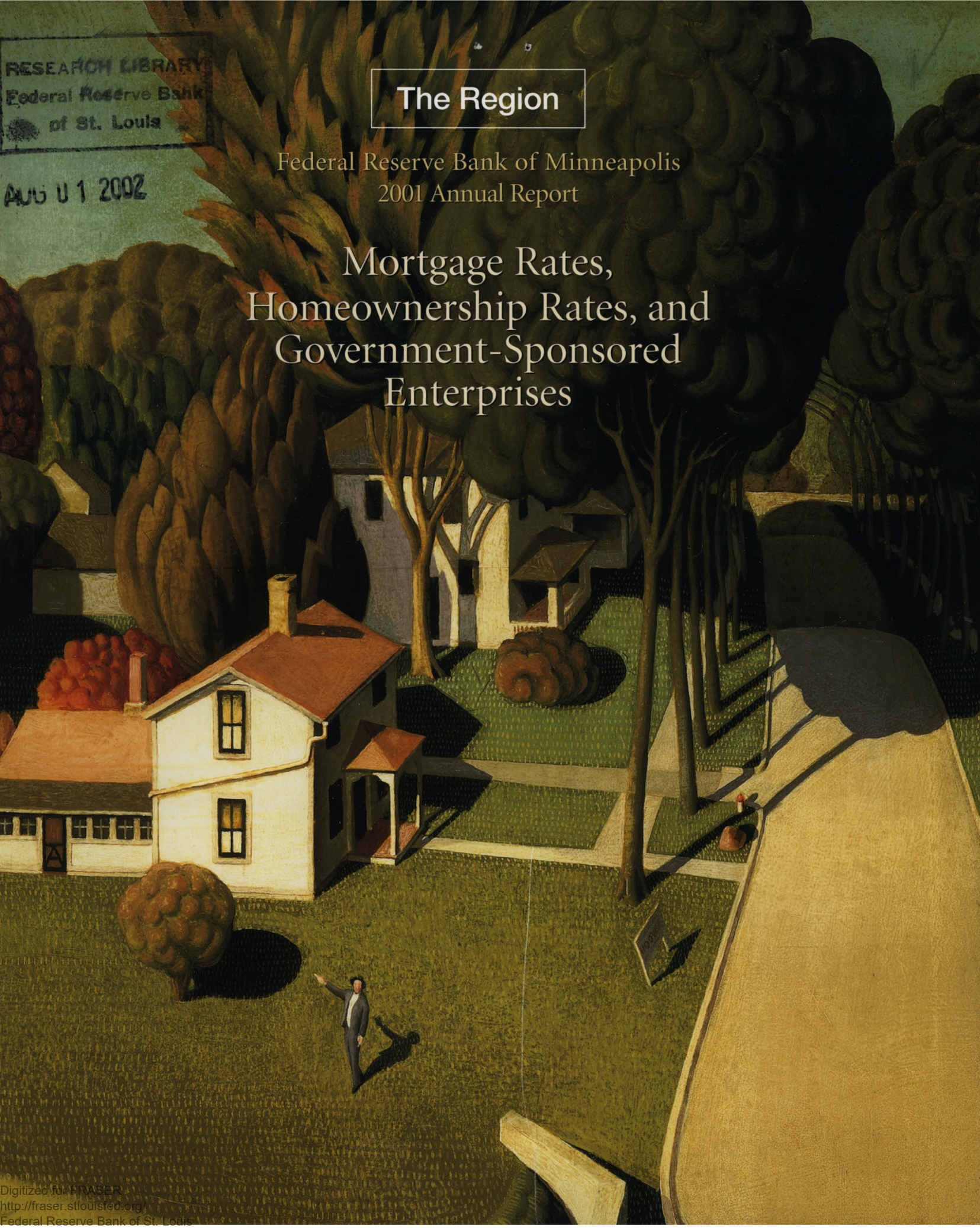
The Region

Federal Reserve Bank of Minneapolis
2001 Annual Report

Mortgage Rates, Homeownership Rates, and Government-Sponsored Enterprises



Volume 16 Number 1
2002
ISSN 1045-3369

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Cover Art: Grant Wood
The Birthplace of Herbert Hoover, West Branch, Iowa, 1931 (detail)
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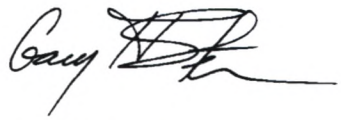
President's Message

A policy priority in the United States is to increase the rate of homeownership. To achieve that objective, policymakers rely on a host of policies and programs that reallocate billions of dollars of resources. Several of these policies and programs try to increase homeownership by reducing mortgage rates. More specifically, federal sponsorship for Fannie Mae and Freddie Mac is one of the major tools that policymakers rely on to reduce mortgage rates.

Given the public resources involved, many aspects of Fannie Mae's and Freddie Mac's activities have been subject to vigorous public discussion. As part of that discussion, we think it important to examine if the mortgage rate reduction produced by Fannie Mae and Freddie Mac is likely to increase homeownership. In the following essay, we contribute to the discussion by reviewing evidence on the effect of mortgage rate changes on people's ability and desire to buy a house. Most of the evidence we review finds that mortgage rate changes need to be around 2 percentage points before they have what many would consider a modest, but not trivial, effect on homeownership.

Because Fannie and Freddie likely have an effect on mortgage rates considerably lower than 2 percentage points, the effect of their mortgage rate reductions on homeownership is likely to be quite modest although, again, not trivial. Moreover, the evidence in the essay also suggests that a more direct method of subsidizing potential homeowners would have a larger effect on homeownership, while using the same amount of resources, than the reductions in mortgage rates attributed to Fannie and Freddie.

Of course, an analysis of homeownership and mortgage rates is complicated by a number of factors, including the complexity of the decision to own and weaknesses in data. As a result, the studies we summarize in the essay all have important weaknesses, many of which we highlight. Fannie Mae and Freddie Mac also do more than alter rates and have broader goals than an increase in homeownership. In short, this essay is surely not the last word on the topic, which we view as a welcome outcome. A lively discussion of one of the nation's top policy priorities serves the public interest.



Gary H. Stern
President

Mortgage Rates, Homeownership Rates, and Government-Sponsored Enterprises

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I. Summary

Mortgage rates influence a household's ability and desire to buy a home. The mortgage rate determines, in part, the monthly mortgage payment of borrowers and therefore their ability to meet debt-to-income standards used by mortgage lenders. Rates also affect ownership costs and the desire of households to become homeowners.

A small number of simulations have tried to quantify how a change in mortgage rates affects the number of potential homeowners. Most of the simulations find that a shift—generally a reduction— in mortgage rates of roughly 2 percentage points changes the percentage of households that can buy a house by around 50 basis points.[1] Most of the simulations found that a similar swing in mortgage rates would alter the percentage of black households that could buy a house by around 10 basis points.[2] Some research examining the variation in homeownership rates more directly suggests that small mortgage rate changes do not explain much of the variation.

The simulations also measure the relative effect of a mortgage rate reduction on homeownership by comparing it to other changes in mortgage qualification standards and/or policy options. The simulations find that shifting from mortgages with a 5 percent down payment to a 0 percent down payment would increase the percentage of all households that could buy a house by between 2 and 4.5 percentage points. The increase in ownership for black households for the no-down- payment policy was between 1 and 5 percentage points. These findings indicate that an inability to pay standard down payments and closing costs could have a larger effect on homeownership than mortgage-rate–related factors.

Two of the simulations also examine the effects on homeownership of a policy of providing cash assistance to renters that they could use to pay for down payments, closing costs and/or, in some cases, to retire debt. They find that cash assistance on the order of $5,000 to $10,000 per household would lead to a three-to-ten times greater increase in the percentage of renting households that could qualify to purchase a lower-cost home than an elimination of down payments.

The simulations have several attributes and limitations worth noting. First, the simulations may produce inflated results because they do not take into account all of the factors that lenders consider when funding mortgages. Second, the data used in

[1]One basis point is 1/100 of a percentage point. In addition, one simulation found a much larger effect from a smaller increase in rates. An increase in rates of 50 basis points reduced the percentage of households likely to become homeowners by 1 percentage point.

[2]Again, one study found a much larger effect from a smaller increase in rates. An increase in rates of 50 basis points reduced the percentage of black households likely to become homeowners by 3 percentage points.

the simulations may not accurately reflect the true condition of households. In particular, the data can understate wealth and therefore the ability of households to make down payments and the like. Third, the results do not indicate how shifts in mortgage rates or down payments alter the timing of homeownership. Even if such shifts do not have a large effect on the ability of households to purchase a house at a point in time, a reduction in down payments can accelerate homeownership for some households, while a small increase in mortgage rates may slow home purchase for only a short time. Fourth, the assumptions used in the simulations (for example, the level of mortgage rate at which the change in the rate occurs) influence the results. Finally, some of the simulations do not account for all of the factors that influence the decision of a household to own a house.

The simulation results—keeping the aforementioned caveats in mind—provide context for the federal policy to increase homeownership in the United States by sponsoring the Federal National Mortgage Association (Fannie Mae) and the Federal Home Loan Mortgage Corporation (Freddie Mac). The implied support of the federal government reduces Fannie Mae's and Freddie Mac's cost of funds, and they can pass on the savings in the form of lower mortgage rates for borrowers whose mortgages they fund. Estimates indicate that Fannie and Freddie reduce mortgage rates by around 20 to 50 basis points, with estimates from more recent research analyzing more current data tending toward the lower end. A reduction in mortgage rates of around 20 to 50 basis points is, of course, considerably lower than the 2 percentage point rate change just discussed and thus should have a smaller effect on homeownership. In addition to reducing mortgage rates, Fannie Mae and Freddie Mac fund special "affordable" mortgages that have reduced down payment requirements and offer other relaxed terms. The activities of Fannie Mae and Freddie Mac could also have led to lower down payments and relaxed terms on the standard mortgage.

Additional research in two areas would inform future discussions of Fannie's and Freddie's mortgage rate reductions. A widespread reduction in mortgage rates can end up increasing home prices. The higher home prices would offset, at least in part, the effect of lower rates. In addition, Fannie and Freddie finance rental properties. Subsidizing both forms of housing can limit their ability to reduce the relative price of ownership. Quantifying the importance of these potential outcomes should assist policymakers and analysts.

II. Mortgage Rates and Homeownership

We first discuss how mortgage rates affect homeownership. We then summarize two types of analyses that quantify the effect of mortgage rate changes on homeownership. (Appendix 1 provides background on trends and features of the homeownership rate.) Following the distinction made by Rosenthal (2001, p. 6), we discuss studies that quantify the number of households that "have the *ability* to purchase a home under different underwriting criteria" as well as studies that quantify the number of households that "would *choose* to own a home under different underwriting criteria." We call the former *underwriting simulations* and the latter *tenure choice simulations*. In addition to summarizing findings, we discuss factors to consider when interpreting simulation results. We briefly reference a third type of analysis that tries to explain changes in the homeownership rate more directly.

Effect of Mortgage Rates on Homeownership

A mortgage rate reduction can increase the homeownership rate in two ways. First, a reduction can make it feasible for a household to qualify for a mortgage by lowering the monthly mortgage payment and allowing the household to meet the originators' debt-to-income standard. In a standard mortgage, monthly mortgage payments cannot exceed 28 percent of monthly income. (Total debt cannot exceed 36 percent of income.) Second, a reduction can induce a household that has already qualified for a mortgage to decide to own instead of rent. A number of factors beyond mortgage qualification standards influence the ownership decision, including income, the relative price of ownership, and demographic factors such as age and family structure.

In terms of mortgage standards, at least two other factors can prevent a household from qualifying for a mortgage. To the degree that these other factors constrain a household from qualifying for a mortgage, a mortgage rate reduction will be insufficient by itself to permit a household to buy a house. First, a borrower can have insufficient cash to make a down payment and pay for the closing costs associated with the mortgage. The standard minimum down payment has fallen over the years and is now 5 percent.

Second, a borrower's credit quality can be too weak. Mortgage underwriters make use of credit scores and other measures of credit quality when assessing the ability and propensity of households to repay the mortgage completely and in a timely fashion. A borrower with a high score has a greater chance of making full and timely payment than a borrower with a low score. Fair Isaac—a firm that calculates credit scores—reports that 40 percent of individuals have a score higher than 745 and 40 percent have a score lower than 690. Fair Isaac's basic score ranges from 300 to 850. (See myfico.com for data on the distribution of credit scores.)

A borrower can have such a low credit score that a lender will not make a loan under any condition. More likely, a lender will require the borrower to have a higher down payment or mortgage rate to compensate for low credit quality. The higher down payment or mortgage rate could lead the borrower to become wealth- or income-constrained. For example, Fair Isaac reports that as of early April 2002, a borrower with a score between 500 and 559 would typically have a mortgage rate of 10.2 percent, while a borrower with a score between 675 and 699, all else equal, would have a rate about 2.5 percentage points lower. The difference in rates remains at 2 percentage points when the score rises to between 560 and 619. (See myfico. com for data on the relationship between mortgage rates and credit scores.)

Underwriting Simulations

Some analysts simulate the loan underwriting process to determine how mortgage rates affect the ability of households to qualify for a mortgage. In the underwriting simulation approach, analysts choose a *reference house*. They then review financial data to determine the percentage of households or families that would qualify for a mortgage on the reference house using specified mortgage qualification criteria and a prevailing mortgage rate. The analysts can then adjust the qualification criteria and the mortgage rate to examine how the change alters the number of households or families that can qualify for a mortgage on the reference house.

The U.S. Bureau of the Census regularly prepares underwriting simulations, and the most recent examines data from 1995. (See Savage 1999.) To determine a household's ability to qualify for a mortgage, the Census uses the standard mortgage qualification ratios from conventional mortgage underwriting guidelines (for example, 5 percent down payment, 28 percent mortgage debt-to-income ratio, and 36 percent total debt-to-income ratio). The Census then determines the number of renters who could qualify for a mortgage to buy a house with a price at the 25th percentile (that is, 75 percent of all houses would sell for a higher price than this "modestly priced" house). The Census then estimates the effects of lower mortgage rates on the percentage of renters who could qualify for the mortgage on the modestly priced house.

The Census finds that mortgage rate declines of up to 3 percentage points would have zero effect on the percentage of black renters who could become owners and close to zero effect on Hispanic renters. (See Table 1.) Mortgage rate reductions would have an effect on the percentage of all renters who could purchase the modestly priced house. A 1 percentage point reduction would raise the percentage of renters who could buy the modestly priced house by 30 basis points, while a 2 percentage point reduction would raise it by 60 basis points.

