

# ECONOMIC REVIEW

1992 Quarter 4

---

**White- and Blue-Collar Jobs  
in the Recent Recession  
and Recovery: Who's Singing  
the Blues?** **2**

by Erica L. Groshen and Donald R. Williams

---

**Assessing the Impact of  
Income Tax, Social Security  
Tax, and Health Care Spending  
Cuts on U.S. Saving Rates** **13**

by Alan J. Auerbach, Jagadeesh Gokhale, and Laurence J. Kotlikoff

---

**History of and Rationales for  
the Reconstruction Finance  
Corporation** **22**

by Walker F. Todd



**FEDERAL RESERVE BANK  
OF CLEVELAND**

1992 Quarter 4  
Vol. 28, No. 4

## White- and Blue-Collar Jobs in the Recent Recession and Recovery: Who's Singing the Blues?

2

by Erica L. Groshen and Donald R. Williams

Throughout the 1990–91 recession, media reports, unaided by rigorous substantiation, asserted that white-collar workers were being hit disproportionately hard. This paper investigates the veracity of that claim by using aggregate data from the Bureau of Labor Statistics for the six downturns and recoveries since 1960. The authors find that, as usual, the latest episode exacted a greater toll on blue-collar workers. However, the extremely slow growth in white-collar employment was unusual by historical standards. Furthermore, the recent recession was generally harsher than the previous downturns for white-collar workers, but milder than the historical median for their blue-collar counterparts.

## Assessing the Impact of Income Tax, Social Security Tax, and Health Care Spending Cuts on U.S. Saving Rates

13

by Alan J. Auerbach, Jagadeesh Gokhale,  
and Laurence J. Kotlikoff

Today's policy reform proposals seem to be motivated not by concerns about the dramatic decline in U.S. saving rates during the past decade, but instead by the recent sluggishness in economic growth, perceived unfairness in the tax system, and runaway health care expenditures. These concerns have given impetus to proposals for reductions in income and Social Security taxes on middle-income households and for health care spending cuts. The impact of such plans on national saving will obviously depend on the financing method adopted. This paper, through the use of generational accounting, assesses their likely effect on both current and future national saving.

## History of and Rationales for the Reconstruction Finance Corporation

22

by Walker F. Todd

Proposals for government intervention to support the capital positions of financial institutions tied to regional or national interests usually build upon a memory, increasingly hazy with the passage of time, of the original governmental rescue program of the 1930s, the Reconstruction Finance Corporation (RFC). This paper analyzes the history of and theoretical rationales for the RFC. Particular attention is paid to the necessity of separating the traditional fiscal policy operations of a government-funded rescue mechanism from the traditional monetary policy operations of a central bank. The author also draws comparisons between the RFC of the 1930s and today's Resolution Trust Corporation, created by Congress to manage the thrift industry crisis of the late 1980s.

*Economic Review* is published quarterly by the Research Department of the Federal Reserve Bank of Cleveland. Copies of the *Review* are available through our Public Affairs and Bank Relations Department, 1-800-543-3489.

Coordinating Economist:  
James B. Thomson

Advisory Board:  
David Altig  
Erica L. Groshen  
William P. Osterberg

Editors: Tess Ferg  
Robin Ratliff  
Design: Michael Galka  
Typography: Liz Hanna

Opinions stated in *Economic Review* are those of the authors and not necessarily those of the Federal Reserve Bank of Cleveland or of the Board of Governors of the Federal Reserve System.

Material may be reprinted provided that the source is credited. Please send copies of reprinted material to the editors.

ISSN 0013-0281

# White- and Blue-Collar Jobs in the Recent Recession and Recovery: Who's Singing the Blues?

by Erica L. Groshen and Donald R. Williams

Erica L. Groshen is an economic advisor at the Federal Reserve Bank of Cleveland, and Donald R. Williams is an associate professor of economics at Kent State University. The authors are grateful to John Stinson and Thomas Nardone of the Bureau of Labor Statistics for providing unpublished data, to Mark Sniderman and Patricia Beeson for helpful discussions, and to Colin Drozdowski for research assistance.

## Introduction

Was the 1990–91 recession predominantly “white collar,” as many analysts and media reports have claimed? And if so, did this public focus on the layoffs of managers, professionals, and scientists arise because the downturn hurt white-collar workers more than their blue-collar counterparts, or because their plight was somehow worse than in previous recessions? This paper examines these questions by analyzing the absolute and relative severity of the recent recession for both occupational groups, using aggregate data from the Bureau of Labor Statistics (BLS) for the six downturns since 1960.<sup>1</sup>

Our results show that during the 1990–91 slump, the labor market faced by blue-collar workers was worse and deteriorated more than the white-collar job market. However, the lack of white-collar employment growth was unusual by historical standards. Furthermore, the latest recession was harsher than most previous

ones for white-collar workers, but milder than the historical median for blue-collar workers. The 15 months of recovery beginning in May 1991 also sent contradictory signals, but clearly stacked up as the weakest rebound ever for both occupational groups.

One difficulty in answering the questions posed here is pinpointing the trough of the 1990–91 recession. For previous downturns, we use the peak and trough months designated by the National Bureau of Economic Research (NBER). Because the trough of the recent recession has not yet been named, we follow the lead of many analysts who, using the same general criteria as the NBER, conclude that April 1991 will eventually be chosen.<sup>2</sup> In section V, we compare the pace of the current recovery for white- and blue-collar workers and consider how our qualitative conclusions might change if May

■ 1 For further comparisons between the 1990–91 recession and previous ones, we refer readers to McNees (1992). For a description of other labor market conditions during the recent recession, see Meisenheimer, Mellor, and Rydzewski (1992).

■ 2 The day before this article went to press, the NBER's Business Cycle Dating Committee, which is the official arbiter of the economy's peaks and troughs, designated March 1991 as the trough of the 1990–91 recession. Fortunately, our assumed trough is only one month later, and experiments conducted with several alternative dates do not affect our qualitative results. A set of slightly revised tables using March 1991 as the trough is available from the authors upon request.

1991 through July 1992 were included in the recession. In general, experiments with alternative troughs and with monthly measures do not affect our results.<sup>3</sup>

## I. Why Occupations Are Affected Differently by Recessions

Conceptually, white-collar workers hold salaried or professional jobs and usually do not perform manual labor. In contrast, blue-collar workers hold hourly jobs that generally involve some physical tasks. On average, white-collar positions require more formal education and training, while most blue-collar skills are acquired relatively quickly, often on the job.

The reasons why economic downturns have different impacts on these two groups hinge on the various roles in the production process that employees play. Historically, contractions have had a muted effect on white-collar workers because their employment is less closely tied to production levels. Typically, when a U.S. company faces falling demand, it cuts output and lays off production (blue-collar) workers. By contrast, white-collar workers are likely to be retained in the short run. Their salaries are generally considered part of the fixed costs of operation, since their replacement costs (hiring, training, and so on) are higher and their services are not easily divisible. The employment of accountants and engineers by the auto industry, for example, is not as cyclically sensitive as that of assembly-line workers.

Second, the compensation plans of white-collar workers are often more flexible than those of their blue-collar counterparts. Thus, the adjustment to an economic downturn may take the form of lower profit shares or bonuses for a firm's white-collar staff, while blue-collar workers are more likely to lose their jobs.

Finally, the last 30 years have witnessed a strong secular decline in the blue-collar share of U.S. employment. Explanations for this phenomenon include technological changes that conserve on low-skill labor (such as automation) and increased competition from less-developed

countries. Employment losses arising from such structural shifts are most intense during a recession, either because they actually induce the slowdown or because cyclical drops in demand force marginally productive employers to modernize or to cease operations more quickly than they would during an expansion. Thus, the overall trend away from blue-collar employment also tends to deepen recessions for these workers.

On the other hand, three factors peculiar to the 1990–91 recession suggest an enhanced impact on white-collar workers this time around, and perhaps in future downturns. First, recessions do not affect all industries equally. A slowdown will exact a greater toll on white-collar workers if it is centered in industries that employ a high percentage of these employees. Downturns in the banking, finance, or computer industries (all of which led the way into the latest recession), for example, will hit white-collar workers harder than downturns in the auto industry. Second, the recent growth in contracting out for traditional white-collar functions (such as accounting, advertising, and secretarial and design services) may provide employers with a route for minimizing the indivisibility of their white-collar staff. Consequently, as their customers cut back, service providers will lay off the white-collar workers whose services they used to farm out.

Finally, the absolute impact of a recession on any group of workers will rise with that group's share of total employment and total labor costs. The shift toward white-collar employment over the past 30 years, when coupled with the rising pay differential between white- and blue-collar workers, suggests that employers may increasingly resort to white-collar layoffs when they need to cut costs. Conversely, during a recovery, we would expect labor market conditions to improve more rapidly for those groups that suffered high rates of temporary layoffs during the recession, as well as for those with a strong secular growth trend. For white-collar workers, these two influences tend to work at cross-purposes.

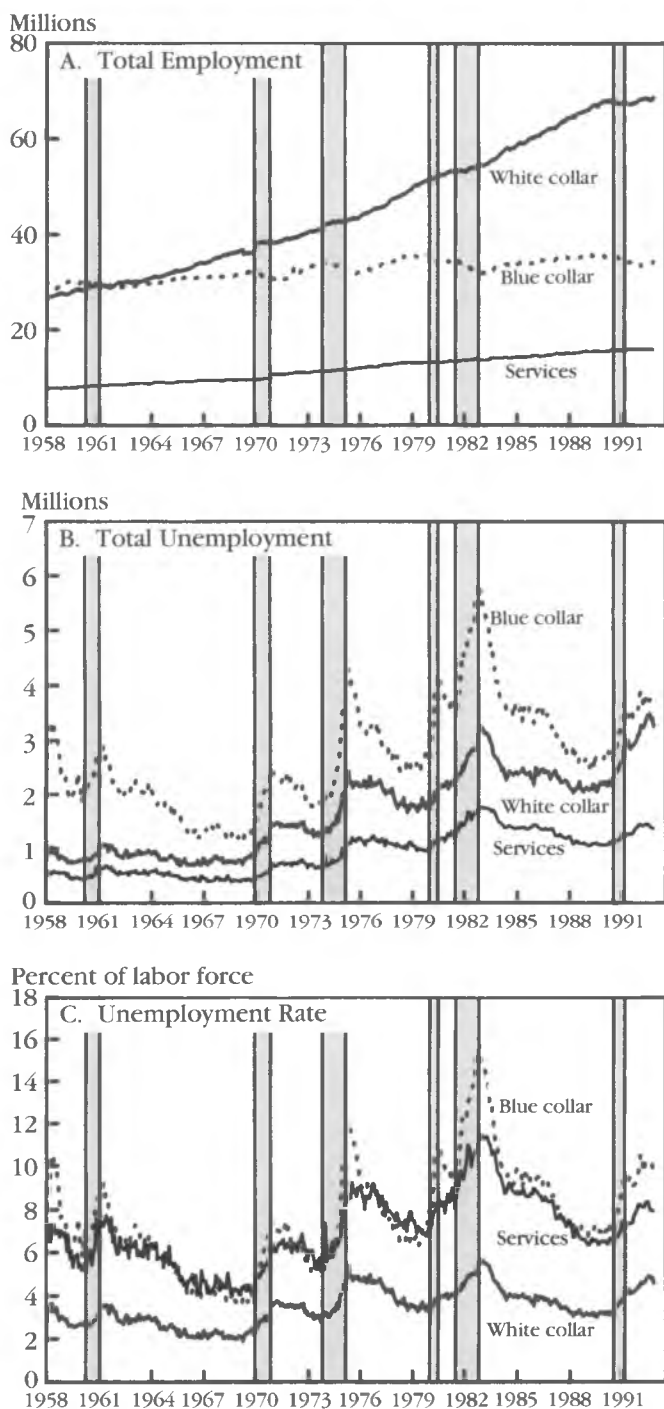
## II. Defining Collar Color: The Data

The most comprehensive U.S. employment figures are gathered in the BLS's monthly, household-based Current Population Survey (CPS). At present, the BLS organizes occupational statistics into six broad categories: 1) managerial and professional specialties, 2) technical, sales, and administrative occupations, 3) service occupations, 4) precision production, craft, and repair

■ 3 Throughout this paper, recession-linked changes in employment/unemployment are measured from the month of the previous peak to the month of the trough. We do not investigate the possibility that white- and blue-collar labor markets experienced different business cycle lags. We also conducted analyses using three-month moving averages (recommended by the BLS because of monthly variations in occupational classifications) and found that our qualitative results were unaffected. For <http://fraser.stlouisfed.org> exposition, we present only the basic analysis here.

FIGURE 1

### U.S. Labor Market Indicators by Major Occupational Group



NOTE: All data are seasonally adjusted. Shaded areas indicate recessions. Service occupation data are estimated from totals and subtotals provided by the BLS and thus should be interpreted with caution.

SOURCES: Data for 1958–77 and 1983–87 are from the U.S. Department of Labor (1983, 1988). Data for 1978–82 were obtained directly from the BLS. Data for 1988–91 are from the U.S. Department of Labor, *Employment and Earnings*, various issues.

workers, 5) operators, fabricators, and laborers, and 6) farming, forestry, and fishing occupations. The first two categories are clearly white-collar jobs, while the last three are distinctly blue collar. Service occupations, on the other hand, do not fit easily into either broad group.<sup>4</sup> Since the BLS does not provide seasonally adjusted data for services, we exclude this category from our analysis.<sup>5</sup>

These six occupational categories have been in place only since the BLS changed its classification system in January 1983. Fortunately, although the change affected all levels of classifications, the effect on the white-collar/blue-collar distinction is minimal.<sup>6</sup> The pre-1983 category “white-collar occupations,” now officially dropped, contains (with few exceptions) the same detailed occupations now grouped into the first two categories listed above.<sup>7</sup> The occupations in the pre-1983 “blue-collar” classification plus the “farm worker” category correspond roughly to the last three post-1983 categories.<sup>8</sup> The “service occupations” category has remained essentially the same.

Further assurance that the occupational groupings are reasonably comparable over time can be found by examining a time series of labor market statistics. On the basis of answers recorded in the CPS, the BLS divides the U.S. population into three categories: the employed, the unemployed, and persons out of the labor force. Those in the latter category are not actively seeking employment, usually because they work without pay in the home or are retired, disabled, in school, or too young. Seasonally adjusted employment and unemployment totals and employment rates over the January 1958 to July 1992 period are presented in figure 1 for these three broad occupational categories. No obvious discontinuities show up in any of the series in January 1983.

■ 4 Service occupations include workers in private households and in the protective, health, food, and personal service industries. Like blue-collar jobs, service jobs are usually paid hourly, may be somewhat physical in nature, and require only moderate to low levels of general education. But like white-collar personnel, service workers generally produce intangible, non-storable products.

■ 5 Seasonally adjusted data are not provided because the series is too volatile.

■ 6 For further discussion of the BLS changes, see the appendix.

■ 7 The pre-1983 white-collar category includes professional and technical workers, managers and administrators, sales workers, and clerical workers.

■ 8 The pre-1983 blue-collar category includes craft and kindred workers, operatives (except transport), transport operatives, and nonfarm laborers. Our analysis adds farm workers to the pre-1983 data and includes farming, fishing, and forestry workers in the post-1983 data to improve comparability over time.

What is clear from the figure is that white-collar and, to a lesser degree, service employment grew dramatically over this period, while blue-collar employment remained essentially flat. Furthermore, the cyclical sensitivities of all three series differ by occupational groupings. In particular, panel C suggests that white-collar unemployment rates are both lower and less cyclical than blue-collar rates. Because the 1990–91 recession saw a dramatic increase in the number of unemployed for both groups, these charts alone cannot reveal whether the downturn can accurately be termed white collar.

There are no definitive criteria for judging a recession's severity. Thus, we focus on a wide range of employment and unemployment measures, comparing particular points in time (how bad things are at the trough) as well as changes over the cycle (how much they deteriorated from the peak).<sup>9</sup> We examine both unemployment and employment, each of which can be charted by the number of workers so classified or be combined into the unemployment rate. Focusing on the unemployment rate helps to mitigate problems of interpretation posed by offsetting movements in the individual series.

The appropriateness of any particular measure depends on the reason one is interested in the white-collar/blue-collar distinction. For example, in order to target job services appropriately, the differential impact of the recession on the pool of unemployed persons would be the measure of choice. For those making or advising others on career decisions, a measure of risk or increase in risk of joblessness, such as the unemployment rate and its change, would be more useful. And for those interested in placements or office space needs, the employment-related indicators would be of greatest relevance. Although we try to summarize across all measures whenever possible, it is clear that sometimes our answers are not entirely uniform.

