

Tax Incentives, Investment and Economic Growth



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January 2007

Abstract

Investment collapsed in 2000 and, as a result, the rate economic expansion slowed. The tax legislation of 2001 and 2002, and the Jobs and Growth Tax Relief Reconciliation Act of 2003 (JGTRRA), combined with accommodative monetary policy, helped the economy regain its footing. By late 2003, investment returned to its pre-recession trend and economic growth increased its pace as well. As the benefits of JGTRRA took full force in 2004, the economy expanded at a healthy rate of 3.9 percent. In 2005, despite the economic dislocations associated with the hurricanes and the steep rise in energy prices, the economy registered 3.2 percent growth.

This research paper presents the case that JGTRRA played a key role in the turnaround in investment and the turnaround in the economy. This paper also makes the general case that lowering the cost of capital through tax legislation can be both timely and effective in stimulating economic growth.

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Tax Incentives, Investment and Economic Growth

By the summer of 2000, six months before President Bush was sworn into office, the economy was showing signs of stress. In response to deteriorating economic conditions – a recession in 2001 and anemic growth in 2002 – President Bush signed into law a series of tax bills. The Jobs and Growth Tax Relief Reconciliation Act of 2003 (JGTRRA), the third in a series of tax bills, was designed to encourage balanced economic growth. In addition to providing taxpayer relief, JGTRRA expanded the scope of the investment incentives in the Job Creation and Worker Assistance Act of 2002 and created additional incentives to promote investment, capital formation and long-term growth. Because JGTRRA augmented many provisions in the previous tax bills of 2001 and 2002, it has been the primary focus of academic research on the impact of recent tax legislation on economic performance.

This paper presents the case that JGTRRA, and related tax legislation, the Economic Growth and Tax Relief Reconciliation Act of 2001 and the Job Creation and Worker Assistance Act of 2002, were effective in stimulating investment and economic growth in recent years. This paper also presents the case that, categorically, tax legislation has a swift and significant effect on investment.

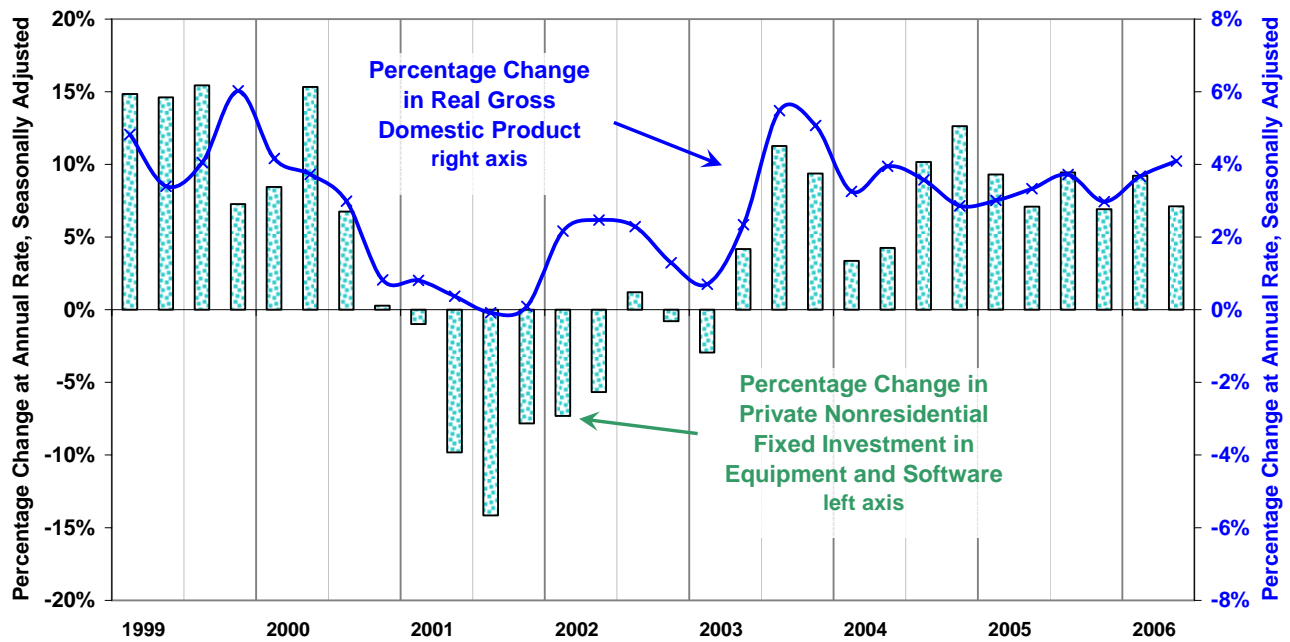
The first section of this paper discusses recent economic performance and the positive effects that JGTRRA, combined with accommodative monetary policy of the Federal Reserve, have had on economic growth. This brief discussion includes both the empirical results and the economic theory associated with JGTRRA and investment. Then, the focus moves to a longer time span that reviews how changes in the tax code have affected investment and economic performance. The last section presents additional empirical and theoretical support for the case that tax legislation can be both timely and effective in stimulating economic growth.