As part of a larger analysis, Listokin et al. (2001) follow the Census approach and examine how a wide range of mortgage qualification standards and policy options affect the ability of renting families to become owners. They report the effect of reducing mortgage rates by 3.05 percentage points and 5.55 percentage points and by eliminating mortgage rates altogether (that is, charging mortgage rates of 0 percent). A reduction of mortgage rates to 0 percent increases the percentage of black and Hispanic renters who can purchase the modestly priced house by 30 basis points. The 3.05 percent-

Table 1
Underwriting Simulation Results: Mortgage Rate Reductions

	Percentage of Renters Who Can Buy		
	All	Black	Hispanic
Results from Savage 1999			
Baseline[1]	10.2	3.4	2.6
Percentage Point Change When Interest Rates are Reduced by[2]			
1 Percentage Point	.3	0	0
2 Percentage Points	.6	0	.1
3 Percentage Points	.9	0	.1
Results from Listokin et al. 2001			
Baseline Situation[1]	9.2	2.7	1.8
Percentage Point Change When Interest Rates are Reduced by[3]			
3.05 Percentage Points	.8	0	.3
5.55 Percentage Points	1.4	0	.3
8.05 Percentage Points	2.0	.3	.3

[1]Assumes a fixed-rate, 30-year mortgage with a 5 percent down payment.
[2]Assumes an interest rate of 8.67 percent.
[3]Assumes an interest rate of 8.05 percent.

age point reduction increases the percentage of all renters who can purchase the modestly priced house by 80 basis points. (See Table 1.)

By way of context, 1 percent of renting households in 2000 equaled roughly 360,000. (See factfinder.census.gov for data.) The average annual change in homeownership rates from 1960 to 2001 is 20 basis points. The average annual change in homeownership rates from 1995 to 2001 is 80 basis points. [U.S. Bureau of the Census (2001b, Table 12) reports homeownership data.]

Finally, the effects of mortgage rate reductions of 2 to 3 percentage points are small relative to other policy changes the Census tests (discussed in Section IV). According to the Census, the results from the mortgage rate simulations reflect the fact that renting households typically have both wealth and income constraints. In the Census sample, 70 percent of renters have an inability to pay a down payment and/or closing costs and too little income to meet debt service requirements. Only 2 percent of renters are constrained by income alone.

The underwriting simulations just discussed do not account for the likelihood that a household will buy the reference house.[3] Some renters may not want to own the home even if they could qualify for a loan. Other renters may qualify for a loan prior to the mortgage rate reduction but choose not to buy until the rate reduction induces such behavior. The affordability approach does not try to model or account for such preferences.

We now turn to simulations that more fully model the decision to rent or own.

Tenure Choice Simulations

Following the approach of Linneman and Wachter (1989), a number of analysts have modeled the probability of a household owning a home as a function of factors such as the relative price of owning versus renting, income, demographic factors that serve as proxies for the preferences of the household, and the constraints imposed by mortgage qualification standards.[4] The approach is generally more econometrically complex than the underwriting simulations. The approach can also vary it its implementation between studies. The following review, as a result, provides only a high-level summary of this complex approach.

Quercia et al. 2000 is one of the most recent additions to this literature and takes two related approaches to estimating the effect of a change in mortgage rates on homeownership. In the first approach, the authors develop a model to quantify the probability of a household owning a house. Variables used in the model include estimates of the relative price of housing; an estimate of the permanent income of the household; demographic variables such as household size, age, race, and gender; and an estimate of whether a household was prevented, or *constrained*, from buying a desired house

[3] Other types of analyses by Listokin et al. (2001) rely on a reference house that reflects household preferences using an approach similar to that of Linneman and Wachter (1989) and Calhoun and Stark (1997), which we discuss. Listokin et al. (2001) also examine how changes in mortgage rates and mortgage qualification standards affect the "purchasing power" of renting households.

[4] Jones (1989) and Zorn (1989) also provide important contributions to the analysis of income and wealth and homeownership.

because it could not meet a variety of underwriting guidelines. Like many of the other variables in the model, the borrowing constraint variables result from a multistep estimation process. Essentially, the authors calculate the price of the house that a household desires to purchase based on the variables just discussed. They then determine whether the household qualifies to purchase the desired house based on its ability to meet mortgage qualification standards.

After estimating all of the necessary variables, the authors calculate the probability of ownership using various down payment requirements, housing debt-to-income requirements, and mortgage rates. They then compare the probability of ownership resulting from the various scenarios. The comparisons indicate how changes in mortgage standards and mortgage rates affect the probability of ownership.

The authors test two cases where mortgage rates fall by 2 percentage points. (See Table 2.) In the first case, the 2 percentage point drop in mortgage rates increases the probability of homeownership for black households by 10 basis points. In the second case, a similar drop in rates increases the probability of ownership by 20 basis points. The effect on the probability of homeownership for all households is similar. In the first case, the increase in the probability of ownership is 40 basis points, and in the second case, the probability of ownership actually declines by 10 basis points. The decline in ownership probabilities in the second case may reflect the link between wealth and income constraints in this analysis. The lower the mortgage rate and higher the mortgage debt-to-income standard, the more expensive the house for which the household can meet debt-to-income standards. However, the more expensive the house, the greater the down payment, and the more likely that the household will become wealth-constrained.

As is the case in the affordability simulations, Quercia et al. (2000, pp. 14–15) find that limited wealth prevents lower rates from having a large effect on homeownership. The authors note, "Consistent with the literature, the downpayment requirement is a greater detriment to home purchase than the income requirement. Thus, lowering the cost of borrowing does not necessarily allow more people to purchase once the downpayment requirement becomes binding. For instance, although the percentage of income-constrained households decreases as a result of a 200 basis point drop from 8 percent to 6 percent in the interest rate, the percent of people that could actually buy a house remained the same because the percentage of downpayment constrained households remained unchanged. This implies that there is a significant overlap between the two constrained measures. Because lack of wealth to meet the necessary downpayment is the dominant constraint, most households that are income constrained are also wealth constrained. However, the reverse is not the case."

In the second approach, Quercia et al. (2000) update Wachter et al.'s (1996a) test of how an increase in the mortgage rate of 50 basis points

Table 2
Tenure Choice Simulation Results: Mortgage Rate Reductions

	Change in Mortgage Rates From	Change in Homeownership Propensity (Percentage Points)	
		All	Black
Results from Quercia et al. 2000: Main Approach	8% to 6% (20 percent down payment)[1]	.4	.1
	8% to 6% (3 percent down payment)[2]	–.1	.2
		(Percent)	
Results from Quercia et al. 2000: Replication of Wachter et al. 1996	8% to 8.5%	–1.1	–1.8
		(Percent and [Percentage Points])	
Results from Wachter et al. 1996a	10.12% to 10.62%	–1.8 [–1.1]	–6.5 [–2.8]
		Change in Expected Homeownership Rate (Percentage Points)	
Results from Linneman et al. 1997	7% to 8%	–.07	N/A
	7% to 9%	–.11	N/A
	7% to 10%	–.22	N/A

[1] Mortgage debt-to-income ratio constant at 28 percent.
[2] Mortgage debt-to-income ratio increases from 33 percent to 38 percent.

affects the probability of ownership.[5] Wachter et al.'s (1996a) general description of their approach is largely similar to the first approach taken by Quercia et al. (2000). (We note one important difference below.) Wachter et al. (1996a) estimate the probability of ownership using the same four types of variables (the relative cost of ownership, income, demographic factors, and income and wealth constraints). Using these estimates, Wachter et al. (1996a) estimate the probability of ownership for households under various mortgage rate and down payment requirements.

We report the results for this second approach for Quercia et al. 2000 and for Wachter et al. 1996a. (See Table 2.) To provide comparability to the underwriting simulations, we highlight the results for all households and black households, although both analyses also examine central city households and low- and moderate-income households. In their second approach, Quercia et al. find that an increase in mortgage rates from 8 percent to 8.5 percent decreases the ownership probability of all households by 1.1 percent and decreases the probability of ownership of black households by 1.8 percent. (Results in percentage points are not provided.) Wachter et al. (1996a) find an increase in mortgage rates from 10.12 percent to 10.62 percent decreases the ownership probability of all households by 1.8 percent and decreases the probability of ownership of black households by 6.5 percent.[6]

Quercia et al. note two reasons why the updated results might be lower than the earlier findings. They argue that changes in mortgage rates have a larger effect on homeownership when rates are higher. The smaller effect of rate increases in the updated simulation may reflect the lower assumed level of mortgage rates. They also hypothesize that an "increased bifurcation in the national income distribution" has left fewer households at the income level where a small reduction in mortgage rates produces more homeownership (Quercia et al. 2000, pp. 15–16).

In addition, Quercia et al. note a fairly technical difference in methodology between their first and second approaches that would lead Wachter et al.'s (1996a) approach to overestimate the effect of a change in mortgage rates. In their first approach, Quercia et al. estimate the probability of homeownership in simulations using the actual individual probabilities of homeownership for each household. This approach is apparently not taken by Wachter et al. (1996a). As a result, Quercia et al. (2000, p. 16) report that their first approach provides more accurate estimates.

The results from the first and second approaches in Quercia et al. 2000 may also differ because the second approach examines an increase in mortgage rates, while the first approach reviews a decrease in mortgage rates. As noted, a decrease in rates in their analysis can make the wealth constraint more binding because it can lead the household to demand a more expensive house with a larger down payment. The effect from the more binding wealth constraint can outweigh the greater number of households that can meet the debt-to-income standard with the lower mortgage rate. In contrast, an increase in rates makes the income constraint more binding while relaxing the wealth constraint as the price of the desired house decreases. If the income effect outweighs the wealth effect, the increase in rates can have a larger effect on a household's propensity to own than the decrease in rates.

The findings of Quercia et al. (2000) in their first approach are consistent with findings from the tenure choice simulations of Linneman et al. (1997), which updated Linneman and Wachter 1989 and added simulations on the effects of changes in mortgage rates on expected homeownership rates. In contrast to the results from the second approach of Quercia et al., Linneman et al. find that a 2 percentage point increase in mortgage rates (from 7 percent to 9 percent) would lead to about a 10 basis point decrease in homeownership. (See Table 2.) Although Linneman and Wachter (1989) do not simulate changes in mortgage rates on homeownership, they do find that due to financing innovations, "the income constraint had little impact on homeownership propensities" by the

[5]Unlike the other simulations discussed, Wachter et al. (1996a) specify the cause for the change in mortgage rates. They intend their simulation to capture the effects of removing sponsorship from Fannie Mae and Freddie Mac. This sponsorship and its effects on mortgage rates are discussed in Section III.

[6]These simulations are performed on a full data set and on two more narrowly focused data sets. We follow the authors' example and focus on results from the full data set.

1981 to 1983 period, while wealth constraints continued to matter (Linneman and Wachter 1989, p. 399).

Calhoun and Stark (1997) combine features of the two types of simulations we have discussed. They determine whether a renter would prefer to own, estimate the type of house the renter would prefer to own, and compare the value of the preferred home to the mortgage for which the borrower could qualify. A ratio below one indicates that the renting household cannot qualify for the house it would prefer. Drops in mortgage rates of up to 6 percentage points lead to relatively small changes in the ratio for all renters and almost never push it above one.

Interpreting the Simulations

Several observations should be kept in mind when considering the results of the simulations. First, some simulations may overstate the effect of mortgage rate reductions because they do not account for important standards used to determine whether a borrower qualifies for a mortgage. Quercia et al. do not consider qualification standards related to nonmortgage debt outstanding. The Census finds that excessive nonmortgage debt is the single largest reason that renters do not qualify for mortgages. (See Savage 1999, p. 5.)

In addition, none of the simulations considers credit quality. As a result, some of the renting households that qualify for a mortgage with the lower rate in the simulation may not actually qualify because of a low credit score, for example. The data to directly determine the importance of omitting credit scores from the simulations are not readily available. Some publicly available data from 1996 suggest that households without a mortgage, a proxy for renters, have worse scores than households with a mortgage: 26 percent of households with a mortgage had scores below 660 while 15 percent had scores below 621, and 39 percent of households without a mortgage had scores below 660 while 25 percent had scores below 621.[7] Confirming the potential importance of credit quality to homeownership, Rosenthal (2001) finds that removal of credit constraints could increase the homeownership rate by as much as 4 percentage points.[8] (See Duca and Rosenthal 1994 for an earlier estimate.) In addition, poor credit history is the most frequently cited reason by mortgage originators for the denial of single-family mortgages (Collins 2002, p. 10).

Second, the income and wealth data used in the analysis come from surveys and/or econometric estimates. Households can report their incomes or wealth incorrectly on such surveys.[9] An underestimate of wealth can lead to underestimates of the number of renting households that qualify for a mortgage. Wachter et al. (1996a) and Quercia et al. (2000) estimate household wealth, and these estimates may be inaccurate.[10] Quercia et al. (2000, p. 11) note, for example, that their estimate of wealth does not include assets held in pensions.

Third, simulations reflect how mortgage rate changes or mortgage qualification standards affect households at a point in time. An increase in mortgage rates or a down payment requirement delays, but may not prevent, a household from becoming an owner. As noted, Wachter et al. (1996a) find that a 50 basis point increase in mortgage rates lowers predicted homeownership rates for all households by about 1 percentage point. However, they report that this result would probably be "much less" if calculated on an "ever-own" basis (Wachter et al. 1996a, p. 354). That is, the increase in rates may simply delay some households from purchasing homes but may not prevent them from doing so in the future. Goodman and Nichols (1997) similarly find that, at best, the Federal Housing Administration (FHA) loan guarantee program accelerates ownership.

Moreover, simulation results may reflect assumptions related to the environment at the time the simulation was conducted. As noted, the effect of mortgage rate changes on homeownership can depend on the prevailing mortgage rate used in the

[7] These are the author's calculations based on data in Avery et al. 1996, pp. 640–41, and Avery et al. 2000, p. 529.

[8] Credit constraints are measured by past credit denials, partial credit approvals, or expected credit denials.

[9] The underwriting simulations discussed in this paper rely on data from the Survey of Income and Program Participation conducted by the U.S. Bureau of the Census.

[10] These studies rely on data from the U. S. Bureau of the Census 2000. Linneman and Wachter (1989) and Linneman et al. (1997) rely on data from the Survey of Consumer Finances sponsored by the Board of Governors of the Federal Reserve System.

simulation: A change in mortgage rate from a higher level potentially leads to a larger effect on homeownership than a change from a lower rate.

