



## Take a Walk on the Supply Side

Tax Cuts on Profits, Savings, and the Wealthy Fail to Spur Economic Growth



SOURCE: AP/Gail Oskin

Francisco Brum, who worked at the Prince pasta plant for 25 years, walks past the factory for perhaps the last time after it closed, putting 300 employees out of work.

**By Michael Ettlinger, John S. Irons | September 12, 2008**

The first supply-side era in modern economic history began in earnest in 1981 with huge tax cuts for the wealthy and corporations. Although there were modest steps back from these tax cuts in the ensuing years in response to fiscal deficits and tax-sheltering, this first supply-side era didn't end until the tax hikes of 1993. This respite from supply-

side policies ended in 2001, however, when a new set of supply-side tax measures were enacted. Today, as budget shortfalls mount and the economy weakens, the supply-side approach to economic policy is once again up for debate. This paper reviews the theory underlying supply-side tax cuts and examines their results.

The term “supply-side” comes from the idea that economic policy, and tax policy in particular, can influence private-sector production decisions by changing the incentives to work or to invest. Like many ideologies pushed to an extreme, supply-side theory does contain a kernel of truth: In certain circumstances lower tax rates can lead to additional economic activity and can lead to additional government revenue. This is a standard incite in public economic theory. But, it is equally true that in other circumstances lower tax rates do not lead to additional economic activity or government revenue.

The chain of logic for supply-side policies to work requires the following. Lower tax rates on savings (or on those who save more) leads to higher saving rates. Higher saving leads to more economic investments and greater capital accumulation. Finally, more capital leads to greater economic growth. At each of these steps, however, there is reason to doubt the theory—there are other possible outcomes and conflicting theories.

The efficacy of supply-side policies thus becomes an empirical question: Do they work? As importantly, do they work better than alternative approaches of greater public investment to stimulate our economy? The two supply-side eras that sandwich the period from 1993 to 2001 offer us an opportunity to assess the impact of supply-side policies. The claims for these policies have been great, yet the results have been meager. Specifically:

- Real investment growth after the tax increases of 1993 was much higher than after the tax cuts of 1981 and 2001. The yearly growth rate after 1993 was 10.2 percent versus 2.8 percent for the

first supply-side era beginning in 1981, and 2.7 percent in the period of the second supply-side era beginning in 2001. Without better investment growth being associated with supply-side policies, a critical link in the theory of supply-side economics is broken—and it is difficult to draw any plausible connection between supply-side tax cuts and any observed positive economic performance.

- Economic growth as measured by real U.S. gross domestic product was stronger following the tax increases of 1993 than in the two supply-side eras. Over the seven-year periods after each legislative action, average annual growth was 3.9 percent following 1993, 3.5 percent following 1981, and 2.5 percent following 2001.
- Average annual real median household income growth was greatest after the 1993 tax increases, at 2.0 percent annually compared to 1.4 percent after 1981 and 0.3 percent after 2001.
- Wage levels also did better after 1993. Average real hourly earnings following 1981 fell at an annual rate of 0.1 percent and following 2001 rose at a rate of only 0.3 percent. Following the 1993 tax increases average hourly earnings grew by 0.9 percent per year.
- Employment growth was weaker during the supply-side eras than during the post-1993 era. Average annual employment growth was 2.1 percent after 1981, 2.5 percent after 1993, and 0.6 percent after 2001.
- Federal budget deficits and national debt increased during supply-side periods and decreased following the 1993 tax

increases. In the seven years from 1993 to 1999, the country went from a federal deficit of 3.9 percent of GDP to a surplus of 1.4 percent. After 1981 the deficit ballooned to 6 percent of GDP by 1983. In the year the 2001 tax legislation was adopted, there was a surplus of 1.3 percent of GDP. This turned into a deficit of 3.6 percent by 2004, which fell back to 1.2 percent in 2007 but will undoubtedly be higher in 2008. The national debt has followed a similar pattern, rising by an astounding 14.8 percentage points relative to GDP over the 7 years following adoption of the 1981 supply-side tax cuts, shrinking by almost 10 percentage points relative to GDP following 1993, and moving back up by 3.8 percentage points relative to GDP after the 2001 tax cuts.

Of course, the reason for the failures of the supply-side periods to deliver as strong an economic performance as the 1993 to 2001 era may not have anything to do with tax policy. Other short-term factors and long-term trends influence the economy as well. The evidence that supply-side tax cuts help economic growth is, however, weak at best and much contradicted in the economic literature. As the data we present in the pages that follow shows, economic policies with tax cuts for corporations and the wealthy as their centerpiece have simply failed to produce strong economic growth by a variety of measures.

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Michael Ettlinger Center for American Progress

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# Introduction and summary

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The term “supply-side” comes from the idea that economic policy, and tax policy in particular, can influence private-sector production decisions by changing the incentives to work or to invest. Like many ideologies pushed to an extreme, supply-side theory does contain a kernel of truth: In certain circumstances lower tax rates can lead to additional economic activity and can lead to additional government revenue. This is a standard incite in public economic theory. But, it is equally true that in other circumstances lower tax rates do not lead to additional economic activity or government revenue.

The chain of logic for supply-side policies to work requires the following. Lower tax rates on savings (or on those who save more) leads to higher saving rates. Higher saving leads to more economic investments and greater capital accumulation. Finally, more capital leads to greater economic growth. At each of these steps, however, there is reason to doubt the theory—there are other possible outcomes and conflicting theories.

The efficacy of supply-side policies thus becomes an empirical question: Do they work? As importantly, do they work better than alternative approaches of greater public investment to stimulate our economy? The two supply-side eras that sandwich the period from 1993 to 2001 offer us an opportunity to assess the impact of supply-side policies. The claims for these policies have been great, yet the results have been meager. Specifically:

- Real investment growth after the tax increases of 1993 was much higher than after the tax cuts of 1981 and 2001. The yearly growth rate after 1993 was 10.2 percent versus 2.8 percent for the first supply-side era beginning in 1981, and 2.7 percent in the period of the second supply-side era beginning in 2001. Without better investment growth being

associated with supply-side policies, a critical link in the theory of supply-side economics is broken—and it is difficult to draw any plausible connection between supply-side tax cuts and any observed positive economic performance.

