business firms, suppliers, venture capital firms, and miscellaneous types. The survey collected information on the sources of checking and savings accounts; lines of credit, loans, and capital leases; and financial management services.<sup>28</sup>

In 2003, depository institutions were used by 96 percent of all firms, roughly the same percentage as in 1998 (table 9). Among depository institutions, the use of commercial banks remained about the same, whereas the use of thrift institutions and credit unions increased.

In contrast, the proportion of firms using nondepository institutions increased from 40 percent in 1998 to 54 percent in 2003, with increases recorded both for primarily financial nondepository sources and for other nondepository sources. Among the primarily financial nondepository sources, only leasing companies were used somewhat less in 2003 than in 1998. Among other nondepository institutions, credit card processors logged the largest increase between 1998 and 2003.<sup>29</sup> These changes are consistent with the finding that the percentage of small businesses that used credit card processing services increased over the period between surveys.

### Depository Financial Institutions

Depository institutions provided at least one financial service to about 96 percent of small businesses in 2003 (table 9), roughly the same percentage of businesses that had a checking or savings account in 2003 (table 6.A). Commercial banks continued to be used by a far larger proportion of firms (87 percent) than were thrift institutions (14 percent) or credit unions

(8 percent). In general, the percentage of firms using commercial banks increased with firm size, and once a certain size threshold was crossed (for example, at least twenty employees or at least \$2.5 million in sales), virtually all firms (97 percent or more) used at least one commercial bank. In contrast, the use of credit unions declined with size, and the use of thrift institutions did not vary systematically with size. Proprietorships, which are generally the smallest firms, were somewhat less likely than other firm types to use commercial banks and more likely to use credit unions and thrift institutions.

The use of thrift institutions increased from 9 percent to nearly 14 percent between 1998 and 2003, and the use of credit unions increased from 6 percent to 8 percent. The increased use of thrift institutions reverses declines observed in earlier surveys, declines that had been attributed to the decrease in the number of thrifts during the 1990s. The increased use of thrifts and credit unions suggests that the deregulation of business lending by those institutions and the expansion in potential credit union membership permitted by the relaxation in the definition of “common bonds” by the National Credit Union Administration in recent years may have enabled these institutions to better meet the financial service demands of small businesses.

As was true in earlier surveys, small businesses in New England were much more likely to use thrift institutions (52 percent) than were firms in other parts of the country. This finding is consistent with the fact that thrifts account for a larger proportion of depositories in New England than in other areas of the country. Moreover, thrifts in New England tend to look more like commercial banks in terms of their business lending than do thrifts outside of New England.<sup>30</sup> Credit unions were most likely to have been used by firms located in the Pacific part of the West.

Black-owned and Hispanic-owned businesses were less likely than non-Hispanic-owned or white-owned firms to use commercial banks. Asian-owned firms were more likely to use commercial banks than other ownership groups. Also, female-owned firms were less likely than male-owned firms to use commercial banks. In 1998, the groups most likely to use commercial banks were also the least likely to use thrift institutions and credit unions. In 2003, this apparent substitution across institution types altered somewhat. The use of thrifts and credit unions was often greatest for those firm types that were also the most

28. No information on the sources of owner loans, credit cards, and trade credit was collected.

29. As noted earlier, an additional service—credit card and debit card processing—was added to the list of financial management services in the 2003 survey. This additional service may have been partly responsible for the observed increase in the use of nondepository sources—especially of credit card processing sources. However, the data suggest that part of the increase in the use of nondepository sources was independent of the addition of the credit card processing service. For most types of nondepository sources, including finance companies, brokerages, insurance and mortgage companies, government, and family and individuals, the incidence increased between 1998 and 2003. The only nondepository sources for which incidence decreased were leasing companies and “other” types.

30. Steven J. Pilloff and Robin A. Prager (1998), “Thrift Involvement in Commercial and Industrial Lending,” *Federal Reserve Bulletin*, vol. 84 (December), pp. 1025–37.

likely to use commercial banks. For example, the use of thrifts was highest for white-owned firms and for firms owned equally by males and females; the use of credit unions was highest for white-owned firms and for male-owned firms.

### Nondepository Sources

Small businesses obtained their financial services from a variety of sources besides depository institutions. Between 1998 and 2003, the incidence of nondepository use by small firms increased from 40 percent to 54 percent (table 9). Both primarily financial nondepositories and other nondepositories were used more frequently in 2003 than in 1998.

#### Primarily Financial Nondepositories

Primarily financial nondepositories were a source of financial services for about 40 percent of all small firms, a sizable increase over the roughly 30 percent incidence reported in 1998. And as in 1998, the most commonly used financial nondepositories were finance companies, followed by brokerage companies.

The use of financial nondepositories (and of each subgroup of suppliers within that group) is strongly related to firm size, increasing from about one-fourth of the smallest firms to about three-fourths of the largest firms. For example, 16 percent of the smallest firms (those with fewer than 2 employees) used finance companies, and 8 percent used brokerages, whereas about 42 percent of firms with 100 or more employees used finance companies and 41 percent used brokerage companies. Use of financial nondepositories also differed by organizational form, ranging from 31 percent of proprietorships to 52 percent of C corporations. Proprietorships and partnerships were about half as likely as corporations to use brokerages and about two-thirds as likely to use finance companies.

The use of financial nondepositories also varied with the race, ethnicity, and sex of the business owners. White-owned and male-owned firms used financial nondepositories, finance companies, brokerages, and leasing companies more often than did other types of firms. The differences were largest among groups using brokerage firms: For example, 15 percent of white-owned firms used brokerages, compared with 11 percent of nonwhite or Hispanic-owned firms.

#### Other Nondepositories

In 2003, 24 percent of firms used other nondepositories (such as card and check processors, government,

family and individuals, other businesses, supplier businesses, and venture capital firms), up from 16 percent in 1998. Most of this increase is due to a rise in the use of card and check processors (from 4 percent in 1998 to 13 percent in 2003), which may, in turn, partly reflect increased use and acceptance of credit and debit cards by small businesses.<sup>31</sup> The use of other subgroups was largely unchanged from 1998. About 1 percent used government, 7 percent used family and individuals, and 6 percent used other sources, including other business firms.<sup>32</sup>

The use of other nondepository sources did not consistently increase with firm size, although it was least likely for the smallest firms. For example, the use of other nondepository sources increased from 15 percent of firms with fewer than two employees to 33 percent for firms with five to nine employees. For larger firms, the percentage using such sources generally remained at the higher levels. Proprietorships and partnerships were less likely than were corporations to use these sources.

Younger firms were more likely to use other nondepositories, including family and individuals, than were older firms. Younger firms sometimes have difficulty borrowing from financial institutions, in part because financial institutions often require that prospective borrowers provide several years of financial statements with their loan applications. Nonfinancial sources, such as individuals who may be familiar with the prospective borrowers, may be better positioned to evaluate creditworthiness and to monitor the financial condition of younger firms, or alternatively they may have different credit standards than financial sources. The survey results show that in 2003 the use of family and individuals was most common among younger firms.