### III. Absolute Measures

To determine whether white-collar workers suffered disproportionately during the 1990–91 recession, we examine a variety of labor market indicators for the period. These figures reveal

that blue-collar, not white-collar, workers bore the brunt of the downturn.<sup>10</sup>

Beginning with unemployment measures (rows 1 to 6 of table 1), we note that in April 1991, even though white-collar workers accounted for over half of total employment, they constituted less than two-fifths of the unemployed, below the blue-collar share (row 1).<sup>11</sup> Less than half the increase in joblessness over the course of the recession came from the white-collar ranks (row 2). Furthermore, the white-collar unemployment rate was less than half the blue-collar rate, with the latter rising about twice as much from peak to trough (row 5).

Only when we examine *changes* relative to the base of unemployment at the beginning of the recession (rows 3 and 6) does the increase in white-collar unemployment appear comparable to, or slightly worse than, that for blue-collar workers. That is, these measures tell us that the pool of unemployed became slightly more white collar over the course of the downturn, although it was still dominated by other occupations.

The employment measures presented in rows 7 through 9 of table 1 also offer little evidence of a white-collar recession. Blue-collar employment shrank about 3 percent, while the number of white-collar positions actually expanded, albeit slowly. In fact, since the white-collar and service occupations added jobs, the decline in blue-collar slots actually accounted for more than the total number of jobs lost.

To evaluate the recession and its aftermath as a whole, we repeated the analysis assuming a trough of July 1992. The results are reported in the last three columns of table 1. Although this change does not alter the qualitative conclusions discussed above, it does make the recession appear somewhat worse for white-collar workers when judged by unemployment measures. For every unemployment labor market indicator, extending the period of analysis raises the value of the white-to-blue-collar ratio. For employment measures, on the other hand, considering the whole period improves the picture for white-collar personnel.

■ 9 Other nonemployment indicators that would be interesting to investigate are income, wealth, bankruptcy rates, or unemployment insurance changes over the course of the recession. Unfortunately, data for <http://fraser.stlouisfed.org> only years are not available. Federal Reserve Bank of St. Louis

■ 10 These results are qualitatively similar to those obtained using preliminary data for February 1990 through February 1991, reported in Eberts and Groshen (1991).

■ 11 The blue- and white-collar shares of employment and unemployment do not sum to 100 percent because service occupations are excluded.

TABLE 1

**Impact of the 1990–91 Recession on  
White- versus Blue-Collar Workers**

Labor Market Indicator	July 1990–April 1991			July 1990–July 1992		
	WC <sup>a</sup> (percent)	BC <sup>b</sup> (percent)	WC/BC (ratio)	WC (percent)	BC (percent)	WC/BC (ratio)
<b>Unemployment measures</b>						
Share of employment at end of period	39.2	44.5	0.88	39.8	42.5	0.94
Share of increase in unemployment	46.6	46.1	1.01	45.6	38.3	1.19
Percent increase in unemployment	26.9	22.7	1.19	47.1	33.7	1.40
Unemployment rate at end of period	4.2	9.0	0.47	4.8	9.8	0.49
Change in unemployment rate	0.9	1.7	0.53	1.4	2.5	0.57
Percent increase in unemployment rate	25.4	23.9	1.07	42.4	34.5	1.23
<b>Employment measures</b>						
Share of employment at end of period	57.5	28.8	2.00	57.8	28.6	2.02
Share of employment change	-20.6	121.5	-0.17	-953.2	935.5	-1.02
Percent change in employment	0.3	-2.8	-0.10	1.8	-3.3	-0.55

a. White collar.

b. Blue collar.

NOTE: All data are seasonally adjusted. Because seasonally adjusted data are not available for service occupations, they are omitted from the table. In April 1991, total unemployment was 7,568,000 and total employment was 116,844,000. In July 1992, total unemployment was 8,843,000 and total employment was 117,759,000. Blue- and white-collar shares of unemployment and employment do not sum to 100 percent because service occupations are omitted.

SOURCE: U.S. Department of Labor (1983, 1988, *Employment and Earnings*, various issues).

TABLE 2

**White- and Blue-Collar  
Unemployment during Recessions**

Recession	Peak to Trough Increase in Unemployment (thousands of workers)		Peak to Trough Percent Increase in Unemployment		Unemployment Rate at Trough (percent)		Peak to Trough Percent Increase in Unemployment Rate	
	WC <sup>a</sup>	BC <sup>b</sup>	WC	BC	WC	BC	WC	BC
1960–61	244	722	32.5	36.2	3.3	8.8	28.1	37.9
1969–70	557	984	64.6	68.6	3.6	7.4	61.0	68.1
1973–75	935	2,330	77.2	125.7	4.8	11.9	69.6	126.1
1980	244	1,122	13.2	38.2	3.8	10.9	11.2	41.0
1981–82	978	2,284	44.2	64.8	5.6	15.6	39.6	67.5
1990–91	628	622	26.9	22.7	4.2	9.0	25.4	23.9

a. White collar.

b. Blue collar.

NOTE: All data are seasonally adjusted. April 1991 is estimated trough of 1990–91 recession.

SOURCE: U.S. Department of Labor (1983, 1988, *Employment and Earnings*, various issues).

TABLE 3

### White- and Blue-Collar Employment during Recessions

Recession	Peak to Trough Change in Employment (thousands of workers)		Peak to Trough Percent Change in Employment	
	WC <sup>a</sup>	BC <sup>b</sup>	WC	BC
1960–61	760	-1,110	2.7	-3.8
1969–70	308	-894	0.8	-2.9
1973–75	989	-2,395	2.4	-7.2
1980	736	-1,888	1.4	-5.4
1981–82	844	-2,903	1.6	-8.5
1990–91	167	-985	0.3	-2.8

a. White collar.

b. Blue collar.

NOTE: All data are seasonally adjusted. April 1991 is estimated trough of 1990–91 recession.

SOURCE: U.S. Department of Labor (1983, 1988, *Employment and Earnings*, various issues).

## IV. A Historical Perspective

Since the 1990–91 recession was clearly not a white-collar one judged by the absolute criteria examined above, we now refocus on whether white-collar workers were hit *harder* than in the past. First, we compare their unemployment experience during the latest recession to recent patterns. Next, we compare their employment experience during past recessions to the latest pattern. Finally, we compare the relative historical severity of the recent recession for white-collar workers (using both employment and unemployment measures) to that for blue-collar workers.

Was white-collar unemployment higher or did it increase more during the latest recession than in the earlier downturns? The answer is no. Table 2 presents separate white- and blue-collar unemployment-based measures of severity for the six most recent recessions. Column 1 shows that the number of jobless white-collar workers rose by greater absolute amounts in both the 1973–75 and 1981–82 downturns. In percentage terms (column 3), which control for burgeoning white-collar employment, the current white-collar increase in joblessness is the second *lowest*. Turning to unemployment rates, columns 5 and 7 show that the white-collar rate at the 1990–91 trough was lower than in two previous recessions and that it increased less than in four

previous recessions. Thus, using the yardstick of their own unemployment in previous slow-downs, white-collar workers did not appear to fare worse this time.

Was job creation particularly slow for white-collar workers? Most definitely. Table 3 reports changes in employment during the six most recent recessions. Columns 1 and 3 reveal a striking difference between the 1990–91 episode and the previous five. White-collar employment growth during the latest downturn was by far the slowest observed. And although the meager addition of 167,000 white-collar jobs is still better than the drop in blue-collar employment during the mildest recession examined, in light of the previously unabated growth of white-collar jobs, this stall clearly sets the 1990–91 recession apart. The disparity between the unemployment and employment results must stem either from a drop in white-collar labor force participation or from a switch to blue-collar or service jobs.

In a historical sense, was the latest recession relatively more severe for white-collar than for blue-collar workers? Unlike the previous two questions, this one requires looking at a wide variety of indicators. Table 4 presents five possible ways of approaching the issue. The first column, provided for comparison purposes, shows the growth in white-collar workers' share of total employment over the past 30 years. If white-collar jobs were as cyclically sensitive as blue-collar and service jobs, then column 2, which reports the white-collar share of employment change, would be identical to column 1. Instead, these numbers are uniformly negative, indicating that white-collar employment continued to expand while total employment fell.

Column 3 of table 4 shows that although white-collar workers remained a minority of the unemployed in April 1991, they still constituted a greater percentage than during all five previous recessions. What's more, column 4 indicates that the current white-collar share of additions to the unemployment line is also at a record high. These numbers, while lower than the white-collar share of jobs, represent substantial and historically high percentages.

We saw in figure 1 that the highest jobless rate reached by white-collar workers (more than 5 percent in 1982) barely approaches the lowest rates experienced by blue-collar workers over the last decade. Hence, column 5 of table 4 focuses on the gap between the two rates. The white-collar unemployment rate for April 1991 is almost half that of blue-collar workers. Historically, it is the second highest white-to-blue-collar ratio, just barely superseded by the 1969–70 downturn.



TABLE 4

### Relative Employment and Unemployment Measures during Recessions

Recession	White-Collar Percent of:				White-Collar/Blue-Collar Ratio of:	
	Employment		Unemployment		Unemployment Rate at Trough <sup>a</sup>	Increase in Unemployment Rate, Peak to Trough <sup>b</sup>
	Level at Trough	Change, Peak to Trough	Level at Trough	Change, Peak to Trough		
1960–61	44.4	–3,304.4	22.9	21.5	0.38	0.74
1969–70	48.7	–68.9	31.6	32.1	0.49	0.90
1973–75	50.1	–92.9	29.0	25.8	0.40	0.55
1980	52.9	–58.7	28.3	15.6	0.35	0.27
1981–82	54.4	–54.5	29.7	26.2	0.36	0.59
1990–91	57.4	–20.6	39.2	43.6	0.47	1.07

a. Ratio of column five to column 6 in table 2.

b. Ratio of column 7 to column 8 in table 2.

NOTE: All data are seasonally adjusted. April 1991 is estimated trough of 1990–91 recession.

SOURCE: U.S. Department of Labor (1983, 1988, *Employment and Earnings*, various issues).

TABLE 5

### Relative Rankings of Severity of Recessions

Recession	Criterion											
	(I) Absolute Increase in Number Unemployed		(II) Percent Increase in Number Unemployed		(III) Unemployment Rate at Trough		(IV) Percent Change in Unemployment Rate		(V) Absolute Change in Number Employed		(VI) Percent Change in Number Employed	
	WC <sup>a</sup>	BC <sup>b</sup>	WC	BC	WC	BC	WC	BC	WC	BC	WC	BC
1960–61	6	5	4	5	6	5	4	5	4	4	6	4
1969–70	4	4	1	2	5	6	2	2	2	6	2	6
1973–75	2	2	2	1	2	2	1	1	6	2	5	2
1980	6	3	6	4	4	3	6	4	3	3	3	3
1981–82	1	1	3	3	1	1	3	3	5	1	4	1
1990–91	3	6	5	6	3	4	5	6	1	5	1	5

a. White collar.

b. Blue collar.

NOTE: 1 = most severe, 6 = least severe.

SOURCE: Derived from tables 2 and 3.

TABLE 6

### White- and Blue-Collar Employment and Unemployment during the First 15 Months of Recovery

Recession	Percent Change in Employment		Percent Change in Unemployment		Unemployment Rate		Change in Unemployment Rate		Percent of Increase in Unemployment Rate Recovered <sup>a</sup>	
	WC <sup>b</sup>	BC <sup>c</sup>	WC	BC	WC	BC	WC	BC	WC	BC
1960–61	1.4	1.0	–21.7	–17.3	2.6	6.5	–0.7	–2.3	101.2	95.5
1969–70	1.8	6.6	–1.2	–10.8	3.5	6.2	–0.1	–1.1	7.4	37.8
1973–75	3.5	5.1	3.0	–22.2	4.8	9.1	0.0	–2.8	1.2	42.3
1980 <sup>d</sup>	1.6	2.9	6.1	–13.2	4.0	9.3	0.2	–1.5	–43.0	48.7
1981–82	5.2	5.9	–25.1	–37.2	4.1	9.9	–1.5	–5.7	97.4	90.0
1990–91	1.5	–0.5	15.9	9.0	4.8	9.8	0.6	0.8	–66.6	–44.7

a. Defined as the change in the unemployment rate over the 15 months following the trough, divided by the rise in the unemployment rate from the previous peak to the trough.

b. White collar.

c. Blue collar.

d. Because the recovery following the 1980 recession lasted only seven months, we present statistics for July 1980, the next peak.

NOTE: April 1991 is estimated trough of 1990–91 recession.

SOURCE: U.S. Department of Labor (1983, 1988, *Employment and Earnings*, various issues).

What about relative increases in the proportion of unemployed? Column 6 of table 4 reports the ratio of the percentage increase in the white-collar unemployment rate to that for blue-collar employees. In all five previous recessions, white-collar jobless rates increased proportionally less than blue-collar rates (that is, the ratio was less than one). Only in the recent downturn was the opposite true.

By the five measures considered in table 4, the 1990–91 recession appears to have been deeper, in a historical sense, for white-collar than for blue-collar workers. To reinforce this point, table 5 presents the results discussed earlier in a different form. We rank each recession according to the various criteria considered above, side by side for both groups of workers. Among white-collar employees, the harshest downturns occurred in 1973–75 and 1981–82, using the unemployment criteria (I–IV). Using those (within-white-collar) criteria, the 1990–91 recession ranks either third or fifth in terms of severity. However, when changes in employment (criteria V and VI) are considered, the latest downturn was the deepest for white-collar workers. For blue-collar workers, it does not rank above fourth for any of the measures listed above.

For a relative perspective, we next compare the rankings of white- and blue-collar workers for each recession. For example, by criterion I,

the 1990–91 recession was relatively deeper for white-collar workers (third compared to sixth in severity). Using this approach and considering all six criteria (particularly the employment-based gauges), the latest downturn ranks consistently more severe for white-collar workers. This, then, is one sense in which the recent recession is more white collar than earlier downturns.

### V. How Have White-Collar Workers Fared since April 1991?

Table 6 compares various measures of white- and blue-collar workers' relative performance between April 1991 and July 1992 with the first 15 months of recovery after the earlier recessions. In the past, the lower cyclical sensitivity of white-collar jobs has meant that recoveries were felt most strongly in the blue-collar job market. Historically, during the first 15 months after a trough, both blue- and white-collar employment has risen, but blue-collar employment has usually picked up at least as fast, and often much faster, than the white-collar numbers, presumably reflecting workers recalled from temporary layoffs. Similarly, the ranks of the blue-collar unemployed

have shrunk faster than those of jobless white-collar workers, which have sometimes continued to rise after the trough.

If we use the unemployment rate at the previous trough as a benchmark, we can measure the extent to which labor markets recover in the first 15 months after a recession. Column 9 presents such estimates for each of the earlier recessions. For instance, by May 1962, 15 months after the February 1961 trough, the white-collar unemployment rate had already subsided to slightly below its level at the previous peak. In contrast, 15 months after the next trough, it had fallen by only 7.4 percent of the amount it had climbed between December 1969 and November 1970. Comparing the white-collar and blue-collar extents of recovery in columns 9 and 10, respectively, reinforces the notion that the pace of recovery tends to be faster in the blue-collar job market.

The bottom row lists figures for the current recovery. Columns 1 and 2 show that employment of white-collar workers has increased, while blue-collar jobs have continued to contract. Nevertheless, column 3 indicates that white-collar unemployment has risen rather than fallen — which also happened after two earlier downturns, though not nearly as dramatically. This suggests that entrants into the white-collar labor market are far outstripping increases in available positions, raising joblessness much more rapidly in the white-collar ranks. The 9.0 percent uptick in blue-collar unemployment since April 1991 is uncharacteristic of recent recoveries. Unemployment rates have risen for both white- and blue-collar occupations, with the white-collar rate adding another two-thirds of what it gained before April 1991, and the blue-collar rate adding almost half again what it had gained before.

Although this analysis of recoveries suggests that the current one is particularly weak, it does not contradict our previous conclusions. Labor market conditions for blue-collar workers continue to be worse than for their white-collar counterparts. Judged by employment measures, this recovery is slow for white-collar workers, but not unusually so, while blue-collar workers' losses are unprecedented. Furthermore, unemployment indicators for May 1991 through July 1992 hardly point to a recovery for either type of worker. Although it is not unusual for white-collar joblessness to pick up during recoveries, the current rise is uncharacteristically large. And since 1960, no other recovery has seen a net increase in blue-collar unemployment over the 15 months following the trough.

## VI. Conclusion

This paper investigates whether the recession that began in July 1990 can accurately be characterized as white collar. We examine the employment/unemployment status of white- and blue-collar workers during the latest downturn and in the five post-1960 recessions in order to address the question from various angles. The answer we offer depends crucially on how the question is posed.

