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1986 Tax Reform Act Reduced Efficiency of Investment

A major goal of the Tax Reform Act of 1986 (TRA86) was to reduce the existing disparities in tax rates on different types of investment. Before 1986, for example, structures were taxed more heavily than equipment. This caused too much investment in industries that used a lot of equipment relative to industries that used a lot of structures. By making the tax rates on various kinds of capital more uniform, TRA86 was supposed to "level the playing field" among industries, and thereby improve the allocation of investment among various sectors of the economy.

But a recent NBER study by **Lawrence Goulder** and **Philippe Thalmann** suggests that the new law did not succeed. In **Approaches to Efficient Capital Taxation: Leveling the Playing Field versus Living by the Golden Rule** (*NBER Working Paper No. 3559*), the authors point out that although the 1986 law did make the tax treatment of equipment and structures more uniform within the business (nonresidential) sector, it had two other effects that reduced the efficiency of investment. The tax reform *increased* disparities in the taxation of capital between the business and housing sectors, and *raised* the average level of taxation of capital. The adverse effects on efficiency of these aspects of the reform more than offset its positive effects of leveling the playing field in the business sector.

For example, Goulder and Thalmann calculate that the "marginal effective total tax rate" (METR) on structures was 37 percent in agriculture and mining versus 13 percent in service industries before TRA86.

This METR takes account not only of tax rates and other provisions of the tax code but also considers the likely effect of the reform on interest rates. After TRA86, the METR on structures fell to 36 percent in agriculture and mining and rose to 25 percent in services.

At the same time, TRA86 increased the tax disparity between housing and other industries. Before TRA86, the average METR on all assets in the non-housing business sector was 17 percent, much higher than the 8 percent rate for housing. After the new law, the METR rose to 28 percent for the nonhousing business sector, but to only 9 percent for housing.

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The decreased disparity in tax rates among non-housing industries made the allocation of capital in those sectors more efficient. But the gain in efficiency was almost wiped out by the increased misalloca-

tion of capital between housing and business sector industries.

Goulder and Thalmann also note that TRA86 raised the average METR across all sectors from 13 percent to 19 percent, and thus reduced the overall incentive to invest. Taken together, these changes in the 1986 tax law imply a 1.8 percent reduction in Americans' gross domestic product in the long run.

This study concentrates on the effects of tax reform on investment in structures and equipment only. An extension of this work will look at the effects of the reform on investment in other types of capital assets, including land, inventories, and intangible capital. DRH

Mothers' Work and Children's Development

A mother's working throughout the child's first three or four years of life has little or no net effect on the child's cognitive development, according to a recent NBER study by **Francine Blau** and **Adam Grossberg**. However, the child's development, as measured by results on a standardized test, is affected negatively by the mother's employment during the first year of life and positively by her employment in the second and subsequent years, they find.

In **Maternal Labor Supply and Children's Cognitive Development** (*NBER Working Paper No. 3536*), Blau and Grossberg study a large group of three- and four-year-olds of mothers aged 21-29 in 1986. Over half of these mothers worked during the first year of their child's life, and almost 80 percent worked during the second and subsequent years after the child's birth. Among the workers, the typical woman was employed during about half of the weeks in each period.

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Blau and Grossberg measure cognitive development by scores on the Peabody Picture Vocabulary Test (PPVT), which are highly correlated with scores on other IQ tests. They find that working throughout

a child's first year lowers scores by nearly six points, while working throughout later years raises scores by over four points. (The average test score for children in their sample was 91 points, with two-thirds of the children scoring between 73 and 109.)

Blau and Grossberg suggest that a mother's working during the first year may lower the child's test scores because day care providers offer less attention to the child than the mother who remains at home. During the second year of life, though, children in day care may benefit from increased interactions with other children and adults. The authors find that the mother's increased income doesn't appear to offset the negative effect of working during the first year of the child's life, but is important in producing the positive effect in later years.

Blau and Grossberg also report that the higher the mother's verbal ability (also measured by a standardized test) and the father's education, the higher the child's test score. In contrast, the number of children in the household negatively affects the child's score.

Finally, children who spend their entire lives in a female-headed household are expected to score about two points lower on the PPVT than other children, primarily because of the lower income of those households.