### USE OF FINANCIAL SERVICES SUPPLIERS, BY SERVICE

The data reviewed thus far have examined variations in the use of financial services by firms according to characteristics of the firm and variations in the source of financial services used by firms according to the type of firm. This section reports on the types of

31. As indicated earlier, some of the observed increase is likely caused by explicitly asking about credit card processing services in the 2003 survey. Before 2003, credit card processing was included in the question about transaction services.

32. The 1 percent figure likely understates the true role of government in providing financial services to small businesses. Many government entities, such as the U.S. Small Business Administration, provide credit guarantees, which ensure repayment of small business loans made by institutional lenders such as commercial banks and thrift institutions.

## 10. Use of selected suppliers of financial services by small businesses, by selected service, 2003 survey

Percent

Service	Any supplier	Depository				Nondepository										
		Any	Com- mercial bank	Thrift institu- tion	Credit union	Any	Primarily financial					Other nondepository				
							Any	Finance com- pany or factor	Broker- age or pension firm	Leasing com- pany	Insur- ance or mort- gage com- pany	Any	Card or check pro- cessing firm	Gov- ernment	Family and in- divid- uals	Other
Any .....	96.4	95.9	86.5	13.8	8.1	54.1	40.3	25.2	14.9	4.5	5.4	24.3	13.4	1.2	6.6	5.5
Liquid asset account ...	95.0	94.5	83.2	10.9	4.9	4.5	4.2	.4	3.8	0	.1	.3	.1	0	0	.2
Checking .....	94.6	94.1	82.7	10.5	4.4	1.8	1.7	.1	1.6	0	0	.2	.1	0	0	.1
Savings .....	22.1	20.0	16.2	2.4	2.3	3.1	3.0	.4	2.6	0	.1	.1	.0	0	0	.1
Credit line, loan, or capital lease ....	60.4	46.4	41.1	5.5	3.9	33.3	26.6	22.2	.8	4.3	2.3	10.4	.3	1.1	6.5	2.9
Credit line .....	34.3	32.4	29.5	2.8	.9	3.6	2.9	2.2	.4	.1	.4	.8	0	.1	.1	.6
Mortgage .....	13.3	10.8	9.1	1.9	.3	3.4	1.9	.6	.1	0	1.2	1.5	0	.4	.9	.2
Vehicle loan .....	25.5	13.2	10.0	1.1	2.5	15.2	14.8	14.5	0	.3	.1	.4	0	0	.2	.2
Equipment loan .....	10.3	5.1	4.3	.5	.4	5.8	4.4	3.4	.2	1.0	.1	1.5	.1	.1	.5	.8
Capital lease .....	8.7	1.1	1.0	.1	0	7.8	6.9	4.6	0	2.9	0	1.1	.1	0	.1	1.0
Other .....	10.1	3.4	3.1	.2	.2	7.2	1.4	.6	.1	.2	.6	5.9	0	.5	4.9	.5
Financial management ...	64.8	53.2	48.2	5.6	2.2	33.1	20.1	5.1	13.3	.3	3.2	16.3	13.3	.1	.3	2.8
Transaction .....	39.0	38.3	34.1	4.0	1.9	3.0	2.0	.8	1.0	0	.2	1.1	.6	0	.2	.4
Credit and debit card processing .....	37.2	22.5	20.7	1.7	.4	16.7	3.1	2.8	.1	.1	.2	14.2	13.1	0	0	1.0
Cash management ...	6.7	6.2	5.8	.4	.1	.8	.7	.2	.5	0	0	.1	0	.1	0	0
Credit-related .....	5.0	4.1	3.8	.4	.2	1.4	1.0	.8	.1	.1	0	.4	.1	0	0	.3
Brokerage .....	5.6	.8	.8	0	.1	5.0	4.9	.3	4.5	0	.3	.2	0	0	0	.2
Trust and pension ...	17.2	3.6	3.2	.4	.2	14.3	13.2	.8	10.1	.1	2.7	1.2	.1	0	.1	1.0

NOTE: Refer to numbered notes to table 9.

financial services provided to small businesses by each type of financial service supplier.

Not all financial service suppliers provide the full range of financial services (table 10). Depository institutions were used for the full range of services—checking and savings (95 percent of firms); lines, loans, and leases (46 percent); and financial management services (53 percent). In fact, a much larger percentage of firms used depository institutions for each of these services than used nondepository sources. One in four firms obtained lines, loans, or leases from primarily financial nondepositories, and one in five firms obtained financial management services from primarily financial nondepositories. Among other nondepositories, used by about one in four firms, credit card processors were important sources of financial management services, and family and individuals were most often used for credit.

### Checking and Savings Accounts

As was the case in previous surveys, commercial banks dominated the provision of checking accounts to small businesses in 2003, supplying them to 83 percent of all small firms (table 10). Firms also obtained checking accounts from thrift institutions (11 percent), credit unions (4 percent), and brokerages (2 percent). No other type of supplier provided more than a trivial share of checking accounts. Commercial banks

were also the dominant supplier of savings accounts, far outpacing the next most common providers (thrifts, credit unions, and brokerages).

### Credit Lines, Loans, and Capital Leases

In 2003, commercial banks were the most common supplier of credit lines, loans, and capital leases, providing about 41 percent of firms with such services, slightly up from 39 percent in 1998 (table 10). Primarily financial nondepositories and family and individuals were also important suppliers. In 2003, one-fourth of businesses obtained lines from, or had outstanding balances on loans or leases with, primarily financial nondepositories (specifically, finance and leasing companies); 7 percent had loans from family and individuals. These percentages were somewhat lower in 1998. Although suppliers other than commercial banks were important sources of lines, loans, and leases, commercial banks in 2003 were about two times more likely than finance companies to have been the source of these services for small businesses, six times more likely than family and individuals, and ten times more likely than leasing companies.

Credit lines, used by about one-third of businesses, were the most commonly used form of credit. They were supplied primarily by commercial banks, thrift institutions, and finance companies. Commercial



banks were the most important source and were ten times more likely than thrifts and fifteen times more likely than finance companies to have been the source of this service. Most mortgages used for business purposes were obtained from commercial banks (9 percent of firms), thrifts (2 percent), mortgage companies (1 percent), and family and individuals (1 percent). Vehicle loans were obtained primarily from finance companies (15 percent of firms) and commercial banks (10 percent). Equipment loans were also obtained mainly from these sources, with finance companies used somewhat less than commercial banks. Leases were obtained mainly from finance and leasing companies. However, less than 9 percent of businesses reported a capital lease in 2003. Finally, family and individuals were the source of “other” loans for 5 percent of firms, and commercial banks were the source of these loans for about 3 percent of firms.

In sum, commercial banks were the dominant source of lines, loans, and leases. By credit type, commercial banks were the dominant source of lines, mortgages, and equipment loans; and they were the second most important source for vehicle and other loans. The only credit type for which commercial banks were not an important source was capital leases.<sup>33</sup>

### *Financial Management Services*

Commercial banks were the dominant supplier of financial management services, providing almost half of small businesses with those services in 2003 (table 10). Brokerages and credit card processing firms, tied as the second most common source of financial management services, were each used by 13 percent of firms. By individual service, commercial banks were the dominant supplier of transaction services (used by 34 percent of firms), credit card processing (21 percent), cash services (6 percent), and credit services (4 percent). Brokerages were the most widely used source of trust and pension services (used by 10 percent of firms) and brokerage services (5 percent). Credit card processing firms, used by 13 percent of firms for credit and debit card processing, were the second most common supplier of these services.

