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What Ever Happened to Trickle Down?

During the sustained U.S. economic expansion of the 1960s, the fraction of Americans with incomes below the poverty line fell from over 22 percent to 12 percent. But despite a near-record period of economic growth during the 1980s, this "poverty rate" actually increased from 11.7 percent in 1979 to 12.8 percent in 1989. In a recent NBER study, **Rebecca Blank** finds that poverty increased during the 1980s because declines in the wage rates of the poor more than offset increases in their employment and days of work.

In **Why Were Poverty Rates So High in the 1980s?** (*NBER Working Paper No. 3878*), Blank compares changes in the incomes of different workers in 1963–9 and 1983–9. Her data show that the changes in the wage structure in the 1980s outweighed the general effects of growth for the poorest group. She estimates that a 1 percent increase in GNP raised the incomes of the poorest one-fifth of families by about $70 in 1963–9 but by only $30 in 1983–9. By contrast, the richest one-fifth of workers saw their incomes rise by $348 in 1963–9 and by $473 in 1983–9 for each 1 percent increase in GNP.

This increasing disparity between rich and poor in the two decades resulted almost entirely from declines in real wages among low-income workers. During 1963–9, each 1 percent increase in GNP was associated with a $2.18 rise in the weekly wages of the poorest 10 percent of workers. Twenty years later, the

weekly wages of the poorest group actually *declined* despite rising real GNP. By contrast, each single percent increase in GNP was associated with increases among the top one-fifth of workers of $2.16 in 1963–9 and $3.53 twenty years later.

Blank observes that for low-income households, employment and days worked per year expanded more rapidly in the 1980s than in the 1960s. In 1963–9, each 1 percent increase in GNP was accompanied by virtually no change in the number of days worked by the poorest one-fifth of workers. Similarly, in 1983–9, each 1 percent gain in GNP growth increased the average work year of this group by about two days.

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Blank also finds that cuts in transfer programs do not explain the reduced effect of growth on poverty during the 1980s. She estimates that the poverty rate in 1988 would not have changed if the eligibility and benefit rules of 1978 had been in effect, although the average poor family was $618 worse off in 1988 than

in 1978. Since welfare recipients would have been poor under both sets of rules, though, any changes had little effect on measured poverty rates.

Finally, Blank reports that changes in the demographic composition and regional distribution of the poor do not explain their failure to benefit from growth during the 1980s. Thus she concludes that, because of the changing wage structure in the 1980s, economic growth did not reduce poverty the way it did in the expansion of the 1960s.

Productivity Decline in Electricity Generation

Between 1899 and 1973, output per man-hour—one measure of productivity—rose by about 2.4 percent per year in the U.S. nonfarm business sector. During 1973–88, though, productivity growth was only 1 percent annually.

To gain insights into this slowdown, which continues to puzzle economists, NBER Research Associate **Robert Gordon** focuses on the electric utility industry. It, construction, and mining, have suffered the sharpest deceleration in productivity growth. In **Forward into the Past: Productivity Retrogression in the Electric Generating Industry** (*NBER Working Paper No. 3988*), Gordon finds that productivity growth in electric generating slowed after 1973 because of problems with introducing new technology, decreases in capacity utilization, and tightening environmental regulation.

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Gordon reports that the average size of electric generating equipment has increased dramatically since World War II. The average capacity of newly installed plants in 1948–50 was only 85 megawatts, but in 1972–4 the average new plant had 862 megawatts of capacity—more than a tenfold increase. After 1974, the trend to ever larger plants slowed considerably. In 1986–7 the average new unit had 921 megawatts of capacity. Gordon estimates that each 10 percent increase in the capacity of a power plant increases by only 5.4 percent the amount of labor needed to run it. The economies of scale achieved by bigger generators resulted in substantial savings in the amount of labor needed to generate a kilowatt of

electricity. Therefore, productivity increases in this industry were substantially above the economywide average of about 2.2 percent annually from 1899–1973, but increases in both size and productivity slowed sharply after that year.

Gordon reports that productivity also rose after World War II because advances in metallurgy allowed generating equipment to operate at ever higher temperatures and pressures. The new equipment was considerably more efficient in converting energy from fuel into electricity than older equipment that burned coal or oil at lower temperatures and pressures. Beginning in the 1960s, however, the very high pressures in the newer "supercritical" boilers began to create unanticipated maintenance problems that drastically lowered labor productivity. As electric utilities discovered that these new boilers were idle far more often than the older boilers, they stopped ordering them. Gordon reports that only 6 percent of the boilers installed in 1981–2 were supercritical, down from 63 percent in 1970–74.

The decline in capacity utilization after 1973 also decreased productivity in this industry. Gordon estimates that each 10 percent increase in capacity utilization requires only a 1.2 percent increase in the amount of labor used. During 1948–71, the capacity utilization rate for the plants in his sample was 57 percent, but it was only 47 percent for 1975–88, he estimates.

Finally, Gordon observes that tighter environmental regulations cut productivity. For example, regulations caused a shift from high-sulfur to low-sulfur coal and oil, requiring more BTUs to generate a unit of output. As a consequence, a plant installed in 1948 used 2 percent more fuel per kilowatt hour of electricity generated than a 1968 plant, but a plant installed in 1987 used 9.5 percent more fuel than the 1968 plant. Gordon estimates that almost one-third of the productivity problems associated with operating older equipment can be attributed to environmental legislation.

This study is based on annual operating data for 401 fossil-fuel-burning electric generating plants during 1948–87. Of the total, 68 were built before 1948, 113 in 1948–57, 97 in 1968–77, and 48 in 1978–86. In addition, Gordon interviewed managers of plants with unusually high or low productivity to learn their views.