The absolute, narrowly focused question of whether white-collar workers bore the brunt of the recent recession yields a strong no: Blue-collar workers suffered larger unemployment increases and job losses and experienced higher unemployment rates. And when we ask whether the level of, or the increase in, white-collar unemployment reached a historical high, the answer is also an unequivocal no. By every measure considered here, the 1990–91 recession was less severe in this respect than at least two previous downturns.

But when we ask whether the growth of white-collar employment fell to a record low for a recession, the answer is a definite yes. White-collar job growth essentially stopped during the latest downturn, as opposed to just slowing, as it did in the previous five episodes.

Furthermore, when we ask whether, compared to their own experience in the earlier recessions, this one had a more severe impact on white-collar workers than on their blue-collar counterparts, the answer is also yes. In particular, when measured relative to their own history of employment changes during recessions, white-collar workers were clearly hit disproportionately hard. By all employment/unemployment criteria examined here, the latest downturn for white-collar workers ranks worse, in a historical sense, than the downturn for blue-collar workers.

Last, when we ask whether white-collar workers are lagging their blue-collar counterparts during the current recovery, the answer is less clear. The 15 months beginning in May 1991 rank as the weakest historically for both occupational groups, particularly for blue-collar workers.

Any explanation for the pattern of occupational impact seen in the 1990–91 downturn will ultimately require further analysis of secular changes in the structure of employment. Perhaps the changes in the white-collar labor market that we attribute to the recession in fact reflect a long-run shift in the previously uninterrupted growth of white-collar jobs, as suggested

in Cappelli (1992).<sup>12</sup> If so, the 1990–91 employment decline and tepid recovery may actually be the result of increased permanent, rather than cyclical, trimming of the corporate white-collar work force.<sup>13</sup>

Also of interest is why the recent recession slowed white-collar employment relatively more than it raised unemployment. Since losing one's job is usually a ticket to the unemployment line, the dissimilar results for these two measures present a puzzle. What did the displaced white-collar workers do during the recession instead of joining the ranks of the unemployed?<sup>14</sup> And do their activities explain the sharp rise in white-collar unemployment during the recovery?

Until CPS data files with individual responses are released for analysis, we cannot answer these questions, but we can list some intriguing possibilities. White-collar workers may have delayed or avoided entry (or reentry) into the labor market by pursuing more education or training, by accepting early retirement offers, or by performing nonmarket activities in the home. Alternatively, they may have worked, perhaps temporarily, at blue-collar or service jobs. The answer should provide insights into the labor market of the 1990s, since these possibilities have different implications for both the composition and quality of the work force.

Finally, our conclusion that the 1990–91 downturn was *more* white collar than usual should not obscure the overriding fact that, judged by employment/unemployment criteria, recessions still exact a greater toll on blue-collar workers. By all measures examined here, the harshest recessions experienced by white-collar workers barely measure up to the mildest suffered by their blue-collar counterparts. In any absolute sense, the 1990–91 slump was clearly a blue-collar recession, like all those at least as far back as 1960.

■ **12** Also consistent with this hypothesis is evidence of a shift in the industrial distribution of displaced workers during the 1980s away from manufacturing and toward the service and retail trade industries (see Podgursky [1992]).

■ **13** In fact, this recovery has been characterized by a dramatic increase in the percentage of job losers across all industries who expect their layoffs to be permanent (see Allig and Bryan [1992] and U.S. Department of Labor [1992]). In general, layoffs from nonmanufacturing jobs are much more likely to be permanent.

■ **14** Of course, these numbers are not strictly contradictory. The number of unemployed white-collar workers has increased by 628,000, while white-collar jobs have grown little. However, as our analysis indicates, it is this recession's *employment* growth that was particularly slow. Thus, it may be more appropriate to think of the total number of white-collar jobs lost as the number that would have been created had the secular trend toward increased white-collar employment continued unabated. The unusual spurt in white-collar unemployment during the early months of the recovery may also be part of the story.

## Appendix

In January 1983, the BLS changed its occupation classification system from the Dictionary of Occupational Titles to the Standard Occupational Classifications (see Green et al. [1983]). Fortunately, although the shift affected all levels of classifications, we believe that the effect on the white-collar/blue-collar distinction is minimal.

The few instances in which the reclassification moved workers across broad occupational categories are listed in table A–I. Were such movements substantial, they could compromise the comparability of the data over time. Using 1982 employment figures, about 200,000 workers were moved from white collar to blue collar, 123,000 from blue collar to white collar, 409,000 from services to white collar, 7,000 from white collar to services, and 8,000 from blue collar to services.

The total number of individuals reclassified constitutes less than 1 percent of U.S. employment, and the largest individual change, moving practical nurses from services to white collar, affects less than half of 1 percent of total employment in 1982. Thus, we feel reasonably confident that the reclassification is unlikely to have affected our qualitative results.

TABLE A-1

**Effect of 1983 Change in the BLS  
Occupational Classification System**

Occupation	Moved		1982 Employment	Percent of Total 1982 Employment <sup>a</sup>
	From	To		
Ship officers, pilots, and pursers	WC <sup>b</sup>	BC <sup>c</sup>	41,000	0.04
Inspectors (not elsewhere classified)	WC	BC	136,000	0.13
Railroad conductors	WC	BC	23,000	0.02
Decorators and window dressers	BC	WC	123,000	0.12
Health trainees	Services	WC	9,000	0.01
Practical nurses	Services	WC	400,000	0.40
Therapy assistants	WC	Services	7,000	0.01
Urban rail conductors	BC	Services	8,000	0.01

a. Total employment in 1982: 101,206,000.

b. White collar.

c. Blue collar.

SOURCE: Unpublished data from the U.S. Department of Labor, Bureau of Labor Statistics.

## References

Altig, David, and Michael F. Bryan. "Can Conventional Theory Explain the Unconventional Recovery?" Federal Reserve Bank of Cleveland, *Economic Commentary*, April 15, 1992.

Cappelli, Peter. "Examining Managerial Displacement," *Academy of Management Journal*, vol. 35, no. 1 (March 1992), pp. 203–17.

Eberts, Randall W., and Erica L. Groshen. "Is This Really a 'White-Collar Recession?'" Federal Reserve Bank of Cleveland, *Economic Commentary*, March 15, 1991.

Green, Gloria P., Khoan tan Dinh, John A. Priebe, and Ronald R. Tucker. "Revisions in the Current Population Survey Beginning in January 1983," *Employment and Earnings*, February 1983, pp. 7–17.

McNees, Steven K. "The 1990–91 Recession in Historical Perspective," Federal Reserve Bank of Boston, *New England Economic Review*, January/February 1992, pp. 3–22.

Meisenheimer, J.R., Earl F. Mellor, and L.G. Rydzewski. "The Job Market Slid in Early 1991, Then Struggled to Find Footing," *Monthly Labor Review*, vol. 115, no. 2 (February 1992), pp. 3–17.

Podgursky, Michael. "The Industrial Structure of Job Displacement, 1979–89," *Monthly Labor Review*, vol. 115, no. 9 (September 1992), pp. 17–25.

U.S. Department of Labor, Bureau of Labor Statistics. *Labor Force Statistics Derived from the Current Population Survey, 1948–1981*. Washington, D.C.: U.S. Government Printing Office, 1983.

\_\_\_\_\_. *Labor Force Statistics Derived from the Current Population Survey, 1948–1987*. Washington, D.C.: U.S. Government Printing Office, 1988.

\_\_\_\_\_. *Issues in Labor Statistics, Summary 92–8*. Washington, D.C.: U.S. Government Printing Office, July 1992.

\_\_\_\_\_. *Employment and Earnings*, various issues (monthly).

# Assessing the Impact of Income Tax, Social Security Tax, and Health Care Spending Cuts on U.S. Saving Rates

by Alan J. Auerbach,  
Jagadeesh Gokhale,  
and Laurence J. Kotlikoff

Alan J. Auerbach is a professor of economics at the University of Pennsylvania and an associate of the National Bureau of Economic Research, Jagadeesh Gokhale is an economist at the Federal Reserve Bank of Cleveland, and Laurence J. Kotlikoff is a professor of economics at Boston University and an associate of the National Bureau of Economic Research. The authors thank Charles T. Carlstrom, Erica L. Groshen, and Alan Viard for helpful comments, Edward Bryden and Susan Byrne for research assistance, and John Sabelhaus for critical data on consumption.

## Introduction

Economists and policymakers have been expressing concern of late about the prospects for U.S. economic growth. Foremost among their concerns is the recent decline in U.S. saving. The net national saving rate, which averaged 8.5 and 4.7 percent in the 1970s and 1980s, respectively, registered an abysmal 1.7 percent in 1991 (see table 1). Many fear that continued low saving will constrain investment and cause productivity to stall in the future.

The total amount of saving is determined by several factors. Among them are the degree of uncertainty about future economic outcomes, the extent of foresight exercised by households in anticipating future needs, the demographic composition of the population, the completeness of financial and insurance markets, and the thrust of government economic policies. Current projections suggest that two particular factors will play an important role in determining the future course of U.S. saving: the demographic transition currently under way and the chronically increasing costs of health care. Both may pose serious obstacles to achieving greater

Debate continues on how best to reform Social Security and Medicare to meet these challenges. Further, many economists recommend greater fiscal stimulus by way of income-tax cuts for achieving faster rates of economic growth. Although the likely impact of these policies on national saving is obviously important, little direct attention has been paid to it, probably because these policies are not motivated primarily by a desire to influence saving.

Economic theory suggests that individuals' consumption and saving decisions are intimately related to the amount of their available resources—their net worth and expected future income. For an individual, the net availability of resources depends, in part, on the size of the fiscal burden imposed by government tax and transfer policies. Thus, measuring the impact on saving of a given policy change requires prior estimation of the policy-induced changes in the fiscal burdens facing members of different generations. This can be done by using generational accounting. Elsewhere, we have used this method to explore the impact of alternative fiscal policies on U.S. saving rates.<sup>1</sup> This *Economic Review* applies the same

TABLE 1

### Saving Rates in the United States (percent of net national product)

Years	Personal	Private	National
1960–1969	7.2	11.8	9.1
1970–1979	8.6	11.9	8.5
1980–1984	8.7	10.4	5.8
1985	6.7	9.6	4.4
1986	6.6	8.3	3.0
1987	4.0	6.5	2.7
1988	4.1	7.2	3.6
1989	5.0	7.1	4.0
1990	6.0	7.2	2.9
1991	6.4	—	1.7

NOTE: Personal saving is defined as saving by households. Private saving is defined as personal saving plus saving by businesses. National saving is defined as private saving plus saving by the U.S. government.

SOURCE: Authors' calculations based on the *Economic Report of the President*, February 1992, various tables.

method to examine the likely impact of alternative Social Security and Medicare policies on U.S. saving rates.

## I. The Analytical Framework<sup>2</sup>

As mentioned earlier, policy-induced changes in the fiscal burdens facing different generations affect their net resource availabilities and, hence, their consumption. As a simple illustration, consider an economy in which individuals choose consumption profiles to maximize remaining lifetime utility denoted by

$$(1) \quad U_a = \sum_{t=0}^{T-a} \beta^t u(C_t),$$

subject to the budget constraint

$$(2) \quad \sum_{t=0}^{T-a} R^t C_t = A_0 + \sum_{t=0}^{T-a} R^t W_t - \sum_{t=0}^{T-a} R^t T_t.$$

Here,  $u(\cdot)$  denotes a single-period utility function and  $\beta$  a time preference factor. The individual's current age is denoted by  $a$ , and  $T$  stands

for the maximum age of life;  $R = 1 / (1+r)$ , with  $r$  being an exogenously given rate of return on capital;  $C_t$  stands for consumption,  $W_t$  for wages, and  $T_t$  for net payments — taxes net of transfer receipts — made to the government during period  $t$ . The right side of equation (2) equals the present value of resources,  $PVR_0$ , where the first term,  $A_0$ , is current nonhuman wealth, the second term is human wealth, and the third term is the present value of net payments made to the government over the remaining lifetime — the individual's generational account.

Consider the special case where  $u(C_t)$  equals  $\log(C_t)$ , where there are only two periods in a lifetime (youth and old age), and where individuals possess no assets when young and work only during the first period. In this case, it is easy to verify that optimum consumptions when young and old are

$$(3) \quad C_y^* = \frac{PVR_y}{(1+\beta)}$$

and

$$(4) \quad C_o^* = (PVR_y - C_y^*) / R = \frac{\beta PVR_y}{(1+\beta)R} = PVR_o,$$

where subscripts  $y$  and  $o$  designate values when young and old, respectively, and superscript  $*$  denotes optimum value. Reasonable values of  $\beta$ , ( $\beta \leq 1$ ), yield propensities to consume out of  $PVR$  that rise with age. Such propensities are qualitatively consistent with the empirical evidence. In the two-period example, letting  $W_y = 90$ ,  $W_o = 0$ ,  $T_y = T_o = 20$ ,  $R = 0.5$ , and  $\beta = 1$  produces  $PVR_y = PVR_o = 60$ . The capital stock is 40 and total income per period is 130. Of the total (170) disposable resources each period, the government consumes 40,  $C_y^* = 30$ ,  $C_o^* = 60$ , and saving by the young is 40.

Now consider a tax-cut policy: The government continues to consume 40, but reduces  $T_o$  by 5 for just one period. The debt so generated is serviced by increasing  $T_y$  to 25 in every subsequent period, the additional tax being used to pay interest on the initial borrowing of 5. The generation that is old when the policy change occurs enjoys a reduced tax liability and, following the consumption rule, increases its consumption by 5, to 65. Saving in this period is thus depressed to 35. Clearly, if  $T_y$ , rather than  $T_o$ , had been reduced by 5, saving would have fallen to 37.5 in the first period. Further, if government spending had declined simultaneously with the decrease in  $T_o$ , saving would have remained

TABLE 2

**Current and Projected Population Proportions for Selected Age Groups (percent)**

Year	Age Group			Share of Persons Not in the Labor Force to Those in the Labor Force: $(P-LF)/LF^a$
	0-16	17-64	65 +	
1990	24.54	63.18	12.28	1.12
2000	24.23	63.16	12.62	1.10
2010	22.09	64.67	13.24	1.09
2020	21.01	62.52	16.47	1.15
2030	20.38	59.35	20.27	1.23
2040	19.78	59.21	21.01	1.25
2050	19.64	59.26	21.10	1.26

a.  $P$  = total population,  $LF$  = labor force.

SOURCE: Authors' calculations based on the Social Security Administration's Alternative II Population Projections. Data on the labor force were obtained from the U.S. Department of Labor, Bureau of Labor Statistics.

unchanged; it would have increased if the tax cut had instead been bestowed on the young.

The impact on saving thus depends not only on the amount of the tax cut, but also on who receives it. In addition, it hinges on whether and by how much government consumption spending is altered. Estimates of policy-induced changes in the net tax liabilities for each generation provided by generational accounting can, therefore, be combined with estimates of propensities to consume out of resources to assess the resulting change in aggregate saving. The saving estimates reported in this paper are based on a model in which individuals' economic life spans extend from age 18 through 90. Age-specific consumption propensities estimated from the Bureau of Labor Statistics' Consumer Expenditure Survey are used in the calculations.

Three caveats must be considered when evaluating the results from experiments based on such a procedure. First, this procedure ignores incentive and price effects of policy changes. For example, policies that alter marginal tax rates may introduce a further indirect effect on saving by causing some individuals to revise their labor supply decisions. The model also ignores effects arising from changes in factor prices, which may be large especially if policy shifts are expected to be temporary. In general, however, these effects will reinforce the direction of change in saving rates induced by

the income effects described above. For example, policies that boost saving rates by redistributing resources away from older generations will tend to increase the capital stock and, hence, to reduce interest rates and raise wage rates. These factor price changes will reinforce the redistribution of resources away from older generations and further augment saving rates. Estimates from policy simulations in Auerbach and Kotlikoff (1987) suggest that such wage and interest-rate changes occur only slowly. Because of discounting, the long-run impact of factor price changes on the present value of resources, and thus on saving, is likely to be small.

Second, if the change in policy is partially anticipated, experiments that assume the change to be unanticipated will overstate the saving impact. Third, some policy changes affect the degree of uncertainty about future economic events, especially regarding income and government transfer receipts, and thus may influence households' propensities to consume out of resources. In general, consumption propensities will be lower if policy changes increase the degree of uncertainty regarding future economic outcomes.<sup>3</sup> As yet, however, there exist no reliable estimates of how changes in uncertainty regarding future income affect average and marginal propensities to consume out of resources.