### *SUMMARY*

The 2003 Survey of Small Business Finances, the fourth in a series sponsored by the Federal Reserve Board, provides detailed information on the character-

istics of small businesses and on the types and sources of credit and other financial services they use. The preceding surveys covered the years 1987, 1993, and 1998. Although the discussion in this article is based on descriptive statistics, the data suggest interesting behavior patterns and differences in the use of credit by small businesses.

Straightforward comparisons reveal some similarities in the findings from the earlier surveys. In particular, commercial banks have remained the dominant supplier of financial services for small businesses; these services include checking and savings accounts, most forms of credit other than leases, and most financial management services other than brokerage services.

Comparisons also reveal some changes between surveys. The share of small businesses that are S corporations has risen at the expense of C corporations and proprietorships. Computer use, especially for Internet banking and online loan applications, increased markedly between 1998 and 2003. The payment of business expenses with credit cards, especially business credit cards, has grown substantially between surveys. The incidence of credit lines and vehicle loans has increased, whereas the incidence of capital leases declined somewhat. Since the 1987 survey, small businesses have increasingly used nondepository institutions to obtain some of their financial services. However, despite the growth in the use of nondepository sources—from 25 percent of firms in 1987 to 54 percent in 2003—commercial banks remained the dominant supplier of most financial services.

The 2003 survey also provides some new information unavailable in previous surveys. In particular, the survey collected demographic characteristics for up to three individual owners and thereby helped to refine the firm-level measurement of characteristics such as race, ethnicity, sex, and ownership concentration. In addition, the survey collected information on the use of nonstandard work arrangements by firms and about their use of credit and debit card processing.

Explaining the differences among firms in their use of financing and, more fundamentally, understanding the factors that affect small business financing require a rigorous analytical framework that accounts for the financial characteristics of borrowers and the markets in which they operate. Although the use of such a framework is beyond the scope of this article, the final survey data will provide considerable opportunities for more formal and complete analyses.

33. Of the six types of credit, capital leases were used by the smallest percentage of firms (8.7 percent).



## A.1. Small businesses grouped by selected characteristics and distributed by selected characteristics of firms, 2003 survey

Percent

Characteristic	All firms	Majority owners				Number of employees					Years under current ownership		Urbanization at main office		Organizational form	
		Non-white or Hispanic	Non-Hispanic white	Male or female equally by sex	Female	0-1	2-4	5-19	20-49	50-499	0-9	10 or more	Urban	Rural	Proprietorship	Other
<b>All firms</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
<i>Number of employees</i>																
0-1	20.6	19.7	21.0	18.1	29.5	100	...	...	...	...	22.9	18.9	20.7	20.1	35.2	8.9
2-4	40.0	46.1	39.3	40.2	39.7	...	100	...	...	...	41.1	39.2	39.9	40.4	46.7	34.7
5-9	20.2	21.1	19.8	20.6	18.9	...	...	65.6	...	...	20.2	20.1	20.3	19.6	13.4	25.6
10-19	10.6	5.7	11.2	11.7	6.6	...	...	34.4	...	...	9.6	11.3	10.3	11.5	3.7	16.1
20-49	6.0	5.1	6.1	6.5	4.0	...	...	...	100	...	4.9	6.8	5.9	6.4	.9	10.1
50-99	1.7	1.4	1.7	1.8	.9	...	...	...	...	63.1	1.0	2.2	1.8	1.3	*	2.9
100-499	1.0	.8	.9	1.1	.4	...	...	...	...	37.0	.4	1.4	1.1	.8	*	1.8
<i>Sales (thousands of dollars)</i>																
Less than 25	14.6	20.0	14.0	11.2	26.6	37.3	15.5	2.2	*	*	18.4	11.8	14.3	15.6	24.9	6.3
25-49	9.9	12.6	9.8	8.6	14.7	22.5	11.3	2.3	*	*	11.4	8.8	9.8	10.5	15.8	5.2
50-99	11.6	16.4	11.0	10.7	14.9	17.5	16.8	4.1	*	*	12.2	11.1	11.1	13.3	18.5	6.1
100-249	19.8	14.9	20.4	20.5	17.2	14.4	29.5	16.0	*	*	19.7	19.9	19.7	20.3	21.7	18.3
250-499	14.3	14.1	14.5	15.5	10.3	4.5	16.5	21.1	4.5	*	14.0	14.5	14.5	13.5	9.8	17.8
500-999	12.2	8.8	12.4	13.5	7.6	*	6.1	27.1	14.6	*	11.4	12.7	12.9	9.2	5.8	17.2
1,000-2,499	10.0	7.5	10.3	11.4	5.6	*	3.0	19.6	37.6	12.6	8.6	11.1	10.0	10.3	2.5	16.1
2,500-4,999	3.6	2.8	3.8	4.1	2.0	*	1.1	4.9	20.7	14.5	2.4	4.5	3.6	3.6	*	6.3
5,000-9,999	2.3	1.8	2.1	2.7	.6	*	*	2.6	12.4	27.1	1.3	3.0	2.3	2.2	*	3.7
10,000 or more	1.7	1.2	1.7	2.0	.5	*	*	*	5.9	43.4	.7	2.5	1.8	1.5	*	3.0
<i>Assets (thousands of dollars)</i>																
Less than 25	31.3	37.9	30.6	27.0	46.9	63.1	37.5	10.4	*	*	37.0	27.1	32.7	26.1	45.7	19.8
25-49	12.5	14.4	12.4	12.6	12.4	13.9	16.3	9.2	*	*	13.4	11.9	12.4	13.0	14.0	11.3
50-99	13.5	12.6	13.6	13.5	13.6	10.5	16.1	14.6	5.3	*	13.3	13.6	13.4	13.6	15.2	12.1
100-249	15.9	15.0	15.8	17.3	11.0	6.5	15.8	23.5	15.4	3.6	15.3	16.3	15.4	18.0	13.2	18.1
250-499	10.0	5.5	10.7	11.0	6.8	3.1	7.4	17.6	14.3	6.8	8.5	11.2	10.2	9.6	6.1	13.2
500-999	7.1	5.0	7.4	7.7	4.8	*	3.8	12.8	17.7	8.4	5.8	8.0	6.3	9.8	2.9	10.4
1,000-2,499	5.8	6.3	5.7	6.6	2.8	*	1.8	9.2	25.8	20.7	3.9	7.2	5.6	6.5	2.3	8.6
2,500-4,999	1.9	2.8	1.7	2.1	1.0	*	*	1.5	9.9	22.7	1.2	2.4	2.0	1.3	*	3.0
5,000 or more	2.0	.6	2.2	2.3	.7	*	*	*	4.8	35.4	1.6	2.4	2.0	2.1	*	3.5
<i>Organizational form</i>																
Proprietorship	44.5	47.8	44.6	41.3	56.3	76.0	51.9	24.7	6.9	3.9	42.2	46.2	42.7	51.6	100	...
Partnership	8.7	7.7	8.6	9.0	7.5	*	10.9	9.9	9.7	7.2	12.3	6.0	8.5	9.6	...	15.7
S corporation	31.0	25.5	31.9	32.9	24.8	15.5	25.9	43.2	49.0	47.3	34.5	28.4	32.8	24.1	...	55.9
C corporation	15.8	19.0	15.0	16.9	11.4	5.8	11.3	22.3	34.4	41.7	11.0	19.3	16.0	14.8	...	28.4
<i>Standard Industrial Classification</i>																
Construction and mining	11.8	5.7	12.8	13.7	5.2	13.1	10.5	12.1	15.0	10.9	10.6	12.7	10.4	17.3	12.0	11.7
Manufacturing	7.1	6.0	7.5	7.9	4.4	4.8	6.7	7.6	9.7	20.3	7.3	7.0	7.1	7.1	4.7	9.0
Transportation	3.8	2.6	4.0	4.3	1.8	4.5	3.2	4.0	2.6	7.4	3.8	3.8	3.3	5.3	3.6	3.9
Wholesale trade	5.9	6.8	5.7	6.2	4.7	5.1	6.0	6.0	6.4	8.6	4.8	6.7	6.2	4.8	3.0	8.2
Retail trade	18.4	21.1	18.1	18.1	19.5	10.7	16.9	23.2	30.9	19.4	21.8	15.9	18.1	19.7	18.0	18.7
Insurance and real estate	7.2	4.4	7.5	7.6	5.8	5.6	9.3	6.7	3.0	3.5	6.0	8.1	7.1	7.5	6.5	7.8
Business services	25.1	31.6	24.2	23.4	31.3	31.1	26.2	22.5	15.0	15.4	27.7	23.2	24.9	25.7	29.9	21.3
Professional services	20.7	21.8	20.2	18.7	27.3	25.0	21.3	18.1	17.3	14.5	18.1	22.6	22.8	12.5	22.3	19.3
<i>Years under current ownership</i>																
0-4	20.6	33.4	18.5	20.0	23.1	26.7	21.5	18.0	13.4	6.6	48.3	...	22.1	15.0	20.6	20.6
5-9	22.1	23.2	21.9	20.7	26.9	20.7	22.4	23.3	21.5	14.8	51.7	...	21.8	23.1	19.9	23.8
10-14	16.0	13.2	16.5	15.6	17.1	17.3	16.2	14.9	15.9	15.9	...	27.9	15.8	16.7	16.7	15.4
15-19	12.6	10.1	13.0	12.7	12.3	11.5	11.6	14.3	12.7	16.4	...	22.0	12.5	12.9	12.6	12.6
20-24	10.9	9.1	11.1	11.4	8.9	11.0	10.1	11.6	9.9	14.2	...	18.9	11.2	9.5	12.2	9.7
25 or more	17.9	11.0	18.9	19.6	11.7	12.7	18.3	18.0	26.5	32.1	...	31.2	16.6	22.8	18.0	17.9

