

ECONOMICS USA
PBS PROGRAM #11

PRODUCTIVITY:
CAN WE GET MORE FOR LESS?

BY FRANK M. NESBITT

AIRSCRIPT
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11. PRODUCTIVITY: CAN WE GET MORE FOR LESS?

PURPOSE:

To explain the factors that affect productivity growth and the various ways in which the government has helped or hindered the growth in productivity.

OBJECTIVES:

1. Labor productivity is defined as output per man-hour of employed labor. Factors that are important in determining productivity include education, training, the amount of capital (machinery, factories, etc.) per worker and technological innovation.
2. During the 1970's productivity growth in the U.S. slowed. A variety of explanations have been offered for this. They include: a decline in R&D, a decline in investment relative to GNP, the relative inexperience of the baby-boom generation, the oil shocks, increased government regulation, and uncertainty due to inflation and the changeability of economic policy.
3. Technological innovation has been a major factor in the growth in productivity in the U.S., but the benefits of innovation do not accrue only to the person or firm that financed the research, but to society as a whole. Therefore, there is a justification for some government support of research and innovation.
4. The government may have retarded productivity growth because of tax and regulation policies. Taxes can hurt productivity growth by distorting economic decisions, by encouraging people to invest their time and money in ways, which reduce their taxes rather than in ways that are good for economic growth.

KEY ECONOMIC CONCEPTS:

productivity
innovation
investment
regulation
human capital

tax distortions
benefits of innovative activity
technological changes
supply-side economics
uncertainty

ILLUSTRATIVE EVENTS:

1. the productivity slowdown in the 70's
2. the Carter administration's response to the productivity slowdown (Carter's commission on industrial innovation)
3. the Reagan administration's reliance on "less government" as a means of stimulating productivity growth (tax cuts and deregulation)

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Annenberg/CPB Project (Logo and Music)

TEASER

DAVID SCHOUMACHER: Throughout most of the 20th century, American enjoyed the highest rate of productivity growth in the industrial world. But by the late 1970's, something was drastically wrong. What was happening to American productivity? In 1978, the Carter administration asked, "Can government encouragement of new technology solve the productivity dilemma?" By 1981, the nation was ready to try a new approach...Can less government lead to more productivity? Productivity growth is a crucial, but almost invisible element in our economic well-being...something we take for granted until it begins to slow down. That happened in the 1970's, and by the end of the decade we had a blizzard of suggestions for how to deal with the problem. Productivity: How do we get more for less? With the help of economic analyst Richard Gill, we'll examine that question on this edition of Economics U\$A. I'm David Schoumacher.

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(PRODUCTIVITY: CAN WE GET MORE FOR LESS? appears on screen)

PART I

DAVID SCHOUMACHER: Economists see the world in terms of supply and demand...with simply demand as the appetite to consume...supply as the ability to produce. It is productivity that holds the supply side together. As long as productivity continues to improve, our standard of living continues to improve. This is the classic widget factory...These workers are building a machine to put the stick in a stick deodorant tube. If it works, we'll have more deodorant and less sweat...that is, fewer hours of work putting the tubes together. That's productivity for you. American productivity has been one of the economic marvels of the industrial age. But by the late 1970's, our rate of productivity growth had slumped alarmingly. Why did productivity grow so fast for so long and then suddenly decline in the 1970's? At the beginning of the 19th century, America was predominantly a farm economy...our buildings were made of brick and wood. By the year 1900, we were a nation of steel. Vast deposits of iron and coal fed the blast furnaces of Pittsburgh. Immigrants poured in from Europe to work in the steel mills...to be part of an industrial miracle that was creating a better life for American workers. Rapid productivity growth led to an ever-improving standard of living...and the miracle was not just confined to the steel industry. Throughout the economy, American workers were the most productive in the world. What was responsible for this phenomenal explosion of productivity? Economist Edward Denison singles out one factor as paramount...