## II. The Policy Experiments

### Social Security and Income Tax Policies

In the United States, the baby boom generations will begin to retire in about 20 years. According to table 2, individuals above age 65 currently make up about 12 percent of the population. By 2030, however, their proportion will grow to about 20 percent. Table 2 also shows that the proportion of young individuals in the population is projected to decline over the same period. The last column of the table reveals that as the baby boomers begin to retire, the ratio of individuals not in the labor force to those who are in it may be expected to increase from its current level of 1.12 to 1.15 by 2020, and to attain levels greater than 1.20 in the following decades. The need to support a growing number of dependents will undoubtedly reduce the ability of future working generations to save.



T A B L E 3

Changes in the Net National Saving Rate Due to Alternative Social Security and Income-Tax-Cut Policies (percentage-point change)

Year	Reduce Social Security Taxes			Dissipate the Social Security Surplus		Reduce Income Tax	
	Increase SS taxes after 2020	Reduce SS benefits after 2020	Increase income tax after 2020	Increase SS taxes after 2020	Reduce SS benefits after 2020	Increase income tax after 2020	Lower government consumption
	(1a)	(1b)	(1c)	(2a)	(2b)	(3a)	(3b)
1990	-0.40	-0.08	-0.34	-0.89	-0.72	-0.41	0.58
1995	-0.51	-0.11	-0.43	-0.68	-0.47	-0.51	0.58
2000	-0.60	-0.14	-0.51	-0.72	-0.48	-0.59	0.47
2005	-0.67	-0.17	-0.56	-0.67	-0.40	-0.66	0.32

SOURCE: Authors' calculations.

Anticipating these demographic trends, the 1983 amendments to the Social Security law sought to switch from a *pay-as-you-go* system to one funded by 1) raising current Social Security taxes, 2) gradually increasing retirement ages in future years, and 3) subjecting future Social Security benefits to income taxation.<sup>4</sup> As a result, the Social Security Trust Fund has recently begun accumulating annual surpluses. Although these surpluses are earmarked for financing increased benefit payouts as the baby boomers begin retiring early in the next century, they may also be inducing larger deficits on the rest of the government's budget. Recently, proposals have been made for reducing Social Security and income taxes to provide a tax break for the middle class and to spur consumption demand to lift the economy out of its sluggish pace.<sup>5</sup>

The proposals for Social Security and income-tax cuts point to the possibility that fiscal policies negating the purpose of the Social Security surplus may be adopted. Since the government's finances must obey an intertemporal budget constraint, a tax cut today will compel a compensating change in revenues or outlays, either now or in future years. We therefore investigate the savings impact of the following hypothetical policies: 1) A 20 percent cut in Social Security taxes through 2020 coupled with either a) higher

Social Security taxes thereafter, or b) reduced Social Security benefit payments thereafter, or c) higher income taxation thereafter; 2) a dissipation of Social Security surpluses through higher government consumption to be replaced with either a) higher Social Security taxes after year 2020, or b) reduced Social Security benefits after year 2020; and 3) an 8 percent cut in income taxes until 2020 coupled with a) higher income taxes thereafter, or b) contemporaneous reductions in government consumption spending equaling the reduction in revenue.<sup>6</sup>

Each of these policies maintains intertemporal balance in the federal government's budget. That is, the loss in revenue from the initial tax cuts or spending increases is made up, in present value, by larger revenue from future tax hikes or future benefit cuts. Each of these policies imposes a unique set of gains and losses on different generations. As a result, each policy may be expected to have a distinct impact on current and future saving rates.

Columns 1 through 3 in table 3 show the impact on saving rates of Social Security tax-cut policies.<sup>7</sup> To understand the implications of policy (1a), which reduces Social Security taxes until the year 2020 and increases them thereafter, consider the case of the relatively older generations, those aged 35 and older in 1990.

■ 4 See U.S. Congress (1983).

■ 5 At this writing, the Clinton Administration is considering income-tax cuts for middle-income Americans, although combined with increases for the rich.

■ 6 An 8 percent cut in income taxes results in the same amount of revenue loss as a 20 percent cut in Social Security taxes.

■ 7 All numbers in tables 3 and 4 indicate percentage-point changes.

These generations' present value of resources (PVRs) are larger because they benefit from the immediate Social Security tax cuts, but are not much exposed to the higher Social Security taxes upon retirement after 2020. The net positive effect on their resources of the reduced Social Security taxes will increase their consumption. For some of the slightly younger generations, too, the present-value gain from the immediate tax cuts will be greater than the present-value loss from the higher taxes 30 years later. Their resources, and hence their consumption, will also be larger.

Those younger generations who will not be in the work force for most of the years before 2020, but will face the higher future taxation, will suffer a net loss in their resources. Most of these individuals, however, were not in the work force in 1990 and will not engage in consumption for a number of years thereafter. Thus, older generations will experience a gain, and younger generations a loss, in their PVRs. Given that the old have larger propensities to consume, this pattern of changes in the PVRs will induce larger aggregate consumption. Hence, saving rates will be lower. Table 3 shows that policy (1a) reduces current and future saving rates by between 0.40 and 0.67 percentage point. In contrast, policy (1b) exposes the older generations to reduced Social Security benefits upon retirement. Thus, the increase in their PVRs and, therefore, in their consumption will not be as large as under policy (1a). This explains why the reduction in saving rates under this policy is not as large as that under policy (1a). The saving-rate reductions for policy (1b) range between 0.08 and 0.17 percentage point.

Policy (1c) involves an income-tax hike after the year 2020. Unlike Social Security taxes, which fall exclusively on wage and salary incomes, part of the revenue from income taxation comes from taxation of capital income, which accrues mainly to older and retired generations. As a result, the increase in the PVRs of generations that are of working age in 1990 will not be as large as with higher future Social Security taxation. This induces a comparatively smaller increase in these generations' consumption and, hence, a smaller decline in saving rates. Saving-rate reductions due to this policy range between 0.34 and 0.56 percentage point.

Columns 4 and 5 in table 3 show the impact of policies (2a) and (2b), respectively. Here, the annual Social Security Trust Fund surpluses are dissipated through higher government spending. To compensate, policy (2a) raises Social Security taxes, while policy (2b) reduces Social Security benefits after the year 2020. Both

policies lower current and future saving rates because the direct negative effect due to higher government consumption expenditure is not fully offset by the lower consumption expenditure of generations whose PVRs are reduced as a result of higher future taxes (policy [2a]) or lower future Social Security benefits (policy [2b]). Policy (2a) lowers saving rates by about 0.9 percentage point in 1990. Future saving-rate reductions are lower because Social Security surpluses that are available for dissipation decline gradually as the baby boom generations approach retirement age. Again, because older generations escape higher future taxation under policy (2a) but receive lower benefits under policy (2b), the decline in saving rates is greater for policy (2a).

The last two columns of table 3 show the effects on saving rates from income-tax-cut policies. Under policy (3a), income taxes are increased after the year 2020. This policy is similar to the Social Security tax-cut policy (1a). Saving is reduced because older generations benefit from the immediate cut in income taxes, but are not alive when income taxes are increased in the future. Saving-rate reductions under this policy range between 0.41 and 0.66 percentage point.

Under policy (3b), government spending is reduced in each year by the amount of revenue lost from the income-tax cut. The direct effect of the expenditure reduction in increasing the national saving rate is partially offset by greater consumption induced by lower taxes. This policy nevertheless boosts saving rates by about 0.6 percentage point in the years immediately after 1990. The increases in saving rates are lower for years further in the future because generations that gain the most from current tax-rate reductions then enter age groups with high consumption propensities. Thus, the direct gain in saving due to government spending reductions is increasingly offset by higher private consumption in later years.

The impact on saving rates of the policies considered here is relatively small. The results show that policies involving current tax cuts or current spending increases that are paid for by future tax hikes will affect saving rates adversely. Tax-cut policies that involve contemporaneous reductions in government spending will increase saving rates, however.

## Medicare Policies

The high and rising cost of health care provision provides a second cause for concern about future saving. The fraction of GDP accounted for by health care expenditures grew from about 6.0

TABLE 4

**Changes in the Net National Saving Rate Due to Reduced Growth of Medicare and Medicaid Expenditures (percentage-point change)**

Medicare and Medicaid Growth Rate Reduced after:			
	1995	2000	2005
1990	1.23	0.68	0.41
1995	1.61	0.89	0.54
2000	2.11	1.19	0.73
2005	2.69	1.54	0.94

SOURCE: Authors' calculations.

percent in 1965 to 13.9 percent in 1992. Older individuals spend more on health care than do younger persons.<sup>8</sup> An increasing share of older people in the population will be a major demand-side factor causing future increases in the price of medical services. Supply-side factors such as faster wage gains relative to other sectors, technological advances that are skill and labor intensive and therefore costlier, and shortages of skilled personnel are also likely to contribute to higher health care costs in the future. If current laws and practices continue, health care expenditure as a percentage of GDP is projected to climb to 32.0 percent by 2030.<sup>9</sup> Policy measures aimed at curbing these escalations will surely be adopted in the future, but the alacrity with which they are adopted and prove successful may be crucial in determining the outcome for saving rates.

Several proposals for health care reform and, in particular, for curbing future increases in Medicare and Medicaid spending are currently being debated. We do not explore the impact of alternative ways to reform the health care system, but rather examine the effects on saving of reducing the growth rate of Medicare and Medicaid spending to equal that of the overall economy by a target year in the future. Under the framework adopted here, the current saving rate (in 1990) is assumed to incorporate individuals' expectations regarding the path of Medicaid and Medicare expenditures over the coming decade.

The policy experiment thus refers to the effect on the saving rate of an announcement by the government of a *credible* plan for reducing the growth rate of these expenditures by a specified year. In this experiment, the compensating change is a reduction in fiscal burdens for all future generations. We consider the impact on saving rates of three alternative dates by which the growth of Medicare and Medicaid spending would be reduced to equal the overall economic growth rate.

Table 4 shows that credible plans to reduce the growth rates of Medicare and Medicaid expenditures soon would have a substantial positive impact on saving rates. A plan for reducing their growth by 1995, for example, provides a relatively large and positive impulse to current and future national saving. In this case, national saving rates increase by more than 1.2 percent immediately, and by even larger amounts in the early years of the next century. The impact on saving rates is greater, the earlier the target year for bringing these expenditures under control. Reducing the growth rate of Medicare and Medicaid spending may be expected to produce by far the largest positive impacts on saving rates.

### III. Conclusion

This paper uses the method of generational accounting to investigate the impact on saving rates of Social Security and income-tax-cut policies. In exploring the saving-rate changes under alternative financing arrangements for these tax cuts, we estimate that the effects are not very large. Saving rates are affected adversely under all alternatives that do not involve simultaneous reductions in government consumption. In addition, we find that a decrease in the rate of growth of Medicare and Medicaid expenditures, coupled with a reduction in payment burdens on future generations, is likely to have relatively large positive effects on current and future saving rates in the United States. The increases in saving rates from such a policy will be larger, the earlier it is implemented.

■ 8 See U.S. General Accounting Office (1991).

■ 9 These projections were obtained from the Health Care Financing Administration. See Burner, McKusick, and Waldo (1992).

## Appendix — Generational Accounting Methodology

### Estimating Policy-Induced Changes in the Present Value of Resources

The methodology of generational accounting was developed for comparing the fiscal burdens on current and future generations, where each generation includes individuals of a particular age and sex. Each generation's generational account,  $GA(\pi)$ , represents the average per capita lifetime net-payments burden on members of that generation under the prevailing set of fiscal policies denoted by  $\pi$ . The methodology enables a computation of the GAs that would exist both before and after any contemplated policy change. The difference in these GAs represents the change in the present value of resources,  $\Delta PVR = GA(\pi^1) - GA(\pi^2)$ , accruing to that generation as a result of the policy change.

The  $GA(\pi)$  for a generation currently living is computed according to the formula

$$(A1) \quad GA_{t,k}^x(\pi) = \frac{1}{P_{t,k}^x} \sum_{s=t}^{k+D} \sum_{i=1}^Q T_{s,i,k}^x P_{s,k}^x \prod_{j=t+1}^s (1+r_j)^{-1}$$

Calculations are as of year  $t$ , and  $D$  is the maximum possible age, which is assumed to be 90 years.  $GA(\pi)_{t,k}^x$  stands for the generational account under the set of policies,  $\pi$ , for the generation born in year  $k$ , where  $t-D \leq k \leq t$ . The superscript  $x$  stands for the generation's sex;  $x$  = male or female.  $P_{s,k}^x$  represents the population in year  $s$  of the generation of sex  $x$  that was born in year  $k$ . Intermediate population projections constructed by the Social Security Administration are used in the computations.  $T_{s,i,k}^x$  stands for that generation's average per capita tax payment/transfer receipt of the  $i^{\text{th}}$  type in year  $s$ . Transfer receipts enter into the computations with a negative sign. Equation (A1) thus represents the actuarially discounted sum of average tax payments minus transfer receipts that all surviving members of a generation will

make over their remaining lifetime.  $T_{s,i,k}^x$  is projected according to

$$(A2) \quad T_{s,i,k}^x = \frac{R_{i,s-k}^x A_{i,t}(1+g_i)^{s-t}}{\sum_{j=0} R_{i,j}^m P_{t,k}^m + R_{i,j}^f P_{t,k}^f}$$

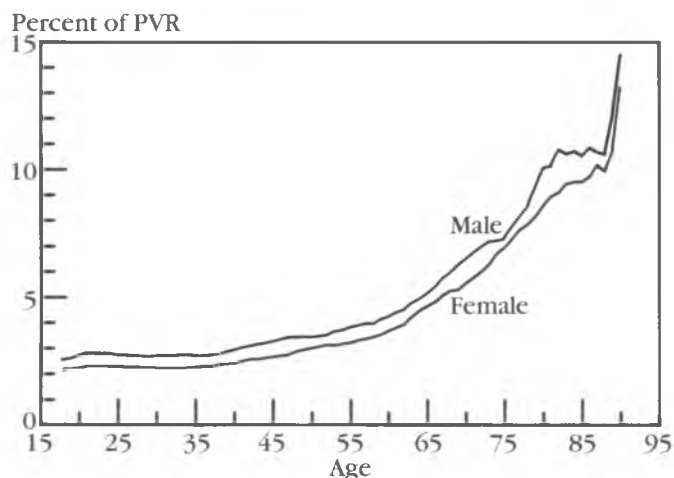
Here,  $A_{i,t}$  stands for the aggregate tax payments or transfer receipts of the  $i^{\text{th}}$  type made by all individuals alive in year  $t$ . These aggregates for the various tax/transfer types are computed from the National Income and Product Accounts. Taxes include labor and capital income taxes, Social Security taxes, indirect taxes, property taxes, and seigniorage. Transfers cover Social Security, Medicare and Medicaid benefits, and welfare benefits such as food stamps, unemployment insurance, Aid to Families with Dependent Children, and general welfare payments. The tax and transfer categories are comprehensive, including all revenues and transfer payments undertaken by federal, state, and local governments.

$R_{i,j}^x$  stands for the share of taxes/transfers of type  $i$  made by the generation of sex  $x$  and age  $j$  in year  $t$  relative to the share for a 40-year-old male in year  $t$ . These relative-share profiles by age and sex for various tax/transfer types are obtained from the Census Bureau's Survey of Income and Program Participation (SIPP) and from the Bureau of Labor Statistics' Consumer Expenditure Survey (CES). Projections of future taxes/transfers assume that the relative-share profiles will remain unchanged through time.

Future aggregate taxes and transfers will be larger as the economy grows. Hence, the aggregates for future years are obtained by multiplying the year  $t$  aggregates by a growth factor. The growth rate,  $g_i$ , chosen for most tax and transfer categories is 0.75 percent, since this value is consistent with the average annual rate of U.S. productivity growth in recent years. The exceptions are the growth rates selected for Medicare and Medicaid expenditures. Projected annual aggregates obtained from the Health Care Financing Administration are used for these two categories. Equation (A2) thus computes the aggregate taxes/transfers of type  $i$  that individuals of sex  $x$  born in year  $k$  expect to pay/receive in year  $s$ .

FIGURE 1

## Average Propensities to Consume by Age and Sex



SOURCE: Authors' calculations.

## Constructing the Average Propensities to Consume (APCs)

Equations (A1) and (A2) constitute a procedure for distributing any given national tax or transfer aggregate among currently living generations according to the per capita relative-share profiles corresponding to that aggregate. We use the same procedure to construct APCs for different generations. For this, we require generation-specific estimates of total annual consumption,  $C_{t,k}^x$ 's, and of the present values of resources,  $PVR_{t,k}^x$ 's.

