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Taxes Make a Big Difference in Mutual Fund Performance

American consumers invest vast amounts in U.S. equity markets through mutual funds: \$67 billion in 1992 alone. The demand for information about mutual fund performance has resulted in a multitude of rankings by magazines, frequent coverage in newspapers and on television, and the creation of a small industry providing newsletters and tabulated data. Yet the most relevant performance information for most investors—the aftertax return on mutual funds—is rarely provided, according to a new NBER study by **Joel Dickson** and **John Shoven**.

In **Ranking Mutual Funds on an Aftertax Basis** (*NBER Working Paper No. 4393*), Dickson and Shoven document that taxes significantly affect both the level of returns on equity mutual funds for taxable investors, and the relative ranking of the funds. The authors evaluate the 150 largest mutual funds classified as “growth” or “growth and income” that had been in existence for over ten years as of October 31, 1992. They consider both the pretax return—important for investors whose funds are in tax-deferred IRAs or 401(k) plans—and the posttax return, calculated for individuals in three different tax brackets.

For the 62 funds with 30 years of returns, one dollar invested in 1963 would have grown to a median pretax value of \$21.89 by the end of 1992. The median posttax return is \$16.45, \$12.52, and \$9.87 for the low-, middle-, and high-income investors, respectively.

Results for the entire sample over the three ten-year subperiods were qualitatively similar. The authors note that over the 30-year period, even the worst-performing mutual fund in the sample provided a better return than an equivalent investment in U.S. Treasury bills. On an aftertax basis, the differences are huge. The median fund generates 3.9 times more wealth for the high-tax investor than T-bills over 30 years. The best-performing fund generates 16.5 times more.

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The difference between pretax and posttax performance rankings is also dramatic. Each

fund is given a percentile ranking, with the worst fund at zero and the best at 100. The fund with the highest posttax ranking over 30 years is Twentieth Century Growth. The average fund in the sample gains or loses 9.7 percentile points after taking taxes into account. The Franklin Growth Fund has the biggest single change in relative position over 30 years, improving its rank by 41.9 points: it goes from the 19.4 percentile on a pretax basis to the 61.3 percentile posttax, for the high-tax investor.

Dickson and Shoven conclude that mutual funds seem to pay very little attention to shareholder-level taxes, and that the pretax mutual fund rankings that are published regularly in the major financial magazines do a poor job of providing the performance information that taxable investors would find useful. RN

Police Resources Deter Crime

Crime rates, particularly for violent offenses, began rising rapidly during the second half of the 1980s. As with previous crime waves, the present wave results largely from the activities of young men. In 1990, 70 percent of the individuals arrested in the United States were between 16 and 34, and over 80 percent were male.

In **Criminal Deterrence: Revisiting the Issue with a Birth Cohort** (*NBER Working Paper No. 4277*), **Ann Dryden Witte** and **Helen Tauchen** find that the criminal activities of young men in urban areas can be lowered by increasing the level of police resources. Interestingly, it appears that the threat of arrest is a more significant deterrent for individuals with limited previous contact with the criminal justice system than for active and hardened criminals, such as prison releasees.

While Witte and Tauchen find that increased police resources have a robust and significant general deterrent effect, their results indicate that the magnitude of that effect is not large. They estimate that increasing real police resources by 10 percent over eight years would reduce by 5 percentage points the proportion of young

men engaging in crime during their late teens and early 20s. That is, the proportion of young men in their sample who don't commit crimes would rise from 85 percent to 89 percent. Such an increase in police resources might decrease the proportion of young, urban males arrested from the estimated 15 percent in their sample to 11 percent.

“The criminal activities of young men in urban areas can be lowered by increasing the level of police resources.”

Witte and Tauchen find that school attendance and work decrease criminality by approximately the same amount. It appears to be important to keep young men busy doing something legitimate—it does not seem to matter whether the legitimate activity is school or work.

Witte and Tauchen also learn that graduating from high school does not affect criminality significantly, but that the young men who attend private, generally parochial schools, are less likely to be arrested than those attending urban public schools. This may stem from peer group effects, or habituation to a more disciplined, less criminal environment. Witte and Tauchen find no evidence that growing up in immigrant families or in low-income neighborhoods affect arrest rates, though.

Bank Loans Have Little Impact on Output

Monetary policy may affect the economy not only by changing the money supply, but also by changing the ability of banks to lend. This additional mechanism, known as the “credit channel,” kicks in when tight monetary policy decreases the supply of bank loans, adversely affecting those firms and individuals who must rely on banks for credit.

