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Changes in Tax Laws Affect Investment

The tax treatment of corporate income has a significant effect on firms' investment decisions, according to a recent NBER study. In **Tax Reforms and Investment: A Cross-Country Comparison** (*NBER Working Paper No. 5232*), **Jason Cummins, Kevin Hassett, and Glenn Hubbard** explain that the reason that previous studies failed to find such an effect is that they did not examine corporate investment both before and after major changes in the tax law.

After examining data for 1981–92 from more than 3000 firms in 14 countries—Australia, Belgium, Canada, Denmark, France, Germany, Italy, Japan, the Netherlands, Norway, Spain, Sweden, the United Kingdom, and the United States—Cummins, Hassett, and Hubbard find conclusively that corporate investment reacts to tax reform, changing significantly after the introduction of major tax legislation. For 12 of

the 14 countries studied—all but the Netherlands and Spain—changes in tax laws had a significant effect on the amount that firms invested. When corporate income tax rates fell, for example, the amount of investment increased.

If the costs of adjusting the capital stock were so high as to

Hassett, and Hubbard find that adjustment costs are only on the order of 5 to 10 cents per investment dollar—not large enough to inhibit the expected response.

Likewise, if a firm's management expects an investment tax credit to be removed, then it may pull into the current period

“For 12 of the 14 countries studied—all but the Netherlands and Spain—changes in tax laws had a significant effect on the amount that firms invested.”

make changing the rate of investment not worthwhile, then investment might not respond to taxation. One type of adjustment cost, for example, is the cost of shutting down a plant while capital equipment is added to the production line. But Cummins,

investment that otherwise might have been made in the future. If so, the large impact of corporate tax rates that the authors find would be the result of strategic timing of investment, thus overstating the long-run impact of tax law changes. But Cummins,

Hassett, and Hubbard point out that if strategic timing is important—as would be the case if firms fully anticipate the removal of an investment tax credit—then we should observe extreme “bunching” of investment around tax reforms. However, their data show little bunching. In the United States, for example, where a

generous investment tax credit was removed in 1986, very few firms shifted from a state of “very high” investment prior to the reform to a state of “very low” investment following the reform. In fact, the probability of observing such a transition from high to low investment was about the same before, during,

and after tax reform. In 1985, 9 percent of firms whose investment rates were less than 5 percent of their capital stock had had investment rates greater than 5 percent of their capital stock in 1984. In 1986, this was true of 8 percent of firms; in 1987, it was true of only 7 percent. DRH

Unemployment Insurance Reduces Saving and Wealth

One of the primary reasons that individuals save is to put aside money “for a rainy day.” This precautionary saving, which is motivated by the risk of adverse events, such as unemployment, is a significant, and perhaps the most important, determinant of how much wealth individuals ultimately accumulate. As a result, however, government programs that provide insurance for these very adverse events will

loss. In **Unemployment Insurance and Precautionary Savings** (*NBER Working Paper No. 5252*), **Eric Engen** and **Jonathan Gruber** demonstrate the negative effects that this program had on individual savings from 1984 to 1990. They find that raising the replacement rate for UI by 10 percentage points (that is, to 55 percent of lost earnings, on average) lowers individual holdings of financial assets by 1 to 5

These findings suggest that UI is “crowding out” a significant share of the savings that an individual otherwise would have as a precaution against unemployment risk. The average person who becomes unemployed spends about 13 weeks without a job. A 10 percentage point rise in the UI replacement rate during that period results in an additional \$547 of income during the unemployment spell. As a result, “. . . UI crowds out up to one-half of private savings for the typical unemployment spell,” Engen and Gruber conclude.

As would be expected, the authors find that this crowding out effect of UI is larger for workers who face a higher expected risk of unemployment. In addition, the effect is larger for younger workers, for whom precautionary saving (as opposed to saving for retirement) is the primary motivation for asset accumulation. The crowding out is also smaller for married workers, who can rely on a spouse should they lose their jobs. DRH

“UI crowds out up to one-half of private savings for the typical unemployment spell.”

have the unintended consequence of lowering savings.

One such program is unemployment insurance (UI). On average, UI replaces 45 percent of a covered worker's lost earnings for up to 26 weeks after the job

percent. When expressed in terms of dollars, however, these effects are fairly small, given the low wealth holdings of the average family. The reduction in savings amounts to only between \$109 and \$290.

U.S. Anticorruption Laws Have Hurt Business, Not Bribery

In 1976 and 1977, the United States prohibited its individuals and corporations from bribing foreign government officials, enacting legislation that stipulates tax penalties, fines, and even prison terms for executives of U.S. companies who pay illegal bribes. Supporters of these reforms believed other nations would follow America's example and outlaw bribery, thereby removing any competitive disadvantage for U.S. firms. Instead, in a new study for the NBER, **James Hines** finds that the U.S. legislation significantly reduced U.S. business activity in countries where government officials routinely receive bribes. U.S. business in these countries fell as much as it would have if local GDP had dropped by 30 percent.

In **Forbidden Payment: Foreign Bribery and American Business After 1977** (*NBER Working Paper No. 5266*), Hines reviews the background of the antibribery legislation and examines its subsequent effects. Bribery of government officials is a common business practice in some countries, and prior to 1977, American multinationals engaged in it routinely. In fact, one of the by-products of the

Watergate investigations of the early 1970s was the disclosure of numerous instances in which U.S. firms bribed foreign public officials. This news was greeted by wide disfavor by the American public, and a major antibri-

He finds that overall FDI grew twice as fast between 1977 and 1982 in corrupt countries as in other countries. FDI by U.S. firms shows the opposite pattern. In addition, U.S. aircraft exports, considered one of the most likely

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bribery measure—the Foreign Corrupt Practices Act—was passed by unanimous vote of Congress in 1977.