The  $C_{t,k}^x$ 's are obtained by distributing total personal consumption expenditures in 1990 according to a relative-share profile for total consumption estimated using CES data. The  $PVR_{t,k}^x$ 's are estimated as the sum of human and nonhuman wealth minus the per capita generational account for this generation.<sup>10</sup> We estimate the average per capita human wealth level for each generation as the present discounted value of that generation's projected per capita labor income. Current per capita labor income is esti-

mated by distributing total labor income in 1990 according to its relative-share profile obtained from SIPP data.<sup>11</sup> Future labor incomes are obtained by annually compounding the 1990 labor incomes at the rate of productivity growth of 0.75 percent. We estimate generation-specific nonhuman wealth by distributing aggregate private net worth by age and sex according to a profile for asset holdings obtained from SIPP data.<sup>12</sup> The age-specific average propensities to consume are  $APC_{t,a}^x = C_{t,k}^x / PVR_{t,k}^x$ , where the subscript  $a$  stands for the generation's age and equals  $t - k$ . The estimated age-specific APCs depicted in figure 1 are assumed to remain constant over time.

## Estimating Changes in Saving Rates

Estimating the consumption *change* arising from a shift in policy requires computing the product of the policy-induced change in resources and the *marginal* propensity to consume resources for members of each generation. However, no reliable empirical estimates of age-specific marginal propensities to consume exist. Here, all individuals are assumed to maximize a homothetic utility function. Homotheticity of the utility function implies equal average and marginal propensities to consume resources. This allows a substitution of average instead of marginal propensities to consume resources in the computations. The change in aggregate saving following a policy change is derived as

$$(A3) \quad \Delta S_t = - \sum_{x \in (m,f)} \sum_{k=t-90}^{t-18} \Delta C_{t,k}^x,$$

where  $\Delta C_{t,k}^x$  is computed as  $APC_{t,a}^x \times \Delta PVR_{t,k}^x$ .

As formula (A3) shows, only individuals 18 and older are assumed to engage in consumption spending. A change in policy will, of course, affect the  $PVR$ s of individuals who are less than age 18 in the beginning year, year  $t$ . The changes in the  $PVR$ s of generations less than 18 years of age will, under this assumption, affect aggregate consumption only in years when these generations are 18 or older. To compute consumption changes for future years, equation (A3) is applied to cohorts aged 18 through 90 in those years. For each cohort, the  $\Delta PVR$ s applicable in these years are computed as

■ 10 The computation and results from the generational accounting exercise used here are discussed in *Budget of the U.S. Government, Fiscal Year 1993*.

Digitized for FRASER  
http://fraser.stlouisfed.org  
Federal Reserve Bank of St. Louis

■ 11 The share of labor is computed according to the formula  $s_L = C_L / (NNP - IT - P)$ , where  $C_L$  is compensation to employees,  $NNP$  is the net national product,  $IT$  is indirect taxes, and  $P$  is proprietors' income.

■ 12 Total private net worth in 1990 was \$18,573 trillion, according to the Board of Governors of the Federal Reserve System (1991).

$$(A4) \quad \Delta PVR_{t+s, k}^x =$$

$$(\Delta PVR_{t+s-1, k}^x - \Delta C_{t+s-1, k}^x)(1+r),$$

where  $r$  is the rate of interest.<sup>13</sup>  $\Delta C_{s, k}^x = 0$  if the cohort born in year  $k$  is less than 18 years of age in year  $s$ . To calculate the change in the national saving rate resulting from a change in policy, we project future net national product using a 0.75 percent rate of productivity growth. The annual changes in saving rates are estimated as  $\Delta s_t = \Delta S_t / NNP_t$ . Policy changes are assumed to be initiated in 1990. For each of the policies considered, we estimate  $\Delta s_t$  for  $t = 1990$  through 2005 and report these for selected years.

## References

- Auerbach, Alan J., Jagadeesh Gokhale, and Laurence J. Kotlikoff. "Generational Accounting: A New Approach to Understanding the Effects of Fiscal Policy on Saving," *Scandinavian Journal of Economics*, vol. 94, no. 2 (1992a), pp. 303–18.
- \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_. "Social Security and Medicare Policy from the Perspective of Generational Accounting," in James M. Poterba, ed., *Tax Policy and the Economy*, vol. 6. Cambridge, Mass.: National Bureau of Economic Research and MIT Press, 1992b.
- Auerbach, Alan J., and Laurence J. Kotlikoff. *Dynamic Fiscal Policy*. Cambridge: Cambridge University Press, 1987.
- Board of Governors of the Federal Reserve System. "Balance Sheets for the U.S. Economy, 1960–91." Washington, D.C.: Board of Governors of the Federal Reserve System, March 1991.
- Burner, Sally, David R. McKusick, and Daniel R. Waldo. "Projections of National Health Expenditures through the Year 2030," *Health Care Financing Review*, 1992 (forthcoming).
- Carroll, Christopher D. "How Does Future Income Affect Current Consumption?" Board of Governors of the Federal Reserve System, Economic Activity Section, Working Paper No. 126, May 1992.
- Kotlikoff, Laurence J. *Generational Accounting: Knowing Who Pays, and When, for What We Spend*. New York: The Free Press, 1992.
- Office of Management and Budget. *Budget of the U.S. Government, Fiscal Year 1993*. Washington, D.C.: U.S. Government Printing Office, 1992.
- U.S. Congress. United States Code Congressional and Administrative News: Ninety-eighth Congress, First Session, 1983, vol. 2. St. Paul, Minn.: West Publishing Co., 1983.
- U.S. General Accounting Office. "U.S. Health Care Spending, Trends, Contributing Factors, and Proposals for Reform," Washington, D.C.: U.S. Government Printing Office, June 1991.
- U.S. President. *Economic Report of the President*. Washington, D.C.: U.S. Government Printing Office, February 1992.

# History of and Rationales for the Reconstruction Finance Corporation

by Walker F. Todd

Walker F. Todd is an assistant general counsel and research officer at the Federal Reserve Bank of Cleveland. An earlier version of this paper was presented to a conference on financial crises sponsored by the Jerome Levy Economics Institute at Bard College, Annandale-on-Hudson, New York, on November 22, 1991.

Helpful comments, suggestions, and encouragement were provided by Ned Eichler, William Greider, Erica L. Groshen, Joseph G. Haubrich, George Kaufman, Martin Mayer, Hyman P. Minsky, Richard Nelson, Robin Ratliff, Joseph C. Reid, Richard C. Schiming, Anna J. Schwartz, James B. Thomson, and Jack Willoughby.

*[I]t became apparent almost immediately, to many Congressmen and Senators, that here was a device [RFC] which would enable them to provide for activities that they favored for which government funds would be required, but without any apparent increase in appropriations, and without passing an appropriations bill of any kind to accomplish its purposes. After they had done that, there need be no more appropriations and its activities could be enlarged indefinitely, as they were almost to fantastic proportions.*

Chester Morrill, former Secretary,  
Board of Governors, on the RFC  
(cited in Olson [1988], p. 43)

## Introduction

The creation of the Reconstruction Finance Corporation (RFC) in 1913, the evolution of a "too-big-to-fail" doctrine within the bank regulatory community in the 1980s, and more recent recommendations that means of regular government intervention be created to support some financial institutions all recall the history of the Re-

construction Finance Corporation (RFC) during lessons learned from our nation's previous large-scale effort to rescue financial institutions and discusses their current relevance.<sup>1</sup>

Then faced with the worst financial crisis in a century, U.S. policymakers of the 1930s deliberately enacted a set of reforms that included central bank restructuring, bank regulatory reforms, federal deposit insurance, and a *separate, politically accountable*, publicly funded rescue mechanism, the RFC. Those policymakers paid careful attention to statutory and institutional structures that separated the fiscal policy operations of the debt rescue mechanism, the RFC, from the monetary policy operations of the central bank, which then were dominated by the Federal Reserve's discount window.

In contrast to most recent proposals for increased levels of government intervention to fund the capital structures of financial institutions directly, the RFC had a clearly defined network of checks and balances with respect to both the activities in which it was authorized to engage

■ 1 As used in this paper, "debt rescue," "rescue," and "bailout" are used interchangeably and might properly be defined as the government's payment or assumption of a person's debts owed to third parties, without adequate security for that payment or assumption to ensure that the government will recover its outlays in full in the near term (currently, under two years).

and the sources of its funding. Yet, despite these checks and balances, and despite the comparatively competent management of the agency for 13 years, the RFC's lending and capital support operations still became politicized over time. After the 1946 elections, congressional Republicans made it one of their first orders of business to begin the dismantling of the RFC. It would be difficult to argue that they were wrong to do so (Sprinkel [1952]). Recent commenters on the RFC have focused primarily on the desirability and efficiency of government intervention in financial markets (Keeton [1992]), rather than on the merits or demerits of particular institutional structures for such intervention, the historic causes of intervention, or the monetary policy aspects of the 1930s reforms.<sup>2</sup>

Today, in the search for a governmentally sponsored financial rescue mechanism, it would be helpful to review the lessons of history that bear upon the legal, economic, and political factors that contributed to the creation and ultimate demise of the RFC. Particular consideration should be given to the rationale for the institutional barriers of the 1930s that separated the RFC's solvency support or capital replacement mechanisms from both the central banking functions (the Reserve Banks) and federal deposit insurance (the Federal Deposit Insurance Corporation [FDIC] and, later, the Federal Savings and Loan Insurance Corporation [FSLIC]).

Modern advocates of RFC-like schemes either have ignored or have passed lightly over the rhetorical inconsistency between advocacy of free markets on the one hand, and publicly funded bailouts of large financial firms on the other. One specific plan reminiscent of the RFC, prepared by a group of advisors to New York Governor Mario Cuomo, was presented to President-elect Clinton in November 1992 and was described as follows:

[T]he report urged the Federal Reserve to play a far more aggressive role in spurring the economy, saying it should pump \$20 billion in capital into the nation's banks to make it easier for them to lend money. But Mr. [Robert] Rubin [Chairman of Goldman Sachs and a member of the Cuomo Commission] dissented from that proposal, saying it would be undue Government interference in business. (Greenhouse [1992])

Such a proposal would be tantamount to requiring the Federal Reserve today to play the

role of the RFC during the Great Depression in supporting the solvency or capital structure of financial institutions. It would also extend the Federal Reserve's monetary policy function well beyond its normal roles of ensuring a steady supply of liquidity to the aggregate economy and stabilizing the domestic price level.

Even if it were decided to have the federal government intervene to such an extent in the private economy, the institutional structure and legal form of the intervention still would matter a great deal (see, for example, Sprinkel [1952], Todd [1988], and Schwartz [1992]). Perhaps the best argument in favor of a revived RFC is that keeping the bailout lending device (the RFC) separate from the monetary policy device (the Fed and, to a lesser extent, the FDIC) would both enable monetary policy to be conducted independent of the bailout function and increase the political accountability to taxpayers for any publicly funded debt rescue.

An understanding of the RFC's history and institutional structure should assist policymakers in decisions regarding the desirability and efficiency of rescuing segments of the financial services industry. Also, knowledge of the history of the RFC should predispose policymakers toward keeping government-funded debt rescue operations separate from the Federal Reserve's monetary policy operations.

## I. History of the RFC

Although government intervention in business operations has a long and involved history, the classically liberal political philosophy of most U.S. administrations prior to Herbert Hoover limited their market interference to relatively few peacetime interventions until the RFC. The actual prototype of the RFC was the War Finance Corporation (WFC), chartered in 1918 to enable the federal government to centralize, coordinate, and fund the procurement and supply operations that accompanied formal U.S. entry into World War I in April 1917.<sup>3</sup>

The WFC was loosely modeled on methods used by J.P. Morgan & Company to coordinate and fund the British Treasury's purchases of U.S. war supplies between January 1915 and April 1917. The WFC's operations, in turn, were guided by an Advisory Commission and were

■ 3 See text of War Finance Corporation Act at *Federal Reserve Bulletin*, vol. 4 (February 1918), pp. 95–98 (proposed bill), and *ibid.* (April 1918), pp. 300–06 (bill as enacted). See also Olson (1988), pp. 10–14, Dos Passos (1962), pp. 219–27, and Clarkson (1924).

■ 2 See, for example, Phillips (1992), Calomiris (1992), and Butkiewicz (1992).



## B O X 1

Herbert Hoover's Intentions  
for the RFC

Hoover's message to Congress (January 1932) proposed that RFC funds be used for the following purposes:

- (a) to establish and finance a system of agricultural credit banks ... [ancestors of the Farmers Home Administration];
- (b) to make loans to the existing [Federal] Intermediate Credit Banks ... [part of the Farm Credit Administration];
- (c) to make loans to building and loan associations, savings banks, insurance companies, and other real estate mortgage agencies so as to enable them to postpone foreclosures [ancestor of the Federal National Mortgage Association];
- (d) to make loans to banks and financial institutions **"which cannot otherwise secure credit where such advances will protect the credit structure and stimulate employment"** [emphasis added];
- (e) to make loans to the railways to prevent receiverships [this was in fact the most significant use of the RFC during its first year of existence and relieved some of the biggest banks of some of their most problematic assets—railroad bonds];
- (f) to finance exports that would aid the farmers and the unemployed [ancestor of the Export-Import Bank];
- (g) to finance modernization and construction of industrial plants and utilities so as to increase employment and plant efficiency [ancestor of the Defense Plant Corporation of World War II and of the Defense Production Act of 1950]; [and]
- (h) to make loans to closed banks upon their sound assets so as to enable them at least partially to pay out deposits to a multitude of families and small businesses who were in distress because their deposits were tied up pending liquidation or reorganization of these banks [emphasis added] [ancestor of the FDIC's powers under the original FDIC Act (1933) to speed up payment of liquidation proceeds to holders of "frozen" bank deposits]. (Hoover [1952], p. 98)

subject to "preference lists" issued by the War Industries Board.<sup>4</sup>

In fall 1931, the onset of the worst part of the Great Depression, President Hoover proposed to the Federal Reserve System's Federal Advisory Council (FAC) the formation of a \$500 million credit pool, to be funded entirely by commercial banks and to have the authority to borrow

another \$1 billion, if necessary, for the purpose of refinancing assets on the books of distressed Federal Reserve Bank of St. Louis

banks. Prior to 1932, the Federal Reserve Banks were not authorized to make advances against assets other than "real bills" or government securities, and they could not lend for longer than 15 days on the government securities owned by member banks. The proposed credit pool, called the National Credit Corporation (NCC), was to make extraordinary advances until the December 1931–March 1932 session of Congress could act upon Hoover's recommendation to authorize Reserve Banks' emergency advances for up to 120 days collateralized by government securities or any other satisfactory assets.

Hoover also proposed to the FAC "... [i]f necessity requires, to recreate the [WFC] ... with available funds sufficient for any emergency in our credit system."<sup>5</sup> The NCC was organized in October 1931, but was superseded when the RFC Act was signed into law on January 22, 1932.<sup>6</sup>

Describing his abandonment of free-market principles to bail out the commercial banking system, Hoover wrote:

[When I met with a group of Congressional leaders on October 6, 1931,] I presented a program for Congressional action if the bankers' movement [NCC] did not suffice. I hoped those present would approve my program in order to restore confidence which was rapidly degenerating into panic. The group seemed stunned. Only [Speaker of the House John Nance] Garner and [Senate Majority (Republican) Leader William] Borah reserved approval. The others seemed shocked at the revelation that our government for the first time in peacetime history might have to intervene to support private enterprise [in this case, by creating the RFC]. (Hoover [1952], p. 98)

Although this was hardly the first time that the U.S. government had supported private enterprise through protection, subsidies, or bailouts, it certainly was the first time that it had done so on a grand scale in peacetime.

■ 4 The WFC was easily the largest-scale effort at central planning in U.S. history before 1932. See Tansill (1938), pp. 79–81, 90–113, Chernow (1990), pp. 186–91, Dos Passos (1962), pp. 219–27, Pusey (1974), p. 216, Clarkson (1924), and *Federal Reserve Bulletin*, vol. 4 (1918), pp. 931–34.

■ 5 Hoover (1952), pp. 84–98, quotation at p. 98. See also Pusey (1974), pp. 216–17, and Friedman and Schwartz (1971), p. 320.

■ 6 Hoover (1952), pp. 84–98, Friedman and Schwartz (1971), p. 320, Pusey (1974), pp. 217–19, and Butkiewicz (1992). The official text of Hoover's statement on the creation of the NCC, together with Federal Reserve Bank of New York Governor (President) George Harrison's reply, is at *Federal Reserve Bulletin*, vol. 17 (October 1931), pp. 551–53. A statement by the organizers of the NCC is at *ibid.*, pp. 555–57. President Hoover's statement on the RFC and the text of the RFC Act are at *Federal Reserve Bulletin*, vol. 18 (February 1932), pp. 89–90, 94–99.