Scholarship Rules Reduce Private Saving

College students who apply for scholarships generally receive aid based partly on their parents' income

and assets. The more their parents have, the smaller scholarship they receive. But the result of this seemingly equitable practice is to tax parents for saving for their children's college education, or for their own retirement if they have children who go to college.

In a new NBER study, **Martin Feldstein** calculates that the formulas used in determining college scholarships impose a "tax" of between 22 and 47 percent on the income from accumulated assets of eligible families. Since this "education tax" is added onto state and federal income taxes, the total tax rate on capital income for these middle-class families may be over 80 percent.

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In **College Scholarship Rules and Private Saving** (*NBER Working Paper No. 4032*), Feldstein also notes that current college scholarship rules impose an *annual* tax on previously accumulated assets. To a middle-income family, a combination of these two "taxes" means that an extra dollar of accumulated assets will be reduced by 30 cents in four years. For a middle-income family with two children who attend college in succession, an initial dollar of accumulated assets will be reduced by 50 cents in four years

Colleges calculate a family's ability to pay using a "uniform methodology" applied by the College Entrance Examination Board. This methodology takes account of both "discretionary income" and "available assets." Feldstein shows what happens to a dollar accumulated by such a family before a child enters college: with 6 percent interest and no tax, the dollar would grow to $1.26 in four years; with state and federal taxes at a total marginal rate of 25 percent, they would have $1.19 in four years; but, with the same tax rates and the implicit education tax levied through scholarship calculations, the dollar would shrink to 87 cents after four years.

Feldstein suggests that these rules provide a strong incentive for certain families not to save for college expenses, but to rely instead on financial assistance or to borrow. Such families also have a strong incentive not to save for retirement, because such saving also would cause a decline in scholarship benefits. According to Feldstein's calculations, a typical household headed by a 45-year-old with two precollege-age children and income of $40,000 a year would be induced to reduce accumulated financial assets by $23,124 because of these rules.

Feldstein's data come from the 1986 Survey of Consumer Finances, conducted by the Federal Reserve System. His analysis is of married couples with a child under age 18 at home, no children in college,

total annual income under $100,000, and a household head aged 40–50. In 1986 there were 5.5 million such U.S. households with total financial assets of $131 billion, an average of $23,785 per household.

Have Commercial Banks Ignored History?

During the 1980s, when many developing countries had difficulty repaying their loans, banks became reluctant to extend new credit anywhere in the Third World. Even countries with good credit no longer could obtain new bank loans. Thus, it seemed that the credit behavior of a developing country borrower had little effect on its ability to borrow. In other words, commercial banks seemed to be ignoring history in making their loan decisions.

But NBER researcher **Sule Özler** reports that, while banks may lump good and bad debtors together during periods of widespread default, such as the 1980s, they reward countries with good repayment histories with lower interest rates than defaulting countries during more stable periods.

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In **Have Commercial Banks Ignored History?** (*NBER Working Paper No. 3959*), Özler studies the interest rates on 1525 commercial bank loans made during 1968–81 to 26 developing countries. She finds that defaults in the distant past, including 1820–99 and 1900–29, had little effect on the interest rates a country was required to pay. However, countries that defaulted on their loans during the 1930s paid 0.2 percentage points more than otherwise similar countries with clean borrowing histories. If a country had problems after World War II, and entered into a standby agreement to borrow from the International Monetary Fund as a result, it paid an additional 0.3 percentage points compared to countries with unblemished records.

Özler also examines 2170 loans made in 1968–81 to 64 developing countries, many of which became independent after World War II. She finds that the interest rates on bank loans to countries without previous credit histories and countries with bad repayment records were similar. Although the differences in interest rates among developing country borrowers in 1968–81 were not large, they do suggest that, at least during periods of optimism, banks do not ignore history.

New NBER Books

The Economics of Art Museums

The Economics of Art Museums, edited by Martin Feldstein and published by the University of Chicago Press, explores a number of significant issues facing major art museums: financial support; the management of the collections; relationships with the public; and government support. The volume includes six background papers written by economists and the personal statements of leaders of major museums and related foundations. A number of tables also provide valuable statistics on art museums, including finance and attendance figures. This volume should interest economists concerned with nonprofit institutions as well as museum officials.

Feldstein is president and CEO of the NBER and the George F. Baker Professor of Economics at Harvard University. The price of *The Economics of Art Museums* is $49.95.

Order this volume directly from the University of Chicago Press, 11030 Langley Avenue, Chicago, IL 60628. Academic discounts of 10 percent for individual volumes and 20 percent for standing orders for *all* NBER books published by the University of Chicago Press are available to university faculty; orders must be sent on university stationery.

Ten Years of ISOM

International Volatility and Economic Growth:The First Ten Years of the International Seminar on Macroeconomics (ISOM) is now available from Elsevier Science Publishers for $65. This volume contains a selection of articles published in special issues of the *European Economic Review* during the 1980s. The articles are grouped into three areas: "Structure and Performance" of the macroeconomy, including productivity growth, housing markets, and labor markets; "The External Constraint and the Exchange Rate Regime," including purchasing power parity, the international monetary system, and international capital movements; and "Internal and External Debt."

ISOM is cosponsored by the NBER, the European Economic Association, and La Maison des Sciences de l'Homme. The authors are European, American, and Japanese. The editors are ISOM organizers Robert J. Gordon, NBER and Northwestern University, and Georges de Ménil, Ecole des Hautes Etudes en Sciences Sociales.

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