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Decreases in Marginal Tax Rates Increase Taxable Income

The Tax Reform Act of 1986 cut the marginal tax rate (MTR) paid by the highest-income taxpayers from 50 percent in 1986 and earlier years to 28 percent by 1988. For all taxpayers, but especially those with high incomes, the lower MTRs made it a reasonable option to work more, take fewer deductions, invest in taxable rather than tax-free assets, and take more pay in the form of money rather than benefits. Thus, the cuts in tax rates increased the tax base, or the amount of income that was taxed.

In a new NBER study, Bureau President **Martin Feldstein** shows that the taxable income of high-income taxpayers increased substantially as a result of the decrease in their marginal tax rates. Thus, the loss in revenue to the government from these cuts was substantially less than if taxable income had not changed.

In **The Effect of Marginal Tax Rates on Taxable Income: A Panel Study of the 1986 Tax Reform Act** (*NBER Working Paper No. 4496*), Feldstein compares 4342 taxpayers in 1985, before the tax rates were cut, and 1988, after all the cuts had been implemented. This is the first study to use data on the same individuals over time in order to estimate the impact of the 1986 law.

Feldstein adjusts each taxpayer's 1985 income upward to correct for inflation and other causes of growth in income. He also adjusts the 1988 incomes to take account of the change in taxes on capital gains.

Feldstein finds that the average increase in adjusted taxable income between 1985 and 1988 was related strongly to the initial 1985 marginal tax rates, and, therefore, to the decline in marginal tax rates caused by the 1986 legislation. He observes changes in taxable income in light of changes in the net-of-tax rates, that is, the share of income that is *not* taxed and remains for an additional dollar of pretax income. For taxpayers with 1985 MTRs between 20 and 38 percent, the net-of-tax rate rose only 12 percent after TRA86, and adjusted taxable income rose by an average of 6 percent. In contrast, taxpayers with 1985 MTRs of 42 to 45 percent experienced a 25 percent rise in the net-of-tax rate, and increased their taxable incomes by 21 percent. And those with 1985 MTRs of 49 or 50 percent saw their net-of-tax rate rise by 42 percent, and increased their taxable income by 71 percent.

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Using the NBER's TAXSIM model, Feldstein also estimates the effect on revenue of President Clinton's 1993 increases in marginal tax rates. If the 1993 increases in tax rates caused no change in taxpayers' behavior, they would increase tax revenue at 1993 income levels by $25.8 billion. But if taxpayers' behavior *does* change in response to the tax rate increases, in the same way that it did after the 1986 tax changes, Feldstein estimates that the 1993 increases in tax rates could increase revenue by as little as $3.4 billion. He concludes: "[t]hese tax rates could be reduced to their pre-1993 levels with little or no revenue loss."

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The Effect of Trade on Jobs and Wages

There is a broad consensus among businessmen and politicians that America's economic difficulties are largely caused by a failure to compete effectively on world markets. But in **Trade, Jobs, and Wages** (*NBER Working Paper No. 4478*), **Paul Krugman** and **Robert Lawrence** examine three widely discussed channels through which international competition might be harming the U.S. economy, and find that they are of limited quantitative importance.

The first channel is the alleged role of declining competitiveness in U.S. "deindustrialization": the persistent decline in the share of U.S. employment and value added occurring In the manufacturing sector. Many writers assert that the loss of high-paying jobs in manufacturing has been a major cause of the stagnation of real wages in the United States since 1970.

According to estimates by Krugman and Lawrence, however, only a small fraction of the relative decline in manufacturing between 1970 and 1990 can be attributed to international competition. While U.S. imports of manufactured goods rose sharply over the period, U.S. exports also rose rapidly. Trade in manufactured goods did move from surplus into deficit over the two decades, but the shift in the trade balance from a surplus of 0.2 percent of GDP in 1970 to a deficit of 1.3 percent in 1990 was less than one-fourth as large as the 6.6 percentage point decline in the manufacturing share of GDP over the same period.

Furthermore, a dollar of trade deficit does not correspond to a dollar of lost manufacturing output: Krugman and Lawrence estimate that only about 60 cents of a dollar of domestic manufacturing sales displaced by foreign competition consists of manufacturing value added; the rest is services or raw materials bought from other sectors. As a result, they estimate that less than 15 percent of the "deindustrialization" of the U.S. economy between 1970 and 1990 can be attributed to foreign trade.

The main cause of the relative decline in manufacturing between 1970 and 1990, they argue, was the same force that made the United States an increasingly service-oriented economy from 1950 to 1970, a period in which the share of manufacturing in nonagricultural employment fell from 33.7 to 27.3 percent, even though international trade was a minor factor. Because productivity has grown faster in manufacturing than in the service sector, they show, relative prices of manufactured goods have fallen over time. And because the demand for manufactured goods as a whole is inelastic, this declining relative price has been reflected in a decline in industry's share of employment and value added. The declining role of manufacturing in the U.S. economy, like the previous decline in agriculture, is a symptom of relative success, not failure. International competition has played only a secondary role.

The authors conclude, therefore, that the loss of "good jobs" because of foreign competition is a small factor in U.S. economic woes. Even if the wage premium in manufacturing is a pure bonus, not a reward for such scarce resources as higher skill, the wages lost because of the manufacturing trade deficit are no more than 0.1 percent of GDP.

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Some writers on competitiveness who concede that the United States has been relatively successful at creating jobs, and that the manufacturing trade deficit has remained fairly small, argue that this apparent success has been achieved only by holding a "fire sale" of U.S. goods—that is, by devaluing the dollar to levels that reduce U.S. real income. This amounts to an assertion that a deterioration in the terms of trade—the ratio of export to import prices—has been a large drag on the rate of growth of U.S. real income.