Recent Economic Performance and JGTRRA

In 2000, the stock market bubble burst and investment spending collapsed. Shortly thereafter, economic growth came to a virtual standstill and the economy lost jobs.

Figure 1. Investment and Economic Growth

After the dramatic downturn in private nonresidential fixed investment in equipment and software at the end of 2000, economic growth stalled.



Source: Bureau of Economic Analysis/Haver Analytics. (The two data series are plotted as 2-quarter moving averages.)

As Figure 1 shows, the economy was rapidly slowing at the end of 2000. Economic growth swung from over 3.5 percent in the first half of 2000 to under 1 percent in the second half. Despite the economic slowdown in 2000 and 2001, consumer spending remained relatively buoyant. After slowing from a 5 percent annual growth rate in 1999, the growth rate of consumer spending returned to the average of the previous twenty-five years – around 3.3 percent per year. In addition to the economic stimulus of the 2001 and 2002 tax bills, consumer spending was also propelled by low interest rates and rising real estate values. Even so, healthy consumer spending could only sustain anemic economic growth.

The economic recovery that began in late 2001 lacked vigor because investment was still falling. Figure 1 shows how sagging investment affected economic growth. In the first half of 2000, investment was solidly positive, but in the

third quarter of 2000, real investment in equipment and software started to slide, eventually heading into negative territory in 2001. Economic growth likewise slowed.

In early 2003, before JGTRRA was signed into law, investment spending was still in the doldrums. JGTRRA contained several investment incentives and augmented the incentives in the 2002 tax bill. When signed into law in May of 2003, JGTRRA, combined with accommodative monetary policy, created a policy mix that was expected to stimulate capital formation, reverse the loss of jobs, boost productivity and contribute to future wage growth.

Through the mechanism of “bonus depreciation,” whereby future tax benefits related to the depreciation of capital are brought forward into the current period, JGTRRA stimulated investment in capital goods. Shortly after the enactment of JGTRRA, investment in all major types of equipment and software categories recovered. The surge in equipment and software investment that began in the second half of 2003 continued in 2004 and 2005.

The economic rebound that followed and the over 6 million jobs created since JGTRRA was enacted show that the tax incentives were effective.

Economic Theory and JGTRRA

Economists cannot conduct controlled laboratory experiments comparing the results of no tax legislation with the economic outcome of JGTRRA. Instead, economists would evaluate the efficacy of JGTRRA, or any tax legislation for that matter, by analyzing the empirical results – as presented above with recent economic data – and by using economic theory. Economic theory states that a decline in the total cost of productive assets – and the total cost includes the taxes paid on the return to capital – would spur an increase in the quantity demanded because, all else equal, lowering the cost of any item increases the quantity demanded of that item. In short, lowering the cost of productive assets is an incentive to invest more and to produce more.

The empirical debate is not centered on whether the cost of capital influences investment – even economists who are skeptical about the wisdom of using tax legislation to stimulate investment agree that the cost of capital affects investment. Rather, the debate is centered on the relative sensitivity of investment to changes in the cost of capital. The conclusions of the researchers attempting to determine the sensitivity of investment to changes in the cost of capital depend on the assumptions, analysis and statistical tools used by those conducting the research. Both conclusions – that investment is highly sensitive to tax incentives that change the cost of capital and that investment is not sensitive – are supported by sizable bodies of research.

The most recent research, however, seems to be tipping toward the conclusion that investment is sensitive to tax incentives.

For example, according to Hassett and Hubbard, “Recent empirical studies appear to have reached a consensus that the elasticity of investment with respect to the tax-adjusted user cost of capital is between -0.5 and -1.0.”¹ Hassett and Hubbard also cite other studies that conclude that tax reforms over the last forty years have had a generally large effect on investment. More recently, research by House and Shapiro shows that temporary investment tax incentives did stimulate investment in the types of capital that qualified for the bonus depreciation.²

JGTRRA is not the only example of tax legislation that influenced investment. There were other significant tax changes over the last twenty-five years that also affected investment. The next section chronicles the performance of the economy and the impact that tax legislation has had on investment and economic growth.