EDWARD F. DENISON: "Much the most important is the advances in knowledge of how to produce at low costs. This includes both technological knowledge and what you'd call managerial or organizational knowledge...how to run a business, organize it. Over a long period, like 1929-82 actually, this accounts for almost 2/3 of the total increase."

DAVID SCHOUMACHER: In agriculture, advances in knowledge led to new seeds, machinery and chemicals...and more crops from fewer workers. Displaced farm workers migrated to the cities to more productive jobs in the factories and steel mills of industrial America. Throughout the 1950's and 60's, productivity soared. But by the 1970's, something was drastically wrong. Throughout the economy, productivity growth was

slowing down. The reasons were not immediately clear, but, in retrospect, several factors stand out. The beginning of the 1970's brought a new era of concern about the environment...Regulations aimed at cleaning up pollution had an immediate and costly impact on American industry. Bethlehem Steel president, Walter Williams...

WALTER WILLIAMS: "We spent, if I remember the numbers correctly, in the equivalent of 1980 dollars, almost a billion dollars in the previous 15 years on environmental facilities. Now that meant that that money was not available for modernization projects."

DAVID SCHOUMACHER: Government regulations forced industry to spend billions cleaning up the environment and protecting the safety of its workers...and millions of these workers were new to the jobs...baby boomers eager to work, but still young and untrained. Their inexperience led to lower output per hour of work...less productivity. In 1973, war in the Mid-East led to an embargo of oil from the Persian Gulf. Energy prices soared...Productivity growth took a nose-dive. And throughout the 1970's, an economy reeling from spiraling energy costs saw all its other costs rising too. Inflation seemed to be an incurable cancer eating away at the American economy...creating a climate of economic fear and uncertainty...discouraging the capital investment that might have improved an increasingly dismal productivity performance. If many different factors had been responsible for the growth of American productivity, it seemed that an equal diversity of factors was conspiring to retard that growth. Productivity performance during the 1970's dropped to less than half the rate of the previous half century...and productivity expert Edward Denison was not encouraging about the prospects for an "easy cure".

EDWARD DENISON: "I think the most important thing to recognize is that no one thing is going to make an enormous difference. And I once was given the task of trying to find some "quick fix" for the growth rate...and my conclusion was it takes an enormous amount of doing to get even a tenth of a point addition."

DAVID SCHOUMACHER: Productivity is an illusive concept...You'll find the tail of a kingdom lost for want of a nail in poetry, not in economics. Just as there were many factors that contributed to the phenomenal growth of American productivity, so there were many factors that contributed to the decline in growth in the 1970's...factors that resist "quick and easy" solutions. We asked economic analyst Richard Gill to comment on the long-range significance of productivity growth and the factors that might cause it to decline.

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RICHARD GILL: Many people fail to understand the true significance of productivity growth because the numbers we use to express it...1 or 2% a year...seem very small. The first thing to realize is that these "small" numbers involve really huge changes in output per capita and living standards over long periods of time. Our historic rate of productivity increase, of between 1 _ and 2% a year, has meant a fivefold increase in our real incomes over the past century. So productivity growth is important and any decline in it is necessarily a matter for concern. But was the decline we observed in the 1970's a permanent one or merely temporary? There certainly were many special factors at work during the 1970's. The oil shocks made energy inputs suddenly much more expensive; rapid inflation increased economic uncertainty; the composition of the labor force, with many young and inexperienced new entrants, was changing; and so on. On the other hand, certain factors...for example, government regulations to protect the environment...may be with us for some time to come. Nor do we know that the 1970's bout with high inflation will be our last, nor for that matter, what new supply shocks may hit us in the years ahead. Whatever the future, the experience of the 1970's strongly suggested that productivity growth was something we could no longer take for granted. Was there anything we could do to improve it?

PART II

PRESIDENT JIMMY CARTER: “We’ve always believed in something called progress...We’ve always had a faith that the days of our children would be better than our own...For the first time in the history of our country, a majority of our people believe that the next five years will be worse than the past five years.”