Homeownership Rate Analysis

Instead of modeling qualification standards directly, some analysts examine the factors that influence the trend in and differences across homeownership rates. Painter and Redfearn (2001) examine how changes in mortgage rates affect short-run and long-run homeownership rates. The analysts develop and test models quantifying the relationship between mortgage and homeownership rates over time and across regions. The models account for other explanatory factors, such as income, age of households, house prices, and population. The authors find that mortgage rates are not statistically significant in explaining changes in rates of homeownership. The general fact that homeownership rates vary a great deal across geographic regions while mortgage rates are set in national markets may also suggest that mortgage rates play a secondary role in determining the ability of households to become owners. (See Coulson 2000 for an analysis of the factors that help explain regional variations in homeownership.)

More indirect evidence comes from recent analyses of how demographic changes over the last decade or two have affected homeownership rates. Segal and Sullivan (1998) find that demographic changes explain the changes in the homeownership rate from 1977 to 1997. The authors infer from this result that the effect of other potential influences on homeownership rates, such as fluctuating mortgage rates, either was constant or was offset by other factors. The authors also argue that the upswing in homeownership rates from 1995 to 1997 relates to factors such as rising income rather than "a response to any special change in housing policy. ..." [In a similar fashion, Green (1996) finds that the stagnating homeownership rate of the 1980s is explained largely by demographic factors and changes in household tastes.] This analysis also seeks to examine the role of demographic trends in examining the homeownership gap between whites and blacks. In contrast to the overall homeownership rate, demographic factors do not explain the gap, or the changes in the gap, very well.

Bostic and Surette (2001) segment households by their incomes in their analysis of homeownership rates. While the authors find that demographic factors explain a substantial portion of the change in homeownership for families with incomes in the upper quintiles of the income distribution, they find that such factors do not account very well for changes in the homeownership rate of families with incomes in the lower quintiles. Because the authors cannot attribute the changes in homeownership for lower-income households to demographic factors, they see a potential explanatory role for changes in regulation that encourage financial institutions to make mortgage loans to minority families and families with low incomes. However, the authors note that the evidence supporting their interpretation is suggestive rather than conclusive. In his comment on the paper, LaCour-Little (2001) notes the difficulty in attributing the unexplained increase in homeownership to policies that encourage increased mortgage lending to certain groups.

III. Mortgage Rate Reductions by GSEs

One aspect of federal policy to increase homeownership rates is to reduce mortgage rates through interventions in secondary mortgage market activity. The secondary mortgage market is where mortgages are bought and sold after origination. The federal government uses two distinct types of institutions active in secondary mortgage markets to lower mortgage rates. The first is a government-owned corporation, Ginnie Mae, that guarantees timely payment on securities backed by a group of mortgages that already have a guarantee of payment from federal government organizations. These securities are issued by private firms.

We focus on a second type of institution called *government-sponsored enterprises* (GSEs), specifically Fannie Mae and Freddie Mac, because of the greater scope of their activities. Fannie and Freddie have financed more mortgages than Ginnie Mae and guarantee both full and timely repayment of funds to investors.[11] Fannie Mae and Freddie Mac

[11] Fannie and Freddie held 41 percent of the mortgage debt on one- to four-family residences while Ginnie Mae held 10 percent as of the third quarter of 2001 (FR Board 2002, p. A35).

are privately owned, publicly traded firms. The federal government does not own stock in either firm. At the same time, the firms have many attributes of public entities. (See Appendix 2 for a discussion of these public attributes.) Observers see Fannie and Freddie as "sponsored" by the federal government because of these attributes. Sponsorship leads many investors who buy securities issued by the GSEs to believe that the federal government will protect them from loss if Fannie and Freddie cannot make good on their financial obligations. This protection is referred to as the GSEs' *implied guarantee*.

Sponsorship and the implied guarantee reduce the GSEs' costs by, for example, exempting the GSEs from certain taxes. The implied guarantee also reduces the cost to the firms of raising cash by making their securities safer and more liquid. Investors will accept a lower rate of interest on securities that pose a low risk of loss and that can be sold with minimal costs. Because of the implied guarantee, the GSEs can also hold fewer financial resources to absorb losses than can competitors, which reduces their costs.

These cost advantages come to bear when the GSEs borrow funds to buy or otherwise fund mortgages that "conform" to size and risk criteria. (See Appendix 2 for the major restrictions on the GSEs' activities.) Because they have lower costs of raising funds, the GSEs can pay a higher price for mortgages than non-GSE competitors, thereby reducing the interest rate on mortgages while still earning sufficient returns to attract capital. In this way, the lower cost made possible by federal sponsorship can work its way into lower mortgage rates for households.[12]

To estimate the degree to which the GSEs lower mortgage rates, analysts examine the difference in rates between *conforming* mortgages and those loans above the conforming limit (*jumbo* mortgages) while trying to hold other factors constant. The CBO (2001a, pp. 12–13, 26–32) summarizes estimates of how much Fannie and Freddie reduce mortgage rates.[13] These estimates generally range between 20 and 50 basis points, with more recent estimates analyzing more current data generally falling toward the lower end of the range. A reduction in mortgage rates of around 20 to 50 basis points is, of course, considerably lower than the 2 percentage point rate change discussed in Section II and thus should have a smaller effect on homeownership.

Table 3
First-Time Home Buyers, 1997–99

First-Time Home Buyers	As a Percentage of All Home Purchases	As a Percentage of FHA-Insured Home Purchase Loans	As a Percentage of GSE-Financed Home Purchase Loans
All	41	81	25
Black and Hispanic	11	27	3

Source: Author's calculations based on data in Bunce 2002, Table 10.

We note that analysts look to the difference in overall mortgage rates on two large classes of mortgages (conforming and jumbo) when estimating the mortgage rate reduction induced by the GSEs. This approach reflects the widespread distribution of assistance by the GSEs, which, in turn, helps to explain why the estimated mortgage rate reductions are relatively small per household. GSEs do not, for example, provide assistance solely to renters unable to become homeowners without GSE help. Data and analysis on first-time home buyers from the U.S. Department of Housing and Urban Development (HUD) is suggestive in this regard. The percentage of home purchase loans financed by the GSEs that go to first-time buyers, particularly blacks or Hispanics, is smaller than the percentage in the overall market and for FHA-insured loans. (See Table 3.) The GSEs' limited role in the first-time home buyer market may reflect the fact that the majority of mortgages Fannie and Freddie

[12]Other aspects of the GSEs' operations can reduce the cost of buying a house, but we focus on mortgage rate reduction unless specifically noted. Fannie Mae (1996) discusses how the GSEs serve home buyers beyond reductions in mortgage rates and describes objectives for the GSEs besides increases in homeownership. Appendix 2 lists the public purposes of the GSEs from their congressional charters.

[13]In addition, the forthcoming *Journal of Real Estate Finance and Economics* (vol. 25, issue 2) includes several articles examining the effect of GSE activity on mortgage rates.

finance have down payments equal to or exceeding 20 percent, even when borrowers have lower incomes (Bunce 2002, pp. 37–38).

IV. Simulation Evidence on Cash Assistance and Down Payment Reductions

To provide additional context for the relationship between mortgage rate changes and homeownership, the simulations compare the effect of mortgage rate reductions to other policy alternatives. Both underwriting and tenure choice simulations review how reducing mortgage down payments can affect the number of households that own homes. They find that down payment reductions have larger effects than mortgage rate reductions. The underwriting simulations examine how providing lump-sum cash assistance to renters affects their ability to qualify for a mortgage. They find that such assistance can have a larger effect than either a down payment reduction or a mortgage rate reduction.

Lower Down Payments

The literature on the effect of mortgage standards on homeownership finds that wealth constraints play a larger role than income constraints in preventing households from becoming owners. Thus, one might expect a policy of reducing down payments to have a greater effect on the ability of families to purchase a house than mortgage rate reductions. Both the underwriting and tenure choice simulations confirm this hypothesis. In terms of the underwriting simulations, the Census finds that a no-down-payment standard increases the percentage of all renters who can become owners by 2.5 percentage points, the percentage of black renters by 2.3 percentage points, and the percentage of Hispanic renters by 60 basis points. Listokin et al. (2001) find generally similar results. (See Table 4.)

In terms of the tenure choice simulations, Quercia et al. (2000) estimate the effect of moving from a 5 percent to a 0 percent down payment. The probability of ownership moves up 4.5 percentage points for all households and 5 percentage points for black households. However, not all reductions in down payments in their simulation have as large an effect. Linneman et al. (1997) find that shifting from a 20 percent down payment to a 5 percent down payment raises the expected homeownership rate by between 2 and 3 percentage points. (See Table 5.)

Table 4
Underwriting Simulation Results: Down Payment Reductions

Percentage Point Change When Down Payment is Reduced From	Percent of Renters Who Can Buy		
	All	Black	Hispanic
Results from Savage 1999[1,2]			
5% to 2.5%	1.1	1	.3
5% to 0%	2.5	2.3	.6
Results from Listokin et al. 2001[1,3]			
5% to 3%	.6	.1	.2
5% to 0%	2.1	1.3	.6

[1]Assumes a fixed-rate, 30-year mortgage with a 5 percent down payment. Baseline information is in Table 1.
[2]Assumes an interest rate of 8.67 percent.
[3]Assumes an interest rate of 8.05 percent.

Our earlier observations about interpreting simulation results apply to these outcomes as well. The absence of credit risk data in these simulations, for example, may reduce the accuracy of the results. Those bearing the risk of the mortgage may want borrowers to have a higher credit score to compensate for the lower down payment. For example, the GSEs have special programs under which they will fund mortgages with down payments ranging from 3 to 0 percent. (They have also relaxed other mortgage qualification standards.) In 1997, mortgages with down payments of equal to or less than 5 percent equaled 2.5 percent of the home purchase mortgages the GSEs financed. By 2000, the percentage had risen to 5.1 percent of the home purchase mortgages the GSEs financed (author's calculation based on data from Bunce 2002, Table 9a). More generally, the GSEs are credited by some for reducing down payments to current levels from higher historical levels and relaxing other terms. That said, applicants for such special mortgages must meet the credit standards of private mortgage insurers and the GSEs. (See Temkin et al. 1999 and Listokin et al. 2001 for a review of GSE

Table 5
Tenure Choice Simulation Results: Down Payment Reductions

Reduce Down Payment From	Change in Homeownership Propensity (Percentage Points)	
	All	Black
Results from Quercia et al. 2000		
5% to 3%[1]	1.0	.8
5% to 0%[1]	4.5	4.9
3% to 0%[1]	3.5	4.1
	Change in Expected Homeownership Rate (Percentage Points)[2]	
Results from Linneman et al. 1997		
20% to 10%	1.1 to 1.8	N/A
10% to 5%	.85 to 1.1	N/A
20% to 5%	2 to 2.9	N/A

[1]Mortgage rates remain at 8 percent and mortgage debt-to-income ratio remains at 33 percent.
[2]Lower part of range assumes a mortgage debt-to-income ratio of 28 percent. Upper part of range assumes a mortgage debt-to-income ratio of 33 percent.

underwriting standards over time and for the role of credit quality in such standards. Ambrose et al. 2002 also highlight the importance of the GSEs in relaxing underwriting standards.)

In addition, Listokin et al. (2001, pp. 503–6) note that households in practice buy houses which the simulations suggest they cannot. They suggest that underreporting of wealth needed to pay down payments and closing costs may partially explain the discrepancy. Another possible explanation is the ability of households to change behavior such that they can rather quickly afford a house previously considered unaffordable. For example, a household can alter spending and working patterns to bolster savings and income in the short term. However, Haurin, Hendershott, and Wachter (1997) find that mortgage qualification standards reduce the probability of ownership for young households even when accounting for household behavior that could minimize the constraint of mortgage standards.

Quercia et al. (2000, p. 19) also note that the amount of existing competition in providing mortgages with favorable attributes, such as a low down payment, can influence the degree to which the simulation results accurately capture the effect of offering such mortgages. Specifically, the simulations can overstate the effect on homeownership of the GSEs' provision of mortgages with low down payments and relaxed mortgage debt-to-income ratios because the simulations do not account for the presence of competing products, such as those offered by FHA. Yezer (1996) also questions the degree to which the simulations take into account the dynamic responses of borrowers and participants in mortgage markets to a change in mortgage terms and rates.

Lump-Sum Cash Assistance

The underwriting simulations review the effect on mortgage qualification of providing renters with cash they can use to make a down payment, pay closing costs, and/or, in the Census simulations, to retire current debt. Cash payments starting around $5,000 have larger effects than other options on the ability of renting households to purchase a modestly priced home. Savage (1999) finds that a $5,000 payment increases the percentage of all renters who can buy the modestly priced home by 11 percentage points. (The percentage point increases are 13 and 7 for black and Hispanic households, respectively.) A payment of $10,000 per household has an effect almost twice as large. Listokin et al. (2001) find larger effects, although the cash assistance they examine can only be used for down payment and closing costs. (See Table 6.) In a similar vein, Green and Vandell (1999, pp. 441–42) find that shifting the tax-favored treatment of housing from its current status to more of a lump-sum payment could increase its effect on homeownership.

Of course, the same observations about interpreting these results hold (for example, concerns about data and lack of tenure choice models in these simulations). It is also not clear from the affordability simulations how a program providing cash assistance might operate. Appendix 3 provides an illustrative description of a cash assistance program.

V. Additional Research

Future discussion of the relationship between the mortgage rate reductions induced by the GSEs and the homeownership rate would be informed by

Table 6
Underwriting Simulation Results: Cash Assistance

Percentage Point Change From Cash Assistance of	Percentage of Renters Who Can Buy		
	All	Black	Hispanic
Results from Savage 1999[1,2,3]			
$1,000	.8	.8	.3
$2,500	2.4	1.8	.7
$5,000	11.0	12.7	7.3
$7,500	17.5	19.2	12.1
$10,000	21.7	22.1	16.0
Results from Listoken et al. 2001[1,4,5]			
$1,000	.7	.3	.5
$5.000	7.0	5.8	2.0
$10,000	26.4	27.1	18.3

[1]Assumes a fixed-rate, 30-year mortgage with a 5 percent down payment. Baseline Information in Table 1.
[2]Assumes an interest rate of 8.67 percent.
[3]Cash assistance can be used to pay down payment or closing costs and/or retire debt.
[4]Assumes an interest rate of 8.05 percent.
[5]Cash assistance can be used to pay down payment and/or closing costs.

additional research in two areas. First, mortgage rate reductions could affect, or be *capitalized* into, house prices. Second, GSE activity could reduce mortgage rates on the financing of both rental properties and owner-occupied properties, leading to a potentially ambiguous effect on the relative cost of ownership.