Economic Performance and Tax Reform: An Historical Perspective

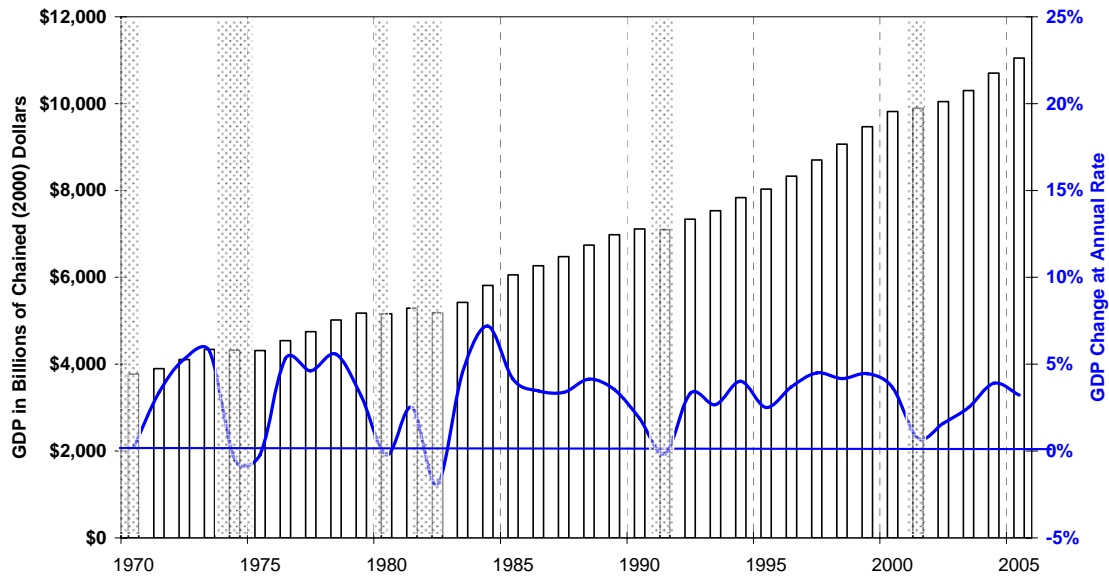
Figure 2 shows that the economy has almost tripled in size since 1970, growing at an average annual rate of 3.1 percent. Only in the recession years of 1970, 1974, 1975, 1980, 1982 and 1991 – the years the solid line dips below zero percent – did the economy contract.

¹ Kevin A. Hassett and R. Glenn Hubbard, “Tax Policy and Business Investment,” in *Handbook of Public Economics*, Vol III, ed. A.J. Auerbach and M. Feldstein (Elsevier Science B.V., 2002), 1325.

² Christopher L. House and Matthew D. Shapiro, “Temporary Investment Tax Incentives: Theory with Evidence from Bonus Depreciation,” unpublished manuscript, January 13, 2005, <http://www.nber.org/~confer/2005/pes05/house.pdf> (accessed June 6, 2006).

Figure 2. Real Gross Domestic Product from 1970 to 2005

On average, the economy has grown at an annual rate of 3.1 percent.
The periods of economic recession are shaded.

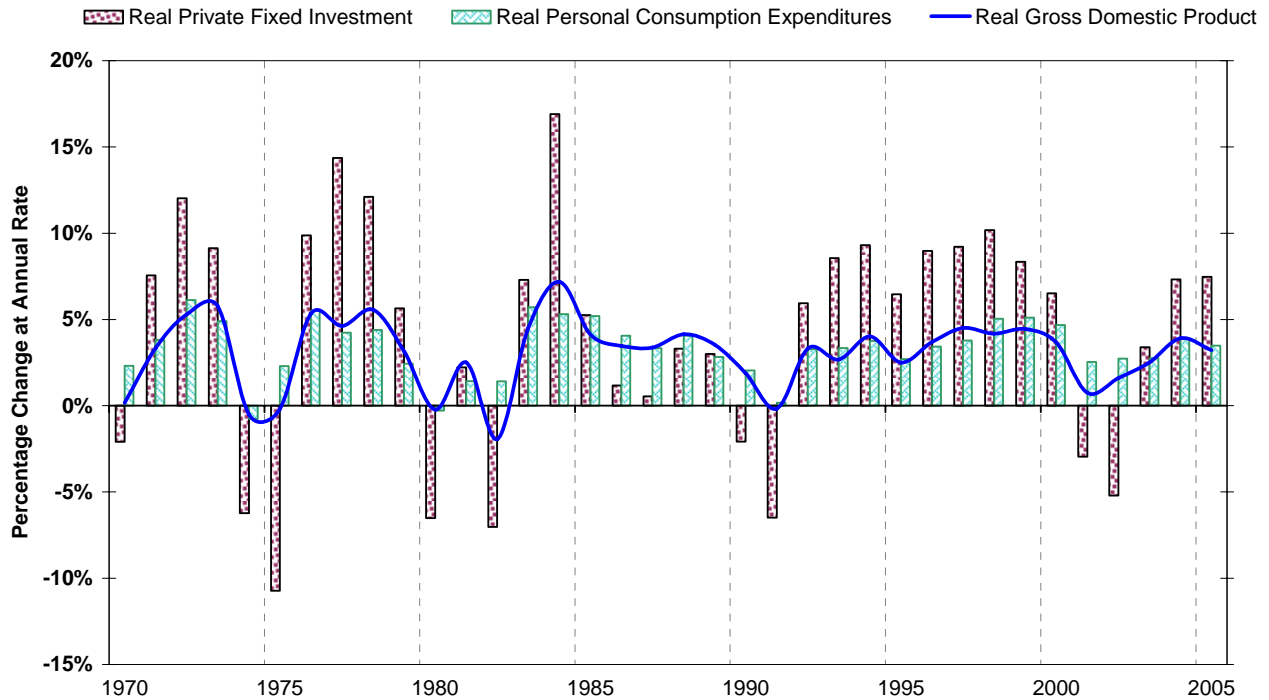


Source: Bureau of Economic Analysis/Haver Analytics.