The original RFC was given a Treasury capital contribution of \$500 million, with initial authority to borrow up to \$1.5 billion more “from either the Treasury or private sources.”<sup>7</sup> Hoover initially asked for \$3 billion of RFC borrowing authority, but that increased amount was not granted until July 21, 1932, when the Emergency Relief and Construction Act raised the ceiling to \$3.3 billion, of which \$300 million was set aside for unemployment relief (Friedman and Schwartz [1971], p. 320; *Federal Reserve Bulletin*, vol. 18 [1931], pp. 473–74).

Although the original RFC Act was altered substantially in subsequent years, its main elements were in place from the beginning, either in Hoover's original plan or in the modifications made during the next year. Bailout loans were to be made not by the central bank (Federal Reserve), but instead by this new, separately chartered, government-sponsored enterprise, the RFC.

To ensure further structural separation between the governmental bailout (fiscal) and central banking (monetary) functions, Section 9 of the RFC Act provided explicitly that obligations of the RFC “shall not be eligible for discount or purchase by any Federal Reserve Bank” (*Federal Reserve Bulletin*, vol. 18 [1932], p. 97). RFC obligations were issued in the public debt market and counted both in federal budget receipts and expenditures and in limitations on federal debt outstanding.

The inauguration of the Roosevelt Administration on March 4, 1933, finally enabled a major change in the RFC's formal powers to occur: The preferred stock purchasing power was added. The vehicle for that change was the Emergency Banking Act, enacted March 9, 1933. The procedures for passage of that bill were extraordinary; among other things, the House of Representatives had no copy of it.

The Speaker recited the text from the one available draft, which bore last-minute corrections scribbled in pencil.... With a unanimous shout, the House passed the bill, sight unseen, after only thirty-eight minutes of debate.... The Senate, over the objections of a small band of progressives [Senators Lafollette, Borah, Case, Dale, Nye, and Shipstead, together with Senator Costigan, the lone Democrat voting no], approved the bill unamended 73–7 at 7:30 that evening and at 8:36 that same night it received the President's [Roosevelt's] signature. (Leuchtenberg [1963], pp. 43–44; *Federal Reserve Bulletin*, vol. 19 [1933], p. 115–18 [text of Act])

President Hoover's advisors played a principal role in preparing the legislation, but the primary draftsman of the final version was Walter Wyatt, then general counsel of the Federal Reserve Board (Jones [1951], pp. 21–22; Olson [1988], pp. 37–40). Eugene Meyer, still Governor of the Federal Reserve Board but no longer Chairman of the RFC at the time, and Treasury Secretary Ogden Mills were the principal Hoover advisors in this effort (Pusey [1974], pp. 232–38).

Under Section 304 of the Emergency Banking Act, the RFC was authorized to purchase preferred stock of banks “in need of funds for capital purposes either in connection with the organization or reorganization of such [banks]” (*Federal Reserve Bulletin*, vol. 19 [1933], p. 117). Wyatt was familiar with the issue and could have given the Reserve Banks a capital replacement or solvency support role in the draft statute if he had chosen to do so. But in fact, he gave that role to the RFC, not to the Reserve Banks.<sup>8</sup>

When the Roosevelt Administration took over in March 1933, the leadership and scope of the RFC also changed. Jesse Jones, a prominent Houston businessman, was appointed chairman (Federal Loan Administrator). He already had served one year as a member of the RFC's board of directors, participated in the first big bank rescue operation of the Depression (the Central Republic Bank of Chicago borrowed \$90 million from the RFC in June 1932), and managed to weather the political storm that erupted when the list of the RFC's borrowers was made public in August 1932. Jones remained as chairman of the RFC until January 1945.<sup>9</sup>

Under Jones, the RFC spent about \$50 billion of the public's money, of which more than \$22

■ 8 Olson (1988), pp. 38–39, notes that the idea of RFC investment in the preferred stock of troubled banks was promoted during the spring and summer of 1932 by, among others, Federal Reserve Bank of New York Governor (President) George Harrison and director Owen D. Young “because so many banks had capital as well as liquidity problems.” By December 1932, Governor (Chairman) Eugene Meyer of the Federal Reserve Board, who understood the fiscal/monetary policy distinction less well than the New York Reserve Bank officials, “began arguing that either the RFC or Federal Reserve Banks [should] invest in [banks'] preferred stock.”

■ 9 Jones (1951), pp. 72–83. See generally Olson (1988), Pusey (1974), pp. 216–26, and Butkiewicz (1992). Morgan (1985), p. 743, describes the reasons for Jones's termination as follows:

By the end [of 1944], President Roosevelt decided to fire ... [Jones] largely because Jones had opposed the third term (1940) and fairly openly supported Dewey (1944). As a consolation prize, FDR offered to fire Marriner Eccles and to let Jones have the chairmanship of the Federal Reserve.

See also Jones (1951), pp. 255–311.

billion fueled World War II procurement and production. About \$10.5 billion went for the fight against the Great Depression "without loss to the taxpayers," if the time value of money were ignored. The rest of the RFC's funds were channeled to foreign aid, domestic relief, and post-war reconstruction and conversion loans to industry. These were significant amounts at the time because, in 1933, gross national product was only about \$56 billion (the initial appropriation for the RFC was about 1 percent of GNP, equivalent to \$65 billion today) ( Jones [1951], p. 4).<sup>10</sup>

Jones was both a populist and a parsimonious man. In the words of Hyman Minsky, "He spent the public's money as though it were his own."<sup>11</sup> His overall aim for RFC interventions in the economy was not to increase central planning or corporatist control, as some New Dealers understood and intended to practice those concepts, but rather to exercise his own judgment in producing outcomes roughly analogous to those that would have been expected had the markets been left alone. Thus, bankers were required to reduce their salaries and sometimes to change managements in exchange for RFC capital assistance; dividends on common shares could not be paid until preferred shareholders' dividends (including those of the RFC) were

paid; and bankers were required to post reasonably good collateral and eventually to repay borrowings, typically over 10 years. There was no hint that the government was making a permanent capital injection into the banks or was making a market in their common shares (Jones [1951], pp. 25–37; Olson [1988], pp. 47–62, 78–83, 124–127), as some of Jones's New Deal contemporaries and some current theorists and politicians have advocated.<sup>12</sup>

The high points of RFC operations affecting the banking industry occurred during 1932 and just after the bank holiday of March 1933. Of the 17,000 commercial banks in existence going into the holiday, only 12,000 survived, and half of those were borrowing some or as much as all of their capital from the RFC under the preferred stock provisions of the Emergency Banking Act. Federal deposit insurance (added in June 1933 as part of the Glass–Steagall Act) did not yet exist. Almost all large banks, in addition to the 5,000 conservatorships, receiverships, and assisted mergers, funded themselves through the RFC. With bailout loans to other industries included, ranging from insurance companies and savings and loans to real estate and steel mills, the RFC became a principal influence on credit availability in the U.S. economy.<sup>13</sup>

Over time, the RFC became corrupted by politics, as Jones came to control enormous patronage. Between 1947 and 1953, the prevailing opinion in Washington, particularly among congressional Republicans, was that central-planning-style interventions in the economy were inefficient and harmful, and the RFC was phased out. Its formal operations ceased in 1953, with the final accounts settled in 1957 (U.S. Treasury [1959], Sprinkel [1952]). Some of its operations survived as independent new agencies, like the Export–Import Bank and the Federal National Mortgage Association, or as part of ongoing Cabinet-level departments.

The bailout lending, preferred stock purchasing, and direct or industrial lending powers of the RFC were not transferred anywhere else—certainly not to the Federal Reserve, or to the FDIC prior to 1982—and should be presumed to have died with the RFC in 1957. No serious effort was made to revive those powers in Congress until the borrower-specific federal loan guarantee programs were enacted for Lockheed, New York City, and Chrysler Corporation during the 1970s. In those cases, the only role played by any federal department or agency other than the Treasury Department, which provided the guarantees, was the role of fiscal agent explicitly

■ 10 Schiming (1992) notes that, for perspective, the Mercury and Apollo space program outlays of the 1960s should be compared with RFC outlays. In the period 1961–1969, total "space research" program outlays in the federal budget summaries appearing in *Federal Reserve Bulletins* were \$34.1 billion, about 3 percent of the final year (1969) GNP. Peak-year outlays were \$5.93 billion in 1966, about 4.5 percent of federal budget outlays, but still slightly less than 1.0 percent of nominal GNP. Thus, proportionately, initial-year outlays for the RFC (about 1.0 percent of GNP) exceeded even peak-year outlays for the Mercury–Apollo space programs.

■ 11 Author's conversation with Hyman Minsky, November 22, 1991. See Buchanan and Tullock (1965), Buchanan (1968), Buchanan and Wagner (1977), Kane (1989), pp. 95–114, Kane (1990), pp. 760–61, and Greider (1992b) for varying explanations of the rarity of efficient management of public funds.

■ 12 See Olson (1988), pp. 111–114, 173, Greider (1992a), Rohatyn and Cutler (1991), Willoughby (1992), and Cummins (1992). In contrast to the kinds of measures that Jones required of bankers receiving RFC assistance, the Treasury Department during 1992 requested repeal of analogous provisions regarding salaries and management changes enacted as part of recent banking legislation (see Rehm [1992], Greider [1992b], and Willoughby [1992]). A 1992 federal housing assistance bill passed by Congress and expected to be signed by President Bush "toned down a provision [of the FDIC Improvement Act of 1991] requiring regulators to issue guidelines for executive compensation. Now guidelines need be issued only to cover unsound institutions." (Garsson [1992b]).

■ 13 See Penning (1968), Upham and Lamke (1934), Jones (1951), Sprinkel (1952), Olson (1988), and Keeton (1992).

assigned to the Federal Reserve Banks for the Lockheed loan guarantee in 1971.<sup>14</sup>

## II. Six Lessons Learned from the RFC

The RFC embodied six key features that are relevant to how one might use such an agency today and, by inference, how one should *not* use a central bank.

*First*, the RFC was explicitly prohibited by law from funding itself via the Reserve Banks, either directly or indirectly. This prohibition was intended to avoid potential conflicts between the Reserve Banks' central banking (monetary policy) operations and politically driven bailout loan requests, which are fiscal policy operations in the classic models of political economy.<sup>15</sup>

*Second*, the RFC also was prohibited from extending credit to new enterprises trying to enter a market. Typically, the RFC made loans only to established enterprises initiated, set on foot, or undertaken "prior to the adoption of [the RFC] act." (RFC Act, section 5, in *Federal Reserve Bulletin*,

vol. 17 [1932], p. 96.) Thus, from a normal, free-market, procompetitive perspective, the RFC was interventionist and anticompetitive, providing subsidized credit to existing businesses that was unavailable to new entrants into those lines of business.

*Third*, through direct purchases of preferred stock after March 1933 (Emergency Banking Act, section 304, in *Federal Reserve Bulletin*, vol. 18 [1933], p. 117), the RFC could provide governmental recapitalization of the banking industry in a way that would be undesirable if undertaken by a central bank.<sup>16</sup> The RFC's preferred stock purchases were one step short of nationalizing the banking system (see, for example, Phillips [1992] and Wyatt [1933]). Governmental recapitalization of the banking industry would amount to de facto nationalization if there were insufficient collateral for the government's loans or if there were no credible schedule for repayment in full of the government's assistance within a reasonable time, such as five years (the longest term of Federal Reserve advances ever explicitly authorized by statute) or 10 years (the longest statutory term of RFC assistance).

*Fourth*, no small part of the success of the RFC may be due to its leader, Jesse Jones. Changed times and changed personalities might make it difficult to appoint anyone comparable to him today. A czar of banking recapitalization today would face conflicting choices between fiscal prudence (reducing spending on the debt rescue) and fiscal imprudence (increasing spending on the debt rescue). Either choice would alienate one set of political constituencies while pleasing the other set. If enough constituents were alienated by such choices, and if reappointment accordingly began to appear politically impossible, then one would have to view even the initial appointment of another Jones as highly improbable.<sup>17</sup>

■ 14 See Todd (1988) and Schwartz (1992) regarding the evolution of RFC-like intervention schemes into federal loan guarantees, particularly after 1942. See also Hackley (1973), pp. 133–61. The 1970s' federal emergency loan guarantee statutory references are Lockheed Corporation, Public Law No. 92-70 (1971); New York City (first rescue), Public Law No. 94-143 (1975); New York City (second rescue), Public Law No. 95-339 (1978); and Chrysler Corporation, Public Law No. 96-185 (1979). In addition, the Defense Production Act of 1950, 50 U.S.C. Appendix Sections 2061 et seq., reenacted in 1992, continues authorization for V-loans, a form of reimbursable loan guarantee program administered by the Reserve Banks for the Treasury since 1942.

■ 15 See Greenspan (1991), pp. 435–36; but see, against his views, Greenhouse (1992). Chairman Greenspan's views on Federal Reserve funding of the Treasury's or a deposit insurance fund's obligations are particularly instructive. Addressing the Bush Administration's early 1991 proposal, with which some members of Congress seemed sympathetic, to have the Reserve Banks lend up to \$25 billion directly to the FDIC's Bank Insurance Fund (BIF), Chairman Greenspan's remarks were as follows (source cited):

[A]n element of the Treasury's proposal that has troubled the Board is the use of the Federal Reserve Banks as the source of these loans. To prevent such loans from affecting monetary policy, the loans would need to be matched by sales from the Federal Reserve's portfolio of Treasury securities.... Not only would use of the Reserve Banks for funding the BIF serve no apparent economic purpose, it could create potential problems of precedent and perception for the Federal Reserve. In particular, the proposal involves the Federal Reserve directly funding the government. The Congress has always severely limited and, more recently, has forbidden the direct placement of Treasury debt with the Federal Reserve, apparently out of concern that such a practice could compromise the independent conduct of monetary policy and would allow the Treasury to escape the discipline of selling its debt directly to the market. Implementation of the proposal could create perceptions, both in the United States and abroad, that the nature or function of our central bank had been altered. In addition, if implementation of the proposal created a precedent for further loans to the BIF or to other entities, the liquidity of the Federal Reserve's portfolio could be reduced sufficiently to create concerns about the ability of the Federal Reserve to control the supply of reserves and, thereby, to achieve its monetary policy objectives.

■ 16 The point that it is theoretically improper for a central bank to provide capital replacement or solvency support for the banking industry is made explicitly in the report of a conference of South American central bankers that appears in *Federal Reserve Bulletin*, vol. 17 (January 1932), p. 45. The conference report, prepared largely by and under the influence of Federal Reserve Bank of New York officials, including future president Allan Sproul, stated that central banks must not in any way supply capital on a permanent basis either to member banks or to the public, which may lack it for the conduct of their business.

■ 17 See, for example, Buchanan and Tullock (1965), Buchanan (1968), and Buchanan and Wagner (1977)—all on "public choice" analysis as it might apply to this issue—and Greider (1992a, b), Kane (1989), pp. 95–114, and Kane (1990), pp. 760–61, on the "principal-agent" conflict as applied specifically to the bank supervision/bank recapitalization problem in the thrift industry. See also a reference to what now would be called the "principal-agent" conflict, applied to the RFC, in Olson (1988), p. 43 (quoting Chester Morrill, former secretary of the Board) [prefatory quotation for this paper].

*Fifth*, for more than one year (January 1932–March 1933), the RFC operated in an environment in which there was no deposit insurance and Federal Reserve notes were convertible into gold. The FDIC, authorized in June 1933, did not begin operations until January 1934. Neither of these conditions—an externally constrained central bank and no deposit insurance—prevails today. The simple vision of federal deposit insurance in the early and mid-1930s was the role of a liquidator primed with cash, not the more extensive role of bank supervisor and engineer of reorganizations of open banks that the FDIC plays today (see Penning [1968] and Todd [1991], pp. 85–90). The actual experience of the 1930s suggests that the optimal use of an RFC would be to compensate for the deficiencies of deposit insurance, where it was deemed desirable to do so, and to lend in cases (such as to insolvent banks) that would be dangerous for lending by an externally constrained Reserve Bank (for example, under a gold standard) (see Todd [1988, 1991]; compare with Epstein and Ferguson [1984]).

*Sixth*, because the RFC's finances were externally constrained, its operations were directly and politically accountable (initially, through the office of the Federal Loan Administrator; later, through the Department of Commerce, whose chief officer, the Secretary of Commerce, is a full member of the President's Cabinet). The external constraint arose from the RFC's incapacity to fund itself off-budget or for a very long time.<sup>18</sup>

In summary, the principal danger posed by governmental bailout mechanisms, or by a Federal Reserve that undertakes RFC-like operations, is that, from public choice theory, we know that it is difficult for the government to extend credit directly to selected businesses (already established ones, at that) and simultaneously to avoid political pressures to distribute the loans or investments in a partisan manner or to selectively favored constituencies (see Olson [1988], p. 67, and Buchanan and Tullock [1965], especially pp. 265–95). In current

discussions, a useful distinction could be made between an RFC that primarily protected existing firms (an RFC with a notably corporatist tinge) and an RFC implementing an industrial policy that attempted to identify, protect, and subsidize emerging industries (Schiming [1992]). It would be better to do neither and to let market forces select winners and losers and encourage promising new industries.