Capitalization

An overall decrease in mortgage rates may simply increase housing prices. Buyers may be willing to pay more for a house if mortgage rates are lower, all else equal, because the combination of lower rates and higher house prices leaves them as well off as they were previously (with higher rates and lower house prices). Because the GSEs spread their subsidy so widely, they may end up encouraging a very large group of home buyers to bid up home prices. For example, Freddie Mac (1996, p. iii) argues that "if Freddie Mac's and Fannie Mae's charters were repealed, higher mortgages rates would cause home values to decline." Although capitalization of the favorable tax treatment of mortgage rates has been subject to much analysis (Cappoza, Green, and Hendershott 1999), the question of how much of the GSEs' mortgage rate subsidy ends up as higher prices has received less attention.

Effect on Relative Cost of Ownership

The GSEs fund rental properties. Their funding for such housing has risen considerably. The GSEs held 20 percent of outstanding multifamily mortgage debt as of third-quarter 2001, nearly double their level from 1990 (author's calculation based on data from FR Board 1992, p. A37, and FR Board 2002, p. A35). Moreover, those purchasing a house can rent it out. Through both methods, the GSEs' activity can affect the price of rental housing. As a result, Yezer (1996) argues that the degree to which the GSEs change the relative price of owning versus renting is not clear. If the mortgage rate changes do not lower the relative costs of owning, then their effect on homeownership is unclear. At least as of 1996, some analysts believed that the GSEs' activity in the rental market was too small to have a material effect on the rental market. (See Wachter et al. 1996b, p. 382.)

Helpful comments were received from Bob Avery, Raphael Bostic, Harold Bunce, Charles Capone, Edward Demarco, John Duca, Scott Frame, John Gardner, Preston Miller, Wayne Passmore, Marvin Phaup, Art Rolnick, Jason Schmidt, Jenni Schoppers, Robin Seiler, Gary Stern, David Torregrosa, and Mario Ugoletti.

Appendix 1

The U.S. Homeownership Rate

A goal of U.S. housing policy is to increase the rate of homeownership. This appendix summarizes major trends and features of the homeownership data.

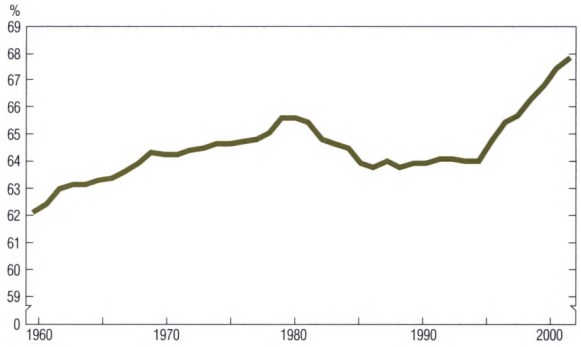
First, the overall rate of homeownership grew significantly from the 1940s to the 1960s, with slower growth until a recent rapid increase. The decennial data in Table 1 show the homeownership rate fluctuating within a relatively narrow band from 1900 to 1930, followed by a dramatic increase from 1940 to 1960 when it rose by 18 percentage points (from 44 percent to 62 percent). The annual data in Graph 1 show that since that time, the rate has gone through periods of slower growth (a 3.5 percentage point increase from 1960 to 1980), stagnation (1980 to 1995), and more rapid growth recently (rising by 2.4 percentage points from 1996 to 2001).

Second, homeownership rates differ a great deal by the race, ethnicity, and location of the household. Graph 2 shows that the Hispanic and black homeownership rates have been around 63 percent of the white rate from the mid-1970s to the current period. A large gap also exists between nonmetro and suburban households and households in central cities. (See Graph 3.) Significant gaps in homeownership rates also occur by other geographic regions. In 2001, California had a homeownership rate of 58 percent while Michigan's was 77 percent (U.S. Bureau of the Census 2001b).

Graph 1

Annual Homeownership Rate in the United States

1960–2001



Source: U.S. Bureau of the Census 2001b, Table 12

Table 1

Homeownership Rate by Decade

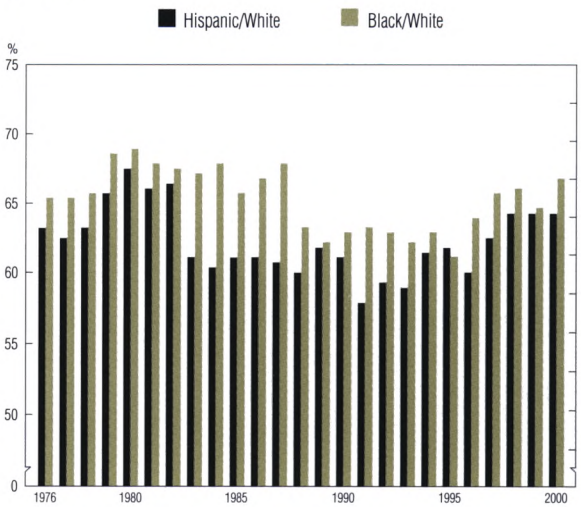
Year	Rate
1900	46.5%
1910	45.9
1920	45.6
1930	47.8
1940	43.6
1950	55.0
1960	61.9
1970	62.9
1980	64.4
1990	64.2
2000	66.2

Sources: 1900 to 1990 from http://www.census.gov/hhes/www/housing/census/historic/owner.html
2000 from http://factfinder.census.gov/bf_lang=en_vt_name=DEC_2000_SF1_U_QTH1_geo_id=01000US.html

Graph 2

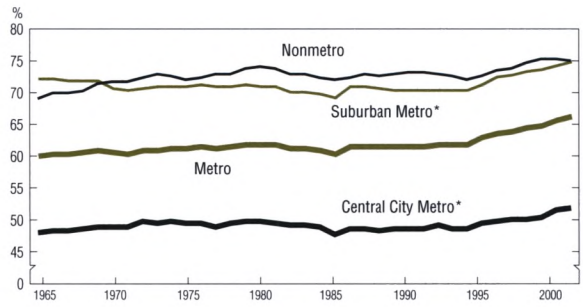
Homeownership Rate by Race and Ethnicity

1976–2000



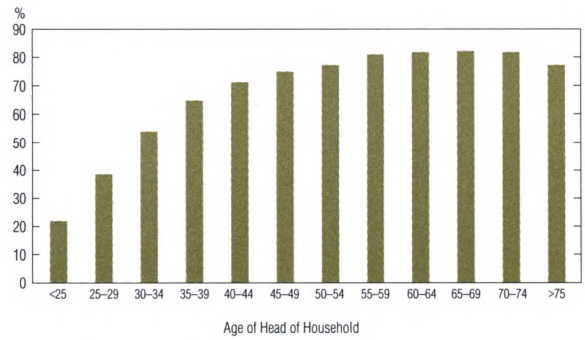
Source: U.S. Bureau of the Census 2001a

Graph 3
Homeownership by Metro and Nonmetro Location
1965–2001



*Rates for 1986 to 1994 are not comparable to earlier or later years. Rates for 1995 and later are not directly comparable to earlier years.
Source: U.S. Bureau of the Census 2001b, Table 1

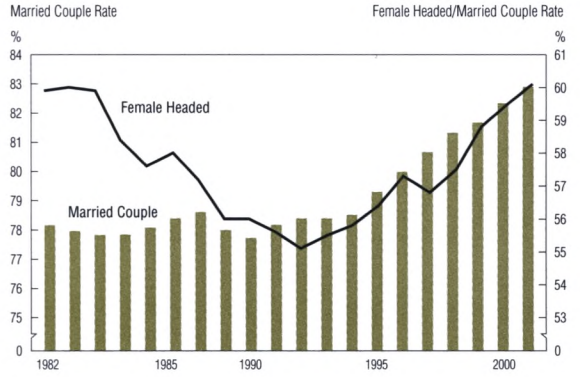
Graph 4
Homeownership Rates by Age
2001



Source: U.S. Bureau of the Census 2001b, Table 15

Third, demographic factors such as age and education level of the household and family structure of the household influence the homeownership rate. Households led by people in their late fifties have a homeownership rate 26 percentage points higher than those led by people in their early thirties. (See Graph 4.) The rates of homeownership are also relatively low for families headed by a female with no husband, households with one household member, and households headed by people with lower levels of education. (See Table 2 and Graph 5.)

Graph 5
Homeownership Rate by Select Family Structure
1982–2001



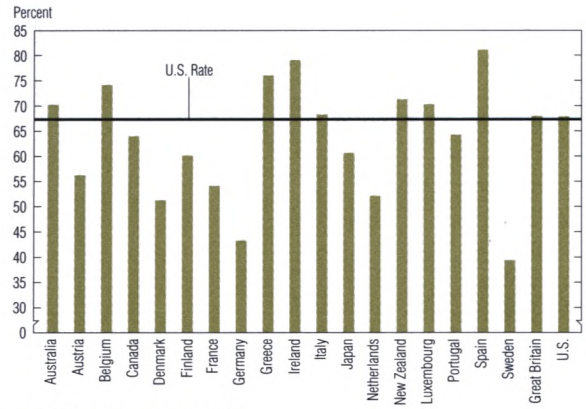
Source: U.S. Bureau of the Census 2001b, Table 15

Table 2
Homeownership Rates by Household Size and Education Level
1999

	Homeownership Rate
Household Size	
1 Person	53%
2 Persons	73
3 Persons	69
4 Persons	75
5 Persons	73
6 Persons	68
More Than 7 Persons	68
Education Level	
Less Than High School Degree	58
High School Degree	69
Greater Than High School Degree But Less Than Bachelor's Degree	66
Bachelor's Degree	71
Graduate or Professional Degree	76

Source: Author's calculations based on U.S. Bureau of the Census 2000.

Graph 6
Cross-Country Homeownership Rates*



* Various dates based on currently available data
Sources: See footnote 1 of Appendix 1.

Finally, the United States has a homeownership rate a bit above the median of a group of developed countries. Graph 6 reports the most recent homeownership rates for countries in the European Union, Japan, and several English-speaking countries. The rate in the United States rests at the 60th percentile of this group.[1]

[1]Sources for the data are Australian Bureau of Statistics, Housing: Home ownership and renting, accessed at *http://www.abs.gov.au/ausstats/abs%40.nsf/94713ad445ff1425ca25682000192af2/affae0316a2c7090ca256b350014de3e!OpenDocument* on 2/17/02; Netherlands Ministry of Housing (2000, p. 33); Statistics Canada, Selected Dwelling Characteristics and Household Equipment, accessed at *http://www.statcan.ca/english/ Pgdb/People/Families/famil09a.htm* on 2/17/02; Statistics Bureau and Statistics Center of Japan, Housing of Japan, "Home Ownership," accessed at *http://jin.jcic.or.jp/stat/stats/13HSG13.html* on 2/17/02; New Zealand Ministry of Housing, The New Zealand Housing Situation, accessed at *http://www.minhousing.govt.nz/situation.html* on 2/17/02; United Kingdom Department for Transport, Local Government and the Regions, Housing Statistics 2000, accessed at *http://www.housing.detr.gov.uk/ research/hss/hs2000/pdf/hsan_ch1.pdf* on 2/17/02; and U.S. Bureau of the Census 2001b.

Appendix 2
Public Attributes of the GSEs

Fannie Mae and Freddie Mac, or government-sponsored enterprises (GSEs), have several public attributes. They include the following:

First, the financial instruments issued or guaranteed by the GSEs are uniquely similar to financial instruments issued by the U.S. Treasury. Some of these similarities include the following: (1) eligibility for Federal Reserve open market purchase, (2) eligibility to collateralize Federal Reserve bank discount loans, (3) exemption from registration requirements of the Securities and Exchange Commission and the states, and (4) eligibility for unlimited investment by national banks, Federal savings associations, and Federal credit unions (HUD 1996, pp. 26–27).

Second, Fannie Mae and Freddie Mac have a unique organizational structure as well as tax and regulatory treatment, including (1) a charter granted by an act of Congress, (2) appointment of members to Fannie Mae's and Freddie Mac's boards by the president of the United States, (3) exemption of corporate earnings from state and local taxes, and (4) authorization of the Treasury to lend $2.25 billion to both Fannie Mae and Freddie Mac (Frame and Wall 2002, pp. 32–33).

Third, Fannie Mae's and Freddie Mac's charters provide the following statement of public purpose: The GSEs should (1) provide stability in the secondary market for residential mortgages, (2) respond appropriately to the private capital market, (3) provide ongoing assistance to the secondary market for residential mortgages (including activities related to mortgages on housing for low- and moderate-income families involving a reasonable economic return that may be less than the return earned on other activities) by increasing the liquidity of mortgage investments and improving the distribution of investment capital available for residential mortgage financing, and (4) promote access to mortgage credit throughout the nation (including central cities, rural areas, and underserved areas) by increasing the liquidity of mortgage investments and improving the distribution of investment capital available for residential mortgage financing.

Fourth, the GSEs face limits on their activities based on the size and riskiness of the mortgages they can finance. The 2002 cap on mortgages eligible for Fannie Mae/Freddie Mac financing is $300,700. The GSEs cannot finance mortgages where the owner has less than 20 percent equity in the house unless an acceptable credit enhancement such as private mortgage insurance is offered. In addition, the firms can only purchase mortgages that meet the standards of private institutional mortgage investors.

Fifth, legislation passed in 1992 required the U.S. Department of Housing and Urban Development (HUD) to establish housing goals for the GSEs. Under these goals, the GSEs must target some of their funding for families with lower incomes and households acquiring units located in underserved communities. The GSEs also have a goal for funding qualifying multifamily housing. (See HUD 2001 for a discussion of the housing goals.)

Sixth, both firms have a historical connection to the federal government. Fannie Mae was originally a governmental entity. Freddie Mac was originally controlled by a pseudo-governmental organization (Feldman 1996, p. 7).

Finally, the federal government has taken action, or refrained from taking action, to support GSEs. Fannie Mae was not closed when it was insolvent on a market basis. HUD estimated that the market value of Fannie Mae's assets minus the market value of its liabilities equaled –$11 billion in 1981 (CBO 1991, p. 129). Congress has twice taken action that reduced the chance of default of two nonhousing GSEs, the Farm Credit System (CBO 1991, pp. 79–80) and the Financing Corporation (Leggett and Strand 1997).

Appendix 3

An Illustrative Direct Assistance Program

A direct subsidy program providing households with cash that they can use to pay off debt, make a down payment, or pay closing costs appears to be able to help a relatively large number of renters become owners. This appendix illustrates how such a program might work. We touch on the program's ability to increase homeownership, effectively target households, and maximize the resources that reach beneficiaries. This appendix is illustrative and does not review most aspects of a direct subsidy program's design and implementation. (See Calomiris 2001 for another discussion of a direct assistance program to increase homeownership.)

