

IN THIS ISSUE

- 401(k) Plans Raise Total Saving
- Why Don't Americans Hold More Foreign Stock?
- Orphan Drugs Cure Rare Diseases
- Buying a Car on the Internet

401(k) Plans Raise Total Saving

In *The Transition to Personal Accounts and Increasing Retirement Wealth: Macro and Micro Evidence* (NBER Working Paper No. 8610), authors **James Poterba, Steven Venti, and David Wise** explore the evolution of U.S. retirement savings over the 1980s and 1990s. In 1980, 92 percent of private retirement saving contributions were to employer-based plans and 60 percent of all contributions were to defined benefit (DB) plans. Today, defined contribution (DC) savings plans — 401(K)s and similar employee-controlled retirement plans — account for about 85 percent of private retirement saving contributions. The shift from defined benefit to defined contribution plans reflects several factors, including changing regulations on DB plans and greater worker demand for pensions that are portable from one job to another.

The authors argue that the growth of 401(k) plans has raised national saving. On average, the combined employer and employee contribution per active participant to 401(k) plans has been about twice as large as the employer contribution per participant to DB plans. This suggests greater wealth accumulation under DC plans. The researchers estimate that between 1984 and 1997, total contributions to all pension plans

of people with a 401(k) plan were three times as great as they would have been in the absence of the 401(k) program.

Poterba, Venti, and Wise find no evidence of strong substitution between 401(k) participation and participation in other retirement plans. They point out that

“The combined employer and employee contribution per active participant to 401(k) plans has been about twice as large as the employer contribution per participant to DB plans.”

the growth in defined contribution assets has been so large that it is unlikely that all of this asset growth has come at the expense of what would otherwise have been defined benefit plans.

There are potentially important differences between accumulating retirement assets in defined contribution and defined benefit plans. Saving in a 401(k) plan is transparent and the individual largely decides how much to contribute, how to invest, and how and when to withdraw the money. This contrasts with far more opaque DB plans in which the employer makes these decisions, and in which the employee may not understand the accruing value of retirement assets. Individuals with 401(k)s are also likely to

work longer and contribute for more years than those who rely on DB pensions, since many DB plans include provisions that make it financially attractive to retire early.

Assuming that current defined contribution pension coverage rates persist for the next three

decades, the average 401(k) balances of people who will reach retirement age in 2035 will be roughly as large as the present value of their Social Security benefits. The precise value of DC plan balances will of course depend on asset market returns over the next thirty years.

The retirement plan contribution rate is much greater than the personal saving rate reported in the National Income and Product Accounts (NIPA) in recent years. The treatment of retirement plan contributions and retirement payouts in the national income accounts contributes to the very low measured personal saving rate.

— Andrew Balls

Why Don't Americans Hold More Foreign Stock?

The fact that domestic companies represent 90 percent of the holdings in an average U.S. investor's stock portfolio — even though U.S. stocks represent only 49 percent of the world market — has prompted a range of theories, but no generally accepted explanation for this so-called “home bias.” Some analysts have blamed market barriers. Others view U.S. investors as lacking sufficient information on foreign equities. And then there are those who see in this imbalance overly optimistic expectations about the performance of homegrown assets.

But in **Corporate Governance and the Home Bias** (NBER Working Paper No. 8680), authors **Lee Pinkowitz, Rene Stulz, and Rohan Williamson** assert that at least some of the oft-noted tilt is not a bias at all but simply a reflection of the fact that a sizeable number of shares worldwide are not for sale to the average investor. They find that comparisons of U.S. portfolios to the world market for equities have failed to consider that the “controlling shareholders” who dominate many a foreign corporation do not make their substantial holdings available for normal trading.

Take this into account, the authors argue, and as much as half of the home bias disappears. A more accurate assessment of globally available shares, they say, would show that about 67 percent of a properly balanced U.S. portfolio would be invested in U.S. companies.

“We show that the home bias is intricately linked to corporate governance,” the authors write. “When companies are controlled

by large investors, portfolio investors are limited in the fraction of a firm they can hold.” For example, in examining 51 countries they find that, on average, 32 percent of the shares are not available for trading. The United States has the lowest percentage of controlling shareholders, with only 7.9 percent of domestic stocks “closely held” followed by the United Kingdom at 9.9 percent. But the authors note that, except for Ireland, Sri Lanka, the United States, and the United Kingdom, “no country has a ... controlling ownership of less than 20 percent,” and in 23 countries, controlling ownership ex-

ceeds 50 percent.