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Of course, the reason for the failures of the supply-side periods to deliver as strong an economic performance as the 1993 to 2001 era may not have anything to do with tax policy. Other short-term factors and long-term trends influence the economy as well. The evidence that supply-side tax cuts *help* economic growth is, however, weak at best and much contradicted in the economic literature.<sup>1</sup> As the data we present in the pages that follow shows, economic policies with tax cuts for corporations and the wealthy as their centerpiece have simply failed to produce strong economic growth by a variety of measures.

# A brief history of supply-side economic theory

Starting in the late 1970s, the idea that cutting taxes on corporations and the wealthy was the key to spurring economic growth began to take hold in political circles. While some “supply-side” tax changes happened earlier, they became the governing philosophy starting with the election of President Ronald Reagan and his massive tax cut of 1981. Almost immediately upon enactment that year, it became clear that at least one prediction of supply-side advocates was not going to come true—that the tax cuts would trigger economic growth of such magnitude that the increased tax revenues generated by that growth would more than pay for the tax cuts.

Faced with huge budget holes and rampant tax-sheltering, legislation enacted in 1982, 1984, 1986, and 1990 walked the federal government back a few steps from the excesses of the 1981 legislation. But supply-side economic theory ruled as a governing principle and as a reality in the tax code until the election of President Bill Clinton. The 1993 tax legislation was based on an entirely different principle—aimed squarely at raising taxes on the wealthy and corporations in pursuit of lower budget deficits and a tax reduction for those with very low incomes.

The election of President George W. Bush in 2000 brought the supply-side principle back into government—with its advocates again claiming that tax cuts for the wealthy were the key to the nation’s economic well-being. This belief manifested itself in a series of supply-side tax cuts, most significantly in 2001 and 2003.

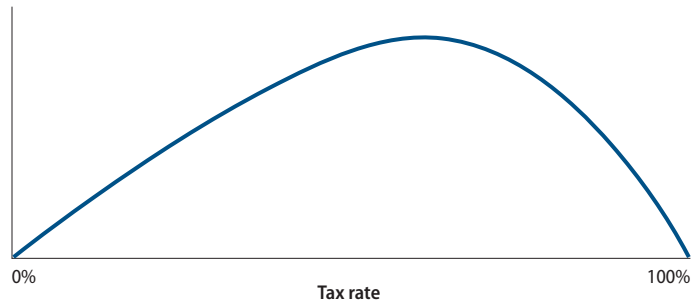
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## The theory and its potential flaws

Supply-side economics remains a mainstay of right-wing economic ideology. The term “supply-side” comes from the idea that economic policy, and tax policy in particular, can influence production decisions by changing private-sector incentives to work or to invest. While that insight is not unique to those who profess to be supply-side adherents, they have taken this idea to its extremes. Like many ideologies pushed to an extreme, supply-side theory does contain a kernel of truth: In certain circumstances lower tax rates can lead to additional economic activity and can lead to additional government revenue.

## The Laffer Curve

Government revenue



This core insight, while nothing new to economic thinking, is codified in political circles as the Laffer curve. The insight is simple—if a tax rate is 100 per cent, then there will be little of the taxable activity undertaken (or reported) and thus the government would receive little or no revenue. Lowering the tax rate will thus create more (reported) economic activity and thus more revenue. The other side of the curve shows that, in a similar way, zero taxes will lead to no revenue, and thus an increase in tax rates will lead to additional revenue. The net result of these two insights is a graph that shows revenue grows with tax rates, up to a point, and then declines.

A key empirical question, then, is where the peak is located. If tax rates are “too high,” that is, if they are above the point that maximizes revenue, then lower tax rates would increase economic activity so much so that it would increase revenues. While the Laffer curve is a standard theoretical insight in public economics—one that economists agree on no matter what their political persuasion—the curve itself has been disingenuously expanded and exploited over the years. This is done along two dimensions. First, despite ample evidence to the contrary, many supply-siders continue to argue that U.S. tax rates are on the right-hand side of the Laffer curve, and thus lowering rates would increase revenues. Thus “tax cuts pay for themselves” is now a regular refrain.

Second, supply-siders take the core insight—that higher taxes can discourage economic activity—to an extreme, arguing that the impact of lower taxes (of various kinds) will lead to greater long-term economic growth and not just to an increase in short-term activity. This link to economic growth—rather than a one-time boost in activity—is important. Economists know much more about how to spur the economy in the short term, while the keys to long-term growth are more elusive. Further, many supply-siders argue that the only way to increase growth is to cut taxes, and that there is little else the government can or should do to promote economic growth.

Supply-side rhetoric as practiced by many policymakers is rarely a coherent theory. However, if we are generous, we can describe a chain of logic that could potentially yield the claimed impact. That chain would look something like the chart on page 5. Lower tax rates on savings (or on those who save more) would lead to higher savings rates. Higher savings would then lead to more economic investments and greater capital accumulation. Finally, more capital would then lead to greater economic growth.

While many supply-siders believe that any tax cut is a supply-side boost, others believe that only certain kinds of tax cuts qualify as supply side. The more limited cuts would include tax reductions on savings or capital accumulation (through capital gains or

dividend tax rates), corporate tax rates, estate taxes, and taxes on higher-income individuals (since they tend to save at higher rates).

There are a number of fundamental flaws in this chain of logic—both in theory as well as empirically. We will highlight the empirical failings below, but it's important to note that this simple theoretical story—while compelling on the surface—does not hold up to scrutiny.

First, tax cuts on savings and investment do not necessarily lead to higher savings rates. For example, if people aim for a “target” level of wealth when they retire, then a higher after-tax rate of return could lead people to save less—not more. Further, when moving from theory to the real world, we need to consider the complexities of the tax code. Case in point: A decrease in the capital gains tax rate will have little impact on the saving rate for people's accumulation of housing wealth (since there already is a large tax exemption on home appreciation) or retirement savings (since Individual Retirement Accounts and 401(k) pension savings plans are already tax-preferred).