## APPENDIX A: SURVEY METHODS

The 2003 Survey of Small Business Finances was conducted in 2004 and 2005 for the Board of Governors of the Federal Reserve System by the National Opinion Research Center (NORC), a research organization at the University of Chicago. The survey covered a nationally representative sample of U.S. for-profit, nonfinancial, nonsubsidiary, nonagricul-

tural, nongovernmental businesses with fewer than 500 employees that were in operation both at year-end 2003 and at the time of the interview. Most interviews took place between June 2004 and January 2005.<sup>34</sup>

34. Further details are in NORC (2005), "The 2003 Survey of Small Business Finances Methodology Report," June, [www.federalreserve.gov/pubs/oss/oss3/nssbftoc.htm](http://www.federalreserve.gov/pubs/oss/oss3/nssbftoc.htm).

## A.1.—Continued

Percent

Characteristic	All firms	Majority owners				Number of employees					Years under current ownership		Urbanization at main office		Organizational form	
		Non-white or Hispanic	Non-Hispanic white	Male or female equally by sex	Female	0–1	2–4	5–19	20–49	50–499	0–9	10 or more	Urban	Rural	Proprietorship	Other
<i>Census area of main office</i>																
Northeast	19.8	14.9	20.5	19.1	22.1	24.9	19.1	17.9	18.3	15.5	18.3	20.8	21.5	13.2	20.5	19.2
New England	6.0	*	6.5	5.6	7.2	7.6	5.0	6.1	6.6	4.4	4.8	6.8	6.1	5.6	6.7	5.4
Middle Atlantic	13.8	12.7	14.0	13.5	14.9	17.3	14.1	11.8	11.7	11.1	13.5	14.0	15.4	7.7	13.9	13.7
Midwest	21.1	10.8	22.5	21.8	18.3	16.6	21.4	22.1	27.8	24.9	19.1	22.6	18.7	30.3	19.9	22.1
East North Central	14.2	8.4	15.0	14.8	12.2	12.2	14.8	13.4	20.4	15.7	13.6	14.7	14.0	15.1	13.8	14.5
West North Central	6.9	2.5	7.5	7.1	6.1	4.4	6.6	8.7	7.4	9.3	5.5	7.9	4.7	15.2	6.0	7.6
South	34.7	44.7	33.6	34.5	35.4	31.6	35.7	36.9	29.7	30.6	39.0	31.6	34.6	35.1	32.6	36.5
South Atlantic	18.9	26.2	17.8	19.4	17.3	15.9	18.6	22.3	15.0	16.6	20.7	17.6	19.9	15.2	15.0	22.1
East South Central	5.3	6.2	5.3	5.1	5.9	5.4	6.0	4.3	5.7	4.7	6.1	4.7	3.9	10.6	6.3	4.5
West South Central	10.5	12.4	10.5	10.1	12.1	10.3	11.1	10.3	9.0	9.3	12.1	9.3	10.8	9.4	11.3	9.9
West	24.4	29.6	23.5	24.5	24.3	26.9	23.9	23.1	24.3	28.9	23.6	25.0	25.2	21.4	27.0	22.3
Mountain	7.6	5.6	8.0	7.9	6.7	9.1	6.3	8.2	9.2	5.1	7.5	7.7	6.5	11.9	6.9	8.2
Pacific	16.8	24.0	15.5	16.6	17.6	17.8	17.6	14.9	15.0	23.8	16.1	17.3	18.7	9.5	20.1	14.1
<i>Urbanization at main office</i>																
Urban	79.4	89.6	77.6	79.2	80.2	79.9	79.2	79.1	77.8	84.5	81.5	77.8	100	...	76.1	82.0
Rural	20.6	10.4	22.4	20.8	19.8	20.1	20.8	20.9	22.2	15.6	18.5	22.2	...	100	23.9	18.0
<i>Number of offices</i>																
One	86.0	86.6	86.0	85.2	88.9	93.5	89.7	82.8	71.1	41.0	85.3	86.5	85.6	87.3	93.0	80.3
Two	9.4	9.5	9.5	9.8	8.1	5.2	8.3	11.8	15.1	18.0	10.8	8.4	9.9	7.7	5.8	12.4
Three or more	4.6	3.9	4.6	5.0	3.0	*	2.0	5.4	13.8	41.1	4.0	5.1	4.5	5.0	1.2	7.4
<i>Sales area</i>																
Primarily within the United States	95.4	95.0	95.6	95.2	95.9	94.6	95.4	96.1	95.7	92.0	95.0	95.6	94.7	97.9	96.3	94.6
International or global	4.6	5.0	4.4	4.8	4.1	5.4	4.6	4.0	4.3	8.0	5.0	4.4	5.3	2.1	3.7	5.4
<i>Management</i>																
By owner	94.3	92.8	94.6	94.6	93.0	99.1	96.2	91.5	85.9	76.9	94.7	93.9	94.0	95.2	97.4	91.7
Hired	5.8	7.2	5.4	5.4	7.0	*	3.8	8.5	14.1	23.1	5.3	6.1	6.0	4.8	2.6	8.3
<i>Race, ethnicity, and sex of majority owners</i>																
Nonwhite or Hispanic	13.1	100.0	1.0	12.3	15.7	12.5	15.0	11.4	11.3	11.5	17.3	9.9	14.7	6.6	14.0	12.3
Non-Hispanic white	86.6	6.3	100.0	86.9	85.8	87.9	85.0	87.3	89.0	88.8	82.0	90.1	84.6	94.3	86.4	86.8
White	91.0	35.0	100.0	91.4	89.8	91.9	90.0	90.9	94.4	92.2	87.9	93.3	89.6	96.3	90.7	91.2
Black	3.7	28.1	*	3.2	5.5	3.5	4.6	3.3	*	*	4.8	2.8	4.3	*	5.1	2.5
Asian, Native Hawaiian, or other Pacific Islander	4.2	32.4	*	4.2	4.3	4.0	4.4	4.0	4.3	5.4	5.8	3.1	4.9	1.6	3.3	5.0
American Indian or Alaska Native	1.3	10.3	.7	1.1	2.2	*	1.6	*	*	*	1.7	1.1	1.2	1.9	1.7	1.1
Hispanic	4.2	31.8	...	4.1	4.3	4.0	4.8	3.3	5.6	3.5	5.2	3.4	4.7	2.2	4.5	3.9
Non-Hispanic	95.8	68.2	100.0	95.9	95.7	96.1	95.3	96.7	94.5	96.5	94.8	96.6	95.3	97.8	95.5	96.1
Female	22.4	26.8	22.2	...	100	32.0	22.1	18.5	15.0	11.5	26.2	19.5	22.6	21.5	28.2	17.7
Male	64.8	65.1	65.3	83.5	...	62.2	62.6	66.3	75.4	80.5	60.7	67.9	65.3	62.9	62.4	66.8
Ownership divided equally by sex	12.8	8.1	12.6	16.5	...	5.9	15.3	15.2	9.6	8.0	13.1	12.6	12.1	15.6	9.4	15.5

NOTE: For definition of sales areas, refer to table 2, note 3.

\* Fewer than fifteen observations.

... Not applicable.

The sample was drawn from the Dun & Bradstreet Market Identifier (DMI) file.<sup>35</sup> The DMI file is broadly representative of all businesses in the United States (though it may underrepresent the newest and smallest businesses). It has been estimated that the