Hines studies the behavior of U.S. firms before and after enactment of antibribery laws using several measures of U.S. business performance, including patterns of foreign direct investment (FDI) and aircraft exports. He has data for 42 countries, 15 of which are identified as “corrupt,” based on an assessment by a well-known consulting firm. Hines also includes variables designed to control for general changes in the level of foreign economic activity.

exports to be affected negatively by U.S. antibribery legislation, fell as a fraction of the world market from 1977–82. The median decline of the U.S. share in corrupt countries was 21.2 percent—far greater than the 6.4 percent median decline in less-corrupt countries. These and other results in the study suggest that this unilateral action by the United States served to weaken the competitive position of American firms without significantly reducing the importance of bribery to foreign business transactions.

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How Effective Are Risk-Based Capital Standards for Banks?

Since 1992, U.S. commercial banks have been required to meet capital standards that relate capital to "risk-weighted assets." The new U.S. risk-based capital regulations are the result of an international agreement—the Basle Accord—forged by the bank regulators of the 12 major industrialized countries in June 1988. In December 1988, the Federal Reserve Board approved a draft of the U.S. risk-based capital guidelines. The final standards were fully phased in as of December 1992.

Risk-based capital (RBC) regulations represented a fundamental shift from previous bank capital standards. Prior to the adoption of the RBC standards, banks were required to hold a flat minimum percentage of capital against all assets. By contrast, the RBC standards require banks to hold differing amounts of capital depending upon the amount of assets held in various (risk-weighted) asset categories. However, the risk weights are determined almost entirely on the basis of credit risk.

In **Risk-Based Capital Standards and the Riskiness of Bank Portfolios: Credit and**

Risk Factors (*NBER Working Paper No. 5178*), **Steven Grenadier** and **Brian Hall** conclude that one cannot delineate the riskiness of defaultable loans by considering any single risk factor (credit risk or interest rate risk, for example) in isolation. Their model shows that the actual risk on bank loans is affected by a complicated interaction of the likelihood of default, the consequences of default, term structure variables, and the pricing of factor risks in the economy.

Under the RBC regulations, which Grenadier and Hall analyzed as part of an NBER Study on Housing Dynamics, U.S. government securities are given a zero risk weight. Because they are considered to be "unconditionally guaranteed" by the U.S. government, they are assumed to have essentially zero credit risk. Most mortgage-backed securities (such as FNMA and FHLMC) are in the 20 percent category. Most home mortgages are given a 50 percent risk weighting. Since these loans are backed by tangible capital, they are considered to have less credit risk than commercial and industrial loans, commercial and all other real es-

tate loans, and consumer loans, all of which have the benchmark 100 percent risk weighting.

In their analysis, Grenadier and Hall use data on bank loan chargeoffs and real estate loan delinquencies to determine if the RBC asset weights are correct on the basis of credit risk alone. They find the RBC regulations to be lacking in several important ways. First, the 50 percent risk weight on home mortgages appears to be too high as judged by credit risk alone. For example, the average annual chargeoff percentage for home mortgages is only 0.13 percent. This is not to imply that mortgages are not risky (they clearly are from an interest-rate risk perspective). However, since mortgage-backed securities are placed in the 20 percent category, and the default risk of underlying mortgage loans is so minuscule, banks have an incentive to replace direct mortgage lending with investing indirectly through the secondary mortgage market. Thus the RBC requirement may have contributed to the surge in mortgage securitization in the 1990s.

Second, while commercial real estate loans indeed have a rela-

(Continued on page 5)

tively high degree of default risk, the weightings implicitly assume that all commercial real estate loans are equally risky. In fact, the authors find a wide range of default experience across property types: industrial and retail loans have the fewest delinquencies; office and hotel loans have the most. Therefore, banks wanting to hold risky loan portfolios

versifying across geographic regions. Therefore, the authors conclude that the weights fail even in their limited goal of correctly quantifying credit risk.

To consider more general notions of bank asset riskiness, the authors study the sensitivity of (proxies for) bank loan returns to three important risk factors: shifts in term structure, default

risk, they may have increased bank sensitivities to interest rate shocks. The authors also find that both commercial real estate and business loans are sensitive to all three risk factors, but commercial real estate is even more sensitive to default and market risk.

Since the adoption of the RBC standards, banks have dramatically adjusted their portfolios toward assets in the low weight classes and away from assets in the 100 percent weight class, the authors find. There was also a dramatic shift in bank real estate portfolios: the amount of home mortgage loans on bank balance sheets increased at a much faster rate than commercial real estate loans. These portfolio reallocations resulted in substantial improvements in the number of banks that were able to meet their RBC ratios. Thus, as judged by the RBC standards, banks have become much less risky. However, the banks may merely have substituted one type of risk (term structure risk) for others (default and market risk) of which the net effect is unknown.

“[B]anks have dramatically adjusted their portfolios toward assets in the low weight classes and away from assets in the 100 percent weight class.”

have an incentive to make the riskiest loans within the same risk-weighting class.

Finally, the RBC regulations ignore portfolio diversification. In particular, the volatility of credit losses can be reduced greatly (by about 50 percent, Grenadier and Hall estimate) by simply di-

versifying across geographic regions. They find that while home mortgages have less default risk and market risk than commercial real estate and business lending, they have the greatest sensitivity to shifts in term structure. Thus, while the RBC regulations may have led to reallocations that reduced default

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