Whether people would save more or less because of a capital gains tax cut is thus purely an empirical question. As we will see below, the empirical evidence for the causal chain does not support the supply-side theory.

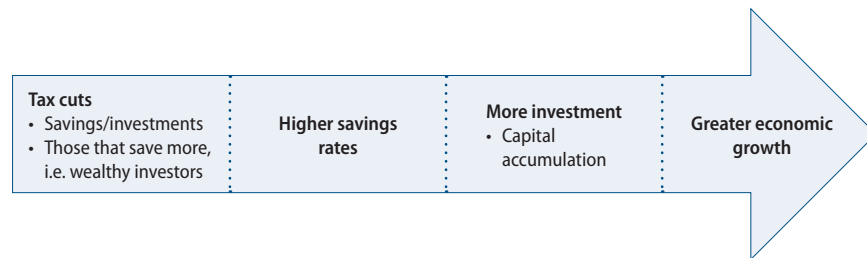
Second, higher saving rates do not necessarily lead to faster long-term growth. In classic economic growth theory, long-term per capita economic growth is determined largely by technological change, while savings rates have only a temporary impact on growth. There are a variety of other economic models that would show an impact of higher savings rates on growth, but the validity of such models is still open to question.

Theory again must also meet real-world complexities. In a global capital market, increased domestic savings need not result in additional domestic investment: Domestic savings could flow overseas, or be swamped by other global factors. Higher savings rates could also mean temporary lower consumption levels and a decline in economic activity in the short term.

Finally, since reductions in tax rates do lower revenue in practice, the tax implications cannot be analyzed in isolation. Supply-side tax cuts will lead to bigger federal budget deficits and/or spending reductions. To the extent that larger deficits decrease national savings, this would offset the savings link in the above chain. And to the extent that cuts in federal

## The Supply-Side Chain

For supply-side economics to work, each of these steps must happen, but that is very much open to debate.



investments—for example, in education, science and technology, and national infrastructure—lead to lower investments or to slower technological advancement, these cuts could very well harm long-term economic growth.

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## What’s missing from supply-side theory?

Adherents to supply-side economic theory not only argue for tax cuts on investments and the wealthy. They also oppose other methods to stimulate economic demand or to increase national investment in areas that might increase economic growth. Further, supply-siders often argue that “government spending” in the abstract is a deterrent to growth despite any sound evidence to support that notion. In recent years, supply-side zealots have approached this issue with blinders on. They ignore contradictory evidence that would question their theory, and reject other policies and other ideas that could stimulate the economy and create jobs. Specifically, they ignore that:

- In an economic downturn, additional demand for goods and services might spur business investment faster and more reliably than investment tax incentives. When the economy is suffering, businesses need customers, not a tax break on non-existent profits. While the economic stimulus package passed in early 2008 did provide tax rebates that increased consumption,<sup>2</sup> there were other provisions, such as increased investments in infrastructure and extended unemployment benefits, that were left out. Yet tax cuts for business investment were included.
- Forgone tax revenues could be used for other investments with greater long-term returns to the economy. Evidence shows that investments in early childhood education, for example, can pay enormous economic rewards over the long haul. Similarly, federal investments in basic science and applied technologies can help spur technological advancement, and investments in renewable energy can begin to wean the economy off of foreign oil.
- Tax preferences can breed tax shelters that are inefficient. For instance, preferences for returns on capital increase the incentives to reclassify ordinary income as realized capital gain—thus while on paper savings and investments might appear to increase, there may be little real economic change. That’s why supply-side changes can create distorted behavior as well as economic inefficiency due to resources being spent in the tax-sheltering industry.

In sum, each of the links in the supply-side chain faces both theoretical as well as empirical hurdles. The following section addresses some of the empirical evidence.

# Analyzing the impact of supply-side policy

In this analysis we examine the three periods following the three major pieces of tax legislation passed in 1981, 1993, and 2001—with the post-1981 and post-2001 periods representing supply-side eras and the post-1993 period representing a respite from supply-side policies. We compare economic and fiscal performance during these periods using a number of different measures.

There has been, throughout these periods, much tax legislation (there's legislation passed almost every year). In our analysis, what distinguishes tax legislation as supply-side or not supply-side (and era-changing or not-era changing) is whether it increases or decreases taxes, the magnitude of the change, and whether it has a significant supply-side component, which we define as tax changes to the corporate income tax or tax changes that predominantly affect high-income payers of personal income tax or the taxation of capital.

The 1981 legislation included huge tax cuts on corporate income, substantial tax breaks for savings and investment, and a significant lowering of the top personal income tax rates on all forms of income. Within a year of the passage of the 1981 legislation, Congress and the president began to have doubts about what they'd done. Faced with massive budget shortfalls as a result of the tax change, legislation in 1982 and 1984 stopped the phase-in of pieces of the 1981 bill and reduced some of its impact.

The grand 1986 tax reform, although not having a large revenue impact overall, also reduced some of the supply-side impact of the tax code by closing loopholes and raising the capital gains rate (although at 28 percent it was still set lower than most periods prior to 1978). Taxes on corporations were increased overall by the 1986 act, although the top rate was reduced. The top rate on income other than capital gains, however, was reduced to 28 percent from 50 percent.

The small tax increase of 1990 also was a retreat from supply-side economics (though the political firestorm that surrounded it made it seem far more important than it was). We do not count the legislation of 1982, 1984, 1986, 1990, or even lesser tax legislation in the period as era-ending revisions. The reason: Their impact was small relative to the sweeping 1981 legislation, and in the case of the legislation in the immediate shadow of the 1981 law, much of their effect was prospective, stopping provisions enacted in

1981 from becoming fully phased in, not repealing already effective provisions. Overall the period starting in 1981 can be fairly considered to have been ruled by supply-side economic policy.<sup>3</sup>

A change of direction came in 1993. Although the tax increase of 1993 was hardly the “largest tax increase in history” as was claimed by opponents at the time, it was squarely aimed at raising taxes on the wealthy and corporations. Corporate taxes were raised and the top rate on the personal income tax was increased to 39.6 percent among other provisions. Although 1997 tax legislation included a small backsliding into supply-side policy, its impact was far less than the 1993 law. Examination of the period following 1993 gives us a strong basis for comparison to the supply-side tax regimes that preceded and followed.

