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401(k)s Increase Private Saving

During the 1980s, 401(k) plans were the fastest-growing employee benefit. These plans allow employees to contribute pretax dollars to a retirement account. The contributions usually are matched to some extent by the employer, and taxes on both the contributions and the account earnings are deferred until the funds are withdrawn. More than 15 million workers now contribute more than $50 billion each year to these employer-provided plans.

In a new NBER study, **James Poterba, Steven Venti**, and **David Wise** find that individuals who contribute to 401(k) plans do not offset their contributions by reducing other saving. Thus, these plans have stimulated new saving and have increased total private saving in the United States.

In **401(k) Plans and Tax-Deferred Saving** (*NBER Working Paper No. 4181*), Poterba, Venti, and Wise compare the financial assets, exclusive of 401(k) holdings, of households with and without 401(k)s. If 401(k) contributions *are* partly offset, then one would expect to find higher non-401(k) asset balances at households without 401(k) plans. But the authors find just the opposite. In fact, after controlling for household characteristics, they find that those with 401(k)s have accumulated more total wealth, and no less wealth excluding 401(k)s, than those without such accounts.

Poterba, Venti, and Wise also show that, during the 1980s, the growth in the net worth of 401(k) contributors was substantially greater than that of noncontributors. The authors caution that these findings are not conclusive, because it is difficult to control for underlying differences in the desire to save between contributors and noncontributors. Nevertheless, these results are not consistent with the view that 401(k) contributors simply transferred other assets into their 401(k) accounts.

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The authors find that participation in a 401(k) plan is closely related to income. In 1987, only 2 percent of families with incomes below $10,000 were in a plan, versus more than 25 percent of families with incomes above $75,000. Most of that difference, though, occurred because low-income families are less likely to work in firms that offer 401(k) plans. About half of eligible families with incomes below $10,000, and 84 percent of eligible families with incomes above $75,000, contribute to 401(k)s.

More than half of eligible workers of all incomes participate in a 401(k) plan, about twice the participation rate for IRAs. Even in plans without employer matching, the participation rate is significantly higher than in IRAs. This may suggest that payroll deductions and encouragement from employers have an important effect on individual decisions about saving.

Poterba, Venti, and Wise calculate that, among individuals with 401(k)s, the average balance in 1987 was $9862. At incomes below $10,000, the average balance among participants was $1628; at incomes above $75,000, the average was $20,350. Not surprisingly, employees were even more likely to participate in a 401(k) plan if their employer matched part or all of their contributions. In 1986, over 75 percent participated when there was employer matching, versus less than 50 percent with no matching. Contributions ranged from 3.5 percent of salary with no matching to 7 percent with 100 percent matching.

Infrastructure Investment Does Not Raise Productivity

Increasing government investment in infrastructure—such as roads, sewer systems, and airports—recently has been proposed as a way to raise productivity in the private sector. However, a new NBER study by **Douglas Holtz-Eakin** finds that such investments have little effect on either output or productivity.

In **Public-Sector Capital and the Productivity Puzzle** (*NBER Working Paper No. 4122*), Holtz-Eakin analyzes how various factors contributed to growth in private sector output in the 48 contiguous states during 1969–86. He finds that a 10 percent increase in a state's work force increased private sector output by 7 percent. A 10 percent increase in private capital increased output by 3 percent. But a 10 percent increase in public capital had essentially no effect on a state's output during this period.

> "Increased investments in infrastructure are not likely to increase private sector productivity."

Holtz-Eakin cautions that investments in public capital may provide direct benefits to consumers, such as fewer traffic jams, shorter delays at airports, and cleaner rivers. However, he concludes that increased investments in infrastructure are not likely to increase private sector productivity, as some observers anticipate.

Elderly's High Health Costs Last Several Years

Long-term catastrophic illness threatens both the financial and the physical health of elderly families. Despite existing coverage provided by Medicare, Medicaid, and private health insurance, the risk of a catastrophic medical expense is large. Congressional estimates of out-of-pocket medical expenses for the elderly in 1988 were $2394 per person, or roughly 18 percent of average per capita income. In a recent study for the NBER, **Daniel Feenberg** and **Jonathan Skinner** report that these expenses are not only substantial but also persist for many years.

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In **The Risk and Duration of Catastrophic Health Care Expenditures** (*NBER Working Paper No. 4147*), Feenberg and Skinner analyze IRS data on thousands of households that itemized deductions and had medical expenses above 3 percent of their adjusted gross incomes in 1968–73. They estimate that an elderly family faced with an unexpected increase of $1000 in out-of-pocket medical spending today will experience increased medical spending of an additional $2800 in future years. Thus, for many elderly families, the risk of spending their life savings quickly is great.

Feenberg and Skinner also find that the burden of out-of-pocket medical expenses is substantially higher for lower- to middle-income elderly families than for higher-income families. For example, they estimate that 10 percent of elderly families with annual incomes of $15,000 spend on average more than 20 percent of their income on out-of-pocket medical expenses over a five-year period. In contrast, only 2 percent of elderly families with incomes of $30,000 spend such a high percentage on medical care.