The growth of economic activity almost came to a stop in 2001, a recession year according to the National Bureau of Economic Research, but, thanks to relatively buoyant consumer spending, the economy did not contract.

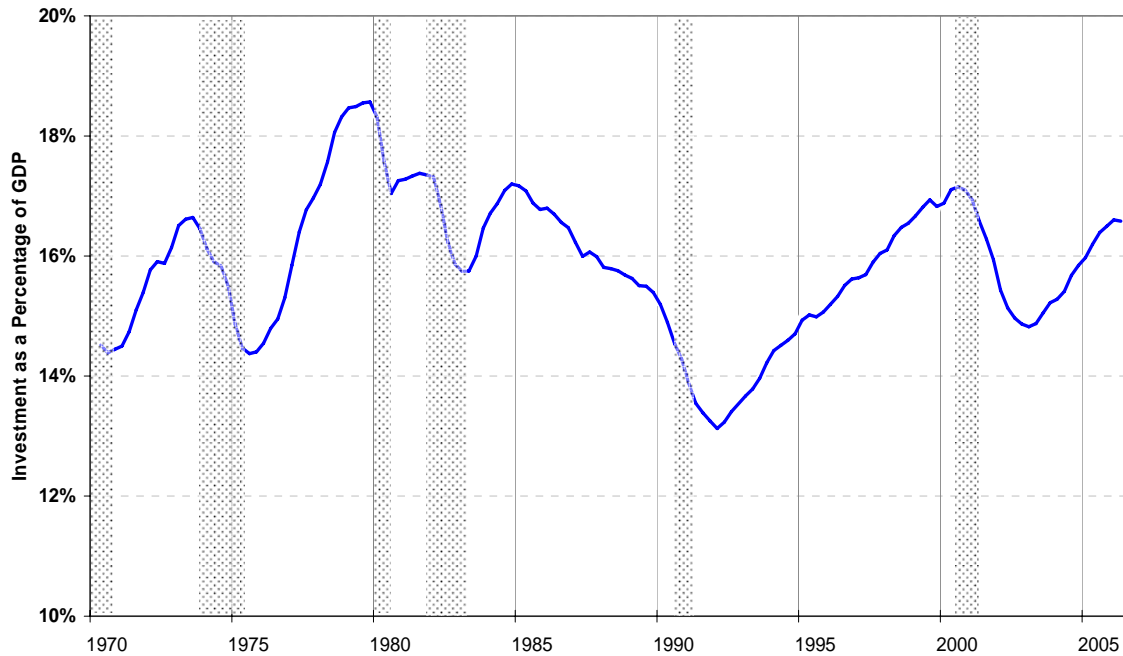
Figure 3 shows how economic growth, consumer spending and investment have fluctuated since 1970. The bars in Figure 3 show the annual percentage change in consumer spending and private fixed investment spending.³ The solid line in Figure 3 plots the same data series as the solid line in Figure 2, namely, the annual percentage change in GDP. The percentage change in GDP and consumer spending – or more precisely, personal consumption expenditures (PCE) – are similar. Changes in investment – that is, investment in equipment and software, commercial structures and residential structures – can be dramatically greater than changes in consumer spending. In 1974, investment expanded at an annual rate of 9.1 percent. The following year, investment spending declined 6.2 percent.

³ The category of private fixed investment is used because tax incentives would not affect government expenditures for structures and equipment. Private fixed investment also excludes inventories.

Figure 3. Growth of GDP, Consumer Expenditures and Investment: 1970-2005

Source: Bureau of Economic Analysis/Haver Analytics.

As Figure 3 illustrates, the percentage change in investment turned significantly negative in the last two recessions, but, in contrast, consumer spending did not dip as much. During 2001, consumer spending was especially resilient. The growth of consumer spending moderated from an annual rate of 5 percent in 1999 to a rate in the years following of 3.3 percent, about the annual average rate for the last twenty-five years. Investment spending, however, declined sharply. Resilient consumer spending, therefore, was unable to maintain the growth of the economy and employment. It is reasonable, therefore, to conclude that the collapse of investment following the stock market bubble of the late 1990s was the primary cause of the recession.

