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Tax Rate Cuts Spurred Rise in Taxable Incomes

Between 1979 and 1989 the share of income received by the top 1 percent of U.S. taxpayers rose from 8.8 percent to 14.4 percent, according to a new study by NBER Research Associates **Daniel Feenberg** and **James Poterba**. Of this increased share, 60 percent went to the top one-tenth of 1 percent, or just over 100,000 taxpayers.

In **Income Inequality and the Incomes of Very High Income Taxpayers: Evidence from Tax Returns** (*NBER Working Paper No. 4229*), Feenberg and Poterba suggest that at least part of the income gains reported on the tax returns of the very rich were the result of the changing tax incentives built into the tax legislation of 1981 and 1986. "The tax reforms of 1981 and 1986 lowered marginal tax rates on high-income households, reducing their incentives to defer taxable income, to transform earnings into untaxed fringe benefits, and to engage in other forms of tax avoidance," Feenberg and Poterba write. "Taxpayers at the top of the income distribution faced marginal tax rates as high as 70 percent in 1980, while in 1988, their marginal tax rates were capped at 28 percent." Deferring income by 14 months, from December 1986 to January 1988, could have raised a taxpayer's after-tax income by 44 percent!

Indeed, the 1966 Tax Reform Act lowered marginal tax rates on top-income households from 50 percent to 28 percent. While the share

of income reported by top income taxpayers rose throughout the 1980s, the sharpest increases were in 1987 and 1988—immediately following this significant decline in marginal tax rates.

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"The late 1980s . . . appear to be the time period when the reported income distribution changed the most among high-income taxpayers," Feenberg and Poterba report. The share of total income of the richest one-half of 1 percent rose from 8 percent to 12 percent between 1985 and 1988, and then fell off by more than one percentage point in 1988 and 1989. This decline "could be consistent with an active role for short-term and one-time income-retiming strategies in the years immediately following enactment" of the 1986 law. The authors also find that the increase in reported income in the 1980s is not simply an artifact of capital gains realizations by the well-to-do, but rather reflects changes in the distribution of most other income sources as well.

DRF

Pharmaceutical Price Indexes Do Not Reflect Cost Savings of Generics

In 1986 the patents on two antibiotics, cephalixin and cephradine, expired. Almost immediately, generic versions of these drugs became available at 50 percent of the price of the branded version for cephalixin and 75 percent for cephradine, capturing a significant fraction of the market for these drugs: 55 and 35 percent, respectively, in the first six months after entry. Over the next few years, the prices of the branded versions of these drugs increased slightly, while the prices of the generics fell to 30 percent of the branded price for cephalixin, and 50 percent for cephradine. The market share of these generics continued to rise, reaching about 85 and 75 percent, respectively, by late 1990.

In **Generics and New Goods in Pharmaceutical Price Indexes** (*NBER Working Paper No. 4272*), **Zvi Griliches** and **Iain Cockburn** report that such a pattern is common when patents on profitable drugs expire. They note that official government price indexes calculated by the Bureau of Labor Statistics (BLS) fail to reflect the sharp decline in prices associated with the introduction of generics.

Instead, the BLS treats generics as distinct goods, even though another government agency, the Food and Drug Administration (FDA), has certified that generic and branded versions of the same drug are perfect substitutes. Griliches and Cockburn explain that the BLS introduces the new products into its indexes belatedly, and "links them" into existing indexes with fixed weights. Thus "none of the direct price decline experienced by those consumers who switch to generics is reflected in the official price indexes."

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Griliches and Cockburn estimate alternative price indexes for cephalixin and cephradine, assuming first that generics are completely equiva-

lent to the original, and then also under other assumptions that fall between the BLS and FDA extremes. For cephalixin, the BLS approach results in an increase in the wholesale price of about 14 percent over 45 months. The FDA's perfect substitute approach yields a price *decline* of 53 percent. The authors' preferred estimate shows a 48 percent decline in the wholesale price of cephalixin, and a somewhat smaller price decline for cephradine.