The 2001 tax legislation launched a new supply-side era that was expanded on in subsequent legislation. Corporate tax breaks were passed. Among other personal income tax changes, the top rate on capital gains and dividend income dropped to 15 percent. The top rate on other income was dropped to 35 percent.

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## The measures and the measurement

We look at several indicators to assess the economic impact of supply-side economics. These include growth in investment, productivity, gross domestic product, median household income, average hourly earnings, employment, and the federal budget deficit and debt. It should be noted that during the periods we examine, as in all other periods, many things other than tax policy were affecting the economy and these measures of the economy. Our analysis will not tease out subtle effects of supply-side policies. If, however, supply-side policies have the impact claimed by its proponents, one would expect to see sharply observable better performance in investment, productivity, economic growth, income growth, wages, and employment under supply-side tax regimes than under a non-supply-side regime.

In examining the performance of each of the measures we look at them in two ways. Conventionally, economists prefer to control for business cycles in economic analysis. There’s a good reason for this. Comparing the short-term impact of a policy change that occurs in a recession to the short-term impact of a policy change that occurs during an economic expansion will obviously produce a distorted conclusion. Recognizing this, one of the ways we compare economic performance under the three tax regimes is by examining the first economic expansion under each tax regime. Specifically, we look at economic performance during the five-year period (or four-year period where five years of data are not available) starting 10 quarters into the expansion after each of the pieces of tax legislation. For the 1981 legislation, the period starts in the second quarter of 1985; for the 1993 legislation, the period starts in the third quarter of 1993; and for the 2001 legislation, the period starts in the second quarter of 2004.<sup>4,5</sup>

For each measure, we also examine the seven-year period immediately following agreement on the defining piece of tax legislation.<sup>6</sup> Among the claims made for supply-side tax cuts are that they will have powerful and immediate positive effects for weak economies, and promote superior economic growth over long periods. These are not subtle changes in policy meant to improve one area of economic performance—to supply-side advocates they represent an entirely different approach to economic policy. Supply-side proponents are often, in fact, disdainful of traditional demand-side stimulus in times of economic weakness. The relative strength of an economy under supply-side and non-supply-side tax regimes over a seven-year period immediately following final agreement on the provisions in the legislation is certainly relevant evidence as to the efficacy of supply-side policies.

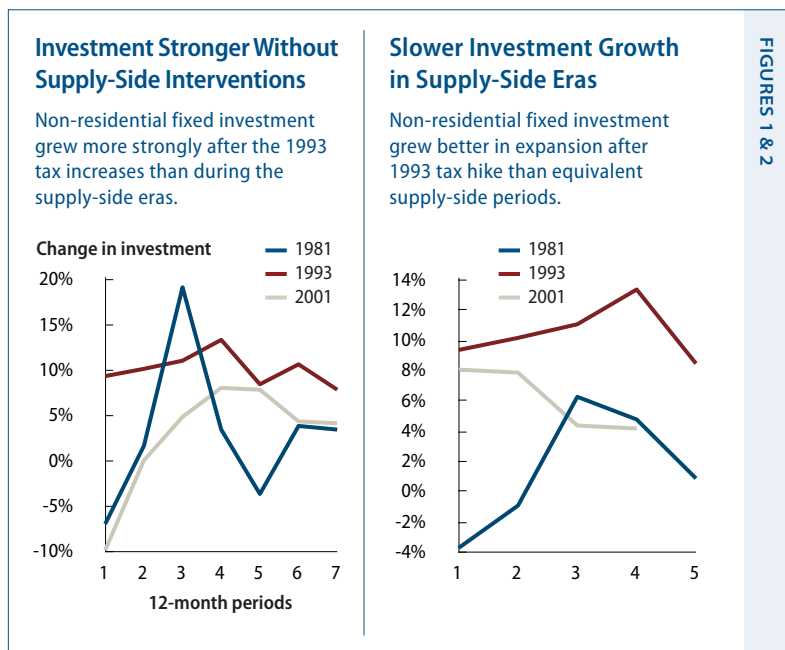
We choose seven years because it is the longest period possible without overlapping supply-side and non-supply-side eras (the 1993 period has to end before the 2001 period starts). An alternative approach would have been to examine each era through to its end, instead of look at each over seven years. This would, however, make the supply-side eras look worse relative to the era following 1993—the 1990 recession and the current economic downturn would both come more into play than the recession at the end of the 1993 period.

We have chosen these periods for our analysis for the reasons described. Other periods could, of course, have been chosen. The conclusions drawn below, however, hold up under all defensible choices.

## Investment

One of the basic premises of supply-side theory is that tax cuts will produce substantial increases in business investment. This, however, has not been the case. Investment growth was much greater in the era after the 1993 tax increases than after either the 1981 tax cut or the 2001 tax cut.

To assess whether supply-side tax cuts boosted investment we compare growth in non-residential fixed investment in the different periods. In the two supply-side eras the average growth rate in real investment was unimpressive: It was 2.8 percent in the seven-year period beginning in 1981 and 2.7 percent in the period beginning in 2001. In the period with higher taxes beginning in 1993, the growth rate was 10.2 percent. In the parallel por-



Source: Authors' analysis of quarterly Bureau of Economic Analysis data. Year-over-year growth rates in BEA quarterly index of non-residential fixed investment.<sup>9</sup>

tions of the business cycles following the tax changes of 1981, 1993, and 2001, investment grew faster under the 1993 tax regime than under either supply-side regime. The average rate of growth was 10.5 percent post-1993, 1.4 percent post-1981, and 6.1 percent post-2001. Thus, the lower growth rates in investment were not due to the tax changes occurring at different points in the business cycle.<sup>7</sup>

Figure 1 is the annual change in non-residential fixed investment for each of the seven-year periods. After the 1981 legislation investment fell for a year, then grew gradually, registering very strong growth moving into 1984 and continuing through most of 1985. It's noteworthy that it didn't start to grow until after the 1982 legislation, which was the most significant claw back of the 1981 cuts prior to 1993. In late 1985, investment growth fell to disappointing levels—with investment declining for a period in late 1985 into 1986.