In **How Important Is the Credit Channel in the Transmission of Monetary Policy?** (*NBER Working Paper No. 4285*), **Valerie Ramey** asks whether the behavior of bank loans provides ad-

ditional information about aggregate output beyond what is contained in monetary variables. Using monthly data from 1954 to 1991, she studies the *velocity* of real total bank loans and of the monetary aggregate, real M2: that is, the ratio of output to each financial variable. Monetary policy is believed to have effects only in the short run, and fluctuations in velocity represent the short-run deviations of M2 from its long-run relationship with output.

“. . . once the behavior of money is taken into account, aggregate bank loan variables do not contain additional information about the future movements in output.”

If Ramey ignores M2 velocity, then bank loan velocity helps to predict future movements in output. A fall in bank loans relative to output in the current period predicts that output will fall in the next period. But once the information from M2 velocity is used, bank loan velocity no longer helps to predict future output in a manner consistent with the credit view, Ramey finds. Thus, M2 velocity seems to capture all the relevant information about monetary policy.

Ramey also finds that an increase in the federal funds rate causes output to fall for a year, and then return to normal after three years. When M2 velocity cannot respond to the change in the funds rate, output does not fall. When bank loan velocity cannot respond to the funds rate, on the other hand, output falls by as much as in the bank case. This implies that virtually all of the impact of the funds rate on output is through the money channel, rather than the bank loan channel.

Finally, Ramey investigates two other credit variables to see whether they perform any better than bank loan velocity. A variable measuring the difference in loan growth between small and large firms does provide some evidence for the credit channel. That is, even after including the information from M2 velocity, a decline in the growth rate of loans of small firms relative to large firms signals a future decline in output. There is a small change in the behavior of output when the loan growth variable is not allowed to respond to monetary policy.

In summary, once the behavior of money is taken into account, aggregate bank loan vari-

ables do not contain additional information about the future movements in output. Only a variable that measures differences across firms contains some additional information. This suggests that the aggregate importance of the bank loan channel is small.

Currency Intervention and Monetary Policy Are Tightly Linked

Central banks frequently buy and sell currencies in the foreign exchange market in order to help stabilize exchange rates. Since such intervention is almost always small relative to the total amount of currency trading, some scholars contend that it is an ineffectual tool for exchange rate management. Other scholars have argued that intervention affects the exchange rates because it heralds the future direction of monetary policy. To consider this possibility, NBER Research Associate **Karen Lewis** asks whether intervention in fact is a predictor of future monetary policy.

“Intervention does help predict monetary policy.”

In Are Foreign Exchange Intervention and Monetary Policy Related and Does It Really Matter? (*NBER Working Paper No. 4377*), Lewis analyzes the effect of Federal Reserve currency interventions from 1985 to 1990 on four carefully watched indicators of monetary policy: the basic money supply (M1); the monetary base; nonborrowed reserves; and the federal funds rate. Intervention does help predict monetary policy, she finds, for the four measures she considers. Conversely, changes in M1 and in the monetary base, but not in Fed funds or nonborrowed reserves, are useful predictors of intervention. An increase in the growth rate of either variable—which, all other things being equal, would tend to depress interest rates and thus cause the dollar to depreciate—is likely to be fol-

lowed within two weeks by Fed purchases of dollars.

But are monetary variables truly indicators of exchange rates? To investigate this question, Lewis examines how shocks to U.S. monetary policy affected dollar-mark and dollar-yen exchange rates over the subsequent 22 weeks. A 1 percent increase in M1 affects the dollar-mark exchange rate in about four weeks and depresses the dollar for three months thereafter, she finds, but has no discernible impact on the dollar-yen rate. Shocks to nonborrowed reserves affect the exchange rate only after four weeks, and sudden increases in Fed funds have no statistically significant effect on exchange rates at all. Monetary variables have greater predictive

power when foreign interest rates are brought into the equation, indicating that changes in the monetary policies of both countries must be considered in predicting bilateral exchange rates.

The cause of the relationship between foreign exchange intervention and monetary policy, Lewis suggests, is the Fed's effort to "sterilize" international financial flows so as to minimize their impact on the domestic money supply. When the Fed buys foreign currency with dollars, it reduces the amount of nonborrowed reserves in the banking system, effectively tightening monetary policy. The subsequent increase in the growth rate of monetary variables may be caused by Fed attempts to resume the path it was pursuing prior to the intervention. ML

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