Figure 4. Private Fixed Investment as a Percentage of GDP

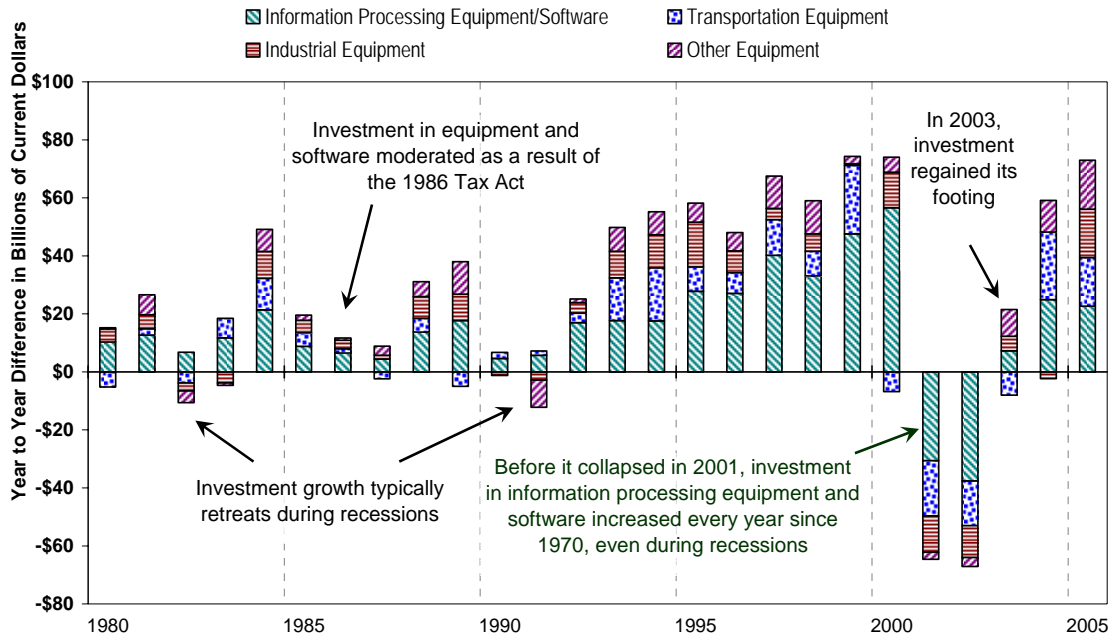
Source: Bureau of Economic Analysis/Haver Analytics.

Figure 4 presents the investment and recession interaction from a slightly different perspective. Figure 4 plots the proportion of GDP devoted to private fixed investment. The proportion drops with every recession. From 2000 to 2002, investment as a percentage of GDP fell by more than 2 percentage points. Given that investment as a proportion of GDP continued to decline through 2002, it is not surprising that the post-recession nadir occurred in the first quarter of 2003 and turned around after JGTTTRA was signed into law. After JGTTTRA was signed into law, investment in all major types of equipment and software categories recovered, as shown in Figure 5.⁴ Figure 5 also shows how major tax legislation has affected investment since 1980.⁵

⁴ Current dollar data, or data not adjusted for inflation, rather than constant dollars, are used for the remainder of the paper. The appendix explains why this approach is used. One may wish to make the mental note, however, that a dollar in 1985 is worth about two dollars today because of the economy-wide rise in the price level.

⁵ Figures 5 and 6 plot the change in current-dollar investment from one year to the next. They do not plot the dollar level of investment or the change in the rate of investment. This type of bar chart allows one to see the change in direction of total investment spending from one year to the next, as well as the relative size of each investment category.

Figure 5. Private Investment in Equipment and Software: 1980-2005
Current-Dollar Change in Investment Spending from Previous Year



Source: Bureau of Economic Analysis/Haver Analytics.

Figure 6. Private Investment in Nonresidential Structures: 1980-2005
Current-Dollar Change in Investment Spending from Previous Year