What Makes Some Countries Rich, Some Poor?

What determines whether a country is rich or poor? Do rich countries have more physical capital? A more educated work force? Do culture, institutions, or technology make the difference? A recent NBER study by **Gregory Mankiw**, **David Romer**, and **David Weil** finds that higher saving and spending on education raise income per capita and higher population growth lowers it.

In **A Contribution to the Empirics of Economic Growth** (*NBER Working Paper No. 3541*), Mankiw, Romer, and Weil examine a sample of 98 countries, and find that 80 percent of the variation in income per capita can be explained by population growth, saving, and schooling. They further find that the importance of saving and schooling are approximately equal: an increase of 1 percent in either the fraction of output saved or the fraction of output devoted to education leads to an increase of approximately 1 percent in the level of GDP per worker.

Because these three factors explain most of the international variation in standards of living, Mankiw, Romer, and Weil argue that other factors are of minor importance.

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The authors also ask whether countries tend to “converge”—that is, whether poor countries tend to grow more quickly than rich countries. Mankiw, Romer, and Weil find that countries would converge if they all had similar rates of population growth, saving, and education. This suggests that poor countries will be able to catch up with rich ones once they control their population growth and raise their rates of investment in physical and human capital. Mankiw, Romer, and Weil estimate that when countries become similar in these respects, about half of the difference in their incomes can be eliminated over a 35-year period.

Financial Crises Turned Deflation Into Depression

Many economic historians now believe that the Great Depression was caused by deflation, or falling prices, which in turn was the product of poor management of the international gold standard by the Federal Reserve and other central banks. After France and the United States—the two major gold surplus countries—took deflationary paths in 1928–9, the gold standard spread the monetary contraction around the world. Proof that the gold standard played a central role in creating the Depression is the fact that countries that were never on it, such as Spain, suffered no significant fall in output or prices, and countries that left the gold standard relatively early, such as the United Kingdom and Sweden, escaped from depression and deflation more quickly than other countries did.

But exactly how did falling prices after 1929 trigger declines in output? NBER Research Associate **Ben Bernanke** and **Harold James** argue that one important channel was “the disruptive effect of inflation on the financial system.” Their study of 24 countries, **The Gold Standard, Deflation, and Financial Crisis in the Great Depression: An International Comparison** (*NBER Working Paper No. 3488*), concludes that the countries with the worst depressions were those in which financial weakness or institutional flaws in banking interacted with deflation to produce banking panics.

Deflation and the constraints on central bank policy imposed by the gold standard led to the banking panics that erupted in many countries in the early 1930s. The panics reached a peak in the spring and fall of 1931 after more than two years of worldwide deflation. Deflation contributed to bank panics by squeezing—and eventually exhausting—bank capital. In addition, the rules of the gold standard severely limited the ability of central banks to ease panics by acting as the lender of last resort. In fact, since banking panics often coincided with foreign exchange crises, central banks frequently tightened monetary policy during panics in order to maintain currency convertibility. In contrast, there were virtually no bank panics in any country after it had abandoned the gold standard.

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By disrupting the flow of credit, banking panics had major effects on the real economy. On average, Bernanke and James estimate, one year of panic reduced the growth of industrial production by 16 percentage points. Banking panics, especially in the United States, also may have contributed to the deflationary process through their effects on money supplies.

Not all countries experienced banking panics during the 1930s. Of the 24 countries Bernanke and James study, 13 avoided major panics. Countries with branch banking and countries that had responded to emerging banking problems in the 1920s with vigorous reforms fared best, while countries with universal banking systems and a high proportion of foreign deposits were most likely to suffer panics.

Recent NBER Book

Race and Schooling

Race and Schooling in the South: 1880-1950: An Economic History, by Robert A. Margo, is available from the University of Chicago Press for \$24.95. Margo uses newly available Census data and school district records to analyze how education affected the black-white earnings ratio, which was stable until 1940 and then increased significantly.

He concludes that increased schooling, combined with the two world wars, the Civil Rights movement,

and antidiscrimination laws, led to a higher demand for black labor and to an increase in the earnings ratio.

Margo is a research associate in the NBER's Program in Development of the American Economy, and an associate professor of economics at Vanderbilt University.

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