In contrast, the post-1993 era registered investment growth at a consistently high rate over the period and actually grew slightly more slowly after the 1997 tax cut. After the 2001 legislation, however, investment fell alarmingly and has been growing since then at a relatively slow rate.

Figure 2 shows non-residential fixed investment after 1981, 1993, and 2001 for an equivalent period in the business cycle, beginning 10 quarters after the end of a recession and continuing for five years (note that only four years of data are available for the period following the 2001 legislation). Investment did substantially better in the expansion following the 1993 tax increases than in the parallel periods after the tax cuts of either 1981 or 2001.

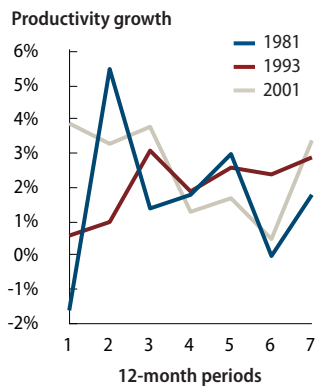
The failure of investment to respond to supply-side tax cuts greatly undermines the central premise of the theory underlying the policy. Any attempt to draw a causal connection between positive economic performance and supply-side policies during these periods is extremely strained. There is a basic break in the causal relationship by virtue of the failure of investment to increase in response to supply-side policies relative to an era when taxes were higher on corporations and high-income taxpayers. It is, in fact, not surprising that, as we shall see, economic performance was worse during the supply-side periods.

## Productivity

Figure 3 shows productivity growth in each of the seven 12-month periods following the 1981, 1993, and 2001 tax legislation. Productivity growth was

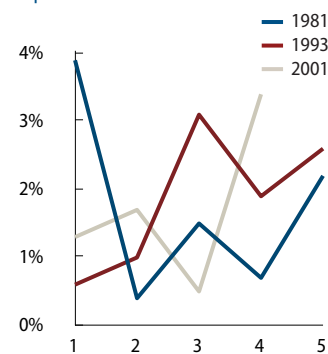
### Productivity Mixed at Seven Years

Supply-side eras' productivity growth sandwiches non-supply-side era.



### Productivity Weaker in Supply-Side Expansions

Productivity gains were higher during non-supply-side era expansion of 1993–1998.



Source: Authors' analysis of quarterly Bureau of Economic Analysis data. Year-over-year growth rates in BEA quarterly index of labor productivity.

overall greater after 1993 than after 1981—although after 1981 it varied greatly year-to-year. Productivity growth after the 2001 legislation started high and experienced a downward trend, then fell until the middle of 2007. The latest jump in productivity, however, is likely an artifact of businesses maintaining output at the expense of fewer workers—the growth on these terms is not sustainable. For these periods, average year-to-year productivity growth was at 1.7 percent post-1981, 2.1 percent post-1993, and 2.5 percent post 2001.<sup>9</sup>

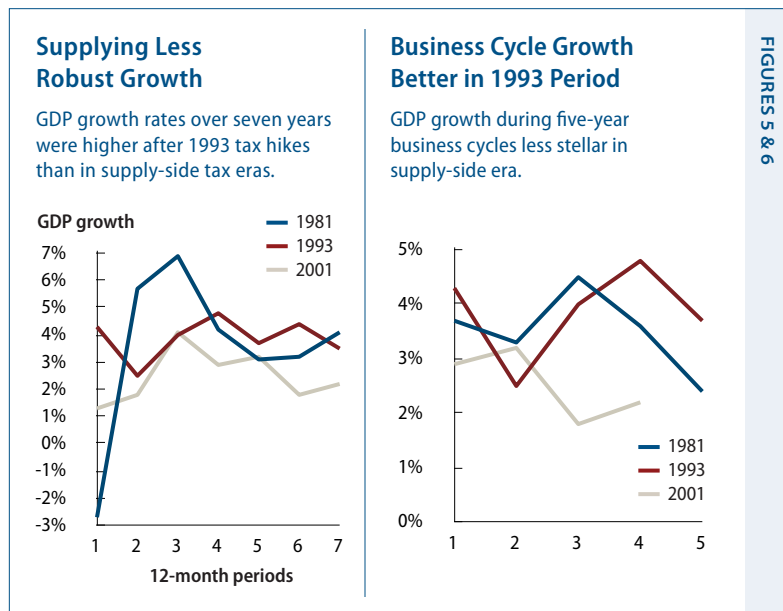
When examined at equivalent points in the business cycle, productivity growth was greater after 1993 than during either of the supply-side eras. Figure 4 shows the growth in productivity for five years during the parallel periods following each piece of tax legislation (four years for the 2001 act due to lack of data). Overall for these periods the average annual productivity growth was 1.9 percent during the expansion following the 1993 legislation, and 1.7 percent for both supply-side eras.<sup>10</sup>

Productivity growth is an important driver of economic growth and, to a significant degree, the mechanism by which increased investment is presumed to increase economic well-being. The failure of supply-side policies to clearly boost productivity, as with investment, makes it unlikely that those policies would result in general improvement in economic conditions.

## Gross domestic product

Change in gross domestic product is the broadest commonly used measure of economic growth. GDP is sometimes criticized for failing to capture much about how actual people are experiencing the economy, and it is not a measure of overall well-being. Nevertheless, as measure of growth of total national income it is well established.

Economic growth as measured by GDP was stronger following the tax increases of 1993 than in the two supply-side eras. Over the seven-year periods after each legislative action average annual growth was 3.9 percent following 1993, 3.5 percent following 1981 and 2.5 percent following 2001. The average yearly GDP growth rate during the parallel years of economic expansion for each of the eras was 3.8 percent for the non-supply-side post-1993 expansion, 3.5 percent in the first supply-side period following the 1981 tax cuts, and 2.5 percent since the 2001 legislation.<sup>11</sup>



Source: Authors' analysis of quarterly Bureau of Economic Analysis data. Year-over-year growth rates in BEA quarterly real gross domestic product.