DAVID SCHOUMACHER: As American productivity performance declined in the 1970’s, American self-confidence seemed to decline with it. The lack of a clear and specific cause only added to the frustration. By 1978, President Jimmy Carter was asking himself, what could the government do to improve productivity? Long before Jimmy Carter was a politician, he was a nuclear engineer. And as an engineer he understood the historic relationship between productivity, technology and research and development. The effort to send a man to the moon consumed billions of dollars of American wealth and 10+ years of single-minded national commitment. But even before John Glenn orbited the earth, American consumers were starting to enjoy the productivity benefits that came from advances in metallurgy, communications and computer sciences...all developed by the Space Program. When Carter became president, he supported NASA’s Space Shuttle Program...he pushed hard for government funding of efforts to develop new energy sources. He saw the nation on the threshold of exciting breakthroughs in such fields as robotics, electronics and genetics. And he discovered that his options were limited. Technology expert Jordan Baruch explains...

JORDON BARUCH: “Innovation for a Space Program, innovation for defense, innovation for anything where the federal government is the customer is easy to take care of. Stuff that is difficult to take care of is innovation where you and I are the customer...It requires a knowledge of the market...It requires an environment in the company that will encourage innovation.”

DAVID SCHOUMACHER: Despite increasing foreign competition, American investment in research and development was declining as a percentage of GNP. Why were businesses so reluctant to invest in research and development? We asked productivity expert Edwin Mansfield...

EDWIN MANSFIELD: “Basically, one of the most important factors is that the firm cannot appropriate all of the social benefits...If the firm comes forth with a new product, a new process, many of the benefits from a process or product accrue to spill out to the firm’s customers, the firm’s suppliers, others besides that firm...And so consequently, because the firm can’t appropriate all of the benefits that it creates, it tends to under-invest in that form of activity.”

JORDAN BARUCH: “The President saw a report by the National Science Foundation that showed a decline in industrial research and development...and the first question that was asked by the policy office to the White House was: Why the decline? And that question was then modified to: What can we do about the decline in industrial research and development? But as we all realized that research and development was only a little part of the innovation process, we finally got to the question: What should the federal government do to encourage industrial innovation?”

DAVID SCHOUMACHER: In 1978, the Carter Administration pooled the resources of two dozen major government departments to find ways to help industries to innovate. The domestic policy review eventually presented the president with a menu of over 30 policy options targeted at restoring flagging productivity growth.

PRESIDENT JIMMY CARTER: “The actions that I’m announcing today meet this goal. First of all, they will loosen some of the stifling restraints that have been placed upon innovation by government. Secondly, they represent a first major step toward forging a public and private partnership which will rally cooperative efforts to spur industrial growth.”

DAVID SCHOUMACHER: A corner had been turned...and we seemed to fact a new awareness of the role of government in helping industries to be more productive.

JORDAN BARUCH: “This was not an effort to decide what industry should be investing its money in...not an effort to decide what innovations were important to our society. Government can make that decision when it involves defense, space, the post office or some other government function, but this was an effort to help industry decide to respond to the needs of the public.”

DAVID SCHOUMACHER: Most technology research in the United States is and always has been financed by private industry. What the government tried to do in this case was lend a helping hand by encouraging businesses to innovate...and permitting society to reap the benefits of that innovation. We asked Richard Gill why economists put so much emphasis on new technology...

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RICHARD GILL: Modern experts, like Edward Denison and Edwin Mansfield, agree that, in one way or another, new technology is at the heart of productivity growth. Much of this growth is, in fact, in the form of new products that didn't even exist a century ago: And the way we produce old products...like wheat or poultry...has also been revolutionized by new technology. What this means is that the intangible, human factors in growth...advances in knowledge, increased education, research and development programs...are universally agreed to be critically important to increasing our productivity. The practical question here is how fare the government should take the lead in promoting these factors. We have examples of successful government projects, like the original atomic energy program or the space program, two projects close to President Carter's heart. There are also several general arguments as to why the government should involve itself heavily in research and development work. The costs of certain projects may be too large for private industry; the pay-offs may be too far in the future;

also there is the danger of rival firms imitating, pirating or otherwise benefiting from one's own R & D efforts. All this adds up to a strong case for government involvement. On the other hand, there is also a theory that the best thing the government can do is to provide incentives to private industry or, better yet, back off from the economy generally. This theory was definitely being heard from in the late 1970's and early 1980's.