Increasing Homeownership

The direct subsidy program would provide renting households with cash from the government that they could use to pay off debt, make a down payment, or pay for closing costs. For discussion purposes, we assume the funding for the direct program equals the $8.3 billion that analysts estimate was provided on average to the GSEs annually from 1995 to 2000. (See CBO 2001b for the estimate and Toevs 2001 and Pearce and Miller 2001 for a critique of the estimate.) Policymakers must decide how much to give each program participant. Census Bureau analysis suggests that cash assistance must equal $5,000 per recipient household to allow more renting households to qualify for a mortgage than would be achieved by eliminating down payments. (See Tables 4 and 6 in the preceding text.) A program with total funding of $8.3 billion which provides $10,000 per renting household would serve 830,000 households a year. In three years, the direct subsidy program would assist 2.5 million renting households. There were 105 million households in the United States as of 2000, according to the Census Bureau, with 69.8 million homeowners. A direct subsidy program serving 2.5 million households over three years would, all else equal, increase the homeownership rate by 2.4 percentage points. Even if this estimate were overstated by one-third to one-half, the direct subsidy program would achieve material increases relative to historical changes in the homeownership rate over such a short period and to estimates of the effect of small mortgage rate reductions.

Targeting Households

In the preceding illustration, cash assistance is restricted to renting households. Policymakers could come up with other forms of targeting based on easy-to-observe characteristics (for example, income of the borrower). Targeting has a potential downside if it imposes significant cost processes. Policymakers could reduce potential costs by relying on existing processes. The current mortgage origination process should capture and verify all of the information needed to determine if a household qualifies for the cash assistance: current income, price and location of the home being purchased, and location and renter status of the borrower. Moreover, the analytical talents and data required for targeting already exist. The Department of Housing and Urban Development, for example, reports on area median income for metro areas each year.

Minimizing Costs

As just suggested, qualification for the cash assistance program could occur when a borrower applies for a loan in order to minimize costs. Therefore, the government's major administrative expense from the direct assistance program would arise from fund disbursement and accounting, limited participant verification, potential reimbursement to contractors, and other administrative functions. Policymakers could look to the administrative costs of other government programs to gauge potential costs. (See Social Security Administration 2000 and CBO 1993 for the following data.) Large-scale payment systems, such as the old-age survivors insurance part of Social Security, have lower administrative costs (about 50 basis points of total costs). Food stamp and Medicaid programs that require more verification and have a finer level of means testing have administrative costs of 13 percent and 4 percent of total costs, respectively. Programs such as Women, Infants and Children, which include counseling services, have administrative costs of 25 percent of total costs. The program outlined seems to fall between large-scale payment programs and programs that carry out more verification. This would put administrative costs below double-digit levels.

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2001 OPERATIONS REPORT

EXECUTIVE MESSAGE

The year 2001 presented daunting economic challenges to the nation and to the Upper Midwest—the region that forms the Ninth District of the Federal Reserve System. We began the year with the economy slowing, unemployment growing and business investment falling. As the year unfolded the Federal Open Market Committee moved aggressively to lower short-term interest rates. The terrorist attacks of Sept. 11 and the resulting uncertainty and business restructuring dealt a further shock to the economy. But, as evidence of the resilience of the U.S. economy, even with the Sept. 11 shock, it is increasingly clear that last year's "recession" was extremely mild and short-lived by historical standards. In fact, early 2002 data show the economy growing at a very healthy rate.

As the nation's central bank, the Federal Reserve has a rich tradition of confronting and helping to resolve financial sector crises. On Sept. 11 and in the days and weeks that followed, the Federal Reserve did its part to mitigate the impact of the terrorist attack on one of the nation's key financial districts. The Federal Reserve addressed liquidity needs and payments mechanism issues when financial markets were disrupted, helping to ensure that critical payments system infrastructure and financial services continued to function.

Gary Stern, President and
James Lyon, First Vice President

As the Reserve Bank responsible for the operation of the System's automated clearing house operations (ACH), we were able to provide direct support to New York financial institutions. Within the district, we worked diligently to minimize the disruption to check flows created by the grounding of all air traffic. We are proud of our employees' response and contribution in this time of national emergency.

For 2001, the Minneapolis Fed's key operational goals were to improve our productivity and strengthen our financial performance. We also continued to modify our operations to maintain alignment with the increasingly standardized and centralized approach the Federal Reserve is adopting to operations across the 12 Federal Reserve Banks. These changes reflect our continuing commitment to efficient use of public resources and to effective response to the changing land-

scape of banking. We made considerable strides in improving our productivity last year, improvements we will build upon going forward. We are committed to making these changes while continuing our tradition of excellence in both serving Ninth District financial institutions and fulfilling our public mandate.

From a policy perspective, the Bank has continued to promote the benefits of market discipline as a component of bank regulation and more broadly as an important consideration in public policy deliberations.

In our conversations with policymakers, bankers, students and others we often find that people are not fully aware of the diverse roles that the Federal Reserve plays in its three key functions: monetary policy, banking supervision and regulation, and financial services. To address this gap we provide in this year's annual report a primer of the roles and functions our Bank performs and how they touch the lives of people throughout our district.

We are proud of the accomplishments of the Federal Reserve Bank of Minneapolis and look forward to continuing to serve the changing needs of the Ninth District and Federal Reserve System.

Gary H. Stern
PRESIDENT

James M. Lyon
FIRST VICE PRESIDENT

Payments Services

MAKING (SURE THE) ENDS MEET

YOU MAY NOT REALIZE that when you write a check to pay your electric bill, get money from a cash machine or receive notice that your paycheck has been deposited directly into your bank account that the Federal Reserve System is working behind the scenes on those transactions. Indeed, you probably don't worry about how those financial transactions are completed; you simply take them for granted. And that's just fine with the Fed.

Every day in the United States, trillions of dollars are transferred by a variety of means—whether in the form of paper or electronics—and the economy depends on the safe and sound accounting of those funds. In effect, there is an infrastructure for these methods of payment that underlies our economy, and the Fed is a key player in ensuring that this infrastructure is always up and running.

The Fed provides three payments services: check clearing, currency and coin delivery to banks and thrift institutions, and the electronic transfer of funds. When it comes to the first two services—checks and currency—the Minneapolis Fed faces particular challenges owing to the remote locations of many financial institutions in the Ninth Federal Reserve District. The Ninth District stretches from the Rocky Mountains, across the Great Plains and to the Great Lakes, and is one of the largest Federal Reserve districts as measured by square miles, encompassing Montana, North and South Dakota, Minnesota, northwestern Wisconsin and the Upper Peninsula of Michigan. To help

ensure efficient delivery of services across the Ninth District, the Minneapolis Fed has a branch office in Helena, Mont.

The Minneapolis Fed processed about 996 million checks in 2001 worth about $800 trillion, including more than 177 million checks worth nearly $335 trillion at the Helena Branch. Together, the 12 Banks of the Federal Reserve System, including 45 branch and processing locations, clear about 34 percent of all the checks issued in the United States. But even commercial banks that clear their own checks still use accounts at the Federal Reserve to settle with banks at the end of the day. In other words, just like you balance your checkbook, so does the entire U.S. financial system, and the Fed is responsible for ensuring that this complex job is completed without a hitch.

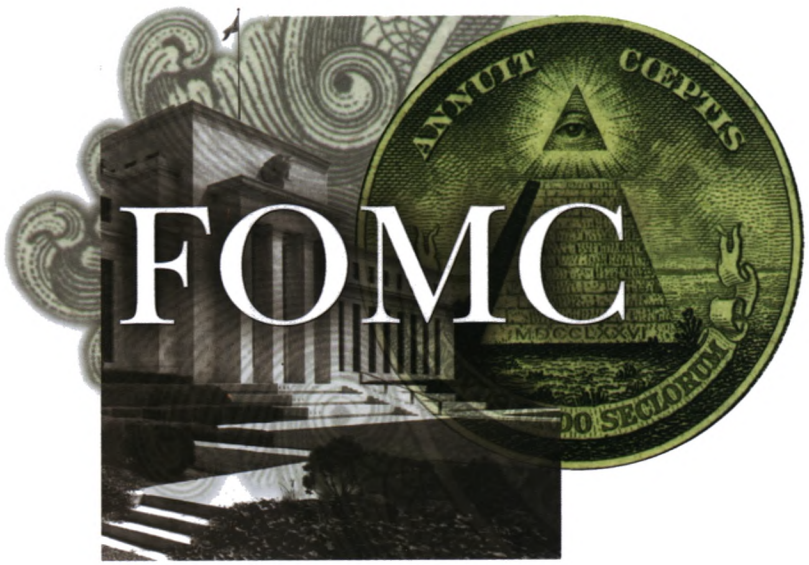
That responsibility also extends to electronic payments. Almost since its inception, the Federal Reserve has transferred funds electronically between banks. But starting in the early 1970s the Fed pioneered the use of electronic payments for such transactions as payroll deposits, thus providing the efficiency and security of this technology to consumers. This economical system has grown in popularity and use; in 2001, the Fed processed $655 trillion in electronic payments, from direct deposit of payroll and Social Security payments, to multimillion-dollar transfers between banks.

Of course, no matter how popular electronic payments become or no matter how many checks people continue to write, there will always be a need for currency in the economy. The Minneapolis Fed helps meet this need by processing currency for circulation to banks, recycling used bills that are returned to the Fed and destroying unfit currency and replacing it with new bills. In 2001, the Minneapolis Fed recirculated $11.2 billion in cash and coin—about $43 million a day.

There is one other responsibility that the Fed has as the nation's central bank, and that is to serve as the government's fiscal agent, managing the process of funding the country's debt. What this means to you, for example, is that the Fed provides such Treasury services as selling and redeeming Savings and Treasury Bonds. The Federal Reserve Bank of Minneapolis specializes in the retail side, working directly with individual purchasers and providing behind-the-scenes support to financial institutions and other firms that offer their customers or employees opportunities to buy bonds.

Monetary Policy

WORKING TO ENSURE PRICE STABILITY



THE FEDERAL RESERVE'S PRIMARY RESPONSIBILITY is to chart a course for the country's monetary policy. You often hear that the Fed has lowered or raised interest rates and then are told how this will likely affect the price of goods or affect economic growth. Many consumer choices are influenced by the cost of borrowing, from whether to buy a new car or home, or whether to borrow money for home repairs or other purposes; businesses also make choices about jobs and expansion based, in part, on borrowing costs.

Clearly, the health of the U.S. economy is an important responsibility and one the Fed takes very seriously. The policymaking arm of the Fed is the Federal Open Market Committee (FOMC), consisting of the Board of Governors and the presidents of the 12 Federal Reserve Banks. The members of the Board of Governors and the president of the New York Fed are permanent voting members of the FOMC, with four other Federal Reserve Bank presidents voting on a rotational basis. Even when they are not voting members, each president participates in policy discussions during the meetings, which occur eight times a year. This group works to establish a monetary policy focused on low and stable inflation, thus creating an economic environment that will sustain the highest possible growth and job creation.

The decisions of the FOMC are not made in a vacuum. To ensure that the committee has the best information available to make its decisions, each Federal Reserve Bank—along with the

Federal Reserve Board—engages in data-gathering and economic forecasting. For the Minneapolis Fed, this means keeping track of the Ninth District's diverse economy through meetings with the Bank's directors and other representatives of the Ninth District economy, regular phone calls, e-mail updates and statistical analysis. The assembled Ninth District information is used to better understand the entire U.S. economy. Much of this analysis and data are made available to the public through the Bank's publications and its Web site: www.minneapolisfed.org.

Banking Supervision

ENSURING SAFETY AND ACCESS

PROVIDING THE FINANCIAL INFRASTRUCTURE to ensure that you have access to your money and working to make sure that interest rates are set at a level that allows the economy to grow at a sustainable pace are just two of the primary ways that the Fed impacts your financial life. The third element supports the first two: ensuring that banks are operated in a safe, sound and fair manner, and consistent with consumer banking regulations, while meeting the convenience and needs of their communities.

The Banking Supervision Departments of the Reserve Banks, along with other federal and state regulators, ensure that banking laws

are followed, that risk is managed effectively and that banks maintain business relationships with all members of their community. Essentially, the examinations performed by the Minneapolis Fed fall into two categories, and both have a direct impact on consumers: the first deals with how banks manage their money, the second with how banks relate to their customers.

The first type of examination verifies the financial viability of the bank and includes an evaluation of its assets, capital, earnings, liquidity and sensitivity to market risk, as well as the bank's managerial policies, among many other factors. The second ensures that banks comply with all bank-related consumer legislation, including accurate communication of bank interest rate information, and fair and equal access to credit regardless of gender, race, marital status or other characteristics. For example, you may have heard of the Community Reinvestment Act (CRA), which was established by Congress with standards to assess whether a bank is meeting the credit needs of its community.

Part of the role of the Federal Reserve's examiners is to monitor and analyze broader trends in banking and determine how they impact the safety and soundness of the industry. In recent years, as banks have grown larger and as they have moved into increasingly complex businesses, the Federal Reserve's supervisory efforts have become even more important.

BUT CHANGE IS NOTHING NEW IN BANKING, and the Federal Reserve is accustomed to such change, whether it be in financial services products, monetary policy research or supervision of the financial system. Through it all, the Federal Reserve System's mission remains the same: to maintain a stable price environment to better generate economic growth and job creation, and to ensure the safety and soundness of the nation's financial system. That way, when you write your check or use a cash machine you can take the Fed for granted—and feel good about it.

2001 Minneapolis Board of Directors

James J. Howard
Chairman

Ronald N. Zwieg
Deputy Chairman

CLASS A ELECTED BY MEMBER BANKS

Roger N. Berglund
President and Chief Executive Officer
Dakota Western Bank
Bowman, N.D.

W. W. LaJoie
Chairman and Chief Executive Officer
Central Savings Bank
Sault Ste. Marie, Mich.

Dan M. Fisher
Chief Information Officer
Community First Bankshares Inc.
Fargo, N.D.

CLASS B ELECTED BY MEMBER BANKS

D. Greg Heineman
Chairman
Williams Insurance Agency Inc.
Sioux Falls, S.D.

Jay. F Hoeschler
President
Hoeschler Realty Corp.
La Crosse, Wis.

Rob L. Wheeler
Vice President and Sales Manager
Wheeler Manufacturing Co. Inc.
Lemmon, S.D.

CLASS C APPOINTED BY THE BOARD OF GOVERNORS

James J. Howard
Chairman
Xcel Energy Inc.
Minneapolis, Minn.