### III. Forbearance, the Too-Big-to-Fail Doctrine, and the RTC: Comparisons between the Rescue Structures of the 1930s and Those of the 1980s

The crises that emerged in the thrift and banking industries in the 1980s prompted a variety of governmental attempts to either buy time to allow market-driven corrective forces to work out a positive solution or prevent further loss of depositors' confidence that their deposits would be repaid at par value. Initially, *forbearance* seemed to be the mechanism of choice, with the former FSLIC and the FDIC being authorized in 1982 to issue income maintenance certificates and net worth certificates to keep insured institutions open, even if technically insolvent.<sup>19</sup>

The too-big-to-fail doctrine had precursors in regulatory discussions of the 1970s, but gradually became fully articulated in the early 1980s. The doctrine was brought into public debate with the 1984 decisions by both insurance funds to treat their largest insured institutions as "too big to fail" because of the generalized loss of depositors' confidence that might be engendered by a closing without repayment of deposits at par: The FSLIC preserved American Savings Bank of Stockton, California (\$34 billion total assets), its largest insured thrift. The FDIC, with funding provided temporarily by the Federal Reserve, preserved Continental Illinois of Chicago (\$41 billion total assets), the tenth-largest FDIC-insured institution. Both were rescued even though only small shares of their funding were provided by their own, retail, insured deposits (Mayer [1992], pp. 108–15, 254–56; Todd and Thomson [1990]).

In the case of Continental, the shareholders of the parent holding company were offered a settlement initially valued at 20 percent of the shareholders' equity in the remaining bank, plus stock options and a contingent claim on recoveries from liquidations of presumptively

■ 18 The RFC initially was authorized to issue obligations not in excess of three times its subscribed capital (originally \$500 million) and to borrow for not in excess of five years. Its obligations were explicitly guaranteed by the full faith and credit of the United States (RFC Act, sections 2 and 9, in *Federal Reserve Bulletin*, vol. 18 [February 1932], pp. 94, 97). Similarly, obligations of the modern Resolution Trust Corporation (RTC) explicitly carry the full faith and credit of the United States when the principal amount and maturity date are stated. 12 U.S.C. Section 1441a (j)(3) (1992).

■ 19 See, for example, Eichler (1989), Kane (1989), Mayer (1992), pp. 57–89, and Woodward (1992). Woodward provides a good working definition of "forbearance": the policy of permitting capital-deficient institutions to operate under the protection of federal deposit insurance.

bad assets (Sprague [1986], pp. 186–88, 209–10). These rescues, which preserved large, insolvent institutions, were analogous to the role of the RFC in the 1930s, but they were not done as efficiently or as cheaply as the RFC could have done them after March 1933, when the preferred stock purchase plan began. In any case, although there was limited statutory authority for the FDIC to provide open-bank assistance to prevent immediate loss to the fund after 1982, there was no comparable, explicit statutory authority for other too-big-to-fail actions undertaken by the commercial banking regulators in the 1980s. In contrast, the Emergency Banking Act of 1933 explicitly authorized the RFC to recapitalize insolvent or marginally solvent banks. The RFC's power to fund receiverships existed since 1932, and the comparable power to fund conservatorships was added by the Emergency Banking Act.

Eventually, in 1989, the thrift crisis of the 1980s led to the creation of the Resolution Trust Corporation (RTC) as a passive liquidator of insolvent institutions formerly insured by the FSLIC. Although it appears that the sponsors of the RTC had a rough model of the RFC in mind, especially its operations in 1932, the RTC proved to be quite different from the RFC of 1933 and after.

Also, the federal bank regulators' concepts of too big to fail and systemic risk have continued to evolve since the RTC was created in 1989. In this context, "systemic risk" has the meaning attributed to it in the FDIC Improvement Act of 1991 (FDICIA) [Section 141 (a)(1)(G)]: a regulatory determination that failure to repay uninsured claims on insured institutions at par "would have serious adverse effects on economic conditions or financial stability." The following section evaluates the effectiveness of the RTC and the continued evolution of the too-big-to-fail/systemic risk doctrines in light of the lessons learned from the experiences of the RFC in the 1930s.

### Forbearance and the Too-Big-to-Fail Doctrine

During the 1980s, and particularly after 1982, thrift industry regulators found themselves in a situation in which they required a large amount of new funds to deal with weak institutions in the traditional manner (closing and liquidating or assisting with the required mergers of such institutions). However, neither Congress nor the Executive Branch was willing to provide the necessary funds to the FSLIC before 1986, and the amount finally provided in 1987 (\$10.8 billion) proved

inadequate (Mayer [1992], pp. 230–42). Thus, the thrift regulators were forced to forbear, that is, to defer events that would force the accounting recognition of the economic losses already accrued to the FSLIC (Kane [1989], pp. 70–114). The forbearance devices actually used took several forms, ranging from decreased frequency and intensity of examinations to lower capital requirements and approval of accounting regimes designed to make embedded losses in asset portfolios appear to be increases in regulatory capital instead (Mayer [1992], pp. 57–115).

Writing on the importance of supervisory forbearance as a cause of the thrift industry's collapse in the 1980s, Kane (1989), p. 78, notes:

[C]apital forbearance — which has to an important extent been forced on FSLIC by Congress, both in its unwillingness to increase FSLIC's human or capital resources to handle the surge in client [S&L] economic insolvencies and in formal limitations on closure powers enacted in the Competitive Equality Banking Act of 1987 — served to bifurcate the industry into the living and the living dead. While many of the living have been able to strengthen their capital position, the zombies have been getting worse.

Kane also notes the cumulative impact of the FSLIC's forbearance policies: Between 1982 and 1987, the number of insolvent *open* institutions rose from 237 to 515, and the number of insolvencies resolved by the FSLIC fell from 247 in 1982 to only 36 in 1984 (Kane [1989], p. 26).

The FDIC and other federal regulators were simultaneously developing and expanding the concept of banks "too big to fail," with Continental Illinois serving as the principal catalyst in 1984. The collapse of nearly all large bank holding companies in Texas from 1986 until 1989 and of a few large ones in the Middle Atlantic region and New England after 1989 gave rise to further refinements of large-bank failure resolution procedures under the systemic risk doctrine (Todd and Thomson [1990] and Kaufman [1992]).

The relevance of these developments to analysis of the RTC depends on the assumptions that one is prepared to make about the efficacy of and motives for supervisory behavior during the 1980s. If, as the authorities cited argue, the regulatory process had lost its way prior to the enactment of FDICIA, then too many weak or failing thrifts and banks were being kept open instead of being closed down and liquidated. The decisive factor in the political process was that it was apparently cheaper in the short term to ignore failing bank cases in a fiscal environment

that simply would not have provided sufficient, on-budget funding to close weak institutions directly (see, for example, Kane [1989], pp. 18–22, and Mayer [1992], pp. 90–115). In hindsight, it appears that a full-fledged RFC with the capacity to either recapitalize weak and marginally insolvent banks or provide the funding to pay off depositors and general creditors would have proved quite helpful (see Keeton [1992]). But instead, the eventual government-funded liquidator, the RTC, was created in 1989 with all of the liabilities but comparatively few of the asset and funding powers of the old RFC.

### The RTC and the RFC

In August 1989, the RTC was chartered for seven years to deal with the wave of thrift institution failures in the late 1980s.<sup>20</sup> Like the RFC, the RTC was intended as a temporary expedient only, with its authority to administer new cases to expire in September 1993 and its charter to expire in 1996. But although the RFC became an active solvency-support provider after March 1933, the RTC's role has been restricted to passive liquidation only—an important distinction between the roles of these two rescue agencies.

Funding the RTC has been problematic. The initial vehicle was the Resolution Funding Corporation, an entity whose acronym (RFC) evokes memories of the original rescue agency of the 1930s. Like the original RFC, the modern RTC has borrowed funds to enable it to repay depositors of failed thrifts initially and then has had to administer assets until resale. The RTC also has obtained funds through additional, direct appropriations and through borrowings for liquidity purposes through the Federal Financing Bank. The ultimate cost to taxpayers backing RTC obligations is the difference between the amounts initially disbursed to repay depositors and the amounts realized upon eventual resale of seized assets, adjusted for ongoing costs of administration of those assets.

The funding sources of the modern RTC are more varied, but its cash flow is more constrained than that of the old RFC. Both entities share a common funding restraint: Neither could borrow at the Federal Reserve Banks.

The 1930s' RFC was authorized to issue its own debt instruments into the public debt market (the Federal Financing Bank did not exist until

1973) and had a substantial amount of positive cash flow. After all, the RFC did not lend to significantly insolvent firms, most of its loans were short term, and loan repayments and scheduled preferred stock redemptions provided the cash flow. The RTC, on the other hand, is required to fund depositor payoffs for even grossly insolvent thrifts and has, by definition, a large portfolio of nonperforming, difficult-to-sell assets. The RTC's cash flow, other than from asset sales, has been minimal for several months at this writing. In fact, it is because of these funding constraints that some proponents have advocated a role for the Federal Reserve in any new or expanded bank or thrift rescue operations (see Greenhouse [1992] and Rohatyn and Cutler [1991]).

Although most of the RTC's funding is on-budget, and although its funding corporation has issued off-budget bonds (which still count as part of gross public debt) with maturities as long as 40 years, the RTC exhausted its available cash for thrift failure resolutions in March 1992, and Congress still has not appropriated new funds. Worse yet, as Kane (1990), p. 756, has noted, there are political and bureaucratic pressures at work that tend to increase the eventual, final, taxpayers' cost of the RTC's operations, such as the "counterproductive layers of go-slow administrative restraints [at the RTC]." (See also Pike and Thomson [1991].)

Two principal lines of argument have emerged regarding the disposition of RTC assets. One line argues that the RTC should liquidate its entire portfolio as quickly as possible, even if that means initially absorbing large losses from the face value of its assets, because the losses embedded in the RTC's portfolio generally will not improve under government management (Eichler [1989], Kane [1990], and Pike and Thomson [1991]). Also, the carrying costs (the accrual of interest on borrowed funds, maintenance costs regarding real property, and administrative expenses for a large bureaucracy) are sufficiently large that the total cost of the RTC after five or seven years probably would be less than if the alternate path were followed.

The second line of argument is that the RTC's affairs should be managed so as to minimize nominal losses from face value upon resale of the properties. This would entail a readiness to expend necessary sums for maintenance and improvements, because borrowing costs currently are low and because bureaucratic and administrative expenses should not prove significantly greater in the near term than those required for a sales force to liquidate all the properties. Initially, proponents of this second view argued that the RTC could become the government's general

■ 20 Financial Institutions Reform, Recovery, and Enforcement Act of August 9, 1989, Section 501; 12 U.S.C. Section 1441a (1992), as amended (FIRREA).

manager for all rescue operations, including rescues of nonbank, nonfinancial firms, thereby more fully mimicking the original RFC (see Mayer [1992], pp. 260–325, especially pp. 315–18).

In general, this second view, omitting the proposed role of the RTC as general manager of all governmental rescues, has dominated RTC operations thus far, largely because of fears in regions like Texas and New England that massive sales of foreclosed real property would further depress an already depressed real estate market. Proponents of the first view argue that liquidation sales would clear the market and establish a bottom value for real estate upon which a sustainable recovery of prices could be founded—something that cannot occur as long as there is a substantial amount of real estate in government hands that overhangs the market and eventually has to be sold anyway (Mayer [1992], pp. 260–86, 308–10; compare with Eichler [1989], pp. 143–46).

Similar matters were argued at great length during the RFC's operations in the 1930s, with the central planning/corporate state factions of the New Deal (such as Rexford G. Tugwell and Adolf A. Berle) arguing for permanent management of assets in the RFC's hands (Schlesinger [1959], pp. 432–33, and Olson [1988], pp. 111–14, 173). Jones eventually aligned himself with the fiscal conservatives (including Senator Carter Glass, Budget Director Lewis Douglas, and Postmaster General James Farley), who wanted to return RFC assets to private hands as soon as possible and eventually to dismantle the RFC.<sup>21</sup>

Cost estimates regarding the modern RTC's operations vary. The original RFC broke even, ignoring the time value of money (Jones [1951], p. 4). But the combined cost of the RTC and FSLIC resolutions (deadweight loss) is expected to be about \$200 billion at present value, largely reflecting the difference between failed thrifts' liabilities paid off at par today and the RTC's recoveries on assets sold in the future.<sup>22</sup> This loss represents nearly \$2,000 for every individual income tax return.

It still is generally expected that nearly 900 thrifts (almost one-third of the industry in 1987) holding more than \$400 billion in assets will fail and be managed by the RTC before its intervention authority expires in September 1993. At the end of March 1992, when the RTC's available cash was exhausted, it had disposed of 640 closed institutions holding \$311 billion of total assets, for which it obtained \$202 billion at book value (Resolution Trust Corporation [1992]).<sup>23</sup> The Bush Administration estimates that an additional \$42 bil-

lion of funding, beyond the \$80 billion already appropriated in 1989 and 1991, would be necessary to complete the RTC's operations, in addition to funding the Southwest Plan deals (see note 22), with a further \$8 billion funding request for initial capitalization of the Savings Association Insurance Fund, the successor of the FSLIC, after 1992.

## The Central Bank's Role

A tendency to use central bank resources to fund a bailout increasingly politicizes the bank's monetary policy functions, which risks causing it to resemble the way in which national development agencies are used and often abused in developing countries (providing assistance from public funds to the most powerful and politically well-connected entities in the state).<sup>24</sup> Generally, industrial-economy central banks are somewhat insulated from political requests to fund specific rescue operations. For example, during 1992, Sweden, Norway, and Finland, all industrial economies, decided to bail out their banking systems, but they established new governmental agencies outside their central banks (RFC analogues) to do so.<sup>25</sup>

Some industrial-economy nations, however, do use their central banks to fund rescue operations. The French bankers' association has

■ 21 See Olson (1988), pp. 36–37, 84–103, 173, 193; Browder and Smith (1986), pp. 110–16; and Schlesinger (1960), pp. 515–23.

■ 22 This \$200 billion estimate of loss is divided between \$135 billion for RTC resolutions and \$65 billion for so-called "Southwest Plan" resolutions committed by FSLIC before FIRREA was enacted in 1989. See Mayer (1992), pp. 249–59, on the Southwest Plan. The \$135 billion portion of the \$200 billion estimate is likely to rise again (and the \$65 billion portion to fall somewhat) if short-term interest rates increase. The Congressional Budget Office also currently estimates the RTC's portion of this cost at \$135 billion, reduced from its \$155 billion estimate in late 1991, attributing the reduction primarily to lower-than-expected interest rates during the past year. See Garsson (1992a). At this writing, in early December 1992, the Federal Reserve discount rate is 3.0 percent, as is the federal funds target rate that the market perceives.

■ 23 Using June 30, 1992 data provided by RTC regional sales offices, the Southern Finance Project calculated that the RTC was recovering about 55 percent of the book value of commercial real estate assets sold (Schmidt [1992], Thomas [1992], and Southern Finance Project [1992]).

■ 24 See, for example, the case of the Central Bank of the Philippines, which assumed the foreign debt of its government's state-sponsored enterprises in the early 1980s and consequently lost \$13 billion on its income statement during 1991, with even greater losses expected during 1992 (LDC Debt Report [1992]). See also Schwartz (1992), Todd (1988, 1991), and Epstein and Ferguson (1984).

■ 25 See Brown-Humes (1992), Corrigan (1992), Fossli (1992), and Taylor (1992).



officially asked the French government for assistance with about \$15 billion of nonperforming property loans on the books of the nation's banks, including "one option proposed ... for cheap refinancing of troubled loans through the Bank of France" (Dawkins [1992a, b]). Japan also has been studying methods for relieving its banking system of nonperforming real estate loans without using taxpayers' funds but has not yet settled upon a final plan (Chandler [1992]). Some Japanese bankers have requested central bank assistance in this plan, but the government has not yet committed such resources to the effort.

In the case of the Federal Reserve Banks, it is official Federal Reserve policy that Reserve Banks' advances should not be used to substitute for the capital of depository institutions and that Federal Reserve resources should not be used so as to enable the Treasury to avoid the discipline of selling its debt instruments into the open market.<sup>26</sup>

#### IV. Conclusions

This paper reviews some of the important lessons to be learned from the experience of the original RFC, which was the principal government-funded bailout agency for both banks and nonbanks from 1932 to 1947. Having tried forbearance and seen it fail to deal adequately with the thrift industry's problems after 1982, Congress created the RTC, which it apparently hoped would resolve those problems much as the RFC had done in the 1930s. Unfortunately, the RTC has proved to be a much weaker entity, and it has had no new appropriations for failure resolutions since March 1992, with its mandate to deal with new cases set to expire in September 1993.

