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Taxes Discourage Mutual Fund Investors

In **Do After-Tax Returns Affect Mutual Fund Inflows?** (NBER Working Paper No.7595), **Daniel Bergstresser** and NBER Research Associate **James Poterba** show that at least some mutual fund investors seem to care a great deal about taxes. In a related paper — **Tax Externalities of Equity Mutual Funds** (NBER Working Paper No.7669) — **Joel Dickson**, **John Shoven**, and **Clemens Sialm** explain why, demonstrating that investors who fail to pay attention to aftertax returns may well end up considerably poorer.

In 1995, just over half of all mutual fund investments were taxable, while the others were held through tax-deferred accounts, such as IRAs. Bergstresser and Poterba use asset and return data provided by Morningstar to track mutual fund inflows; their analysis includes a large sample of U.S. domestic equity funds from 1993 to 1998. The number of funds included in their sample grew from 509 in 1993 to 1607 in 1998.

They find that funds that place higher tax burdens on their investors, by earning a higher fraction of their return in the form of dividends and interest, or by distributing more realized capital gains, are likely to experience lower cash inflows than other funds with similar pretax returns but lower tax burdens. Estimates of the future taxes incurred by investors in each fund in their sample show that the individual tax burden varies by as much as 3 percentage points. Tax burdens even affect mutual fund cash inflows after adjustments for risk, pretax performance, fund age, size, investment strategy, and rating. Funds with large embedded capital gains, that is funds that are likely to distribute greater amounts of realized capital gains in the future, are likely to have both lower gross cash inflows and lower gross cash outflows. This reflects two factors: investors avoid getting into funds likely to distribute capital gains and avoid cashing out of funds with large undistributed capital gains.

For their paper, Dickson, Shoven, and Sialm calculate the aftertax returns on a variety of simulated mutual funds in order to determine the extent to which investors' aftertax returns depend on the actions of other people. Their simulated mutual funds are constructed using historical returns from 1984 to 1998 for the 50 companies with the largest market capitalization on the NYSE, AMEX, and Nasdaq in 1983.

As these three authors explain, new investors in a mutual fund dilute the overall capital gain position of the fund and make tax-sensitive accounting techniques more powerful in reducing the overall tax burden faced by investors. New cash inflows may eliminate the need for the fund to realize capital gains by selling securities to pay shareholders wishing to redeem their shares. Tax efficient accounting techniques that minimize gains by selling the highest cost share of a particular security first can improve aftertax returns. The authors look at alternative investment policies for actively managed funds and demonstrate the aftertax superiority of a policy of systematically divesting stocks with substan-

"Investors avoid getting into funds likely to distribute capital gains and avoid cashing out of funds with large undistributed capital gains."

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tial losses rather than deleting securities with large capital gains.

Dickson, Shoven, and Sialm assume for this study that investors face a 39.6 percent marginal tax rate on ordinary income and a 20 percent marginal tax rate on realized long-term capital gain distributions. They conclude that a fund's aftertax return is significantly affected by its accounting method, its cash inflows, whether or not it is closed to new buyers, and whether it follows an active or a passive investment strategy. Even with very similar before-tax returns, the differences in after-tax returns for different mutual fund accounting and management policies can amount to as much as 4 percent per year.

—Linda Gorman

An Investment-Based Social Security System Can Benefit Low-Income Groups

One of the most talked about problems facing the United States is the impending Social Security funding crisis. Social Security payroll taxes will have to rise sharply to meet the needs of growing numbers of elderly Americans or else future benefits will be slashed. An alternative to this dire scenario is to introduce an investment-based social security system. Until now, one of the major criticisms of such a plan was that it would leave low-income earners much worse off. But a new NBER study by **Martin Feldstein** and **Jeffrey Liebman** finds that is simply not the case. In fact, their results show that it is possible to design an investment-based plan under which the vast majority of retirees would have higher benefits than they would under the current pay-as-you-go system.

In **The Distributional Effects of an Investment-Based Social Security System** (NBER Working Paper No. 7492), Feldstein and Liebman compare both average and individual benefits under the current social security system with benefits under a pure investment-based system and a mixed system. Although they acknowledge that a pure investment-based approach is not a realistic option, the authors argue that it is worth using as a benchmark. A more realistic option would be a mixed approach that incorporates the stability of the current system with the higher funding potential from an investment-based plan.

Under a mixed system, Feldstein and Liebman assume that the payroll tax funding the traditional benefit remains at the current 12.4 percent rate and that the investment component amounts to an additional 3 percent contribution to Personal Retirement Accounts (PRAs) that invest 60 percent in stocks and 40 percent in bonds. Given this mixed system, the authors find that in the long run more than 90 percent of individual retirees would be better off than under the current system, even assuming market returns below those experienced in the post-war period. On average, retirees would experience a 39 percent increase in their annual benefits. In addition, all demographic groups regardless of marital status, race, and education experience an increase in average benefits under the mixed plan.

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So who are the big winners under the mixed plan? According to the study, whites gain more than blacks under a mixed system, but the potential poverty reduction among blacks is more substantial than whites. Hispanics gain the least, but the authors believe this is because their sample includes a large number of immigrants who receive substantial benefits under the existing social security system. The potential poverty reduction for elderly widows is large as well.

Another important benefit of shifting to a mixed system is that it reduces the long-run cost of funding Social Security. Feldstein and Liebman point out that if the current system remained in place, payroll tax rates would have to rise from today's level of 12.4 percent to 19 percent to maintain the level of retiree benefits projected in current law. By increasing current contribution rates, the mixed system results in much higher benefits for virtually all groups at a substantially lower long-run cost. Instead of the additional 6.6 percent increase in taxes, a mixed system would involve only a 3 percent increase in the form of new savings contributions.