Linda Hall Whitman
Maple Plain, Minn.

Ronald N. Zwieg
President
United Food and
Commercial Workers Local 653
Plymouth, Minn.

Seated *(from left):* Jay Hoeschler, Roger Berglund, Linda Hall Whitman, Rob Wheeler; standing *(from left):* Dan Fisher, W.W. LaJoie, James Howard, Ronald Zwieg

2001 Helena Branch Board of Directors

William P. Underriner
Chairman

Thomas O. Markle
Vice Chairman

APPOINTED BY THE BOARD OF GOVERNORS

Thomas O. Markle
President and Chief Executive Officer
Markle's Inc.
Glasgow, Mont.

William P. Underriner
General Manager
Selover Buick Inc.
Billings, Mont.

APPOINTED BY THE MINNEAPOLIS BOARD OF DIRECTORS

Emil W. Erhardt
Chairman, President
and Chief Executive Officer
Citizens State Bank
Hamilton, Mont.

Richard E. Hart
President
Mountain West Bank
Kalispell, Mont.

Marilyn F. Wessel
Dean and Director
Museum of the Rockies
Bozeman, Mont.

FEDERAL ADVISORY COUNCIL MEMBER

R. Scott Jones
President and Chief Executive Officer
Signal Financial Corp.
Mendota Heights, Minn.

Seated *(from left):* Marilyn Wessel, Richard Hart; standing *(from left):* Thomas Markle, Emil Erhardt, William Underriner

Advisory Council on Small Business, Agriculture and Labor

Rob L. Wheeler, Chairman
Vice President and Sales Manager
Wheeler Manufacturing Co. Inc.
Lemmon, S.D.

Terry Anderson
President
Anderson Chemical Co.
Litchfield, Minn.

John T. Forkan Jr.
Business Manager
Plumbers and Pipefitters Local 141
Butte, Mont.

Carrie Holmen
Rancher
Billings, Mont.

Karl Murch
Controller
Nortrax Equipment Co.
Eau Claire, Wis.

Curt Niemala
Secretary Treasurer
Blizzard Corp.
Calumet, Mich.

Donald C. Peterson
Owner
Yaggie's Inc.
Yankton, S.D.

Joe Rothschiller
General Manager
Steffes Corp.
Dickinson, N.D.

Gae Veit
Chief Executive Officer
Shingobee Builders
Loretto, Minn.

Seated *(from left):* Gae Veit, Rob Wheeler; standing *(from left):* Joe Rothschiller, Curt Niemala, Terry Anderson, Karl Murch

Federal Reserve Bank of Minneapolis

Senior Management

Gary H. Stern
President

James M. Lyon
First Vice President
Chief Operating Officer

Sheldon L. Azine
Senior Vice President
and General Counsel
Treasury Services, Cash Operations, Protection and Law

Scott H. Dake
Senior Vice President
Check Standardization Project Office

Creighton R. Fricek
Senior Vice President
and Corporate Secretary
Information Technology, Human Resources and Financial Management

Arthur J. Rolnick
Senior Vice President
and Director of Research
Research and Public Affairs

Claudia S. Swendseid
Senior Vice President
Priced Services, FedACH Support Services and Helena Branch

Niel D. Willardson
Senior Vice President
Banking Supervision and Risk Management

Seated *(from left)*:
Claudia Swendseid,
Gary Stern,
James Lyon,
Niel Willardson,
standing *(from left)*:
Scott Dake,
Arthur Rolnick,
Creighton Fricek,
Sheldon Azine

Federal Reserve Bank of Minneapolis

December 31, 2001

Officers

Duane A. Carter
Vice President
Cash Operations

Michael Garrett
Vice President
Human Resources

Linda M. Gilligan
General Auditor

Caryl W. Hayward
Vice President
Check

Richard L. Kuxhausen
Vice President
Customer Relations

Susan J. Manchester
Vice President
Treasury Services

Preston J. Miller
Vice President
Banking and Policy Studies

Kinney G. Misterek
Vice President
Banking Supervision

H. Fay Peters
Vice President
Protection and Facilities

Susan K. Rossbach
Vice President and Deputy
General Counsel

Julie Stackhouse
Vice President and
Community Affairs Officer
Risk Management

Thomas M. Supel
Vice President
Financial Management

Richard M. Todd
Vice President
Information Technology

Thomas H. Turner
Vice President
Treasury Services

Warren E. Weber
Senior Research Officer
Research

Kelly A. Bernard
Assistant Vice President
Check Standardization
Project Office

Jacquelyn K. Brunmeier
Assistant Vice President
Banking Supervision

James A. Colwell
Assistant Vice President
Banking Supervision

Barbara G. Coyle
Assistant Vice Presiden
Risk Management

James T. Deusterhoff
Assistant Vice President
and Discount Officer
Risk Management

Ron J. Feldman
Assistant Vice President
Banking and Policy Studies

David G. Fettig
Assistant Vice President
and Public Affairs Officer

Jean C. Garrick
Assistant Vice President
Check

Peter J. Gavin
Assistant Vice President
FedACH Support Services

Elizabeth W. Kittelson
Assistant Vice President
Financial Management

Matthew D. Larson
Assistant Vice President
Information Technology

Marie R. Munson
Assistant Vice President
Treasury Services

Richard W. Puttin
Assistant Vice President
Check

Paul D. Rimmereid
Assistant Vice President
Financial Management

Randy L. St. Aubin
Assistant General Auditor

Kenneth C. Theisen
Assistant Vice President
Check

Cheryl L. Venable
Assistant Vice President
FedACH Support Services

John E. Yanish
Assistant Vice President
and Assistant General
Counsel

Helena Branch

Samuel H. Gane
Vice President
Branch Manager

R. Paul Drake
Assistant Vice President
Check and Support

Susan M. Woodrow
Assistant Vice President
Cash and Support

Federal Reserve Bank of Minneapolis

90 Hennepin Avenue, P.O. Box 291
Minneapolis, Minnesota 55480-0291
Phone 612 204-5000

March 4, 2002

To the Board of Directors:

The management of the Federal Reserve Bank of Minneapolis (FRB of Minneapolis) is responsible for the preparation and fair presentation of the Statement of Financial Condition, Statement of Income, and Statement of Changes in Capital as of December 31, 2001 (the "Financial Statements"). The Financial Statements have been prepared in conformity with the accounting principles, policies, and practices established by the Board of Governors of the Federal Reserve System and as set forth in the Financial Accounting Manual for the Federal Reserve Banks, and as such, include amounts, some of which are based on judgments and estimates of management.

The management of the FRB of Minneapolis is responsible for maintaining an effective process of internal controls over financial reporting including the safeguarding of assets as they relate to the Financial Statements. Such internal controls are designed to provide reasonable assurance to management and to the Board of Directors regarding the preparation of reliable Financial Statements. This process of internal controls contains self-monitoring mechanisms, including, but not limited to, divisions of responsibility and a code of conduct. Once identified, any material deficiencies in the process of internal controls are reported to management, and appropriate corrective measures are implemented.

Even an effective process of internal controls, no matter how well designed, has inherent limitations, including the possibility of human error, and therefore can provide only reasonable assurance with respect to the preparation of reliable financial statements.

The management of the FRB of Minneapolis assessed its process of internal controls over financial reporting including the safeguarding of assets reflected in the Financial Statements, based upon the criteria established in the "Internal Control – Integrated Framework" issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Based on this assessment, the management of the FRB of Minneapolis believes that the FRB of Minneapolis maintained an effective process of internal controls over financial reporting including the safeguarding of assets as they relate to the Financial Statements.

Gary H. Stern, President

James M. Lyon, First Vice President

PRICEWATERHOUSECOOPERS

PricewaterhouseCoopers LLP
650 Third Avenue South
Suite 1300
Minneapolis MN 55402-4333
Telephone (612) 596 6000
Facsimile (612) 373 7160

Report of Independent Accountants

To the Board of Directors of the
Federal Reserve Bank of Minneapolis:

We have examined management's assertion that the Federal Reserve Bank of Minneapolis ("FRB of Minneapolis") maintained effective internal control over financial reporting and the safeguarding of assets as they relate to the Financial Statements as of December 31, 2001, included in the accompanying Management's Assertion. The assertion is the responsibility of FRB of Minneapolis management. Our responsibility is to express an opinion on the assertions based on our examination.

Our examination was made in accordance with standards established by the American Institute of Certified Public Accountants, and accordingly, included obtaining an understanding of the internal control over financial reporting, testing, and evaluating the design and operating effectiveness of the internal control, and such other procedures as we considered necessary in the circumstances. We believe that our examination provides a reasonable basis for our opinion.

Because of inherent limitations in any internal control, misstatements due to error or fraud may occur and not be detected. Also, projections of any evaluation of the internal control over financial reporting to future periods are subject to the risk that the internal control may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, management's assertion that the FRB of Minneapolis maintained effective internal control over financial reporting and over the safeguarding of assets as they relate to the Financial Statements as of December 31, 2001, is fairly stated, in all material respects, based upon criteria described in "Internal Control - Integrated Framework" issued by the Committee of Sponsoring Organizations of the Treadway Commission.

PricewaterhouseCoopers LLP

March 4, 2002
Minneapolis, Minnesota

Federal Reserve Bank of Minneapolis

Financial Statements for years ended December 31, 2001 and 2000

PRICEWATERHOUSECOOPERS

PricewaterhouseCoopers LLP
650 Third Avenue South
Suite 1300
Minneapolis MN 55402-4333
Telephone (612) 596 6000
Facsimile (612) 373 7160

Report of Independent Accountants

To the Board of Governors of The Federal Reserve System
and the Board of Directors of The Federal Reserve
Bank of Minneapolis

We have audited the accompanying statements of condition of The Federal Reserve Bank of Minneapolis (the "Bank") as of December 31, 2001 and 2000, and the related statements of income and changes in capital for the years then ended. These financial statements are the responsibility of the Bank's management. Our responsibility is to express an opinion on the financial statements based on our audits.

We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

As discussed in Note 3, the financial statements were prepared in conformity with the accounting principles, policies, and practices established by the Board of Governors of The Federal Reserve System. These principles, policies, and practices, which were designed to meet the specialized accounting and reporting needs of The Federal Reserve System, are set forth in the "Financial Accounting Manual for Federal Reserve Banks" and constitute a comprehensive basis of accounting other than accounting principles generally accepted in the United States of America.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Bank as of December 31, 2001 and 2000, and results of its operations for the years then ended, on the basis of accounting described in Note 3.

March 4, 2002
Minneapolis, Minnesota

Federal Reserve Bank of Minneapolis

STATEMENTS OF CONDITION

(in millions)

	As of December 31, 2001	2000
Assets		
Gold certificates	$ 143	$ 158
Special drawing rights certificates	30	30
Coin	31	33
Items in process of collection	526	516
Loans to depository institutions	3	5
U.S. government and federal agency securities, net	1,752	2,183
Investments denominated in foreign currencies	563	572
Accrued interest receivable	18	25
Prepaid expense–Interest on Federal Reserve notes to the U.S. Treasury	31	31
Interdistrict settlement account	12,065	—
Bank premises and equipment, net	144	150
Other assets	18	19
Total assets	$ 15,324	$ 3,722
Liabilities and Capital		
Liabilities:		
Federal Reserve notes outstanding, net	$ 14,055	$ 1,587
Deposits:		
Depository institutions	460	456
Other deposits	1	2
Deferred credit items	457	451
Interdistrict settlement account	—	642
Accrued benefit costs	43	41
Other liabilities	10	10
Total liabilities	15,026	3,189
Capital:		
Capital paid-in	180	368
Surplus	118	165
Total capital	298	533
Total liabilities and capital	$ 15,324	$ 3,722

The accompanying notes are an integral part of these financial statements.

Federal Reserve Bank of Minneapolis

STATEMENTS OF INCOME

(in millions)

	For the years ended December 31, 2001	2000
Interest income:		
Interest on U.S. government and federal agency securities	$ 102	$ 197
Interest on investments denominated in foreign currencies	12	10
Interest on loans to depository institutions	1	4
Total interest income	115	211
Other operating income:		
Income from services	52	46
Reimbursable services to government agencies	23	25
Foreign currency (losses), net	(55)	(51)
U.S. Government securities gains (losses), net	1	(1)
Other income	1	1
Total other operating income	22	20
Operating expenses:		
Salaries and other benefits	77	70
Occupancy expense	12	13
Equipment expense	10	9
Assessments by Board of Governors	12	10
Other expenses	55	43
Total operating expenses	166	145
Net (loss) income prior to distribution	$ (29)	$ 86
Distribution of net (loss) income:		
Dividends paid to member banks	$ 18	$ 19
Transferred to (from) surplus	(47)	67
Total distribution	$ (29)	$ 86

The accompanying notes are an integral part of these financial statements.

STATEMENTS OF CHANGES IN CAPITAL

for the years ended December 31, 2001, and December 31, 2000
(in millions)

	Capital Paid-in	Surplus	Total Capital
Balance at January 1, 2000			
(4.7 million shares)	$ 235	$ 235	$ 470
Net income transferred to surplus	—	67	67
Surplus transfer to the U.S. Treasury	—	(137)	(137)
Net change in capital stock issued			
(2.7 million shares)	133	—	133
Balance at December 31, 2000			
(7.4 million shares)	$ 368	$ 165	$ 533
Transferred from surplus	—	(47)	(47)
Net change in capital stock redeemed			
(3.8 million shares)	(188)	—	(188)
Balance at December 31, 2001			
(3.6 million shares)	$ 180	$ 118	$ 298

The accompanying notes are an integral part of these financial statements.

Notes to Financial Statements

1. ORGANIZATION

The Federal Reserve Bank of Minneapolis ("Bank") is part of the Federal Reserve System ("System") created by Congress under the Federal Reserve Act of 1913 ("Federal Reserve Act") which established the central bank of the United States. The System consists of the Board of Governors of the Federal Reserve System ("Board of Governors") and twelve Federal Reserve Banks ("Reserve Banks"). The Reserve Banks are chartered by the federal government and possess a unique set of governmental, corporate, and central bank characteristics. Other major elements of the System are the Federal Open Market Committee ("FOMC") and the Federal Advisory Council. The FOMC is composed of members of the Board of Governors, the president of the Federal Reserve Bank of New York ("FRBNY") and, on a rotating basis, four other Reserve Bank presidents.

Structure

The Bank and its branch in Helena, Montana, serve the Ninth Federal Reserve District, which includes Minnesota, Montana, North Dakota, South Dakota, and portions of Michigan and Wisconsin. In accordance with the Federal Reserve Act, supervision and control of the Bank are exercised by a Board of Directors. Banks that are members of the System include all national banks and any state-chartered bank that applies and is approved for membership in the System.