Figure 5 shows economic growth as measured by GDP for the 7 years following the 1981, 1993, and 2001 tax legislation. After 1981, economic growth plummeted, with GDP falling in three of the next four quarters. But coming out of the extended period of the double-dip recession, growth was robust before falling back to more typical levels in the mid-1980s. Growth in the post-1993 era was strong and stable over the period and stronger overall than in the 1980s period. GDP growth after the 2001 tax cuts has generally been disappointing.

Figure 6 compares GDP growth at equivalent five-year periods in the economic expansions that followed each of the tax acts (four years for the post-2001 period). As to be expected during economic expansions, growth was positive in each case for all years. The growth rate in the post-1981 and post-2001 expansion periods declined in later years while remaining strong in the post-1993 period of expansion—with overall growth better post-1993 than during the supply-side periods. Thus, by the broadest, most commonly used, measure of economic growth, the two supply-side eras are not associated with greater growth than the era following the 1993 tax increases on corporations and high-income individuals.

## Employment

As seen in Figure 7, employment growth was weaker in the supply-side eras than the post-1993 period. For the seven years after each piece of tax legislation, average employment growth was 2.1 percent after 1981, 2.5 percent after 1993, and 0.6 percent after 2001.<sup>12</sup>

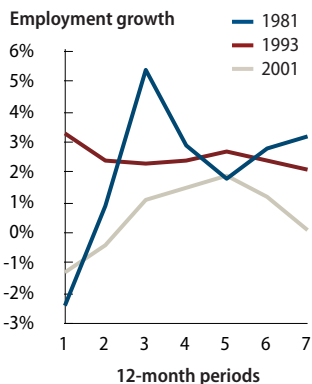
Immediately after the 1981 legislation, employment fell. Employment growth, however, was very strong in 1984, making up ground for the major employment losses of the recessionary period of the early 1980s. Employment growth stayed strong for the rest of the period following the 1981 legislation.

Employment growth after 1993 was steady and strong over the period. It has been disappointing following 2001. Employment growth rates coming out of the recession that ended in 2001 were disappointing, and only reached typical levels for a brief period before falling off again. Of course, beyond the seven-year period analyzed the situation has gotten worse.

Figure 8 shows employment growth during equivalent periods in the business cycle. This chart shows similar employment growth in the post-1981 and 1993 periods and disappointing growth in the post-2001 supply-side period. Average growth rates for

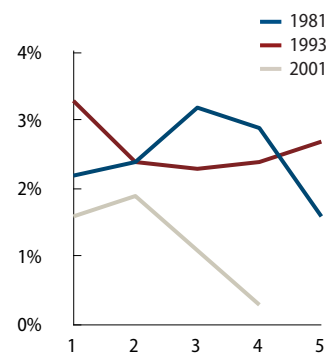
### Employment Growth Weaker in Supply-Side Eras

Supply-side eras employment growth record mixed.



### Employment Growth Weak in Recent Supply-Side Era

First supply-side era and post-1993 expansion period comparable.



Source: Authors' analysis of quarterly Bureau of Labor Statistics data. Year-over-year growth rates in BLS nonfarm employment.

these periods were 2.6 percent in the post-1993 expansion, 2.5 percent post-1981, and 1.2 percent post-2001 (five years of data are used for the post 1981 and 1993 analysis and four years for post 2001 because of data availability).

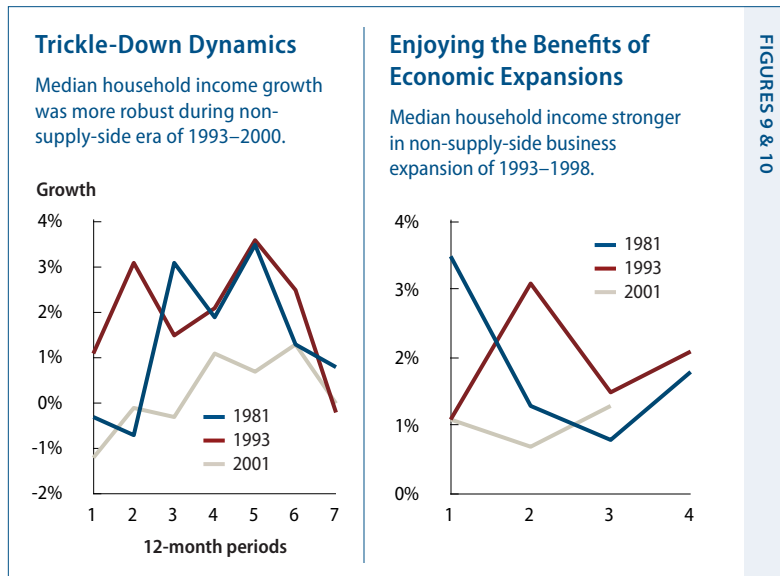
## Median household income

A central defense of supply-side policy is that the benefits, although initially accruing to the few, eventually end up in the pockets of the many (hence the “trickle-down” moniker). A good measure of whether this happens is to examine what happens to typical incomes. For each of the seven-year periods after each of the tax laws, real average annual pre-tax median household income growth was 2.0 percent after 1993, 1.4 percent after 1981, and an anemic 0.3 percent after 2001. In the parallel periods of economic expansion (four years starting in the 10th quarter of expansion for 1981 and 1993; three years in the case of 2001 because of data limitations), average median income growth was 2.3 percent in the post-1993 era, 1.2 percent in the expansion after the 1981 supply-side tax cuts, and 1.1 percent in the supply-side era that began in 2001.<sup>13</sup>

Figure 9 shows the pattern of income growth over the seven-year periods after each tax legislation. Figure 10 shows the pattern over the parallel periods in the business cycles. As these data show, income may have *trickled* down during the supply-side eras but it flowed at a much more robust rate during the non-supply-side period.