Dun & Bradstreet database covers approximately 93 percent of full-time business activity.<sup>36</sup>

Entities known to be ineligible for the survey (such as firms with 500 or more employees, branches, subsidiaries, and firms in certain industries) were removed from the DMI file, and then the DMI file

35. Dun's Marketing Service, Dun & Bradstreet, Inc.

36. Bruce D. Phillips and Bruce A. Kirchoff, "Formation, Growth, and Survival: Small Firm Dynamics in the U.S. Economy," *Small Business Economics*, vol. 1 (March), pp. 65–74.

was sampled according to a stratified systematic design. The design consisted of seventy-two strata defined by the cross-classification of firm size by number of employees (less than 20, 20–49, 50–99, and 100–499), Census division, and urban or rural status. Each stratum was sorted by Standard Industrial Classification (SIC) code to help ensure proportionate industry coverage. Larger small businesses (those with 20 or more employees), which account for a small proportion of the target population, were over-sampled to ensure a large enough sample to permit comparisons with smaller small businesses.

A sample of 37,600 firms (representing nearly 9.7 million enterprises) was initially selected for a brief, computer-assisted telephone interview. The purpose of this screening interview was to verify that the firm was eligible for inclusion in the sample, to confirm contact information, and to secure cooperation for the main interview. In advance of the screening interview, selected firms received a brochure describing the survey. The average screening interview itself took less than eleven minutes, and the average total time per screening interview (which included establishing contact with firm owners, setting appointments, and calling back to complete the screening interview) was about one hour. Of these 37,600 firms, 23,798 were selected for the screening interview, 14,061 were actually screened, and 9,687 were determined to be eligible. The weighted response rate on the screening interview was 62 percent.<sup>37</sup>

In the second stage, the main survey, also a computer-assisted telephone interview, was attempted with all 9,687 firms determined to be eligible during the screening stage.<sup>38</sup> Within a couple of weeks of completing the screening interview, firms received a customized worksheet to help the owners collect and organize their records in preparation for the main interview. The worksheet requested financial data for the firm, information about the financial services used by the firm, and the sources of those services. The worksheets were customized according to the firm's legal organizational form and directed respondents to the appropriate lines on their tax forms.<sup>39</sup> When

interviewing was finished, 4,240 eligible firms, representing 6.3 million businesses, had completed interviews—a completion rate of 52.4 percent for the main interview. The weighted response rate for screening and main interviews combined was 32.4 percent.<sup>40</sup>

The actual main telephone interview took an average of about fifty-five minutes, and the total time (which included establishing contact, setting appointments, and so on) averaged more than three hours per completed case. Typically, respondents that started the main interview and got through the first few questions ended up completing the interview.

The following categories of information were collected from each firm:

- the demographics of the firm and of the owners with the largest shares—up to three owners per firm
- the firm's use of financial services and the sources providing the services
- the most recent applications for credit by the firm in the past three years
- the firm's balance sheet and income data
- the recent credit history of the firm and its owners

With the exception of the income statement, balance sheet, and most recent credit applications, the data were collected as of the date of the interview.<sup>41</sup>

A public-use version of the data set and a user's manual will be posted on the Federal Reserve Board's website, at [www.federalreserve.gov/pubs/oss/oss3/nsbftoc.htm](http://www.federalreserve.gov/pubs/oss/oss3/nsbftoc.htm).

## APPENDIX B: RACE, ETHNICITY, AND BUSINESS OWNERSHIP

In contrast to earlier years, the most recent SSBF survey and the most recent data released by the U.S. Census Bureau differ in the estimated share of all

37. Details on response rates are in NORC (2005), "The 2003 Survey of Small Business Finances Methodology Report."

38. During the main interview, a few additional firms were determined to be ineligible. In most of these cases, screening interviews had been completed by someone other than an owner.