Board of Directors

The Federal Reserve Act specifies the composition of the Board of Directors for each of the Reserve Banks. Each board is composed of nine members serving three-year terms: three directors, including those designated as Chairman and Deputy Chairman, are appointed by the Board of Governors, and six directors are elected by member banks. Of the six elected by member banks, three represent the public and three represent member banks. Member banks are divided into three classes according to size. Member banks in each class elect one director representing member banks and one representing the public. In any election of directors, each member bank receives one vote, regardless of the number of shares of Reserve Bank stock it holds.

2. OPERATIONS AND SERVICES

The System performs a variety of services and operations. Functions include: formulating and conducting monetary policy; participating actively in the payments mechanism, including large-dollar transfers of funds, automated clearinghouse ("ACH") operations and check processing; distributing coin and currency; performing fiscal agency functions for the U.S. Treasury and certain federal agencies; serving as the federal government's bank; providing short-term loans to depository institutions; serving the consumer and the community by providing educational materials and information regarding consumer laws; supervising bank holding companies and state member banks; and administering other regulations of the Board of Governors. The Board of Governors' operating costs are funded through assessments on the Reserve Banks.

The FOMC establishes policy regarding open market operations, oversees these operations, and issues authorizations and directives to the FRBNY for its execution of transactions. Authorized

transaction types include direct purchase and sale of securities, matched sale-purchase transactions, the purchase of securities under agreements to resell, and the lending of U.S. government securities. The FRBNY is also authorized by the FOMC to hold balances of and to execute spot and forward foreign exchange and securities contracts in nine foreign currencies, maintain reciprocal currency arrangements ("F/X swaps") with various central banks, and "warehouse" foreign currencies for the U.S. Treasury and Exchange Stabilization Fund ("ESF") through the Reserve Banks.

3. SIGNIFICANT ACCOUNTING POLICIES

Accounting principles for entities with the unique powers and responsibilities of the nation's central bank have not been formulated by the Financial Accounting Standards Board. The Board of Governors has developed specialized accounting principles and practices that it believes are appropriate for the significantly different nature and function of a central bank as compared to the private sector. These accounting principles and practices are documented in the *Financial Accounting Manual for Federal Reserve Banks* ("Financial Accounting Manual"), which is issued by the Board of Governors. All Reserve Banks are required to adopt and apply accounting policies and practices that are consistent with the Financial Accounting Manual.

The financial statements have been prepared in accordance with the Financial Accounting Manual. Differences exist between the accounting principles and practices of the System and accounting principles generally accepted in the United States of America ("GAAP"). The primary differences are the presentation of all security holdings at amortized cost, rather than at the fair value presentation requirements of GAAP, and the accounting for matched sale-purchase transactions as separate sales and purchases, rather than secured borrowings with pledged collateral, as is generally required by GAAP. In addition, the Bank has elected not to present a Statement of Cash Flows. The Statement of Cash Flows has not been included as the liquidity and cash position of the Bank are not of primary concern to the users of these financial statements. Other information regarding the Bank's activities is provided in, or may be derived from, the Statements of Condition, Income, and Changes in Capital. Therefore, a Statement of Cash Flows would not provide any additional useful information. There are no other significant differences between the policies outlined in the Financial Accounting Manual and GAAP.

Effective January 2001, the System implemented procedures to eliminate the sharing of costs by Reserve Banks for certain services a Reserve Bank may provide on behalf of the System. Data for 2001 reflects the adoption of this policy. Major services provided for the System by this bank, for which the costs will not be redistributed to the other Reserve Banks, include: FedACH Application Business Functions, Check Standardization Project Office, Banking Application Management System, and Electronic Access Products.

The preparation of the financial statements in conformity with the Financial Accounting Manual requires management to make certain estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of income and expenses during the reporting period. Actual results could differ from those estimates. Certain amounts relating to the prior year have been reclassified to conform to the current year presentation. Unique accounts and significant accounting policies are explained below.

a. Gold Certificates

The Secretary of the Treasury is authorized to issue gold certificates to the Reserve Banks to monetize gold held by the U.S. Treasury. Payment for the gold certificates by the Reserve Banks is made by crediting equivalent amounts in dollars into the account established for the U.S. Treasury. These gold certificates held by the Reserve Banks are required to be backed by the gold of the U.S. Treasury. The U.S. Treasury may reacquire the gold certificates at any time and the Reserve Banks must deliver them to the U.S. Treasury. At such time, the U.S. Treasury's account is charged and the Reserve Banks' gold certificate accounts are lowered. The value of gold for purposes of backing the gold certificates is set by law at $42 2/9 a fine troy ounce. The Board of Governors allocates the gold certificates among Reserve Banks once a year based upon Federal Reserve notes outstanding in each District.

b. Special Drawing Rights Certificates

Special drawing rights ("SDRs") are issued by the International Monetary Fund ("Fund") to its members in proportion to each member's quota in the Fund at the time of issuance. SDRs serve as a supplement to international monetary reserves and may be transferred from one national monetary authority to another. Under the law providing for United States participation in the SDR system, the Secretary of the U.S. Treasury is authorized to issue SDR certificates, somewhat like gold certificates, to the Reserve Banks. At such time, equivalent amounts in dollars are credited to the account established for the U.S. Treasury, and the Reserve Banks' SDR certificate accounts are increased. The Reserve Banks are required to purchase SDRs, at the direction of the U.S. Treasury, for the purpose of financing SDR certificate acquisitions or for financing exchange stabilization operations. At the time SDR transactions occur, the Board of Governors allocates amounts among Reserve Banks based upon Federal Reserve notes outstanding in each District at the end of the preceding year. There were no SDR transactions in 2001.

c. Loans to Depository Institutions

The Depository Institutions Deregulation and Monetary Control Act of 1980 provides that all depository institutions that maintain reservable transaction accounts or nonpersonal time deposits, as defined in Regulation D issued by the Board of Governors, have borrowing privileges at the discretion of the Reserve Banks. Borrowers execute certain lending agreements and deposit sufficient collateral before credit is extended. Loans are evaluated for collectibility, and currently all are considered collectible and fully collateralized. If any loans were deemed to be uncollectible, an appropriate reserve would be established. Interest is accrued using the applicable discount rate established at least every fourteen days by the Board of Directors of the Reserve Banks, subject to review by the Board of Governors. Reserve Banks retain the option to impose a surcharge above the basic rate in certain circumstances.

d. U.S. Government and Federal Agency Securities and Investments Denominated in Foreign Currencies

The FOMC has designated the FRBNY to execute open market transactions on its behalf and to hold the resulting securities in the portfolio known as the System Open Market Account ("SOMA"). In addition to authorizing and directing operations in the domestic securities market, the FOMC authorizes and directs the FRBNY to execute operations in foreign markets for major currencies in order to counter disorderly conditions in exchange markets or to meet other needs specified by the FOMC in carrying out the System's central bank responsibilities. Such authorizations are reviewed and approved annually by the FOMC.

Matched sale-purchase transactions are accounted for as separate sale and purchase transactions. Matched sale-purchase transactions are transactions in which the FRBNY sells a security and buys it back at the rate specified at the commencement of the transaction.

The FRBNY has sole authorization by the FOMC to lend U.S. government securities held in the SOMA to U.S. government securities dealers and to banks participating in U.S. government securities clearing arrangements on behalf of the System, in order to facilitate the effective functioning of the domestic securities market. These securities-lending transactions are fully collateralized by other U.S. government securities. FOMC policy requires FRBNY to take possession of collateral in excess of the market values of the securities loaned. The market values of the collateral and the securities loaned are monitored by FRBNY on a daily basis, with additional collateral obtained as necessary. The securities loaned continue to be accounted for in the SOMA.

Foreign exchange ("F/X") contracts are contractual agreements between two parties to exchange specified currencies, at a specified price, on a specified date. Spot foreign contracts normally settle two days after the trade date, whereas the settlement date on forward contracts is negotiated between the contracting parties, but will extend beyond two days from the trade date. The FRBNY generally enters into spot contracts, with any forward contracts generally limited to the second leg of a swap/warehousing transaction.

The FRBNY, on behalf of the Reserve Banks, maintains renewable, short-term F/X swap arrangements with two authorized foreign central banks. The parties agree to exchange their currencies up to a pre-arranged maximum amount and for an agreed upon period of time (up to twelve months), at an agreed upon interest rate. These arrangements give the FOMC temporary access to foreign currencies that it may need for intervention operations to support the dollar and give the partner foreign central bank temporary access to dollars it may need to support its own currency. Drawings under the F/X swap arrangements can be initiated by either the FRBNY or the partner foreign central bank, and must be agreed to by the drawee. The F/X swaps are structured so that the party initiating the transaction (the drawer) bears the exchange rate risk upon maturity. The FRBNY will generally invest the foreign currency received under an F/X swap in interest-bearing instruments.

Warehousing is an arrangement under which the FOMC agrees to exchange, at the request of the Treasury, U.S. dollars for foreign currencies held by the Treasury or ESF over a limited period of time. The purpose of the warehousing facility is to supplement the U.S. dollar resources of the Treasury and ESF for financing purchases of foreign currencies and related international operations.

In connection with its foreign currency activities, the FRBNY, on behalf of the Reserve Banks, may enter into contracts which contain varying degrees of off-balance sheet market risk, because they represent contractual commitments involving future settlement and counter-party credit risk. The FRBNY controls credit risk by obtaining credit approvals, establishing transaction limits, and performing daily monitoring procedures.

While the application of current market prices to the securities currently held in the SOMA portfolio and investments denominated in foreign currencies may result in values substantially above or below their carrying values, these unrealized changes in value would have no direct

effect on the quantity of reserves available to the banking system or on the prospects for future Reserve Bank earnings or capital. Both the domestic and foreign components of the SOMA portfolio from time to time involve transactions that can result in gains or losses when holdings are sold prior to maturity. However, decisions regarding the securities and foreign currencies transactions, including their purchase and sale, are motivated by monetary policy objectives rather than profit. Accordingly, earnings and any gains or losses resulting from the sale of such currencies and securities are incidental to the open market operations and do not motivate its activities or policy decisions.

U.S. government and federal agency securities and investments denominated in foreign currencies comprising the SOMA are recorded at cost, on a settlement-date basis, and adjusted for amortization of premiums or accretion of discounts on a straight-line basis. Interest income is accrued on a straight-line basis and is reported as "Interest on U.S. government and federal agency securities" or "Interest on investments denominated in foreign currencies," as appropriate. Income earned on securities lending transactions is reported as a component of "Other income." Gains and losses resulting from sales of securities are determined by specific issues based on average cost. Gains and losses on the sales of U.S. government and federal agency securities are reported as "U.S. government securities gains (losses), net." Foreign-currency-denominated assets are revalued daily at current market exchange rates in order to report these assets in U.S. dollars. Realized and unrealized gains and losses on investments denominated in foreign currencies are reported as "Foreign currency losses, net." Foreign currencies held through F/X swaps, when initiated by the counter-party, and warehousing arrangements are revalued daily, with the unrealized gain or loss reported by the FRBNY as a component of "Other assets" or "Other liabilities," as appropriate.

Balances of U.S. government and federal agency securities bought outright, securities loaned, investments denominated in foreign currency, interest income, securities lending fee income, amortization of premiums and discounts on securities bought outright, gains and losses on sales of securities, and realized and unrealized gains and losses on investments denominated in foreign currencies, excluding those held under an F/X swap arrangement, are allocated to each Reserve Bank. Income from securities lending transactions undertaken by the FRBNY are also allocated to each Reserve Bank. Securities purchased under agreements to resell and unrealized gains and losses on the revaluation of foreign currency holdings under F/X swaps and warehousing arrangements are allocated to the FRBNY and not to other Reserve Banks.

Statement of Financial Accounting Standards No. 133, as amended and interpreted, became effective on January 1, 2001. For the periods presented, the Reserve Banks had no derivative instruments required to be accounted for under the standard.

e. Bank Premises and Equipment

Bank premises and equipment are stated at cost less accumulated depreciation. Depreciation is calculated on a straight-line basis over estimated useful lives of assets ranging from 2 to 50 years. New assets, major alterations, renovations and improvements are capitalized at cost as additions to the asset accounts. Maintenance, repairs and minor replacements are charged to operations in the year incurred. Internally-developed software is capitalized based on the cost of direct materials and services and those indirect costs associated with developing, implementing, or testing software.

f. Interdistrict Settlement Account

At the close of business each day, all Reserve Banks and branches assemble the payments due to or from other Reserve Banks and branches as a result of transactions involving accounts residing in other Districts that occurred during the day's operations. Such transactions may include funds settlement, check clearing and ACH operations, and allocations of shared expenses. The cumulative net amount due to or from other Reserve Banks is reported as the "Interdistrict settlement account."

g. Federal Reserve Notes

Federal Reserve notes are the circulating currency of the United States. These notes are issued through the various Federal Reserve agents to the Reserve Banks upon deposit with such Agents of certain classes of collateral security, typically U.S. government securities. These notes are identified as issued to a specific Reserve Bank. The Federal Reserve Act provides that the collateral security tendered by the Reserve Bank to the Federal Reserve Agent must be equal to the sum of the notes applied for by such Reserve Bank. In accordance with the Federal Reserve Act, gold certificates, special drawing rights certificates, U.S. government and federal agency securities, triparty agreements, loans to depository institutions, and investments denominated in foreign currencies are pledged as collateral for net Federal Reserve notes outstanding. The collateral value is equal to the book value of the collateral tendered, with the exception of securities, whose collateral value is equal to the par value of the securities tendered. The Board of Governors may, at any time, call upon a Reserve Bank for additional security to adequately collateralize the Federal Reserve notes. The Reserve Banks have entered into an agreement which provides for certain assets of the Reserve Banks to be jointly pledged as collateral for the Federal Reserve notes of all Reserve Banks in order to satisfy their obligation of providing sufficient collateral for outstanding Federal Reserve notes. In the event that this collateral is insufficient, the Federal Reserve Act provides that Federal Reserve notes become a first and paramount lien on all the assets of the Reserve Banks. Finally, as obligations of the United States, Federal Reserve notes are backed by the full faith and credit of the United States government.