“With our results, the removal of barriers to international investment cannot make the home bias disappear,” the authors conclude. “For the home bias to disappear it is necessary for investor rights to improve across countries where firms are mostly controlled by large shareholders...”

Pinkowitz, Stulz, and Williamson also believe their insights should prompt a re-evaluation of the notion that foreign investors sell their stocks more frequently than domestic investors. Such a conclusion, they state, is flawed because it includes in the equation controlling shareholders, a unique class of domestic investors who

“A more accurate assessment of globally available shares would show that about 67 percent of a properly balanced U.S. portfolio would be invested in U.S. companies.”

ceeds 50 percent.

Pinkowitz, Stulz, and Williamson observe that controlling shareholders are not interested in selling off their stocks at the mere market price. The authors point to previous studies demonstrating that “the benefits from control are substantial in most countries,” placing the value of such holdings above those of ordinary shares and thus not practical for the typical foreign investor.

Therefore, the authors believe efforts to make foreign stocks more attractive to domestic investors need to move beyond the current focus on market barriers. They conclude that considerably more attention must be given to how corporate governance repels investors who might otherwise replace some of their domestic stocks with foreign equities.

as a rule do not trade their stocks. Comparing their selling habits to foreign investors gives a misleading impression that foreign investors trade more frequently, when in fact the opposite may well be true.

Finally, Pinkowitz, Stulz, and Williamson note that stock holdings of controlling shareholders could explain why foreign investors seem to show a bias toward purchasing stock in large firms. The authors note that in the United States, the smaller the company, the more likely a large amount of its shares are controlled by “inside ownership.”

“If this fact for the U.S. holds across countries, then the fraction of shares available to foreign investors is likely to be proportional to (a company's) size,” they conclude.

— Matthew Davis

Orphan Drugs Cure Rare Diseases

In the past two decades, a surge of new drugs aimed at treating rare (or “orphan”) diseases has increased the life expectancy of the average American by about two and a quarter months, according to NBER Research Associate **Frank Lichtenberg**. In **The Effect of New Drugs on Mortality from Rare Diseases and HIV** (NBER Working Paper No. 8677) he notes that, before Congress passed the Orphan Drug Act in January 1983, very few new drugs designed to treat rare diseases — diseases affecting fewer than 200,000 Americans — came to market. The average annual number of drugs for rare diseases brought to market after the Act was passed (during 1983-99) was 12 times as great as it had been during 1973-82.

The Orphan Drug Act and its subsequent amendments were meant to encourage the development of drugs that otherwise might be uneconomic by guaranteeing the developer of such products seven years of market exclusivity following their approval by the Food and Drug Administration. The Act also provided a tax credit, and established a clinical research grants program whereby researchers could compete for funding to conduct clinical trials that might support the approval of these drugs for rare diseases.

Lichtenberg’s study indicates that these new drugs did reduce mortality rates from rare diseases. Prior to the Act, mortality from rare disease grew at the same rate as mortality from other more common diseases. In the five years after the Act, mortality from

the life of a victim.

In a similar vein, the average annual number of drugs brought to market to treat Human Immunodeficiency Virus (HIV) during 1994-8 was three times as great as during 1987-93. In the case of HIV, the increase in drugs

“One additional orphan drug approval is estimated to have prevented 211 deaths in the subsequent year.”

these rare diseases — such as Huntington’s disease, myoclonus, ALS, Tourette’s syndrome, and muscular dystrophy — grew more slowly than mortality from other diseases. One additional orphan drug approval is estimated to have prevented 211 deaths in the subsequent year, and ultimately prevented 499 deaths from rare diseases. The 216 orphan drugs approved since 1983 thus are estimated to ultimately prevent 108,000 deaths from rare diseases. Deaths from rare diseases occur about five years earlier than deaths from common diseases.

Lichtenberg batches all the orphan drugs together in reaching his conclusions because the data does not allow for separating out the impact of each individual drug on the sufferers from a specific disease. Nor does it indicate whether a specific drug actually cures a disease or just prolongs

occurred after AIDS (first reported in 1981) was identified as being caused by HIV in 1984. In the 1990s, the average length of time required to develop a drug that was approved was about 15 years. These new drugs played a key role in the post-1995 decline in HIV mortality, Lichtenberg’s evidence indicates.

Each additional HIV drug approval is estimated to prevent 5,986 deaths in the year subsequent to that approval and ultimately 33,819 deaths in total. The average life span of an individual infected with HIV has been about 40 years; that compares with an average life expectancy for Americans of about 73 years. Lichtenberg’s work indicates that the life expectancy of HIV victims has been prolonged by the drugs, but it is too early to indicate by how many years.

