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The Economic Effects of Dividend Taxation

The double taxation of dividends under current law, first as corporate income and then as personal income, raises the cost of capital to American firms and reduces investment. That is the main finding of a recent NBER study by **James M. Poterba** and **Lawrence H. Summers** (*Working Paper No. 1353, The Economic Effects of Dividend Taxation*).

Taxes on dividends may reduce the aftertax rate of return that individuals receive on their investments in equity. If this is so, then stockholders will require higher pretax returns, either in the form of dividends or capital gains from retained earnings. This increase in the cost of capital may reduce corporate investment. Moreover, the higher tax burden on dividend payments will reduce corporate payout ratios.

Poterba and Summers point out that estimating the effects of dividend taxes on corporate decisions is difficult with American data because dividend taxes in the United States have remained relatively constant since World War II. They therefore use data from Britain, where four major tax reforms have created substantial variation in the effective marginal tax rates on dividend income received by British investors. British data thus provide what the authors describe as an "ideal natural experiment for studying the economic effect of dividend taxes."

Poterba and Summers use three kinds of evidence to estimate these effects. First, they look at the changes in share prices around ex-dividend days to see whether stockholders value dividends. Prior to an ex-dividend day, shareholders who purchase stock are

entitled to receive a specified dividend. After the ex-day, however, new investors are ineligible for the cash payment. By comparing the change in the share price on the ex-day with the amount of the cash dividend, it is possible to estimate the value that investors place on the dividend payment. If the tax system affects this valuation, then the relationship between price movements and dividend payments should vary as the tax rate on dividends changes. By studying the ex-day price movements for a sample of large British firms during the last 30 years, Poterba and Summers show that "changes in the tax rates facing typical investors have important effects on the market valuation of dividends," and therefore are likely to influence corporate decisions on dividend payments.

Second, Poterba and Summers examine dividend payments directly to see the effect of changes in dividend tax rates on dividend payments by corporations. Using data on the total dividend payments by the Industrial and Commercial Companies in Great Britain, Poterba and Summers estimate that a 1 percent increase in the dividend tax burden reduces the payout ratio by nearly 1 percent.

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Finally, the authors analyze the responsiveness of investment spending to changes in dividend taxation. Using aggregate data on investment for 1948-

82, they find that raising tax rates on dividends tends to reduce investment.

Of course there are some important differences between the tax systems, and the firms, in the United States and Great Britain. However, Poterba and Summers conclude that their results convey important evidence about the effects of dividend taxation in the United States. Such taxes are likely to decrease dividends, increase the cost of capital to firms, and decrease corporate investment.

Money Supply Announcements and Interest Rates

In recent years, interest rates have risen immediately whenever the Fed has announced that the money supply has grown more rapidly than expected. **Thomas Urich** and NBER Research Associate **Paul Wachtel** find that this rise in interest rates is caused largely by anticipations of future Fed policy. In *The Effect of Inflation and Money Supply Announcements on Interest Rates*, NBER Working Paper No. 1313, they show that policy anticipations, rather than changes in expected inflation, explain this phenomenon.

In attempting to solve the puzzle of why an unexpected increase in the *supply* of money should lead to an increase (rather than a decrease) in interest rates, economists have usually proposed two explanations. The first, called the policy anticipations effect, says that when the Fed announces money growth above its target range, the market anticipates slower money growth in the next period. This anticipation drives interest rates up.

A second explanation of the announcement effect is based on inflationary expectations. With more money available, participants in financial markets expect the inflation rate to rise. Nominal interest rates then tend to rise in order to keep real rates unchanged. Thus an unanticipated increase in the money supply, by raising expectations of future inflation, would drive nominal interest rates up.

If this latter explanation is correct, then large, unanticipated increases in the inflation rate itself should have more of an impact on interest rates than similar changes in the money supply. Urich and Wachtel find that this is not the case. Unanticipated increases in the Consumer Price Index and the Producer Price Index do raise interest rates, but less so than money supply announcements.

Money supply announcements also are shown to move the overnight Fed funds rate. The term of this rate is so short that it cannot plausibly be affected by inflationary expectations. Therefore, announcements can only influence the Fed funds rate because of policy anticipations. Urich and Wachtel take this as further evidence in support of the policy anticipations explanation of interest rate movements.

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Finally, the authors observe that the announcements effect on interest rates has become stronger since the 1979 shift by the Fed from interest rate targeting to control of the money supply. Prior to October 1979, unanticipated changes in the money supply had no effect on the Fed funds rate. After that date, a \$1 billion unanticipated increase in the money supply has led on average to almost a ten-basis-point increase in that rate. This too is evidence that the market reacts to money supply announcements as an indicator of future Fed policy, rather than of future inflation.

For these reasons, Urich and Wachtel conclude that policy anticipations best explain the announcements effect on interest rates.

The International Linkage of Real Interest Rates

High U.S. interest rates have been a matter of constant controversy throughout the 1980s. European policymakers have argued that the high real interest rates (that is, rates adjusted for anticipated inflation) in the United States have not only attracted capital out of their countries but also have driven their domestic interest rates higher. High rates throughout the industrialized world, in turn, have been blamed for the failure of European countries to fully recover from the 1981–82 recession. New research by NBER associates **Robert E. Cumby** and **Frederic S. Mishkin** confirms that real interest rates have indeed been unusually high in the United States and seven other industrialized countries since 1979. In fact, rates in the United States have been the highest since the Great Depression, they say.