The "Federal Reserve notes outstanding, net" account represents Federal Reserve notes reduced by currency held in the vaults of the Bank of $2,015 million, and $7,994 million at December 31, 2001 and 2000, respectively.

h. Capital Paid-in

The Federal Reserve Act requires that each member bank subscribe to the capital stock of the Reserve Bank in an amount equal to 6 percent of the capital and surplus of the member bank. As a member bank's capital and surplus changes, its holdings of the Reserve Bank's stock must be adjusted. Member banks are those state-chartered banks that apply and are approved for membership in the System and all national banks. Currently, only one-half of the subscription is paid-in and the remainder is subject to call. These shares are nonvoting with a par value of $100. They may not be transferred or hypothecated. By law, each member bank is entitled to receive an annual dividend of 6 percent on the paid-in capital stock. This cumulative dividend is paid semiannually. A member bank is liable for Reserve Bank liabilities up to twice the par value of stock subscribed by it.

i. Surplus

The Board of Governors requires Reserve Banks to maintain a surplus equal to the amount of capital paid-in as of December 31. This amount is intended to provide additional capital and reduce the possibility that the Reserve Banks would be required to call on member banks for additional capital. Reserve Banks are required by the Board of Governors to transfer to the U.S. Treasury excess earnings, after providing for the costs of operations, payment of dividends, and reservation of an amount necessary to equate surplus with capital paid-in.

The Consolidated Appropriations Act of 2000 (Public Law 106-113, Section 302) directed the Reserve Banks to transfer to the U.S. Treasury additional surplus funds of $3,752 million during the Federal Government's 2000 fiscal year. Federal Reserve Bank of Minneapolis transferred $137 million to the U.S. Treasury. Reserve Banks were not permitted to replenish surplus for these amounts during fiscal year 2000, which ended September 30, 2000.

Due to the substantial increase in capital paid-in and the transfer of surplus required by the Consolidated Appropriations Act of 2000, surplus was not equated to capital paid-in at December 31, 2000. The amount of additional surplus required due to these events exceeded the Bank's net income in 2000. Surplus was not equated to capital paid-in at December 31, 2001, due to foreign currency losses and less income from the lower participation in SOMA accounts. Net income is affected by SOMA participation as discussed in footnote 4.

In the event of losses or a substantial increase in capital paid-in, payments to the U.S. Treasury are suspended until such losses or increases in capital paid-in are recovered through subsequent earnings. At December 31, 2001, the Bank's payments had not resumed. Payments made to the U.S. Treasury in the year 2000 are classified as "Prepaid expense-Interest on Federal Reserve notes to the U.S. Treasury" for each of the years ended December 31, 2001 and 2000.

j. Income and Costs related to Treasury Services

The Bank is required by the Federal Reserve Act to serve as fiscal agent and depository of the United States. By statute, the Department of the Treasury is permitted, but not required, to pay for these services. The costs of providing fiscal agency and depository services to the Treasury Department that have been billed but not paid are immaterial and included in "Other Expenses."

k. Taxes

The Reserve Banks are exempt from federal, state, and local taxes, except for taxes on real property, which are reported as a component of "Occupancy expense."

4. U.S. GOVERNMENT AND FEDERAL AGENCY SECURITIES

Securities bought outright are held in the SOMA at the FRBNY. An undivided interest in SOMA activity, with the exception of securities held under agreements to resell and the related premiums, discounts and income, is allocated to each Reserve Bank on a percentage basis derived from an annual settlement of interdistrict clearings. The settlement, performed in April of each year, equalizes Reserve Bank gold certificate holdings to Federal Reserve notes outstanding. The Bank's allocated share of SOMA balances was 0.312 percent and 0.421 percent at December 31, 2001 and 2000, respectively.

The Bank's allocated share of securities held in the SOMA at December 31, that were bought outright, were as follows (in millions):

	2001	2000
Par value:		
Federal agency	$ —	$ 1
U.S. government:		
Bills	568	752
Notes	830	1,011
Bonds	323	391
Total par value	1,721	2,155
Unamortized premiums	35	41
Unaccreted discounts	(4)	(13)
Total allocated to Bank	$ 1,752	$ 2,183

Total SOMA securities bought outright were $561,701 million and $518,501 million at December 31, 2001 and 2000, respectively.

The maturity distribution of U.S. government and federal agency securities bought outright, which were allocated to the Bank at December 31, 2001, were as follows (in millions):

	Par value		
Maturites of Securities Held	U.S. Government Securities	Federal Agency Obligations	Total
Within 15 days	$ 33	$	$ 33
16 days to 90 days	389		389
91 days to 1 year	408		408
Over 1 year to 5 years	478	—	478
Over 5 years to 10 years	166		166
Over 10 years	247		247
Total	$ 1,721	$ —	$ 1,721

At December 31, 2001 and 2000, matched sale-purchase transactions involving U.S. government securities with par values of $23,188 million and $21,112 million, respectively, were outstanding, of which $72 million and $89 million were allocated to the Bank. Matched sale-purchase transactions are generally overnight arrangements.

At December 31, 2001 and 2000, U.S. government securities with par values of $7,345 million and $2,086 million, respectively, were loaned from the SOMA, of which $23 million and $9 million were allocated to the Bank.

5. INVESTMENTS DENOMINATED IN FOREIGN CURRENCIES

The FRBNY, on behalf of the Reserve Banks, holds foreign currency deposits with foreign central banks and the Bank for International Settlements, and invests in foreign government debt instruments. Foreign government debt instruments held include both securities bought outright and securities held under agreements to resell. These investments are guaranteed as to principal and interest by the foreign governments.

Each Reserve Bank is allocated a share of foreign-currency-denominated assets, the related interest income, and realized and unrealized foreign currency gains and losses, with the exception of unrealized gains and losses on F/X swaps and warehousing transactions. This allocation is based on the ratio of each Reserve Bank's capital and surplus to aggregate capital and surplus at the preceding December 31. The Bank's allocated share of investments denominated in foreign currencies was approximately 3.869 percent and 3.653 percent at December 31, 2001 and 2000, respectively.

The Bank's allocated share of investments denominated in foreign currencies, valued at current exchange rates at December 31, was as follows (in millions):

	2001	2000
European Union Euro:		
Foreign currency deposits	$ 178	$ 169
Government debt instruments including agreements to resell	104	99
Japanese Yen:		
Foreign currency deposits	73	100
Government debt instruments including agreements to resell	206	201
Accrued interest	2	3
Total	$ 563	$ 572

Total investments denominated in foreign currencies were $14,559 million and $15,670 million at December 31, 2001 and 2000, respectively.

The maturity distribution of investments denominated in foreign currencies which were allocated to the Bank at December 31, 2001, was as follows (in millions):

Maturities of Investments Denominated in Foreign Currencies	
Within 1 year	$ 530
Over 1 year to 5 years	16
Over 5 years to 10 years	17
Over 10 years	0
Total	$ 563

At December 31, 2001 and 2000, there were no open foreign exchange contracts or outstanding F/X swaps.

At December 31, 2001 and 2000, the warehousing facility was $5 billion, with zero outstanding.

6. BANK PREMISES AND EQUIPMENT

A summary of bank premises and equipment at December 31 is as follows (in millions):

	2001	2000
Bank premises and equipment:		
Land	$ 13	$ 13
Buildings	110	110
Building machinery and equipment	14	14
Furniture and equipment	48	48
	185	185
Accumulated depreciation	(41)	(35)
Bank premises and equipment, net	$ 144	$ 150

Depreciation expense was $9 million for each of the years ended December 31, 2001 and 2000.

This Bank has not entered into any capitalized leases for bank premises and equipment.

Future minimum payments under agreements in existence at December 31, 2001, were not material.

7. COMMITMENTS AND CONTINGENCIES

Rental expense under operating leases for certain operating facilities, warehouses, and data processing and office equipment (including taxes, insurance and maintenance when included in rent), net of sublease rentals, was $710 thousand and $255 thousand for the years ended December 31, 2001 and 2000, respectively. Certain of the Bank's leases have options to renew.

Future minimum rental payments under noncancelable operating leases and capital leases, net of sublease rentals, with terms of one year or more, at December 31, 2001, were not material.

Under the Insurance Agreement of the Federal Reserve Banks dated as of March 2, 1999, each of the Reserve Banks has agreed to bear, on a per incident basis, a pro rata share of losses in excess of 1 percent of the capital paid-in of the claiming Reserve Bank, up to 50 percent of the total capital paid-in of all Reserve Banks. Losses are borne in the ratio that a Reserve Bank's capital paid-in bears to the total capital paid-in of all Reserve Banks at the beginning of the calendar year in which the loss is shared. No claims were outstanding under such agreement at December 31, 2001 or 2000.

The Bank is involved in certain legal actions and claims arising in the ordinary course of business. Although it is difficult to predict the ultimate outcome of these actions, in management's opinion, based on discussions with counsel, the aforementioned litigation and claims will be resolved without material adverse effect on the financial position or results of operations of the Bank.

There were no other commitments and long-term obligations in excess of one year at December 31, 2001.

8. RETIREMENT AND THRIFT PLANS

Retirement Plans

The Bank currently offers two defined benefit retirement plans to its employees, based on length of service and level of compensation. Substantially all of the Bank's employees participate in the Retirement Plan for Employees of the Federal Reserve System ("System Plan") and the Benefit Equalization Retirement Plan ("BEP"). The System Plan is a multi-employer plan with contributions fully funded by participating employers. No separate accounting is maintained of assets contributed by the participating employers. The Bank's projected benefit obligation and net pension costs for the BEP at December 31, 2001 and 2000, and for the years then ended, are not material.

Thrift Plan

Employees of the Bank may also participate in the defined contribution Thrift Plan for Employees of the Federal Reserve System ("Thrift Plan"). The Bank's Thrift Plan contributions totaled $2 million for each of the years ended December 31, 2001 and 2000, and are reported as a component of "Salaries and other benefits."

9. POSTRETIREMENT BENEFITS OTHER THAN PENSIONS AND POSTEMPLOYMENT BENEFITS

Postretirement Benefits other than Pensions

In addition to the Bank's retirement plans, employees who have met certain age and length of service requirements are eligible for both medical benefits and life insurance coverage during retirement.

The Bank funds benefits payable under the medical and life insurance plans as due and, accordingly, has no plan assets. Net postretirement benefit costs are actuarially determined using a January 1 measurement date.

Following is a reconciliation of beginning and ending balances of the benefit obligation (in millions):

	2001	2000
Accumulated postretirement benefit obligation at January 1	$ 33.2	$ 30.3
Service cost-benefits earned during the period	1.1	0.9
Interest cost of accumulated benefit obligation	2.6	2.2
Actuarial loss	5.3	1.1
Contributions by plan participants	0.1	0.1
Benefits paid	(1.5)	(1.4)
Plan amendments, acquisitions, foreign currency exchange rate changes, business combinations, divestitures, curtailments, settlements, special termination benefits	(3.6)	—
Accumulated postretirement benefit obligation at December 31	$ 37.2	$ 33.2

Following is a reconciliation of the beginning and ending balance of the plan assets, the unfunded postretirement benefit obligation, and the accrued postretirement benefit costs (in millions):

	2001	2000
Fair value of plan assets at January 1	$ —	$ —
Actual return on plan assets	—	—
Contributions by the employer	1.3	1.2
Contributions by plan participants	0.1	0.1
Benefits paid	(1.4)	(1.3)
Fair value of plan assets at December 31	$ —	$ —
Unfunded postretirement benefit obligation	$ 37.2	$ 33.2
Unrecognized initial net transition asset (obligation)	—	—
Unrecognized prior service cost	3.6	—
Unrecognized net actuarial gain (loss)	(3.5)	1.8
Accrued postretirement benefit costs	$ 37.3	$ 35.0

Accrued postretirement benefit costs are reported as a component of "Accrued benefit costs."

At December 31, 2001 and 2000, the weighted average discount rate assumptions used in developing the benefit obligation were 7.0 percent and 7.5 percent, respectively.

For measurement purposes, a 10.00 percent annual rate of increase in the cost of covered health care benefits was assumed for 2002. Ultimately, the health care cost trend rate is expected to decrease gradually to 5.00 percent by 2008, and remain at that level thereafter.

Assumed health care cost trend rates have a significant effect on the amounts reported for health care plans. A one percentage point change in assumed health care cost trend rates would have the following effects for the year ended December 31, 2001 (in millions):

	1 Percentage Point Increase	1 Percentage Point Decrease
Effect on aggregate of service and interest cost components of net periodic postretirement benefit costs	$ 0.8	$ (0.6)
Effect on accumulated postretirement benefit obligation	7.1	(5.5)

The following is a summary of the components of net periodic postretirement benefit costs for the years ended December 31 (in millions):

	2001	2000
Service cost-benefits earned during the period	$ 1.0	$ 0.9
Interest cost of accumulated benefit obligation	2.6	2.2
Amortization of prior service cost	—	—
Recognized net actuarial loss	—	—
Net periodic postretirement benefit costs	$ 3.6	$ 3.1

Net periodic postretirement benefit costs are reported as a component of "Salaries and other benefits."

Postemployment benefits

The Bank offers benefits to former or inactive employees. Postemployment benefit costs are actuarially determined and include the cost of medical and dental insurance, survivor income, and disability benefits. Costs were projected using the same discount rate and health care trend rates as were used for projecting postretirement costs. The accrued postemployment benefit costs of $6 million were recognized by the Bank for each of the years ended December 31, 2001 and 2000. This cost is included as a component of "Accrued benefit costs." Net periodic postemployment benefit costs were $1 million for each of the years ended December 31, 2001 and 2000.

Auditor Independence

The firm engaged for the audits of the individual and combined financial statements of the Reserve Banks for 2001 was PricewaterhouseCoopers LLP (PwC). Fees for these services totaled $1.3 million. In order to ensure auditor independence, the Board requires that PwC be independent in all matters relating to the audit. Specifically, PwC may not perform services for the Reserve Bank or others that would place it in a position of auditing its own work, making management decisions on behalf of the Reserve Banks, or in any other way impairing its audit independence. In 2001 the Reserve Banks engaged PwC for advisory services totaling $0.9 million, $0.7 million of which was for project management advisory services related to the System's check modernization project. The Board believes that these advisory services do not directly affect the preparation of the financial statements audited by PwC and are not incompatible with the services provided by PwC as an independent auditor.

For more information on the Minneapolis Fed and the Federal Reserve System, go to *minneapolisfed.org*.

Useful telephone numbers
(612 area code unless otherwise indicated):

For the Public
Consumer Affairs Help Line: 204-6500
Job Hot Line: 204-5366 or 1-877-766-8533
Media Inquiries: 204-5261
Research Library: 204-5509
Treasury Auction Results, Current Offerings,
Bills, Notes, Bonds: 1-800-722-2678

For Financial Institutions
Cash Services Help Line: 204-5227
CBAF Help Desk: 204-5400
Customer Relations Help Desk: 204-7010