— David R. Francis

Buying a Car on the Internet

In **Cowboys or Cowards: Why Are Internet Car Prices Lower?** (NBER Working Paper No. 8667) and **Consumer Information and Price Discrimination: Does the Internet Affect the Pricing of New Cars to Women and Minorities?** (NBER Working Paper No. 8668) authors **Fiona Scott Morton, Jorge Silva-Risso, and Florian Zettelmeyer** explore whether people buying new cars through the largest U.S. online car buying service pay lower prices, how much lower those prices are, and whether women and minority buyers disproportionately benefit from transacting business online. They conclude that buyers do gain from using the Internet — they save approximately 2 percent on average — and Hispanic and African-American buyers save an additional 1.5 percent by using the Internet.

Combining data from J. D. Power and Associates and Autobytel.com, the authors are able to compare the online prices — paid by 3.1 percent of the dataset of 671,846 — and the remaining purchase prices, while at the same time controlling for characteristics of the cars and transactions. When the authors

further control for who chooses to use Autobytel.com, the estimated causal effect of buying via the Internet increases to over 2 percent. This suggests that the consumers using this service disproportionately dislike bargaining and would have done poorly through the traditional channels;

“Those who lack information about cars, or have personal characteristics that put them at a disadvantage in negotiations, benefit the most from the information and the low search costs provided by the Internet.”

in other words, those who choose to use the Internet have the most to gain from it. The authors conclude that online buying could save Autobytel customers alone as much as \$240 million per year.

The second paper examines the prices paid by different demographic groups using the buyer's last name as an indication of ethnicity and the buyer's first name as an indication of gender. The authors also use census data for race and ethnicity data at the neighborhood level.

They find that African-American and Hispanic buyers pay about 1.5 percent more for

their cars than the equivalent white buyer. Within this dataset, that result holds even for relatively well-educated or high-income buyers, or those who did not get financing from the dealer. The result is not driven by minorities purchasing at higher-cost dealerships, but is explained partially by

higher search costs faced by minority buyers. However, minority buyers who use the Internet referral service pay the same price as white consumers, despite the fact that dealers likely know the race or ethnicity of the buyer. Women pay about 0.5 percent more than men on average. Still, the authors conclude that those who lack information about cars, or have personal characteristics that put them at a disadvantage in negotiations, benefit the most from the information and the low search costs provided by the Internet.

— Linda Gorman



The National Bureau of Economic Research is a private nonprofit research organization founded in 1920 and devoted to objective quantitative analysis of the American economy. Its officers are:

Martin Feldstein — President and Chief Executive Officer

Susan Colligan — Vice President for Administration and Budget

Carl F. Christ — Chairman

Michael H. Moskow — Vice Chairman

Contributions to the National Bureau are tax deductible. Inquiries concerning the contributions may be addressed to Martin Feldstein, President, NBER, 1050 Massachusetts Avenue, Cambridge, MA 02138-5398.

The NBER Digest summarizes selected Working Papers recently produced as part of the Bureau's program of research. Working Papers are intended to make preliminary research results available to economists in the hope of encouraging discussion and sug-

gestions for revision. The Digest is issued for similar informational purposes and to stimulate discussion of Working Papers before their final publication. Neither the Working Papers nor the Digest has been reviewed by the Board of Directors of the NBER.

The Digest is not copyrighted and may be reproduced freely with appropriate attribution of source. Please provide the NBER's Public Information Department with copies of anything reproduced.

Preparation of the Digest is under the editorial supervision of Donna Zerwitz, Director of Public Information.

Individual copies of the NBER Working Papers summarized here (and others) are available free of charge to Corporate Associates. For all others, there is a charge of \$5.00 per downloaded paper or \$10.00 per hard copy paper. Outside of the United States, add \$10.00 per order for postage and handling. Advance payment is required on all orders. To order, call the Publications Department at (617) 868-3900 or visit

www.nber.org/papers. Please have the Working Paper Number(s) ready.

Subscriptions to the full NBER Working Paper series include all 500 or more papers published each year. Subscriptions are free to Corporate Associates. For others within the United States, the standard rate for a full subscription is \$1850; for academic libraries and faculty members, \$1070. Higher rates apply for foreign orders.

Partial Working Paper subscriptions, delineated by program, are also available. For further information, see our Web site, or please write: National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138-5398.

Requests for Digest subscriptions, changes of address, and cancellations should be sent to Digest, NBER, 1050 Massachusetts Avenue, Cambridge, MA 02138-5398. Please include the current mailing label.