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Saving, Pensions, and Stock Values

In spite of high real interest rates, a robust economy, and the introduction of tax measures designed to encourage saving, the current rate of personal saving in the United States is substantially lower than the rates of the 1970s. According to NBER associates **Douglas Bernheim** and **John Shoven**, this is partly because net contributions to pension funds have fallen during the past few years, and they comprise a large fraction of total private saving. In fact, pension contributions comprised virtually all of personal savings in 1982 and 1983.

In **Pension Funding and Saving** (*NBER Working Paper No. 1622*), Bernheim and Shoven find that high real interest rates have caused pension funding to drop from 6 percent of disposable income in 1982 to 4 percent in 1984, a decline of more than \$30 billion. The link between real interest rates and pension contributions, the authors explain, is the funding mechanism of most pension plans. About 70 percent of pension assets are in defined-benefit plans. Under such plans, firms must pay a worker a specific benefit based on salary, seniority, and other factors. The firm's contributions to the pension plan, plus the interest earned on these contributions, must be sufficient to finance the benefits. If interest rates rise while other factors remain unchanged, a lower level of contributions will be sufficient to pay for benefits. Bernheim and Shoven estimate that in the long run a one percentage point rise in real interest rates will reduce pension contributions by 20 to 30 percent.

In the past, many firms underestimated the level of real interest rates in calculating how much they

needed to contribute to their pension plans. As a result, many of these plans have more assets than are necessary for the benefits they eventually must pay. Bernheim and Shoven estimate that at least 88 percent of the defined-benefit plans of *Fortune* 500 Industrials had more than enough assets to pay for their liabilities at the end of 1983, and at least 34 percent had assets that were half again as large as their liabilities.

Firms with overfunded pension plans have two choices. They can reduce their future contributions over a period of several years in order to bring assets back into line with obligations. Or, they can terminate the existing plan, buy annuities for workers covered by the old plan, and create a new plan. The difference between the assets of the old plan and the cost of the annuities then will revert to the firm.

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Bernheim and Shoven predict that such plan reversions will become increasingly common as firms recalculate the effect of high interest rates on the cost of future pension benefits and on the contributions needed to finance them. Other firms will decrease overfunding by cutting back on contributions. In both cases the level of aggregate pension contributions falls, and personal saving falls as well.

In a related study, NBER researchers **Jeremy I. Bulow, Randall Mørck, and Lawrence H. Summers** find that a corporation's unfunded pension liabilities are reflected in lower stock market prices. In **How Does the Market Value Unfunded Pension Liabilities?** (*NBER Working Paper No. 1602*), they report that a \$1 change in the firm's net pension liabilities leads to a change in the total value of its stock, but not by the full dollar.

The three authors also confirm that an increase in interest rates will lower the value of pension liabilities and thus increase the value of a firm's stock. Their analysis implies that "for a firm with unfunded liabilities equal to 10 percent of equity value, a 1 percent increase in the interest rate would raise market value by about 0.3 percent."

Monetary Policy and Real Interest Rates

Economists often blame the large federal budget deficit for the high real interest rates of recent years. Some say that other factors, such as cuts in corporate income taxes, an investment boom, and the fall in energy prices have given real interest rates a further boost. But a recent study by NBER researchers **John Huizinga and Frederic Mishkin** indicates that another factor—changes in the Federal Reserve's monetary policy regime—may be the principal cause of high real rates. Their findings appear in **Monetary Policy Regime Shifts and the Unusual Behavior of Real Interest Rates** (*NBER Working Paper No. 1678*).

Huizinga and Mishkin define a change in the monetary policy regime as a change in the direction of policy or the way in which policy is conducted. There have been two such changes in recent years. In October 1979 the Fed moved away from its practice of smoothing interest rates and in public pronouncements put more emphasis on achieving its money growth targets. In October 1982 the Fed deemphasized money growth as a policy target.

Huizinga and Mishkin's analysis looks at changes in the behavior of real interest rates—that is, changes in the level and variability of real rates as well as changes in their association with past economic variables. They find that significant shifts in the behavior of real rates followed both the October 1979 and the October 1982 changes in the monetary policy regime. What's more, those months are the most likely breakpoints, or dates when changes in real rate behavior occurred.

Dating the first change in the behavior of real rates at October 1979 demonstrates why the level of real rates alone does not provide an accurate characterization of their behavior. Although real rates became much less volatile in late 1979, the big increase in real rates did not occur until late 1980.

The change in the behavior of real rates can be characterized as follows: Before October 1979, there was a strong Fischer effect, that is, a strong positive association between expected inflation and nominal interest rates. In addition, movements in nominal interest rates were a poor indicator of real rate movements. From October 1979 to October 1982, the Fischer effect disappeared and there was a close correspondence between movements in nominal and real interest rates. After October 1982, there was a reemergence of the Fischer effect, although it was not as strong as before October 1979.

In evaluating a possible link between monetary policy and real rates, Huizinga and Mishkin investigate the hypothesis that real rates have been high because of greater uncertainty about money growth, inflation, and interest rates themselves. However, they find little evidence to support this view. In fact, uncertainty about money growth, inflation, and interest rates fell sharply after the October 1982 change in the Fed's policy regime while the level of real rates remained high.