39. At the end of the main interview, respondents were asked to return their worksheets or other records (tax files, financial reports) in a self-addressed stamped envelope. About one-third of the participating firms returned completed worksheets or other records. The preparation of the worksheets helped respondents prepare for the interview, and the returned worksheets often helped resolve discrepancies or supply items missing after the main interview.

40. The response rate for the 1998 SSBF was 33 percent. One of the goals of the 2003 survey was to improve response rates. To this end, the 2003 survey offered incentives for completing the main interview, shortened the time between the screening interview and the main interview to an average of two weeks or less, sent worksheets to potential respondents using next-day delivery, added an automated procedure for looking up institutions during the main interview to reduce the amount of time needed to identify branch locations and obtain branch addresses, and carefully reviewed and streamlined the questionnaire. These efforts are believed to have prevented the 2003 response rate from declining from its 1998 level.

41. To ease reporting burden and to ensure some consistency across firms, balance sheet and income items were tied to the tax forms that most firms are required to file each fiscal year. Because not all fiscal years end on December 31, and because it takes time for businesses to organize records and prepare tax forms, firms were asked to report balance sheet and income data for the firm's fiscal year that ended between May 1, 2003, and April 30, 2004.

businesses that were owned by Asians, by blacks, and by Hispanics.<sup>42</sup> In the Census Bureau's Survey of Business Owners (SBO), the ownership rates of these minority groups rose between the 1997 and 2002 surveys. However, the SSBF estimates indicate that, between 1998 and 2003, rates of ownership among Asians and blacks were essentially unchanged, whereas rates of Hispanic ownership declined (table B.1).<sup>43</sup>

These differences can largely be explained by three factors:

- First, the lists of businesses from which the two surveys draw their samples (the sample frames) differ in ways that are sensitive to any disproportionate change in minority ownership rates. Such disproportionate changes were seen in the 2002–03 period but not in the 1997–98 period.
- Second, to improve the uniformity of its financial data, the 2003 SSBF lengthened the time that a firm would have to be in business to be eligible for the survey. This change would tend to cause a decrease in the observed rate of minority ownership in the SSBF relative to the SBO because minority-owned firms tend to have shorter life spans than non-minority-owned firms.
- Third, unlike the 1998 SSBF and the two SBO surveys, the 2003 SSBF did not oversample minority-owned businesses. Although that is a notable change in methodology, the specific effects of the change are unknown.

Taken together, these three factors suggest that the difference in minority ownership rates between the 2003 SSBF and the 2002 SBO stem from the interac-

#### B.1. Rates of business ownership, by selected race and ethnicity of owners, 1997 and 2002 SBO and 1998 and 2003 SSBF

Percent

Race or ethnicity	SBO		SSBF	
	1997	2002	1998	2003
Asian <sup>1</sup> .....	4.4	5.0	4.4 (.3)	4.2 (.4)
Black .....	4.0	5.2	4.1 (.3)	3.7 (.4)
Hispanic .....	5.8	6.9	5.6 (.4)	4.2 (.4)

NOTE: Numbers in parentheses are standard errors.

1. For definition of this term here and in the following tables, refer to text note 42.

SOURCE: Here and in the following tables, data for the Survey of Business Owners (SBO) are from total numbers of businesses, 1997 and 2002 surveys, [www.census.gov/csd/sbo](http://www.census.gov/csd/sbo).

tion of survey structure with changes specific to the periods in question. Such complex interactions highlight the need to treat comparisons of results from the SSBF and SBO—indeed, between any two surveys—with care.

#### Differences in Universes

Perhaps the most important reason that the estimates of minority ownership rates from the most recent SSBF and SBO may have diverged is the difference in the promptness with which the surveys' sample frames pick up new and small businesses, together with some particular dynamics of business ownership in the periods between 1997 and 2003.

For both the 1997 and 2002 surveys, the SBO sample was drawn from economic census reports and from a list of firms compiled from federal tax returns filed by businesses.<sup>44</sup> Because the list used by the Census Bureau is drawn in part from restricted sources and is not available to the Federal Reserve Board, the SSBF sample must be drawn from another source. The Dun & Bradstreet Market Identifier File (DMI), thought to be the best publicly available listing of current businesses in the United States, is the source for the 1998 and 2003 SSBF samples.<sup>45</sup> The DMI file is updated using information from new

42. Rates of ownership by American Indians and Alaska Natives were close in the two surveys and are thus not treated in this appendix. In the 1997 SBO, the Native Hawaiian category did not appear separately; in that survey, the category was "Asian and Pacific Islander." As in the rest of this article, "Asian" used in reference to the SSBF refers to individuals who are Asian, Native Hawaiian, or Pacific Islander.

43. The 1998 SSBF covered 3,561 firms, of which 214 were Asian-owned, 273 were black-owned, and 260 were Hispanic-owned. The corresponding ownership numbers for the 4,240 firms in the 2003 SSBF were 170, 119, and 149 respectively. Reported percentages are weighted to adjust for sample design and nonresponse. Because the samples in each survey were drawn from different populations and the Census Bureau does not provide standard errors, the point estimates are not directly comparable across surveys. For this appendix, estimate *B* is considered statistically different from estimate *A* if it does not lie within the 95 percent confidence interval of *A*. For example, in the 2003 SSBF, the percentage of firms that were owned by blacks was estimated to be 3.7 percent. The 95 percent confidence interval for that estimate is from 2.9 percent to 4.5 percent—calculated as  $3.7 \pm (1.96 \times 0.4)$  (see table B.1). Because the 2002 SBO estimate of 5.2 percent falls outside this range, the difference between these two estimates is statistically significant.

44. The Census Bureau obtains electronic versions of the following forms submitted by businesses to the Internal Revenue Service: Form 1040, Schedule C (individual proprietorship or self-employed person); Form 1065 (partnership); all Form 1120 corporation tax forms; and Form 941 (Employer's Quarterly Federal Tax Return).

45. The Small Business Administration (*The State of Small Business: A Report of the President*, U.S. Small Business Administration, 1988) estimates that the DMI frame represented approximately 93 percent of private employment in 1987. No updated estimate of the extent of DMI coverage is available, but its coverage is likely to have improved (or at least held steady) with improved information technology. For example, in the early 1990s, the DMI frame began including

### B.2. Rates of business ownership, by selected race and ethnicity of owners and presence of paid employees, 1997 and 2002 SBO

Percent

Race or ethnicity	No paid employees		Paid employees	
	1997	2002	1997	2002
Asian .....	4.0	4.6	5.5	5.9
Black .....	4.7	6.3	1.8	1.7
Hispanic .....	6.4	7.9	4.0	3.6

credit applications; in-person and telephone interviews; county, state, and federal government sources; business trade-tape exchange programs; and third-party sources such as listings in the Yellow Pages. Given that the newest and smallest firms often do not apply for new credit, advertise in the Yellow Pages, or incorporate, it is likely that the DMI frame underrepresents the smallest and newest firms.<sup>46</sup>

If the rates of minority ownership are higher for the firms missing from the DMI file than for those listed, we would expect to see lower rates of minority ownership in the SSBF than in the SBO. The SBO does not provide information on the ownership of the firm by firm age, so we are unable to say anything about the part of the DMI file that is likely to be missing because the firm is too new. However, the SBO does provide information according to whether the firm has paid employees and, if it does, according to the number of employees. Non-employer firms and firms with few paid employees are less likely to be represented on the DMI file than the employer firms, especially employer firms with a large number of employees.