Again, this assertion can be tested quantitatively. The impact of deteriorating terms of trade can be measured by comparing the rates of growth of real GNP and "command GNP," an index that deflates export prices by the *import* deflator, so as to measure what the United States can afford to buy rather than what it produces. Since 1970, America's terms of trade indeed have deteriorated by about 20 percent; but the resulting drag on the growth of real income has been less than 0.1 percent per year. Again, the alleged competitive problem is far smaller than commonly perceived.

Finally, many observers, including professional economists, have argued that international trade has had an adverse effect on the distribution of income within the United States, because competition from developing countries with abundant unskilled labor has increased the differential between skilled and unskilled workers. The possibility of large effects of trade on income distribution has long been recognized by economists. A shift in income distribution caused primarily by international trade, however, should be associated with certain related symptoms: a shift in the industrial mix toward skill-intensive sectors; and a *reduction* in the skill intensity within each sector. The actual data are inconsistent with those predictions: there has been little shift in the industrial mix toward high-skill industries, and the ratio of skilled to unskilled workers within each sector actually has moved the wrong way. These facts, however, are

consistent with a story that attributes the widening wage differential primarily to technological change. Thus Krugman and Lawrence conclude that international trade is not the main culprit in growing inequality either.

These results do not in any way minimize the very real problems of the American economy. They do indicate, however, that the conventional view that disappointing U.S. economic performance can be seen essentially as a problem of poor international competitiveness is very much off the mark.

Trade Links Growth to Foreign R and D

What links investment in research and development (R and D) to economic growth? If the results of R and D spread quickly around the world, how can the nation that invested in the work appropriate its economic benefits?

In **International R and D Spillovers** (*NBER Working Paper No. 4444*), **David Coe** and **Elhanan Helpman** find that the benefits of R and D in fact are shared across national borders. While a country's total factor productivity depends crucially on its own investment in research, they report, that productivity also depends on the R and D investment of its trading partners.

Coe and Helpman examine the relationship between total factor productivity and cumulative spending on R and D in 22 advanced economies from 1970 to 1990. In addition, they seek to determine the amount of R and D that each country imports from abroad, by measuring the cumulative R and D conducted by its trading partners, weighted according to trade patterns. They find that domestic spending on R and D from 1970–90 is an important determinant of productivity in all 22 countries. It is most significant in the so-called G-7 economies: the United States, Britain, France, Germany, Japan, Italy, and Canada.

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Smaller economies, by contrast, tend to benefit more from R and D undertaken abroad. Each 1 percent increase in its trading partners' total R and D leads to a 0.03 percent increase in U.S. productivity. But countries such as Belgium, Ireland, Israel, and the Netherlands enjoy more than a 0.14 percent increase in total factor productivity when their trading partners raise their R and D stock by 1 percent.

The R and D investment undertaken by the United States has the greatest impact on its trading partners' productivity growth, with Japanese R and D having the second-largest effect. Further, Japan is the only country whose R and D investment has a significant effect on U.S. productivity: each 1 percent increase in Japan's total R and D stock raises U.S. productivity by 0.02 percent, while U.S. R and D investment has roughly the same impact on Japan.

The fact that smaller countries enjoy disproportionate benefits from larger countries' R and D does not mean that R and D is a poor investment for large economies. Coe and Helpman find that in 1990, the G-7 countries reaped an average return of $122 for each $100 increase in their aggregate investment in R and D. The world as a whole gets a $152 increase in total output for each $100 increase in the G-7 economies' stock of R and D investment. This "implies a large international R and D spillover; about one-quarter of the benefits of R and D investment in a G-7 country occur to its trade partners," they write.

The countries that gain the greatest benefit from foreign R and D, Coe and Helpman conclude, are those whose economies are most open to international trade; trade appears to be an important mechanism for the worldwide transmission of innovation and technological progress. ML

Use of Alcohol and Marijuana Lowers High School Graduation Rates

According to a report published by the U.S. Department of Health and Human Services, about 90 percent of high school seniors in 1990 had consumed alcohol within the past two weeks. Nearly one-third of the survey group had consumed five or more drinks in a row. The same report indicated that about three million youths aged 10 to 17 experienced multiple problems resulting from alcohol and drug abuse.

Now an NBER study by **Tetsuji Yamada, Michael Kendix,** and **Tadashi Yamada** shows that alcohol and marijuana use have significant adverse effects on high school graduation. In **The Impact of Alcohol Consumption and Marijuana Use on High School Graduation** (*NBER Working Paper No. 4497*), they find that frequent drinking, liquor and wine consumption, and frequent marijuana use reduce the probability of high school graduation by 4.3, 0.3, and 5.6 percent, respectively.

However, beer taxes, minimum drinking age laws, and marijuana decriminalization all have a significant impact on the demand for these intoxicants. A 10 per-

cent increase in the beer tax, for example, reduces alcohol consumption among high school students and raises the probability of graduation by almost 4 percent. A 10 percent increase in liquor prices raises the probability of graduation by around 7 to 8 percent.

Raising the drinking age for liquor also reduces the consumption of liquor and wine, thus improving the probability of high school graduation. Here, the figures are smaller, since high school students tend to drink beer, rather than wine and liquor.

While the authors find no significant relationship between marijuana decriminalization and marijuana use among high schoolers, they do find some substitution between frequent drinking and marijuana use.

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The data in this study come from the National Longitudinal Survey of Youth. Over 1000 high school seniors in 1981–2 were in the sample.

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