

# The NBER Digest

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## 401(k) Plans Increase Savings

For years, there has been widespread concern about a relatively low savings rate in the United States compared to other nations. To encourage saving, Congress has passed legislation giving more favorable tax treatment to various types of personal retirement saving plans. Some critics have asked whether the money going into tax-advantaged retirement plans was merely diverted from other savings, or whether it added to the nation's total savings. Now a new NBER study by **James Poterba**, **Steven Venti**, and **David Wise** finds that 401(k) plans, the latest of the tax-deferred individual retirement saving programs, actually do make a net contribution to national saving.

In **Do 401(k) Contributions Crowd Out Other Personal Saving?** (*NBER Working Paper No. 4391*), they note that the 401(k) plan is the most important savings vehicle in the current U.S. tax code. The program was created by the Revenue Act of 1978, but was not widely used until the Internal Revenue Service issued clarifying regulations in 1981. Unlike Individual Retirement Accounts (IRAs), the 401(k) plans are available only to employees of firms that offer them. Deposits in 401(k) accounts are excluded from taxable income, and the return on the contributions accrues tax free until withdrawal. Prior to 1987, the employee contribution limit was \$30,000. However, the Tax Reform Act of 1986

reduced the limit to \$7000, and indexed this limit for inflation in subsequent years. The contribution limit was \$8994 for the 1993 tax year.

One notable feature of the 401(k) plans is that employers can "match" employee contributions. About 60 percent of contributions are matched at rates above 10 percent, and 26 percent at rates above 100 percent. Employer matching strengthens the incentives for saving through these plans.

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Contributions to 401(k)s grew rapidly throughout the 1980s, to a level of \$46 billion in 1989, and are still growing rapidly. Poterba, Venti, and Wise find little substitution of 401(k) saving for other forms of saving, including IRAs. Although both IRAs and 401(k)s have similar tax incentive and other provisions, they do not appear to be close substitutes in practice. Most contributions to 401(k)s (and also to IRAs) represent net new saving. In 1991, families that were eligible to contribute to a 401(k) plan had several times as much in total financial wealth as families that were not eligible, after controlling for differences in income between the two groups.

It is possible to study the effect of 401(k) plans on saving by comparing the saving of individuals whose firms offer the 401(k) plan with the saving of individuals who are not able to participate in a 401(k) plan. More specifically, Poterba, Venti, and Wise look at the value of family assets of those who have 401(k)s and those who do not. They find that assets are higher among families with 401(k) plans, after adjusting for differences in income. Indeed, the 401(k) eligible families and noneligible families have about the same level of other financial assets, while the eligible families also have 401(k) assets.

The authors also consider three demographically similar random cross sections of families that have been "exposed" to 401(k) plans for different time periods. They find that contributors who were exposed to the 401(k) option for more years set aside more money in these plans. But they did not reduce saving in other financial assets. And the other financial assets of contributors were about the same as those of noncontributors.

Since most 401(k) contributions represent an increment to household saving, the additional saving clearly exceeds the loss of tax revenues. The evidence therefore shows that the 401(k) option raises national saving (the difference between private saving and government borrowing) as well as personal saving. DRF

## Head Start's Effects Vary by Race

Head Start, which aims to improve the learning skills, social skills, and health status of poor children, is one of the few federal welfare programs that has received broad public support. Today 622,000 children, or about 28 percent of eligible 3-to-5-year-olds, participate in Head Start at an annual cost of \$2.2 billion.

In **Does Head Start Make a Difference?** (NBER Working Paper No. 4406), Janet Currie and Duncan Thomas point out that most previous studies of Head Start have focused only on its effects on IQ. Their study examines Head Start's effect on scholastic success, cognitive attainment, and health. They study children who

attended Head Start and had siblings who did not. In that way, they can hold constant the effect of family background and isolate the effects of the Head Start program. They conclude that Head Start tends to improve academic achievement for whites and Hispanics, but not for blacks, and tends to improve health for blacks more than for whites and Hispanics.

Currie and Thomas show that, relative to siblings who stayed at home, white children who participated in Head Start did better on math and vocabulary tests and Hispanic children did better on reading and vocabulary tests. Moreover, these effects persisted after the children reached 8 years of age, and were equal to or exceeded the effects of attending other preschools. In contrast, the authors find no effect of Head Start on the test scores of black children. Similarly, they find that participation in Head Start reduces the probability that white and Hispanic children will repeat grades: among these children, the probability that a child aged 10 or older has ever repeated a grade is reduced by more than 30 percent.

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How does Head Start affect children's health? Currie and Thomas find that participation in Head Start increases the probability that white and black children will receive measles shots, by 10 percent and 12 percent respectively, but for Hispanic children by only 6 percent.