## Hourly earnings

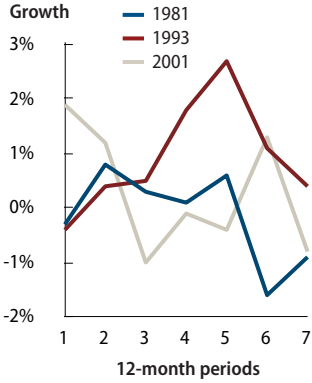
According to supply-side logic, increased savings and investment should lead to more productivity and higher wages. But given the evidence above, it should come as no surprise that growth in real average hourly earnings was dismal in the supply-side eras—with average real hourly earnings following 1981 *falling* over the period at an annual rate of 0.1 percent, and following 2001, growing at only 0.3 percent. Following the 1993 tax increases average hourly earnings grew by 0.9 percent per year. During the parallel periods of economic expansion during each era, average hourly earnings grew by 1 percent per year on average after 1993, fell by 0.5 percent during the expansion following the 1981 cuts, and averaged out as unchanged during the most recent supply-side period following the tax cuts of 2001.<sup>14</sup>



Source: Authors' analysis of annual Census Bureau data.

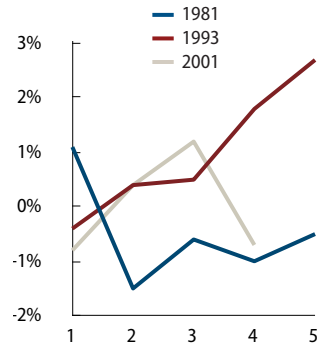
### Supply-Side Eras Fail to Deliver

Growth in real hourly earnings is weak or nonexistent in supply-side eras, strong from 1993–2000.



### Working for Less

Average hourly earnings during parallel periods of economic expansion.



Source: Authors' analysis of quarterly Bureau of Labor Statistics data. Year-over-year growth rates in BLS average hourly earnings.

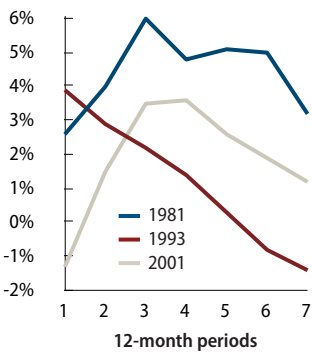
Figure 11 shows the rate of growth in the first seven years of the two supply-side eras and the post-1993 period. After the first year, earnings growth was consistently positive and often strong in the post-1993 period. From the beginning of the first supply-side era hourly pay was weak and frequently declined. In the post-2001 period this has also been the pattern.

When examined during equivalent periods of business cycles during each of the tax regimes, the same pattern is even more pronounced—as seen in Figure 12. Even during the period of expansion wages were often in decline in the first supply-side period. In the second period, wages were also in decline for portions of the period, and never strong. In the post-1993 period, wages were in decline at the start but wage growth grew substantially over the period. With such dismal wage growth during supply-side periods, supply-side policies failed to deliver what supply-side theory predicted.

## Federal deficit and debt

### Consistently Supplying Deficits

Supply-side tax cuts have resulted in higher federal deficits after tax cuts are enacted.



Source: Congressional Budget Office.

One claim made for supply-side tax cuts is that they “pay for themselves.” Although various claims are made as to the causes of higher deficits and greater federal debt—among them excessive spending and economic circumstances unrelated to tax policy—it’s clear that the federal fiscal situation was in much better shape during the non-supply-side era following 2003 than in either supply-side period. In the seven years from 1993 to 1999 the country went from a federal deficit of 3.9 percent of GDP to a surplus of 1.4 percent. After 1981 the deficit ballooned to 6 percent of GDP by 1983, although by 1987 it was back down to 3.2 percent of GDP. In 2001, when tax legislation was adopted, there was a surplus of 1.3 percent of GDP. This turned into a deficit of 3.6 percent by 2004 and fell back to 1.2 percent in 2007, although it will undoubtedly be higher in 2008.

The national debt has followed a similar pattern; it rose by an astounding 14.8 percentage points relative to GDP over the seven years following adoption of the 1981 supply-side tax cuts. Following 1993, it shrank by almost 10 percentage points relative to GDP, then inched back up by 3.8 percentage points relative to GDP after the 2001 tax cuts, as shown in Figure 13.

# Conclusion

The supply-side eras beginning in 1981 and 2001 were both associated with economic performances that were disappointing by most measures when compared to the post-1993 era, which reversed many of the supply-side policies. Above all, the central premise of supply-side economic theory—that tax cuts for corporations and the wealthy, and on capital income, produce greater economic growth by spurring investment—fails when confronted by the data. Investment growth during the post-1993 era far exceeded that seen during the two supply-side periods.

There is no question that there are circumstances where tax levels can be too high and damaging to an economy. There are also, of course, circumstances where taxes are too low, limiting the ability to provide public services and investments that fuel economic growth—circumstances where our public structures are starved. Excessive government deficits resulting from taxes that are too low can also pose economic risks.

Our analysis suggests that during the recent periods where supply-side economics were embraced and put to a practical test the great economic success predicted by the tax cut advocates simply did not occur. In contrast, the era of new investments and fiscal responsibility begun in 1993 paid for by tax increases antithetical to supply-side practice led to a period of strong economic performance—suggesting that those tax changes were not harmful, and possibly were helpful, to the nation’s economic growth.