Declining Unionization Has Increased Wage Inequality

Between 1973 and 1987, wage inequality among American men increased by 25 percent according to

NBER Research Associate **David Card**. He estimates that one-fifth of that increase was caused by changes in the level and distribution of union membership.

In **The Effect of Unions on the Distribution of Wages: Redistribution or Relabeling?** (*NBER Working Paper No. 4195*), Card reports that the percentage of working men aged 25 to 66 who were union members fell from 34 percent in 1973 to 26 percent in 1987. However, the decline was not equal at all skill and wage levels. Among workers in the lowest fifth of wage earners, unionization fell from 39 to 24 percent, while in the top fifth of earners, unionization actually rose from 13 to 20 percent.

"In 1987 the wages of union members in the lowest fifth of the wage distribution were 27 percent higher than the wages of otherwise similar nonunion workers."

Unions tend to raise the wages of low-skilled workers by more than they raise the wages of high-skilled workers, though. Card estimates that in 1987 the wages of union members in the lowest fifth of the wage distribution were 27 percent higher than the wages of otherwise similar nonunion workers. Union membership increased wages by only 11 percent for workers in the top fifth.

Unions also tend to reduce the variation in wages of men with similar skills. Adding the two wage effects together, Card estimates that unions reduced the overall variance of wages among men in 1987 by 7 percent.

Does R and D Make a Difference?

Although economists disagree strongly about the proper extent of government intervention in the economy, there is a broad consensus that a major government role is justified in support of scientific research. Most economists believe that the productivity increases that permit economic growth are caused primarily by technological development, which, in turn, depends upon scientific research. But because research results are often widely available, private parties may not be able to obtain the full benefits of their own research, causing them to spend less on research than the economy needs. If government supplements private research spending, perhaps the amount of research performed will rise to a more desirable level, thereby increasing the rate of economic growth.

According to NBER Research Associate **Frank Lichtenberg**, however, that conventional argument for government R and D spending may not hold water. In **R and D Investment and International Productivity Differerences** (*NBER Working Paper No. 4161*), Lichtenberg finds that privately funded research and development has strong positive effects on both the level and the growth of productivity. However, he says, the measured social benefit of government-funded research is far less than the measured social benefit of private research, and even may be so low that the benefits of the research are outweighed by the costs of undertaking it.

Lichtenberg examines the magnitude of government-funded and privately funded R and D spending, as well as investment in both fixed and human capital, in 53 countries. The data show decisively that private R and D spending has major effects on both the level and the growth rate of productivity. In fact, Lichtenberg finds, the social rate of return to private R and D investment is about seven times as large as the return on equipment and structures. Government-funded R and D, however, is an entirely different story. The net impact on productivity of government R and D is lower than the return on privately funded R and D, and may be nil or even negative, he reports.

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While his research highlights the importance of private R and D to productivity growth, Lichtenberg warns that his findings about the negligible impact of government-funded R and D on productivity should be interpreted with caution. The reason, he says, is that productivity is not measured well in many of the sectors in which much government R and D is conducted, such as defense and health care. This makes it difficult to measure the economic benefits of that spending. However, even if the impact of government R and D spending on productivity is positive, the equivalent amount of R and D spending in the private sector likely would produce higher returns. "There may well be unmeasured benefits from government research, but the opportunity costs, in terms of measured growth, may be substantial," he concludes.

New NBER Book

Bretton Woods Book Is Available

A Retrospective on the Bretton Woods System: Lessons for International Monetary Reform, edited by Michael D. Bordo and Barry J. Eichengreen, is now available from the University of Chicago Press. This volume is particularly relevant to current discussions concerning the future of the European Monetary System and the turbulence it experienced this fall. Nearly 50 years ago, in 1944, delegates from 44 countries assembled in Bretton Woods, New Hampshire to attend a United Nations Monetary and Financial Conference. The focus of their meeting was negotiation of a "new world order," to help industrialized countries emerging from World War II to cope with trade and capital imbalances and to supervise a system of fixed exchange rates that came to be known as the Bretton Woods System. In August 1971, President Nixon suspended the system by ending the convertibility of dollars into gold, thus cutting exchange rates loose.

The papers in the Bordo/Eichengreen volume were presented at a 1991 NBER conference that brought together academics and policymakers to discuss the historical impact of the Bretton Woods System. This book is divided into four sections: 1) an overview of the Bretton Woods System; 2) the successful operation of Bretton Woods, and the causes of its collapse; 3) the Bretton Woods experience in light of subsequent monetary regimes; and 4) an epilogue by Eichengreen summarizing the volume's main findings and their implications for monetary reform today.

Both Bordo and Eichengreen are NBER research associates in the monetary economics program. Bordo is also a professor of economics at Rutgers University; Eichengreen is a professor of economics at the University of California, Berkeley.

This volume is priced at $75.00 and may be ordered directly from the University of Chicago Press, Order Department, 11030 South Langley Avenue, Chicago, IL 60628. Academic discounts of 10 percent for individual volumes and 20 percent for standing orders for *all* NBER books published by the University of Chicago Press are available to university faculty; orders must be sent on university stationery.

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