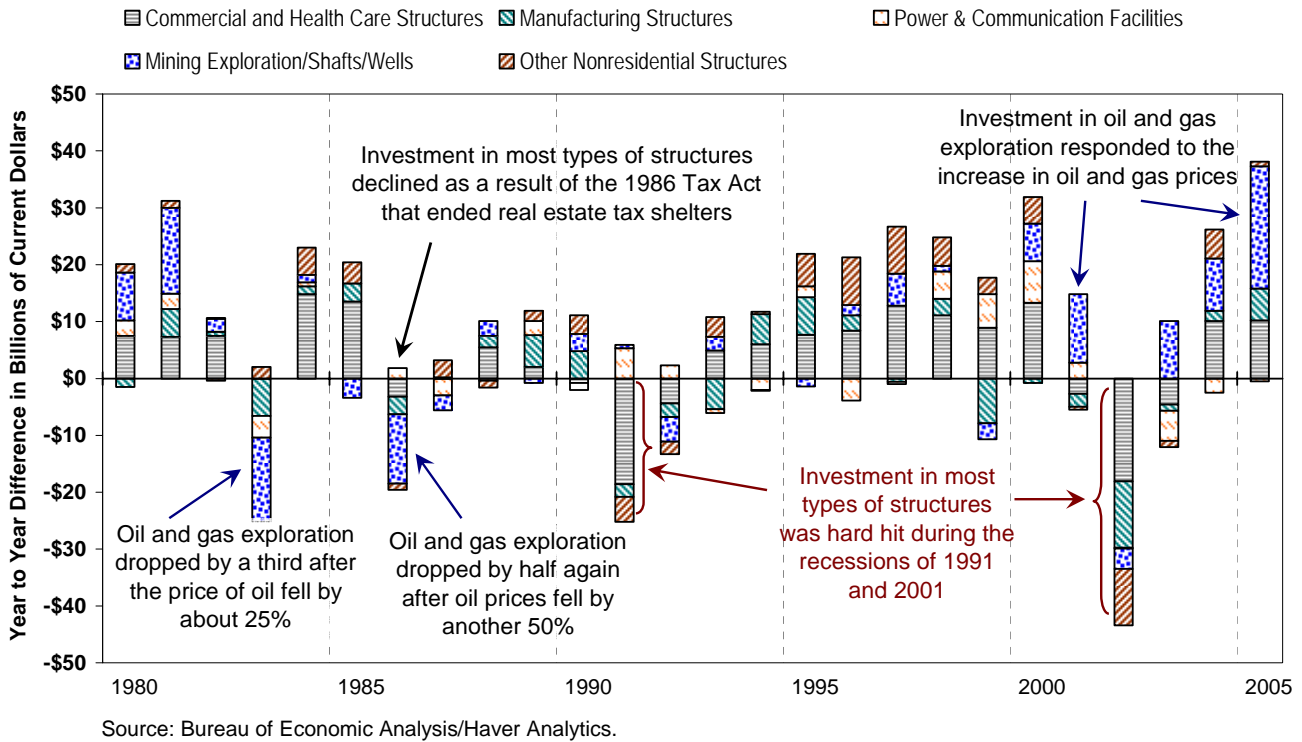
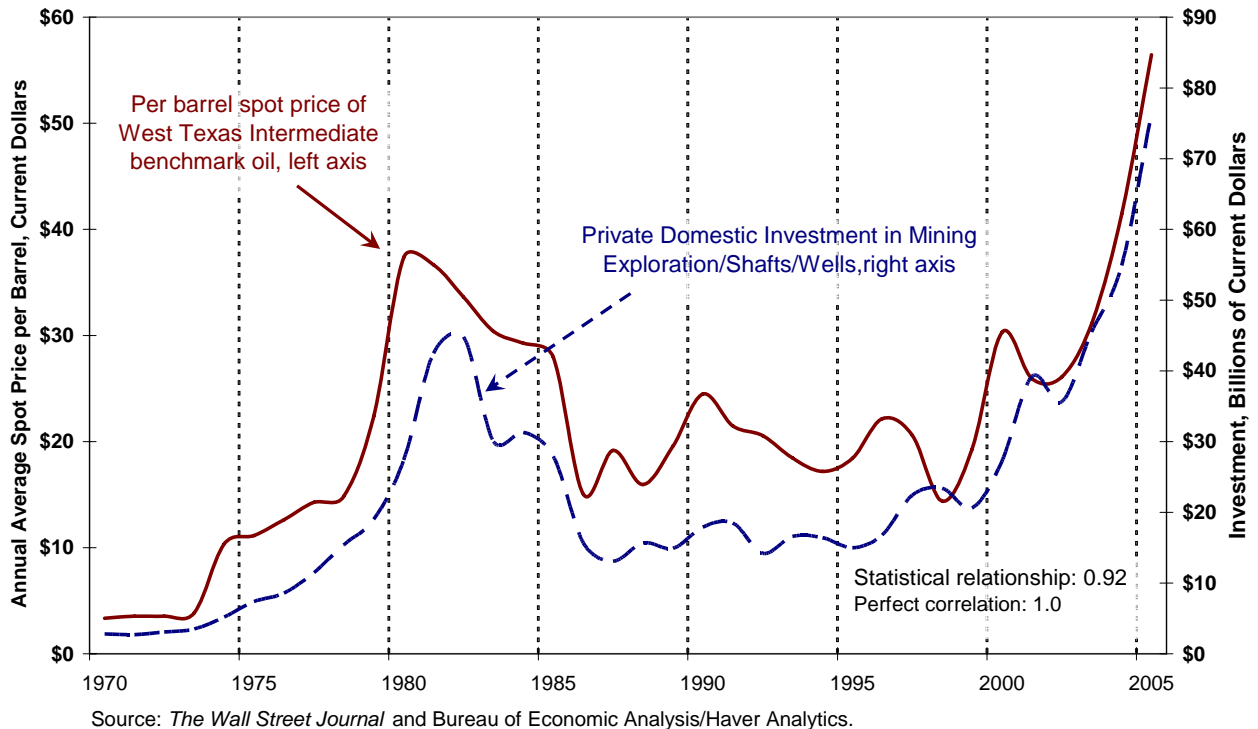


Figure 6 tells several revealing stories about investment in nonresidential structures. First, it shows the relationship between investment in nonresidential structures and recessions. Second, it illustrates the effects of the 1986 Tax Act on investment in nonresidential structures. Despite a relatively buoyant economy, this type of investment hit the skids after the 1986 Tax Act removed many of the tax shelters associated with commercial real estate. Figure 6 also shows economic theory in action, namely, that the profit motive affects investment.

Economic theory states that, in the pursuit of increased profits, an increase in the price of a product will immediately induce firms to expand their output until it reaches the firm's short-term, maximum capacity. In order to expand output in the longer-run, however, firms require greater capacity and will, therefore, increase spending on productive assets. Figure 7 shows how the profit motive affects investment expenditures. In recent years, oil and gas companies have responded to higher prices by investing in expanded production.