When capital replacement problems analogous to those of the thrift industry began to emerge in the banking industry in the mid-1980s, regulators initially responded by adopting forbearance policies regarding certain classes of loans (developing-country debt, agricultural loans, and commercial real estate) and by articulating and elaborating on the too-big-to-fail doctrine, which also produced an offshoot called the systemic risk doctrine. Since the debate began on FDICIA in 1991, increased attention has been

paid to RFC-like solutions for the banking industry's problems as well.

Although some authorities still advocate creation of a new RFC, or the conferral of RFC-like powers on the Federal Reserve, others oppose such a measure and express doubt that it would, in fact, be needed. In retrospect, recreating the RFC probably would have been a better solution to both thrift and banking industry problems in the mid-1980s than what actually was done in 1989 and afterward. However, even the original RFC with a second Jesse Jones in charge would have been hard-pressed to function effectively in the 1980s, when a large number of the institutions to be rescued were grossly insolvent, not just marginally insolvent or undercapitalized, and when Congress refused for long periods to appropriate necessary operating funds for the eventual rescues.

Remembering the RFC and Jesse Jones fondly in hindsight tends to cloud the issues that need to be resolved in any debate about creating a new RFC or assigning its functions to the Federal Reserve. Even with a comparably capable man like Jones running it, the original RFC was not immune from well-founded charges of political favoritism, corruption, and abuse.

An RFC certainly might prove useful today. As Keeton (1992) has shown, an RFC can be an effective way for the government to preserve financial institutions that otherwise would fail, but it is doubtful in the present environment that the government could undertake such rescues in a way that would maximize long-term efficiency and minimize short-term political considerations. Having the Federal Reserve Banks provide the funds for such a rescue operation would only muddy the waters further by reducing the customary measure of direct political accountability for such rescue decisions that currently is obtained through forcing periodic congressional appropriations of new operating funds.

The ultimate objection to RFC-like rescue operations, and even more to having Reserve Banks (repositories of the society's common fund of monetary reserves) fund such rescues, arises from the incidence of the costs to society from such operations. Bailouts entail social costs because they misallocate scarce resources in the direction of activities that the market, by refusing to fund at previous levels, already has rejected, regardless of whether the Fed or a new RFC steps in.

Any revived RFC should be established only as a temporary rescue device. If it lingers indefinitely, it risks becoming a tool for corporatist management of the industrial and financial economies. Jones, for example, saw the RFC as

■ 26 Federal Reserve Regulation A, governing use of the Reserve Banks' discount windows, has provided for nearly 20 years that "Federal Reserve credit is not a substitute for capital and ordinarily is not available for extended periods." 12 C.F.R. Section 201.5 (a)(1992). All words in this paragraph of the regulation following "capital" have been omitted since 1980. See Greenspan (1991), pp. 434–36, partially quoted in note 15.

a temporary rescue device to save capitalism. Still, a new RFC is an idea (albeit an inherently bad one) worth discussing if the only alternative permitted by the political process is central-bank-funded rescues of politically designated target firms. Any new RFC should be separately chartered with a fixed expiration date for its activities and a comparable deadline for the maturity of its funding instruments. The RFC should be funded on-budget and through regular appropriations. The Federal Reserve should be precluded explicitly from funding the RFC, directly or indirectly, to ensure that institutional checks and balances remain in place.

Overall, in thinking about ideas for particular bailouts and bailout devices like the RFC, it is useful to recall the following wisdom extracted from 19th-century experiences with the problem of social cost:

[Policymakers came to understand that] efficiency and equity required that public subsidies to private persons be openly assessed, and not accomplished by inattention or concealment.... [W]e had to learn that the incidence of cost was socially as important as the fact that cost existed. (Hurst [1956], p. 105)

## References

- Board of Governors of the Federal Reserve System. *Federal Reserve Bulletin*, various issues, 1915–present. Washington, D.C.: Board of Governors.
- Browder, Robert Paul, and Thomas G. Smith. *Independent: A Biography of Lewis W. Douglas*. New York: Alfred A. Knopf, 1986.
- Brown-Humes, Christopher. "Sweden Erects Banking Defences," *Financial Times*, November 13, 1992.
- Buchanan, James M. *The Demand and Supply of Public Goods*. Chicago: Rand McNally & Co., 1968.
- \_\_\_\_\_, and Gordon Tullock. *The Calculus of Consent: Logical Foundations of Constitutional Democracy*. Ann Arbor, Mich.: University of Michigan Press, 1965.
- \_\_\_\_\_, and Richard E. Wagner. *Democracy in Deficit: The Political Legacy of Lord Keynes*. New York: Academic Press, 1977.
- Butkiewicz, James L. "The Impact of a Lender of Last Resort During the Great Depression: The Case of the Reconstruction Finance Corporation," University of Delaware, Department of Economics, unpublished paper, July 1992.
- Calomiris, Charles W. "Financial Factors in the Great Depression," University of Illinois, Department of Finance, and National Bureau of Economic Research, unpublished paper, August 1992.
- Chandler, Clay. "Japan to Offer Bailout Plan for Banks That's Weaker Than Industry Expected," *Wall Street Journal*, October 28, 1992.
- Chernow, Ron. *The House of Morgan: An American Banking Dynasty and the Rise of Modern Finance*. New York: Atlantic Monthly Press, 1990.
- Clarkson, Grosvenor B. *Industrial America in the World War: The Strategy Behind the Line, 1917–1918*. Boston: Houghton Mifflin Co. (Riverside Press), 1924.
- Corrigan, Tracy. "Finland to Inject Further FM15bn into Bank Sector," *Financial Times*, December 10, 1992.
- Cummins, Claudia. "Fed Chief Greenspan Says Credit Crunch 'May Finally Be Retreating,'" *American Banker*, November 19, 1992.
- Dawkins, William. "Aid Appeal from French Banks over Bad Debts," *Financial Times*, December 10, 1992a.
- \_\_\_\_\_. "Damage Limitation in the Heart of Paris," *Financial Times*, December 11, 1992b.
- Dos Passos, John. *Mr. Wilson's War*. Garden City, N.Y.: Doubleday & Co., 1962.
- Eichler, Ned. *The Thrift Debacle*. Berkeley, Calif.: University of California Press, 1989.
- Epstein, Gerald, and Thomas Ferguson. "Monetary Policy, Loan Liquidation, and Industrial Conflict: The Federal Reserve and the Open Market Operations of 1932," *Journal of Economic History*, vol. 44, no. 4 (December 1984), pp. 957–83.

- Fossli, Karen. "Norway Set to Reveal Rescue Terms for Banks," *Financial Times*, November 23, 1992.
- Friedman, Milton, and Anna J. Schwartz. *A Monetary History of the United States: 1867–1960*. Princeton, N.J.: Princeton University Press, 1971.
- Garsson, Robert M. "Congressional Budget Office Trims S&L Bailout Estimate by \$20 Billion," *American Banker*, August 6, 1992a.
- \_\_\_\_\_. "Bankers Seeking Regulatory Relief Count on Bush to Sign Housing Bill," *American Banker*, October 13, 1992b.
- Greenhouse, Steven. "The Economy: Liberals Press Clinton to Raise Deficit Spending," *New York Times*, November 17, 1992.
- Greenspan, Alan. "Statement by Alan Greenspan ... before the Committee on Banking, Housing, and Urban Affairs, U.S. Senate, April 23, 1991," *Federal Reserve Bulletin*, vol. 77, no. 6 (June 1991), pp. 430–43.
- Greider, William. "National Affairs: The Emergency Plan to Bail Out the Banks," *Rolling Stone*, February 20, 1992a.
- \_\_\_\_\_. *Who Will Tell the People? The Betrayal of American Democracy*. New York: Simon and Schuster, 1992b.
- Hackley, Howard H. *Lending Functions of the Federal Reserve Banks: A History*. Washington, D.C.: Board of Governors of the Federal Reserve System, 1973.
- Hoover, Herbert. *The Great Depression: 1929–1941* (vol. 3 of Hoover's memoirs). New York: Macmillan Co., 1952.
- Hurst, James Willard. *Law and the Conditions of Freedom in the Nineteenth-Century United States*. Madison, Wis.: University of Wisconsin Press, 1956 (reissued in 1971).
- Jones, Jesse H., with Edward Angly. *Fifty Billion Dollars: My Thirteen Years with the RFC (1932–1945)*. New York: Macmillan Co., 1951.
- Kane, Edward J. *The S&L Insurance Mess: How Did It Happen?* Washington, D.C.: Urban Institute Press, 1989.
- \_\_\_\_\_. "Principal-Agent Problems in S&L Salvage," *Journal of Finance*, vol. 45, no. 3 (July 1990), pp. 755–64.
- Kaufman, George G. "Bank Contagion: Theory and Evidence," Federal Reserve Bank of Chicago, Working Paper Series No. 92–13, June 1992.
- Keeton, William R. "The Reconstruction Finance Corporation: Would It Work Today?" Federal Reserve Bank of Kansas City, *Economic Review*, First Quarter 1992, pp. 33–54.
- LDC Debt Report/Latin American Markets. "World Bank to Act on Creation of Central Bank [for the Philippines]," November 16, 1992.
- Leuchtenberg, William E. *Franklin D. Roosevelt and the New Deal: 1932–1940*. New York: Harper and Row, 1963.
- Mayer, Martin. *The Greatest-Ever Bank Robbery: The Collapse of the Savings and Loan Industry*. New York: Macmillan Co. (Collier Books), 1992.
- Morgan, Ted. *FDR: A Biography*. New York: Simon and Schuster, 1985.
- Olson, James S. *Saving Capitalism: The Reconstruction Finance Corporation and the New Deal, 1933–1940*. Princeton, N.J.: Princeton University Press, 1988.
- Penning, Ann Cooper. "Aid to Distressed Banks—Yesterday and Today," vols. 1 and 2. Rutgers University, Stonier Graduate School of Banking, unpublished dissertation, 1968.
- Phillips, Ronnie J. "The Chicago Plan and New Deal Banking Reform," Jerome Levy Economics Institute of Bard College, Working Paper No. 76, June 1992.
- Pike, Christopher J., and James B. Thomson. "The RTC and the Escalating Costs of the Thrift Insurance Mess," Federal Reserve Bank of Cleveland, *Economic Commentary*, May 15, 1991.
- Pusey, Merlo J. *Eugene Meyer*. New York: Alfred A. Knopf, 1974.

- Rehm, Barbara A. "Treasury Aide Blasts Rule on Executive Pay," *American Banker*, June 23, 1992.
- Resolution Trust Corporation. *RTC Review*, vol. 3, no. 5 (May 1992).
- Rohatyn, Felix G., and Lloyd N. Cutler. "Revitalize the Federal Reserve System," newspaper article reprinted in *The Failure of the Bank of New England*, U.S. Congress, Senate, Committee on Banking, Housing, and Urban Affairs, Hearing 102-354, 102 Cong. 1 Sess., January 9, May 6, and September 19, 1991.
- Schiming, Richard C. Unpublished referee's memorandum on this paper, August 4, 1992.
- Schlesinger, Arthur M., Jr. *The Coming of the New Deal*, vol. 2 of *The Age of Roosevelt*. Boston: Houghton Mifflin Co. (Riverside Press), 1959.
- \_\_\_\_\_. *The Politics of Upheaval*, vol. 3 of *The Age of Roosevelt*. Boston: Houghton Mifflin Co. (Riverside Press), 1960.
- Schmidt, Susan. "RTC Sales Said Well Under Book Value," *Washington Post*, September 9, 1992.
- Schwartz, Anna J. "The Misuse of the Fed's Discount Window," Federal Reserve Bank of St. Louis, *Review*, vol. 74, no. 5 (September/October 1992), pp. 58-69.
- Southern Finance Project. "Fortunate Sons: Three Years of Dealmaking at the Resolution Trust Corporation," Charlotte, N.C.: briefing paper, September 9, 1992.
- Sprague, Irvine H. *Bailout: An Insider's Account of Bank Failures and Rescues*. New York: Basic Books, 1986.
- Sprinkel, Beryl Wayne. "Economic Consequences of the Operations of the Reconstruction Finance Corporation," *Journal of Business*, vol. 25, no. 2 (October 1952), pp. 211-24.
- Tansill, Charles Callan. *America Goes to War*. Boston: Little, Brown, and Co., 1938.
- Taylor, Robert. "SE-Banken [Skandinaviska Enskilda Banken] Seeks Government Help," *Financial Times*, December 11, 1992.
- Thomas, Paulette. "RTC Holdings Going Cheaply, Study Finds," *Wall Street Journal*, September 8, 1992.
- Todd, Walker F. "Lessons of the Past and Prospects for the Future in Lender of Last Resort Theory," Federal Reserve Bank of Cleveland, Working Paper No. 8805, August 1988. Also in *Proceedings of a Conference on Bank Structure and Competition*, Federal Reserve Bank of Chicago (May 11-13, 1988), pp. 533-77.
- \_\_\_\_\_. "Banks Are Not Special: The Federal Safety Net and Banking Powers," in Catherine England, ed., *Governing Banking's Future: Markets vs. Regulation*. Boston: Kluwer Academic Publishers, 1991.
- \_\_\_\_\_, and James B. Thomson. "An Insider's View of the Political Economy of the Too Big to Fail Doctrine," Federal Reserve Bank of Cleveland, Working Paper No. 9017, December 1990. Also in *Public Budgeting and Financial Management: An International Journal*, vol. 3, no. 3 (1991), pp. 547-617.
- U.S. Treasury Department. *Final Report on the Reconstruction Finance Corporation*. Washington, D.C.: U.S. Government Printing Office, 1959.
- Upham, Cyril B., and Edwin Lamke. *Closed and Distressed Banks: A Study in Public Administration*. Washington, D.C.: Brookings Institution, 1934.
- Willoughby, Jack. "Playing Doctor," *Financial World*, vol. 161, no. 8 (March 31, 1992), pp. 20-21.
- Woodward, Thomas. "The Return of Forbearance," in House Committee on the Budget, Republican Staff Report, *Budget and Economic Analysis*, vol. 2, no. 11 (October 9, 1992).
- Wyatt, Walter. "Constitutionality of Legislation Providing a Unified Commercial Banking System for the United States," *Federal Reserve Bulletin*, vol. 19, no. 3 (March 1933), pp. 166-86.

# Fourth Quarter Working Papers

Current *Working Papers* of the Cleveland Federal Reserve Bank are listed in each quarterly issue of the *Economic Review*. Copies of specific papers may be requested by completing and mailing the attached form below.

Single copies of individual papers will be sent free of charge to those who request them. A mailing list service for personal subscribers, however, is not available.

Institutional subscribers, such as libraries and other organizations, will be placed on a mailing list upon request and will automatically receive *Working Papers* as they are published.

■ **9211**  
**Dynamics of the Trade Balance and the Terms of Trade: The S-Curve**

by David K. Backus,  
Patrick J. Kehoe, and  
Finn E. Kydland

■ **9212**  
**The Efficiency and Welfare Effects of Tax Reform: Are Fewer Tax Brackets Better Than More?**

by David Altig and  
Charles T. Carlstrom

■ **9213**  
**Relative Price Movements in Dynamic General Equilibrium Models of International Trade**

by David K. Backus,  
Patrick J. Kehoe, and  
Finn E. Kydland

■ **9214**  
**On Markovian Representations of the Term Structure**

by Peter Ritchken and  
L. Sankarasubramanian

■ **9215**  
**Do Hostile Takeovers Reduce Extramarginal Wage Payments?**

by Jagadeesh Gokhale,  
Erica L. Groshen, and  
David Neumark

■ **9216**  
**U.S. Air Passenger Service: A Taxonomy of Route Networks, Hub Locations, and Competition**

by Neil Bania,  
Paul W. Bauer, and  
Thomas J. Zlatoper

Please complete and detach the form below and mail to:  
Research Department  
Federal Reserve Bank of Cleveland  
P.O. Box 6387  
Cleveland, Ohio 44101

**Check item(s)  
requested**

**Send to:**  
Please print

Please send the following Working Paper(s):

- |                                      |                                      |                                      |
|--------------------------------------|--------------------------------------|--------------------------------------|
| <input type="checkbox"/> <b>9211</b> | <input type="checkbox"/> <b>9213</b> | <input type="checkbox"/> <b>9215</b> |
| <input type="checkbox"/> <b>9212</b> | <input type="checkbox"/> <b>9214</b> | <input type="checkbox"/> <b>9216</b> |

Name \_\_\_\_\_

Address \_\_\_\_\_  
\_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_

Zip \_\_\_\_\_