### Business Ownership Rates from the SBO

Among the firms represented by the 2002 SBO sample, less than one-fourth had any paid employees, a fraction consistent with the 1997 SBO. The SBO estimates indicate that ownership rates for blacks and Hispanics were much lower among firms with paid employees (table B.2). They also indicate that ownership rates among blacks and Hispanics grew *only* among firms with no paid employees. Among firms with paid employees, the rate of ownership among blacks remained roughly constant, and the rate among Hispanics showed a slight decline.

all firms in the business listings of telephone directories, such as the Yellow Pages.

46. An estimate of the coverage of the DMI file is in David A. Marker and W. Sherman Edwards (1997), "Quality of the DMI File as a Business Sampling Frame," in proceedings of the Survey Research Methods Section, American Statistical Association, pp. 21–30, [www.amstat.org/sections/SRMS/proceedings](http://www.amstat.org/sections/SRMS/proceedings).

### B.3. Rates of ownership of businesses with paid employees, by selected race and ethnicity of owners and number of paid employees, 1997 and 2002 SBO

Percent

Number of paid employees	Asian		Black		Hispanic	
	1997	2002	1997	2002	1997	2002
1–4 .....	5.7	6.2	1.9	1.8	4.3	3.8
5–9 .....	5.6	5.8	1.5	1.5	3.9	3.3
10–19 .....	4.5	5.2	1.3	1.3	3.5	3.2
20–49 .....	4.3	4.1	1.2	1.2	2.6	2.5
50–99 .....	3.5	2.9	1.3	1.1	2.7	2.4
100–499 .....	2.5	2.2	1.0	1.1	1.3	1.6
MEMO All firms .....	5.5	5.9	1.8	1.7	4.0	3.6

Asian ownership rates were higher for firms with paid employees than for those without paid employees, and Asian ownership rates grew somewhat for both these types of firms. However, Asian ownership rates were highest for the smallest firms; indeed, the growth between the 1997 and 2002 SBO was limited to firms with fewer than twenty paid employees (table B.3).<sup>47</sup>

### Composition of Self-Employment from the CPS

Data from the March Current Population Survey (CPS) provide further details on the changes in business ownership composition in the periods between the 1997 and 2002 SBO and the 1998 and 2003 SSBF (table B.4). Although the CPS data are not intended to measure business ownership, they do provide information on self-employment, with a breakdown by business incorporation status.<sup>48</sup> We would expect new unincorporated businesses to be picked up less quickly in the DMI file than incorporated businesses for the reasons noted above. *Changes* in the make-up of self-employed individuals in unincorporated businesses are thus likely to be observed only with a lag in the DMI file. However, if the change is proportionate by race and ethnicity, the lag should not affect estimates of minority ownership rates.

47. Minority ownership rates by the number of employees are not available for firms without paid employees, as the numbers of unpaid employees are not collected.

48. Estimates of business ownership rates based on self-employment will not be exactly comparable to actual business ownership rates because the unit of observation is the individual rather than the firm. Counting this way will miss all individuals who do not actively work in their firms and overcount firms that are jointly owned; no information is available on the effect this is likely to have on estimates of minority ownership. Estimates are based on the "Class of Worker" variables for the main and second job; respondents were counted as self-employed if they reported self-employment for either job. From 1994 to 2003, between 10 percent and 12 percent of the employed population reported being self-employed in either their main or second job.



## B.4. Share of self-employed population that is of selected race and ethnicity, by status of business incorporation, Current Population Survey, 1994–2003

Percent

Year	All businesses			Incorporated businesses			Unincorporated businesses		
	Asian	Black	Hispanic	Asian	Black	Hispanic	Asian	Black	Hispanic
1994 ....	2.8 (.2)	4.4 (.3)	5.3 (.3)	3.6 (.4)	2.9 (.4)	4.0 (.5)	2.4 (.2)	4.9 (.3)	5.8 (.4)
1995 ....	2.5 (.2)	4.1 (.3)	4.7 (.3)	3.4 (.4)	2.6 (.4)	4.0 (.5)	2.1 (.2)	4.7 (.3)	5.0 (.4)
1996 ....	3.3 (.2)	4.4 (.3)	5.5 (.3)	4.5 (.6)	2.6 (.5)	3.2 (.5)	2.8 (.3)	5.0 (.4)	6.3 (.4)
1997 ....	4.0 (.3)	4.3 (.3)	5.6 (.3)	4.6 (.5)	2.5 (.4)	3.1 (.5)	3.8 (.3)	5.0 (.4)	6.6 (.4)
1998 ....	3.9 (.3)	4.4 (.3)	5.5 (.3)	4.3 (.5)	2.3 (.4)	3.3 (.5)	3.7 (.3)	5.2 (.4)	6.4 (.4)
1999 ....	4.3 (.3)	5.1 (.3)	6.4 (.4)	4.9 (.5)	3.9 (.5)	3.4 (.5)	4.1 (.3)	5.6 (.4)	7.5 (.5)
2000 ....	3.8 (.3)	5.8 (.4)	5.9 (.3)	4.4 (.5)	4.3 (.6)	4.7 (.5)	3.5 (.3)	6.5 (.4)	6.4 (.4)
2001 ....	4.4 (.3)	5.2 (.3)	6.3 (.3)	4.6 (.5)	4.0 (.5)	4.8 (.5)	4.3 (.4)	5.7 (.4)	6.8 (.4)
2002 ....	3.5 (.3)	5.6 (.3)	6.7 (.4)	4.0 (.5)	3.4 (.4)	3.5 (.4)	3.3 (.3)	6.6 (.4)	8.2 (.5)
2003 ....	4.5 (.3)	5.4 (.3)	7.7 (.4)	5.4 (.5)	4.2 (.5)	4.0 (.5)	4.1 (.4)	6.0 (.4)	9.4 (.5)

NOTE: Numbers in parentheses are standard errors.

SOURCE: Calculated from Current Population Survey for March of each year, [www.bls.census.gov/cps/cpsbasic.htm](http://www.bls.census.gov/cps/cpsbasic.htm).

The data *do* indicate disproportionate changes in the composition of the self-employed in the 2002–03 period. Between 1997 and 1998, the proportions of the self-employed population that were Asian, black, and Hispanic were essentially unchanged. In particular, the proportions of self-employed persons in *unincorporated* businesses who were Asian, black, or Hispanic remained constant. This constancy would imply that, despite the lag with which the smallest new businesses are likely to appear in the DMI file, the estimated rates of minority ownership from a sample drawn from the DMI file during that period should be very close to the actual rates. Indeed, the rates of minority ownership in the 1998 SSBF and the 1997 SBO were both very close to the 1998 estimated overall self-employment proportions calculated from the CPS.