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Huizinga and Mishkin also analyze a change in the monetary policy regime that occurred in 1920 when the Fed twice raised its discount rate sharply. This earlier episode is a natural one for comparison because, much like the recent experience, the economy was suffering from high inflation before the Fed changed policy and a sharp disinflation followed. The 1920 Fed actions were followed by significant changes in the behavior of real interest rates. Those changes were quite similar to those that took place in the 1980s. The most likely date for a change in the behavior of real rates was again the date at which the monetary policy regime shifted. Real rates rose sharply after that shift, became more variable, and remained high. In the inflationary period before mid-1920, the Fischer effect was strong and nominal interest rates were negatively associated with real rates. After that time, the Fischer effect disappeared and nominal and real rates were positively correlated. The evidence from the 1920s therefore corroborates the evidence from the 1970s and 1980s that shifts in monetary regimes are an important factor for explaining the recent unusual behavior of real interest rates.

The Economic Effects of City Governments

The type of government a city has—for example, whether it has a city manager or a directly elected mayor and whether the city council is elected by ward or at large—affects how many people it employs and what they earn, according to a recent NBER study by Research Economist **Jeffrey Zax**. Even after adjusting for differences in population, region, extent of unionization, average income, and the age and ethnicity of residents, Zax finds that cities with elected mayors or city managers have fewer employees but pay them at higher rates than in other cities. With both a directly elected mayor and a city manager, the level of municipal employment is average, but compensation is higher than in cities with just one executive. A nonpartisan city council, or one elected at large, tends to increase both employment and compensation, Zax observes in **Economic Effects of Municipal Government Institutions** (*NBER Working Paper No. 1657*).

Zax speculates that city managers and mayors chosen by direct election need broad voter support and get it by providing municipal services efficiently, not through patronage employment. If this is true, then such officials should reduce municipal employment but increase compensation (to attract the best employees). In fact, Zax finds that city managers reduce per capita man-hours of municipal service (a measure of employment) by nearly 8 percent and mayors by almost 6 percent, compared to an average level. Moreover, city managers increase total compensation by 42 cents per hour worked and mayors by 28 cents per hour worked, over total compensation in other cities.

Zax finds that these differences in compensation are mostly in the form of fringe benefits. While city managers increase mean wages 4.4 percent, they raise medical expenditures 9.9 percent, pension expenditures by 13.9 percent, and other benefits by 28.4 percent. Mayors increase wages 3.6 percent, but raise pension expenditures 8.5 percent.

Twenty six percent of U.S. cities and 48 percent of the sample cities have both a mayor chosen by direct election and a city manager. In these cities, Zax finds total compensation per hour worked (by a municipal employee) is \$1.22 higher than in cities with neither executive, such as Lowell, Massachusetts. Wages are 10 percent higher, medical benefits 50 percent higher, pension benefits 45 percent higher, and miscellaneous benefits 42 percent higher.

In Zax's sample, 56 percent of the cities elect councillors in at-large elections with nonpartisan ballots. This form of elected city government increases wages 43 cents per hour worked and decreases medical and pension expenditures by about half that amount.

Finally, Zax finds that how long a particular form of government has been in place in a city also affects its payroll. For example, the longer a city has had a city manager form of government, the higher its levels of municipal employment and man-hours of municipal service per capita will be. Council-manager governments add 83 man-hours of municipal service per 10,000 residents with each additional year they are in place. Between new incorporations and changes in a city's form of government, the average duration of council-manager governments is about 32 years.

Zax's conclusions are based on surveys conducted in 1975, 1977, and 1979 on a sample of 839 U.S. cities. The surveys include data on municipal employment per capita, annual hours worked by municipal employees, total compensation, wages, medical and pension benefits, and other miscellaneous benefits.

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In contrast to mayors and city managers, Zax notes, city councillors are often elected by small constituencies. If they are chosen in at-large or nonpartisan elections, as in Portland, Oregon or Norfolk, Virginia, the active support of municipal employees is valuable to them. Zax finds that elected councillors do increase both municipal employment and municipal compensation. "Council members . . . take advantage of the easy appeal to municipal employees with whom they have been generous," he writes.

Cities with nonpartisan city council elections increase man-hours of municipal service by about 5.5 percent above average levels; wages rise 2.3 percent per hour. City councils elected at large increase per capita man-hours of municipal service by 5 percent over average levels in cities with councils elected by ward.

Job Complexity and Job Satisfaction

Factory workers do not get more satisfaction from more complex jobs, according to NBER Research Economist **Andrew Weiss**. In fact, the average employee assigned to a more complex job is slightly more likely to quit than one assigned to a simpler job. Nor does increasing the complexity of a job reduce absenteeism. Even among better-educated workers, being placed in a more complex job does not decrease absenteeism or quit rates.

In **The Effect of Job Complexity on Job Satisfaction: Evidence from Turnover and Absenteeism** (*NBER Working Paper No. 1597*), Weiss analyzes data on almost 3000 unionized, semiskilled workers in electronics manufacturing. In their first six months of employment, 12.3 percent of these workers quit.

Among workers assigned to more complex jobs, though, the quit rate exceeded 14.5 percent.

Differences in the complexity of a job have no significant effect on absenteeism, Weiss finds. However, in his sample both absenteeism and quits are lower among older workers, high school graduates, and workers who were employed when they applied for these new jobs.

“Factory workers do not get more satisfaction from more complex jobs.”

Weiss's results are in contrast with other studies that found that increasing job complexity led to higher satisfaction and productivity among workers. Weiss observes that earlier studies relied on volunteers. Their results may merely indicate that workers who ask to be reassigned to more complex jobs prefer the jobs they requested. By contrast, Weiss's findings indicate that randomly selected workers seem to prefer simpler jobs.

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