# Endnotes

- 1 For a summary of the literature related to this subject see Peter Orszag, "Marginal Tax Rate Reductions and the Economy: What Would Be the Long-Term Effects of the Bush Tax Cut?" Center on Budget and Policy Priorities, March 16, 2001, available at <http://www.cbpp.org/3-15-01tax.htm>. Robert D. Atkinson, *Supply-Side Follies: Why Conservative Economics Fails, Liberal Economics Falters, and Innovation Economics Is the Answer*, (Rowman & Littlefield, 2006).
- 2 Christian Broda and Jonathan A. Parker, "The impact of the 2008 rebate," August 15, 2008, available at <http://www.voxeu.org/index.php?q=node/1541>.
- 3 The supply-side era could reasonably be considered to have started with the tax cuts of 1978, which reduced corporate income taxes and substantially cut the top rate on capital gains effectively to 28 percent from 39.9 percent. The 1978 cuts were, however, a more tepid step into supply-side policy than those three years later in 1981. Also, the economy weakened immediately after the 1978 tax cuts and then quickly sank into recession and remained feeble through 1982—the famous "double-dip" recession. Treating the first supply-side era as beginning in 1978 instead of 1981 would, of course, make the economic performance of that era look extremely weak since a good portion of the period was spent in recession. Given the much greater size of the 1981 cuts and that it is the policies of then-President Reagan who most supply-side advocates point to as the most accomplished presidential practitioner of their arts, we take 1981 to be the fairest place to start an examination of a supply-side tax regime. For a list of top personal income tax rates, including capital gains rates, in effect for each year, see from Citizens for Tax Justice: <http://www.ctj.org/pdf/regcg.pdf>.
- 4 We pick the 10-quarters-into-expansion starting point because the 1993 legislation passed 10 quarters into an expansion. We can't use an earlier point because we'd be looking at impacts before the legislation had passed for that expansion. By starting at exactly 10 quarters we have the longest period possible to compare while being able to look at the impact of all three tax regimes.
- 5 Lee Price, "THE BOOM THAT WASN'T: The economy has little to show for \$860 billion in tax cuts" (Economic Policy Institute, 2006), available at <http://www.epi.org/briefingpapers/168/bp168.pdf>. This report offers a comparison of economic performance across a number of business cycles by a number of measures.
- 6 We pick as our starting point for this analysis the date agreement is reached on the legislation for a number of reasons. First, people may start responding to tax legislation as soon as they believe it's going to become law. Second, most tax legislation has a variety of effective dates for its provisions so there is no single statutory date for saying that the legislation is operational. In some cases it is announced early in developing the legislation that parts of it will be made retroactive to ensure that economic activity doesn't stop as taxpayers wait for more favorable tax treatment to be adopted. A final point is that the starting point doesn't make all that much difference. The period from agreement to signature by the president to initial effective dates is rarely more than a few months. The periods begin August 1981; August 1993; May 2001, and their corresponding quarters or years depending on the frequency of the data.
- 7 These average growth rates are measured over the following periods: For the seven-year periods, 1981 Q3 through 1988 Q3, 1993 Q3 through 2000 Q3, 2001 Q2 through 2008 Q2; for the business cycle analysis, 1985 Q2 through 1990 Q2, 1993 Q3 through 1998 Q3, 2004 Q2 through 2008 Q2.
- 8 In this and subsequent graphs that rely on quarterly or monthly data, the data are plotted year-to-year instead of quarterly or monthly to make the trends and changes more visible than they would be were the more volatile quarterly or monthly growth figures used.
- 9 These average growth rates are measured over the following periods: 1981 Q3 through 1988 Q3; 1993 Q3 through 2000 Q3; 2001 Q2 through 2008 Q2.
- 10 These average growth rates are measured over the following periods: 1985 Q2 through 1990 Q2; 1993 Q3 through 1998 Q3; 2004 Q2 through 2008 Q2.
- 11 These average growth rates are measured over the following periods. For the seven year periods: 1981 Q3 through 1988 Q3; 1993 Q3 through 2000 Q3; 2001 Q2 through 2008 Q2. For the business cycle analysis: 1985 Q2 through 1990 Q2; 1993 Q3 through 1998 Q3; 2004 Q2 through 2008 Q2.
- 12 These average growth rates are measured over the following periods: August 1981 through August 1988; August 1993 through August 2000; May 2001 through May 2008.
- 13 Only four years is used in this analysis because this is an annual data series and using five years would bring the post-1981 expansion into the next recession, thus reducing the median income growth shown for the post-1981 period and undermining the comparison of equivalent business cycles.
- 14 These average growth rates are measured over the following periods. For the seven-year analysis: August 1981 through August 1988; August 1993 through August 2000; May 2001 through May 2008. For the business cycle analysis: April 1985 through April 2000; August 2003 through August 2008; April 2004 through April 2008.

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## About the Author

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Michael Ettliger is the Vice President for Economic Policy at American Progress. Prior to joining the Center he spent six years at the Economic Policy Institute directing the Economic Analysis and Research Network. Previously he was tax policy director for Citizens for Tax Justice and the Institute on Taxation and Economic Policy for 11 years. He has also served on the staff of the New York State Assembly.

At the Institute on Taxation and Economic Policy, Ettliger was the principal developer of the ITEP Microsimulation Tax Model. This model, uniquely, permits detailed revenue and distributional analysis of federal and state personal income tax, consumption, and property taxes. Also at ITEP and Citizens for Tax Justice Ettliger authored many reports on tax and economic issues, frequently testified, was widely published, and was often called upon by the media.

At the Economic Policy Institute, Ettliger focused on regional economic development and state level economic policy. His work included analysis of state minimum wage laws, the role of government in economic growth, public attitudes toward economic policy, and the relative efficacy of alternative state economic policies.

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John Irons joined the Economic Policy Institute in 2007. His areas of research include the U.S. economy and economic policy, with an emphasis on federal tax and budget policy. He previously worked as the Director of Tax and Budget Policy at the Center for American Progress (2004–2007) and as a tenure-track Assistant Professor of Economics at Amherst College (1999–2003). He has also worked for the Brookings Institution (1995) and at the Federal Reserve Board of Governors (1992–1994). His academic publications have appeared in several journals including the *Journal of Monetary Economics*, *Journal of Applied Econometrics*, and the *Review of Financial Economics*. He is also co-editor of *Testing Exogeneity*, published by Oxford University Press. He has won several awards for his economics Web sites, including top-5 awards from The Economist and Forbes. He currently serves on the Committee on Electronic Publishing for the American Economic Association, and on the Board of Governors of the National Economists Club.

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