Between 2002 and 2003, however, the proportion of self-employed individuals who were Asian rose about 1 percentage point, the proportion that was Hispanic also rose about 1 percentage point, and the share that was black changed little. Moreover, the proportions of self-employed individuals in unincorporated businesses who were Asian or Hispanic also rose between these years. Thus, unlike in the 1997–98 period, the 2002–03 period had disproportionate changes in the shares of the self-employed who were Asian or Hispanic. A shift of this sort between the two periods should cause a sample drawn from the DMI file for 2003 (the SSBF) to understate these rates of

minority ownership relative to surveys, such as the SBO, that pick up changes in the population of unincorporated businesses more promptly. Although the 2003 SSBF rates are somewhat lower than the overall self-employment proportions in the 2003 CPS, they are not statistically different from the 2003 CPS proportions of persons self-employed in *incorporated* businesses.

This analysis provides evidence that minority ownership rates are highest among the smallest firms, the firms most likely to be missing from the DMI file. In addition, the analysis shows differential trends for minority self-employment. Taken together, these findings provide some insight into the dissimilarity of the comparisons between the 1997 SBO and the 1998 SSBF on the one hand, and the 2002 SBO and the 2003 SSBF on the other.

### Differences in Coverage

Both the SSBF and the SBO limit their samples to firms in business as of certain defined periods, but the SSBF changed its population definition between the 1998 and 2003 surveys. The SBO, focused on owner characteristics, restricts its coverage to businesses in operation at any point during the calendar year; the 1997 survey covered businesses in operation during 1997, and the 2002 survey covered businesses in operation during 2002.

The SSBF, on the other hand, attempts to collect a large amount of financial information about firms that were in business as of December 31 of the survey year. In 2003, an additional in-business constraint was imposed on firms so that account information could be captured as of the date of the interview and balance sheet information could be collected as of the end of the fiscal year (December 31, 2003, for the majority of firms).<sup>49</sup> Thus, whereas the 1998 SSBF collected information on firms that were in business as of December 31, 1998, the 2003 SSBF collected information on firms that were in business as of December 31, 2003, *and* at the date of the interview (between June 2004 and January 2005). The 2003 procedure thus effectively imposed a longer longevity constraint on the population of interest.

Because there is a significant amount of “churning” in the business population each year (table B.5), the added longevity constraint implies that fewer firms would be eligible under the 2003 SSBF eligibility rules than under the 1998 SSBF rules. Research indicates that minority-owned businesses are less likely to remain in business than non-minority-owned businesses.<sup>50</sup> Among the non-minority-owned businesses established in 1997, 72.6 percent were still in business as of 2001. Among Asian-owned businesses, the corresponding proportion was 72.1 percent; among Hispanic-owned businesses, 68.6 percent; and among black-owned businesses, 61.0 percent. Some evidence also indicates that the longer a firm is in business, and the larger a firm is at a given time, the more likely it is to survive over some finite period.<sup>51</sup>

Given (1) the significant churning of businesses, (2) the fact that many minority-owned businesses are quite small, and (3) the higher business closure rates by minorities, we should expect to see fewer minority businesses in the SSBF sample than in the SBO sample even if the sample were drawn from the same list. Furthermore, given that the longevity constraint

49. The additional in-operation restriction was imposed so that respondents could provide information on accounts and financial service providers as of the date of the interview. Although previous interviews asked respondents to provide this information as of the end of the last fiscal year, interviewer reports indicated that many respondents gave account information as of the interview date. To make the reported information consistent across all respondents, the questionnaire was changed to ask about accounts as of the date of the interview.

50. Ying Lowrey (2005), “Dynamics of Minority-Owned Employer Establishments, 1997–2001: An Analysis of Employer Data from the Survey of Minority-Owned Business Establishments,” Research Study, U.S. Small Business Administration, Office of Advocacy (February), [www.sba.gov/advo/research/chron.html](http://www.sba.gov/advo/research/chron.html).

51. Joel Popkin and Company (1992), “Business Survival Rates by Age Cohort of Business,” Research Study, U.S. Small Business Administration, Office of Advocacy; summary at [www.sba.gov/advo/research/chron.html](http://www.sba.gov/advo/research/chron.html).

### B.5. Number of starts, closures, and bankruptcies of businesses with paid employees, 2000–04

Percent

Category	2000	2001	2002	2003	2004
Starts . . . . .	574,300	585,140	569,750	612,296	642,600 <sup>e</sup>
Closures . . . . .	542,831	553,291	586,890	540,658	544,300 <sup>e</sup>
Bankruptcies . . . . .	35,472	40,099	38,540	35,037	34,317

<sup>e</sup> Estimated.

SOURCE: SBA Office of Advocacy, <http://app1.sba.gov/faqs/faqIndexAll.cfm?areaid=24>.

applied only to the 2003 SSBF, we should expect to observe differences in comparisons of estimates of rates of minority ownership between the 1997 SBO and the 1998 SSBF and between the 2002 SBO and the 2003 SSBF.

### Differences in Methodology

Another area that might have contributed to the observed differences in minority ownership rates between the latest SSBF and SBO can be found in the different ways the two surveys drew their samples. For the 1997 and 2002 SBO, predicted race and ethnicity categories were used as sampling strata, and minorities were oversampled. The 1998 SSBF also oversampled minorities using information collected during the screening interview. The 2003 SSBF did not, however, oversample minorities. The effects of this divergence between the surveys are unclear, but the methodological difference itself is worth noting.

### Summary

In contrast to earlier years, the 2003 SSBF reported lower rates of business ownership by Asians, by blacks, and by Hispanics than did the 2002 SBO. This appendix looked at differences in the universes, coverage, and methodology across the two surveys. Each of these three factors, together with the changing dynamics of the small business population, could be expected to contribute to the differential ownership rates observed between the most recent surveys by the SSBF and SBO.

- The SSBF draws its sample from a list that is likely to be slower than the SBO list in picking up the newest and smallest firms. Between 1997 and 1998, the fluctuations in the self-employment population were relatively stable within racial and ethnic categories. Between 2002 and 2003, however, there were sizable increases in the proportion of self-employed individuals who were Asian or Hispanic, and the SSBF likely underestimated that recent rise because its source list was slow to record it.

- The 2003 SSBF extended the time that a firm had to be in business so as to capture certain financial data more accurately. That change would tend, however, to cause fewer minority-owned businesses to qualify for the survey relative to the SBO and to the 1998 SSBF because small and minority-owned firms tend to close more quickly than others.
- Finally, of the four surveys at issue (the two most recent releases of the SBO and the two most recent of the SSBF), the 2003 SSBF was the only one that did not oversample minority-owned businesses, a difference with specific effects that are not known.

Although counterfactuals—such as the percentage of firms that went out of business that are included in the SBO sample or the newly formed firms that are not included in the DMI frame—are not available to definitively identify the cause of the differences, and although all of the factors are likely to have played a role, the differences in the list from which the samples were drawn appear to have been the dominant factor.