Height, among people of the same age and gender, is one good indicator of long-run nutrition and health, the authors note. It turns out that black children who attended Head Start are significantly taller than their siblings who did not attend preschool, Currie and Thomas find. DRH

## Is the Fed Losing Control?

Major changes in the financial industry have altered the way that Americans save and borrow. Mutual funds have displaced bank deposits as the major vehicle for savings, while borrowers

are as likely to obtain credit from a mortgage company or the commercial paper market as to take out a loan from a financial institution. These tendencies have raised concerns that the diminished role of banks reduces the Federal Reserve's ability to use monetary policy to control the economy. According to NBER Research Associates **Christina Romer** and **David Romer**, however, these concerns are misplaced. While the world has changed, the Fed's grip on the economy is as effective as ever, they contend.

In **Credit Channel or Credit Actions? An Interpretation of the Postwar Transmission Mechanism** (*NBER Working Paper No. 4485*), Romer and Romer explore how monetary policy is transmitted through the economy by examining nine episodes since World War II in which the Fed sought to reduce aggregate demand. In each of those cases, interest rates rose sharply following the Fed tightening: Treasury bill rates rose an average of 2.13 percentage points between the six months prior to the date the tightening began and the six months after.

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Romer and Romer show that, in response to this monetary tightening, banks typically found creative ways to maintain lending. Thus, even before the financial changes emphasized today, the American banking system was quite flexible. However, in 1965, 1968–9, 1973–4, and 1978–80, the Fed accompanied monetary tightening with measures deliberately designed to reduce the availability of credit, such as interest rate controls and increases in banks' reserve requirements. A similar event occurred in 1947, when the Fed and other regulators urged bankers to “exercise extreme caution in their lending policies” and successfully pressed Congress to impose legal restrictions on consumer loans. By contrast, in 1955 and 1957, the Fed encouraged banks to maintain their lending activity and allowed the demand for credit to be determined by market interest rates alone.

Hence, Romer and Romer conclude, “the disruptions of bank lending associated with postwar

monetary contractions were largely the result of deliberate actions by the Federal Reserve” and not simply the consequence of tight monetary policy. Statistical analysis of the economic impact of postwar tightenings confirms that view: direct Fed efforts to limit credit had a positive and significant effect on the spread between the bank loan rate and the commercial paper rate, indicating that more was at work than a general increase in interest rates.

The importance of Fed credit actions becomes apparent when Romer and Romer analyze the effect of tightening on output. When monetary policy is tightened but no other efforts are made to regulate credit, they find, the change in monetary policy has its greatest effect after 30 months. At that point, industrial production averages 11 percent lower than it would have been otherwise. Direct steps to restrict credit, on the other hand, cause industrial production to reach its low point after only nine months, by which time it averages 6 percent less than expected without credit controls. The credit restraints, Romer and Romer report, are important, but they are separate from and less powerful than the interest rate impact of monetary policy.

The Fed's ability to alter interest rates has remained unchanged despite financial innovation and is unlikely to change in the future, Romer and Romer write. The Fed's ability to control the extension of credit, by contrast, may have changed as the result of the growth of nonbank lending. However, the authors point out, banks still have a central role in lending, including lending by institutions other than banks. The greater competition for consumer deposits means that increases in bank reserve requirements, which affect the profit banks can make with money obtained at any given rate of interest, may have an even larger impact on banks' cost of funds than in earlier times. Thus, the Fed retains powerful tools to control the flow of lending, should it choose to do so. “The credit side of the transmission mechanism is less important today mainly because the Federal Reserve has become more willing to let high interest rates ration credit and has stopped undertaking actions aimed at reducing bank lending directly,” Romer and Romer conclude. As monetary tightenings alone achieved the anti-inflationary results the Fed desired in 1981–2 and in 1988, no restrictions on credit were necessary, they say. ML

## Why Do Stocks Pay So Much More Than Bonds?

In recent years, economists have been intrigued by the enormous gulf between the investment returns on stocks and fixed-income securities: this is known as the equity premium puzzle. The annual real return on stocks has been about 7 percent since 1926, compared to 1 percent for Treasury bills—a far greater difference than can be explained simply by investors' aversion to the risks of owning stocks.

In **Myopic Loss Aversion and the Equity Premium Puzzle** (NBER Working Paper No. 4369), **Shlomo Benartzi** and **Richard Thaler** note that large discrepancies have existed between the returns of stocks and bonds for the past 120 years. They propose an explanation based on two concepts from the psychology of decisionmaking: The first is loss aversion—the tendency for individuals to be more sensitive to reductions in their level of well-being than to increases in it. Typically, estimates are that individuals' unhappiness at giving something up is twice as great as their satisfaction in acquiring it.

The second concept is called mental accounting—the implicit methods that people use to think about and measure the results of transactions, investments, and gambles. In this context, the key mental accounting question is: how often do investors evaluate their portfolio returns? For loss-averse investors, the more frequently an individual evaluates an investment, the less willing he or she will be to tolerate volatility in its value—even if the investment is made for a long-term purpose, such as retirement, and promises to produce a high return over time.

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The authors call the combination of the two phenomena “myopic loss aversion.” They show that, given these assumptions, investors who evaluate their portfolios approximately once a year in fact would be just as likely to invest in bonds as in stocks, despite the historical discrepancy in returns, thus explaining the equity premium puzzle. RN

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