Figure 7. Investment in Mining Exploration/Sh shafts/Wells and the Price of Oil: 1970-2005



The empirical evidence from the 1986 Tax Act supports the economic theory of investment behavior and strengthens the conclusion that tax legislation motivates investment decisions. In the case of the 1986 Tax Act, however, the effects on investment were negative. A casual look at Figures 5 and 6 does not allow one to estimate the sensitivity of investment to tax incentives, but it does prompt several questions about the causes of the changes in investment over the last twenty-five years. For example, the 1986 Tax Act closed real estate tax shelters. As a result, investment in commercial real estate dropped soon thereafter. The ratio of investment in nonresidential structures to GDP dropped 23 percent from 1985 to 1987.⁶ Investment in equipment and software also moderated and put a damper on the growth rate of GDP.⁷ Had it not been for buoyant consumer spending, the slowdown in investment spending had the potential to precipitate a recession.

⁶ See, for example, Roy E. Cordato, "Destroying real estate through the tax code. (Tax Reform Act of 1986)," *The CPA Journal Online*, June 1991, <http://www.nysscpa.org/cpajournal/old/10917112.htm> (accessed May 18, 2006).

⁷ The 1986 Tax Act was signed into law in the fall of 1986, two years and several near-death experiences after the legislation was introduced. The sweeping legislation – that increased some taxes by eliminating the investment tax credit and real estate tax shelters but also lowered marginal tax rates across the board – created an environment of uncertainty for businesses throughout 1985 and 1986. For a good historical overview of the 1986 Tax Act, see David E Rosenbaum, "The Tax Reform Act of 1986: How the Measure Came Together: A Tax Bill for the Textbooks," *The New York Times*, 23 October 1986, D 16. As Figure 3 shows, private investment spending (that includes residential structures) came to a virtual stop during this time period.

Cummins, Hassett and Hubbard investigated the effects of the 1986 Tax Reform Act, as well as the major tax reforms of 1962, 1971 and 1981, and concluded that changes in tax policy have had economically significant effects on equipment investment.⁸

Additional Support for the Efficacy of Tax Legislation to Stimulate Investment and Growth

There are several other reasons that economic researchers are not unanimous about the effectiveness of tax incentives to stimulate investment and encourage economic growth. Some economists argue, for example, that there are significant time lags between tax legislation and the incremental increase in the capital stock. While it may take several months for legislation to make its way through Congress,⁹ it can no longer be argued that there is a significant lag between an order for a capital good and the installation of productive investment. In generations past, it may well have been true that there were significant lags between decisions to invest – as represented by the placement of an order – and the eventual delivery of, expenditure on, or incremental increase in the productive capital stock,¹⁰ but not any more.

⁸ Jason G. Cummins, Kevin A. Hassett and R. Glenn Hubbard, “Have Tax Reforms Affected Investment?” in *Tax Policy and the Economy*, Volume 9, ed. James M. Poterba, National Bureau of Economic Research, (Cambridge, Massachusetts: The MIT Press, 1995).

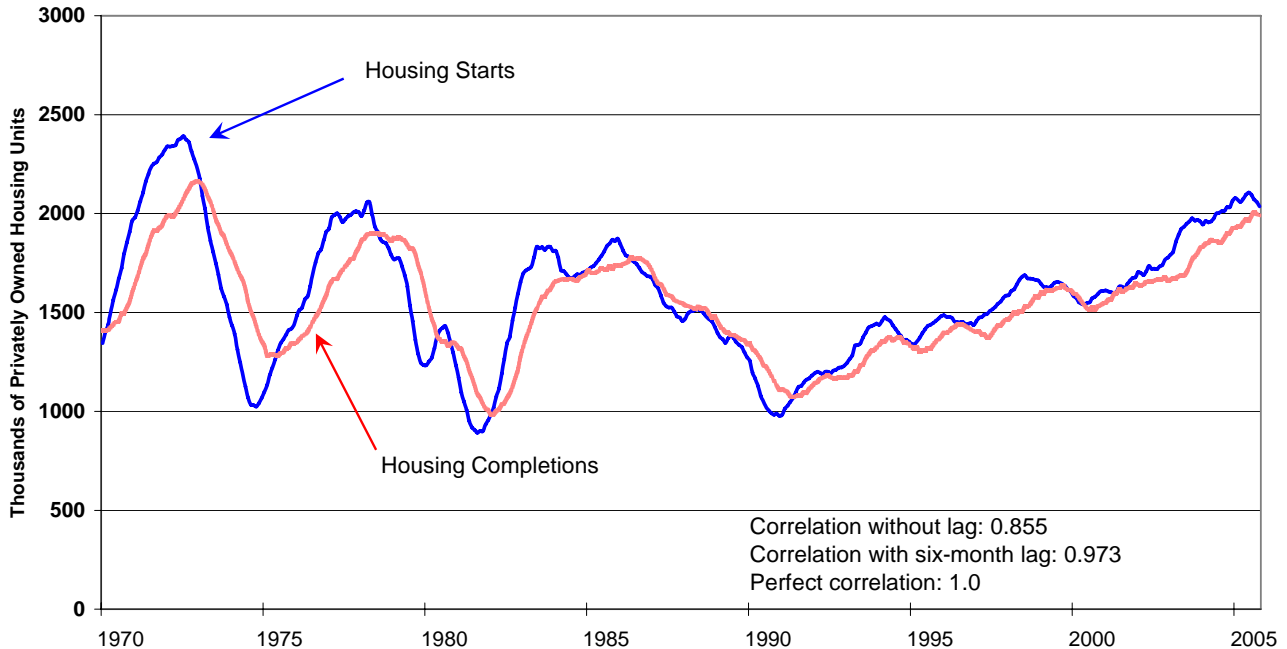
⁹ The 1986 Tax Act took two years to write and enact. It was not, however, intended to spur investment during a period of sluggish economic growth.