PART III

PRESIDENT RONALD REAGAN: "We have the highest percentage of out-moded industrial plant and equipment of any of the industrial nations. I stood in Ohio in a great empty shell of a building that was once a steel plant. The weeds are beginning to grow up, closed because they could not afford to modernize. And punitive taxes and those excessive regulations mandating additional costs on them had been responsible."

DAVID SCHOUMACHER: Ronald Reagan promised to get the government off the backs of the American people. He argued that less government would give us greater productivity. The keystone of his play was a \$750 billion tax-cut. In 1981, the crucial question was: How could we get more productivity with less taxation? The 1970's had been difficult years for America...for the people, for the government, even for economists. By 1980, a growing number of people saw the government as the source, not the solution, of economic miseries. A new group of economists began to say..."let's unshackle private enterprise...let's get the government out of the marketplace...let's give the people an incentive to produce." These economists were called "supply-siders" and their spokesman was Arthur Laffer.

ARTHUR LAFFER: "People don't work to pay taxes...People work to get what they can after taxes. People don't increase the productivity of their capital or their labor or their production processes to give the money away to the government...They do it to make more profits themselves. And when you cut the taxes, you increase their incentives for doing that activity...They'll increase productivity output and employment. Who cares about productivity when you don't get any benefits from it? Frankly, people don't

work for nothing...they work to get paid and when you increase the amount they get after the tax...you'll find them doing more of it.”

DAVID SCHOUMACHER: Laffer believed that tax-cuts would cause people to work harder...Economist Norman Ture argued that the result would be increased savings...

NORMAN TURE: “Every dollar of additional savings represents an additional dollar of capital of some sort. It is a fundamental law of economics...which to my knowledge has not been repealed either by John Maynard Keynes or the United States Congress...that the most effective way of increasing the productivity of labor is by increasing the quantity and the quality of the capital with which it is employed.”

PRESIDENT RONALD REAGAN: “We move on to the individual...you and me...and my proposal is for a 10% cut in the income tax across the board, not a special cut for someone while someone else...you know, rob Peter and pay Paul...we're all named Peter today. 10%...a 10% cut in 1982, and another 10% in 1983...a 30% cut over a three year period.”

DAVID SCHOUMACHER: But mainstream economists like Nariman Behravesh remain sharply critical of Reagan's “supply-side” tax proposal...

NARIMAN BEHRAVESH: “I think the issue was that most people believed that there was some impact of reducing marginal tax-rates on work effort and savings...but most analyses suggest that that impact was very small...in fact, so small that it would not have the kind of “supply-side” effects that was being talked about by people like Art Laffer.”

DAVID SCHOUMACHER: The American people were ready for a change. Ronald Reagan swept to victory in the November election...but his battles had only begun. Democrats in the House of Representatives were determined to block the new President's tax plan. But, as Reagan prepared to take his program to Congress, he found some new friends along the way...and some new ideas for his tax package. Congressman Barber

Conable added a carrot for business in the form of faster depreciation of capital investment.

CONGRESSMAN BARBER CONABLE: “The basic Reagan idea was to have a simple proposal of two parts...rate cuts, and cuts for business that would be given in such a way that would encourage investments and therefore improve productivity. And the ACRS 10-5-3 Jones-Conable Bill was the second half of the proposal. I felt it was very necessary, in short, to encourage productivity growth...to encourage savings. I am not a Keynesian. I don’t believe that you can handle economic policies solely by taking those steps that will stimulate consumption. I think you’ve got to give some incentives to savings too.”