In *The International Linkage of Real Interest Rates: The European-U.S. Connection*, NBER Working

Paper No. 1423, Cumby and Mishkin provide support for claims that real interest rates have recently been at unprecedented levels. They also find a significant correlation between movements in U.S. rates and real rates in other countries. This correlation is consistent with the complaint that high U.S. rates have been transmitted abroad. However, their findings provide no evidence on the causation of high real rates and do not necessarily imply that U.S. rates have pushed up rates elsewhere.

What's more, Cumby and Mishkin find that the linkage of real interest rates across countries is significantly less than complete. Although real rates in different countries sometimes rise and fall together, they often exhibit considerable independence from one another. This independence exists within Europe as well as between Europe and the United States. For instance, Cumby and Mishkin find that the correlation between real rates in Germany and real rates in other European countries is about the same as the correlation of European real rates with U.S. real rates. Interestingly, real rates within the European Monetary System are no more closely related to German rates than are real rates outside the EMS.

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These findings have important implications for domestic monetary policy. If real interest rates in one country move in lockstep with the rest of the world, then that country's central bank cannot influence the economy by tightening or easing monetary policy. But if national real interest rates are at least partly independent, monetary authorities may be able to affect economic activity in their own countries.

To reach their conclusions, Cumby and Mishkin begin by estimating real short-term interest rates in the United States, Canada, and six European countries. They use monthly data from June 1973 through December 1983 adjusted by changes in consumer price indexes, the most reliable measure of prices for all the countries in the authors' study.

The data show an abrupt shift in real interest rate movements in the United States around the time that the Federal Reserve changed its operating procedures in October 1979. U.S. real rates had fluctuated around zero since 1973 but shot upward in late 1979. They declined briefly in 1980 when nominal interest rates declined temporarily but have been high and volatile ever since.

Real rates in all countries show a tendency to be higher in the 1980s than in the 1970s, but there are differences in the timing and extent of the movements. Canadian real rates declined from mid-1979 to mid-1980, but they have tracked U.S. rates fairly closely since then. Rates in Britain began rising about the same time as in the United States but did not become significantly positive until the summer of 1981. Italian and Dutch rates also have been higher, on average, than they were in the 1970s, although both countries went through a period in 1976 when real rates were particularly high. The timing of real rate movements in those two countries does not appear to be closely tied to movements in U.S. rates.

Real rates in Germany did climb in 1979, but their major increase did not begin until late 1980. The increase in French rates was even more delayed. Real rates in France hovered around zero until early 1981, when they shot up to around 6 percent. Swiss rates have followed their own pattern. The increase in Swiss rates began in early 1979, well before U.S. rates climbed. Moreover, Swiss rates have been much less volatile than rates elsewhere and have not climbed nearly as high. AE

Pricing FHA Mortgage Default Insurance

Logically, the premiums paid on mortgage default insurance should reflect the riskiness of the loans insured. In fact, the Federal Housing Administration (FHA) charges the same premium on all of its insured mortgages, regardless of how large or small the down payment is, the rate at which the mortgage is scheduled to repay, and whether or not payments could rise unexpectedly. This policy obviously leads to significant cross-subsidies, many of which are documented by **Donald F. Cunningham** and NBER Research Associate **Patric H. Hendershott**. Moreover, the policy could lead to significant losses for the FHA's mortgage insurance program if the mix of loans shifts to the riskier graduated-payment, adjustable-rate, and price-level-adjusted mortgages.

In **Pricing FHA Mortgage Default Insurance**, *NBER Working Paper No. 1382*, Cunningham and Hendershott estimate that graduated-payment mortgages (GPMs) with large down payments are generally two to three times more likely to default than traditional 30-year level-payment mortgages (LPMs).

Homeowners with GPMs with very small down payments are four to six times more likely to default. Although the current half-point premium is sufficient to cover default risks for 30-year LPMs with 5 percent down payments, it is too low for most GPMs, and too high for shorter-term LPMs, or LPMs with larger down payments. Premiums that more closely reflect the risk of default for different types of mortgages would reduce future losses to the FHA and reduce implicit subsidies from one group of borrowers to another.

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Cunningham and Hendershott estimate the likelihood of default on different types of mortgages by calculating the costs and benefits for hypothetical individuals. Individuals may choose to default when

the benefits of doing so exceed the costs. Those costs include loss of credit in the future, lost opportunities to buy another house, the possibility that creditors might seize other assets, and the psychic costs of defaulting. The primary benefit, on the other hand, is escaping from a mortgage that exceeds the value of the house. A small down payment and slowly (or negatively for a time) amortizing mortgages increase the likelihood that the value of the house will fall below the mortgage balance. A second benefit of default is the free rent from the date of the default to the date of foreclosure. The number of defaults will, of course, depend on the average rate of increase in housing prices and on the variation in price increases among houses.

The authors provide a number of specific examples to demonstrate the findings in their paper. For instance, they show that a 30-year mortgage with a 95.8 percent loan-to-value ratio is nearly four times as risky as one with an 88 percent ratio and thus should have four times as large an insurance premium. Among 15-year mortgages, the same difference in down payment requires twice the premium, while the difference in fair premiums is slightly less for GPMs. These differences are quite insensitive to the assumed level of default costs and to changes (and variability) in inflation rates.

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