As an added safety check to their study of pure and mixed systems, Feldstein and Liebman examine what happens to benefits if the investment picture deteriorates. In their base scenario, the authors assume a real rate of return on investments of 5.5 percent (quite low by historic standards). But to lay any criticism to rest that returns may be much lower in the future, they adopt a real rate of return of 3.5 percent. Even taking into account a much lower rate of return, retirees on average are still better off under a mixed system. Average benefits in the scenario would amount to $9,401 in the mixed plan versus $9,280 under the current system.

—Anna Bernasek

Marijuana Prices and Use

Marijuana is the illicit drug most commonly used by adolescents, and it has been for at least 25 years. Research shows a significant correlation between marijuana use and poor school grades, as well as between marijuana use and dropping out of school.

In **Marijuana and Youth** (NBER Working Paper No. 7703), authors **Rosalie Pacula**, **Michael Grossman**, **Frank Chaloupka**, **Patrick O'Malley**, **Lloyd Johnston**, and **Matthew Farrelly** ask whether price influences the demand for marijuana among youth, and how the drug's perceived harm may affect adolescents' use of the substance. They find that changes in the price of marijuana contributed significantly to the trends in marijuana use between 1982 and 1998, especially to the reduction in usage that occurred from 1982 to 1992. Similarly, youths' perceptions of the potential harmful effects of marijuana use had a substantial impact on both the reduction in use from 1982 to 1992 and the subsequent increased use after 1992.

Using data from the Monitoring the Future surveys, the authors look at thirty-day, annual, and lifetime marijuana use among nationally representative samples of American high school seniors. From 1981 to 1992, marijuana use among high school seniors declined to a recorded low of 12 percent in the previous thirty days, 22 percent in the previous year, and 33 percent reporting use at any point in their life. After 1992, the trend reversed itself, and by 1998 seniors reported increased usage rates of 23 percent, 38 percent, and 49 percent respectively. The increase was consistent among both genders and all ethnic groups.

The behavior of price during the time periods from 1982-92 and after 1992 reflect the adolescent usage. In the earlier period, the price of marijuana more than tripled, while potency fell by 22 percent. Since 1992, price has fallen by 16 percent and potency has increased by 53 percent. During those same periods, adolescent marijuana use also seems to have been influenced by perceptions of the harm that marijuana may cause. These perceptions correlate, in part, with the rise and fall of media campaigns designed to illustrate to youth the potential harm of marijuana use. The authors conclude that it is useful to consider price, in addition to more traditional determinants, in any analysis of marijuana use by youths.

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—Lester A. Picker

High Income Taxpayers are More Responsive to Marginal Tax Rates

In **The Elasticity of Taxable Income: Evidence and Implications** (NBER Working Paper No. 7512), NBER Research Associate **Jonathan Gruber** and co-author **Emmanuel Saez** show that the overall elasticity of taxable income with respect to changes in net-of-tax marginal rates is 0.4. That is, a 10 percent change in the marginal net-of-tax rate (that is, the difference between 100 percent and the marginal tax rate) leads to a 4 percent change in taxable income. Gruber and Saez demonstrate that this elasticity is primarily the result of a greater response by taxpayers with high incomes.

Their analysis is based on a study of U.S. tax reforms in the 1980s. There were two major federal tax reforms, the Economic Recovery Tax Act of 1981 and the Tax Reform Act of 1986. As a result, the top marginal tax rate at the federal level fell from 70 percent in 1980 to 28 percent by 1988, and the income tax schedule was reduced from 15 brackets to four. The authors also assess the parallel impact of numerous state reforms over the period.

They show that taxpayers with incomes above $100,000 per year (in 1992 dollars) have an elasticity of 0.57, much higher than the 0.4 result for the whole sample. Below $100,000, the elasticity is much lower; it is 0.11 for those in the $50,000-$100,000 group and 0.18 for those in the $10,000-$50,000. These

results are based on a study of the NBER's panel of tax returns over the 1979-90 period.

For lower income groups, labor income accounts for most of their income. Since labor income tax is withheld, the only way to manipulate income is to work more, or less. For higher income groups, capital income is more important, and this is more readily manipulated for tax purposes through asset allocation decisions. The researchers show that taxpayers with itemized returns have particularly high elasticity.

Gruber and Saez go on to explore optimal income tax structures. Their results imply that, in general, the optimal tax system should be progressive on average but not at the margin. There could be a negative income tax for those with the lowest incomes, but this would be taxed away rapidly as income rises.

The high responsiveness of taxable income to changes in taxes among the highest income taxpayers suggests that the optimal tax system would feature declining marginal tax rates. To justify tax systems with rising marginal rates requires assumptions that give an extraordinarily low weight to the interests of higher-income groups.

> "To justify tax systems with rising marginal rates requires assumptions that give an extraordinarily low weight to the interests of higher-income groups."

The researchers build on a 1995 study by NBER President Martin Feldstein which showed that standard behavioral responses, such as working fewer hours or saving less, are only one component of what drives taxable income, and that other responses include the form of compensation and compliance. Feldstein found that the overall elasticity of taxable income was very high for the Tax Reform Act of 1986. Subsequent empirical research has generated a lower range of estimated elasticities, from one to zero.

Gruber and Saez's estimate for the overall elasticity of taxable income of 0.4, below the original Feldstein findings, is roughly at the midpoint of the subsequent literature. One problem with earlier studies, corrected by Gruber and Saez, is that they tended to look at all income groups together. A second improvement in this work is that by drawing on the entire set of federal and state reforms in the 1980s, Gruber and Saez are better able to control for other factors in the that contributed to rising taxable income for high-income groups in the 1980 – such as the general widening of the income distribution owing to factors such as skill-biased demand shocks.

—Andrew Balls

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