DAVID SCHOUMACHER: For months Reagan, Conable and the Republicans hammered away at the Democrats in Congress, trying to pry loose enough votes to pass the tax package. But the opposition held...the Reagan program was going nowhere. The tax bill was amended...then amended again in an effort to attract more votes...then the President took his case directly to the people.

PRESIDENT RONALD REAGAN: “This is absolutely essential...if we’re to provide incentives and make capital available for the increased productivity required to provide real permanent jobs for our people.”

DAVID SCHOUMACHER: When the votes were counted, the President had muscled through a great political victory. But was it an economic victory as well? Did the tax-cut increase productivity?

ARTHUR LAFFER: “Yes, clearly, it not only led to better productivity...It also led to an increase in employment. See, to increase output and employment production in the system, there are two ways of doing it. One is productivity, which means you get more for each worker, and the other is to increase the number of workers. And what you found

happening is...both went up. We not only got a lot more employment...we also got a lot more productivity per employee, which is just the perfect combination.”

NARIMAN BEHRAVESH: “I think, by all estimates, it really did not succeed terribly well. Part of it is that the “supply-side” effects were really swamped by all the demand effects...in other words, the boosts in consumption that occurred and the boosts in investment spending. The one “supply-side” effect that did come through was that the ’81 tax-cut did provide very generous benefits to businesses for investment purposes, and this did boost investment, which in a very traditional, Keynesian way, led to a higher capital stock...led to increased productivity in the long run.”

ARTHUR LAFFER: “You can call it anything you want...the question is...it works. Now, those of us in sort of the academic garb who like to get into the footnotes and argue there...sure, you can say, was it a demand shift or was it a supply shift? Who cares? Production output, employment increased enormously...Now I think it was a supply shift...”

DAVID SCHOUMACHER: 1981 was a bad year for the economy. 1982 was even worse. But 1983 was a boom year...a year that saw many of President Reagan’s economic predictions come true. To many it seemed we really had improved productivity by cutting taxes...Workers and businesses alike were working harder and investing more. But to the economics community as a whole, the relationship was by no means that simple. We asked Richard to summarize. How does a tax-cut stimulate productivity?

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RICHARD GILL: The ways in which lowered taxes can improve productivity are fairly obvious. Higher take-home pay may encourage workers to work harder and more efficiently. Lower taxes may provide businesses with more funds for investment and

greater incentives to take the risks of introducing new technologies. The real issue is: How large are these effects? Take the Reagan tax-cuts of the early 1980's. The supply side enthusiasts argued that lower tax rates would lead to much higher productivity, which would lead to a greatly increased GNP, and that this greater GNP would actually result in higher total government tax revenues, even at the lower rates. In short, we'd get such spectacular increases in productivity and growth that we wouldn't even have to think about government deficits! The less enthusiastic view was that lower tax rates would indeed lead to big budget deficits, that government borrowing would lead to high interest rates and that this would result in lower business investment and growth. Obviously, the effects of the Reagan tax cuts are very complicated...and many of these effects are still with us. If we simply compare 1981 with the late 1980s, we can say: yes, productivity did increase; yes, there was growth; yes, in fact, total federal tax revenues did increase. But also yes, there were huge budget deficits and yes, real interest rates did show a substantial rise. Perhaps on one point both sides might agree: If you're going in for massive tax-cuts to spur productivity growth, it would probably also be at least prudent to do something to keep the government spending side of the equation in check.

Schoumacher Closing Standup

DAVID SCHOUMACHER: During the 1970's Productivity growth declined and we still don't know all the reasons why. In the late 1980's the rate of growth was higher, but far less than the optimistic predictions of the supply-siders. Some economists praised the Reagan policies for improving productivity growth. Others declared the policies a failure for not improving it enough. But one thing was clear: the poor productivity of the 1970's and the somewhat disappointing recovery of the 1980's have caused all economists...supply-siders and demand-siders alike...to take a much closer look at the ability of the economy to produce, as well as its appetite to consume. For "Economics USA," I'm David Schoumacher.

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