Wealth, Not Labor Costs, Drives Foreign Direct Investment

The value of the dollar and the flow of foreign direct investment (FDI) into the United States have been linked closely since the 1970s. When the dollar is weak, foreign investors snap up U.S. assets. This occurred between 1985 and 1988 when a 60 percent depreciation of the dollar coincided with a threefold increase in FDI. Two alternative reasons for this relationship have been put forth: either foreign investors are reacting to the increase in their relative wealth resulting from the weak dollar, or they are trying to take advantage of the lower relative cost of labor in the United States. Now a new NBER study by **Michael Klein** and **Eric Rosengren** finds that wealth is the significant factor.

In **The Real Exchange Rate and Foreign Direct Investment in the United States: Relative Wealth Versus Relative Wage Effects** (*NBER Working Paper No. 4192*), Klein and Rosengren review data from 1979 to 1991 on direct investment in U.S. assets from seven nations, which together account for more than three-fourths of the total FDI. Their results confirm the relationship between the value of the dollar and investment: each 1 percent depreciation in the dollar is associated with an increase in overall foreign direct investment relative to U.S. GNP of between 1.9 percent and 3.3 percent, depending on the measure of FDI used.

The authors find that relative wealth is a significant determinant of FDI. Each 1 percent change in a country's wealth relative to the United States, as measured by stock market prices, is associat-

ed with an increase of about 1.5 percent in foreign direct investment relative to GNP. In contrast, there is little correlation between labor costs and investment. This result holds regardless of the choice of countries, or of any changes in the tax code over the sample period.

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Klein and Rosengren note that by itself their evidence does not support a particular theory of how relative wealth affects foreign investments. One theory holds that relative wealth matters because capital markets are imperfect. That is, firms with higher relative wealth can outbid other firms for direct investment opportunities.

Another explanation is that country-specific productivity shocks affect both the relative wealth of a country and the amount of FDI undertaken by its investors. Between 1989 and 1991, FDI into the United States from both Japan and Canada declined sharply, the authors note. The stock markets in both countries were declining relative to the U.S. market at the same time, while productivity increases were outpacing those in the United States. This evidence, the authors conclude, complements the results of their study and suggests that the important role played by relative wealth in the determination of FDI works through imperfections in capital markets. RN

University Patents Are Cited More Than Corporate Ones

Scientific research is thought to have widespread benefits beyond the direct rewards that accrue to those who perform it. These so-called spillovers provide the rationale for government support of research through both direct grants and R and D tax credits. Now a new NBER stu-

dy by **Manuel Trajtenberg, Rebecca Henderson, and Adam Jaffe** suggests methods for quantifying these spillovers and the “basicness” of research. They find that measured spillovers are larger for university research that leads to patents than for research conducted by private firms.

In **Ivory Tower Versus Corporate Lab: An Empirical Study of Basic Research and Appropriability** (*NBER Working Paper No. 4146*), the authors use data from patents granted to universities in 1975 and 1980, and a matched sample of patents granted to corporations, large and small, in the same years. They draw detailed information from the patent documents, including citations to and from other patents, citations to the scientific literature, and classification into technological area according to the U.S. Patent Office’s 400 categories.

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Trajtenberg, Henderson, and Jaffe also examine subsequent patents that cite the earlier, original patents. Using that information, they estimate that the average university patent from 1975 was cited nearly 17 times in subsequent patents, while the average corporate patent was cited less than 11 times.

They also discover that university patents tend to be cited in subsequent patents in a wider range of categories than corporate patents. They interpret this as consistent with the notion that university research is more “general,” and spills over into broader areas than corporate research.

Furthermore, the authors estimate that 13 percent of the citations to corporate patents were owned by the same firm, while only 7 percent of the university patents belonged to the same inventors. This suggests that corporate researchers are able to capture the benefits of their work more readily than university researchers can.

The authors note that their measures may capture only a portion of the output of university and corporate research. The most basic scientific research generates ideas, which cannot be patented. Moreover, until recently, university researchers could not obtain patents based on federally funded research. On the other hand, corporations may choose not to obtain patents for

their inventions, relying instead on secrecy to keep competitors from stealing their new techniques or products. Nonetheless, the authors conclude that the methods that they put forward

can successfully discriminate between basic and applied research. Since these methods rely on patents, they can be applied widely in studying the economic impact of innovations.

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