¹⁰ Robert S. Chirinko, “Business Fixed Investment Spending: Modeling Strategies, Empirical Results, and Policy Implications,” *Journal of Economic Literature*, 31, no. 4 (1993): 1905. In his survey of the research – to be fair, well before the dynamics of “the new economy” became evident – Chirinko cites an article from 1960 about lead times involved in acquiring capital. Historically, these lags may have been relevant. In recent years, however, not only have orders for most computers and communication goods been filled within a month, the time between orders and shipments has also declined for capital goods like machinery.

The next series of graphs shows that for about 50 percent of private fixed investment in equipment and software, there is virtually no lag between orders and shipments. For other types of fixed investment, the lag between orders and shipments has declined over time.

Figure 8. Example of a Lagged Variable: Housing Completions

Based on statistical and graphical analysis, the average lag between housing starts and housing completions appears to be between six and seven months.



Source: Bureau of the Census/Haver Analytics. (In order to smooth erratic monthly data, the housing starts and completions data series are both plotted as nine-month moving averages.)

Figure 8 shows what a significant lag looks like graphically. It illustrates the time between housing starts and housing completions. The gap between the lines for starts and completions shows that it takes, on average, about six months for a house to be built. This conclusion comports with Census Bureau data. According to the Census Bureau, in 2005, a new privately owned residential building start took, on average, 6.4 months to complete.

Figure 9. New Orders and Shipments for Two Types of Capital Equipment

There is virtually no lag between Computer and Office Equipment orders and shipments. On the other hand, there is a significant lag, measured in years, between the orders and shipments of Aircraft, Missiles, Space Vehicles & Parts.

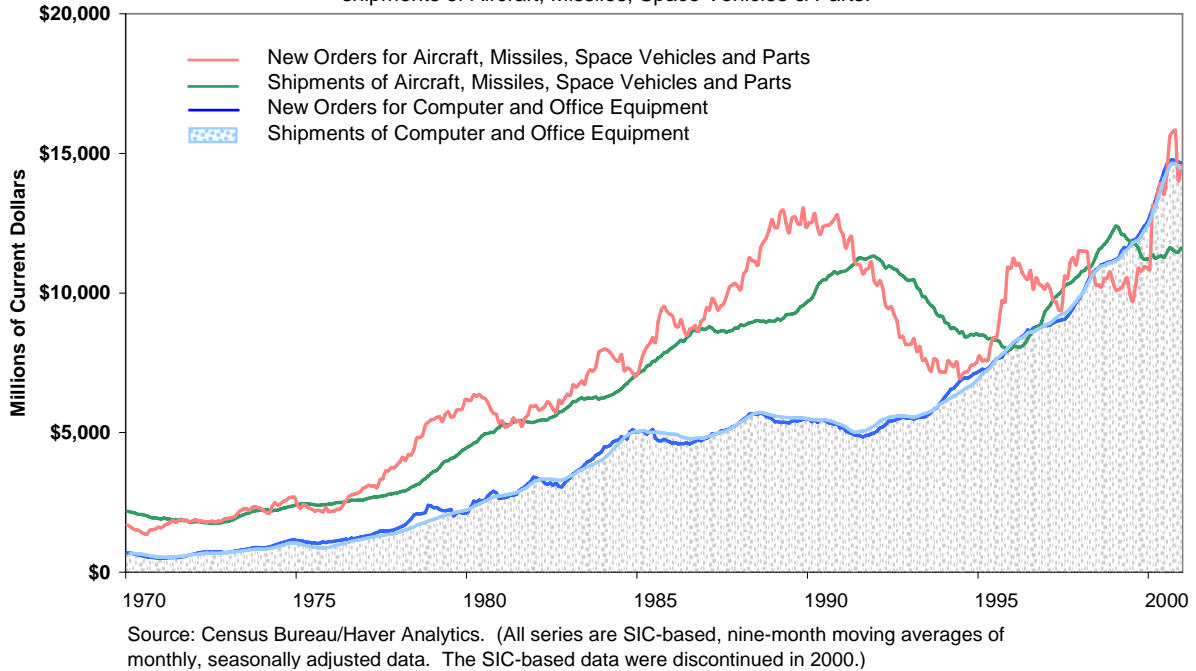
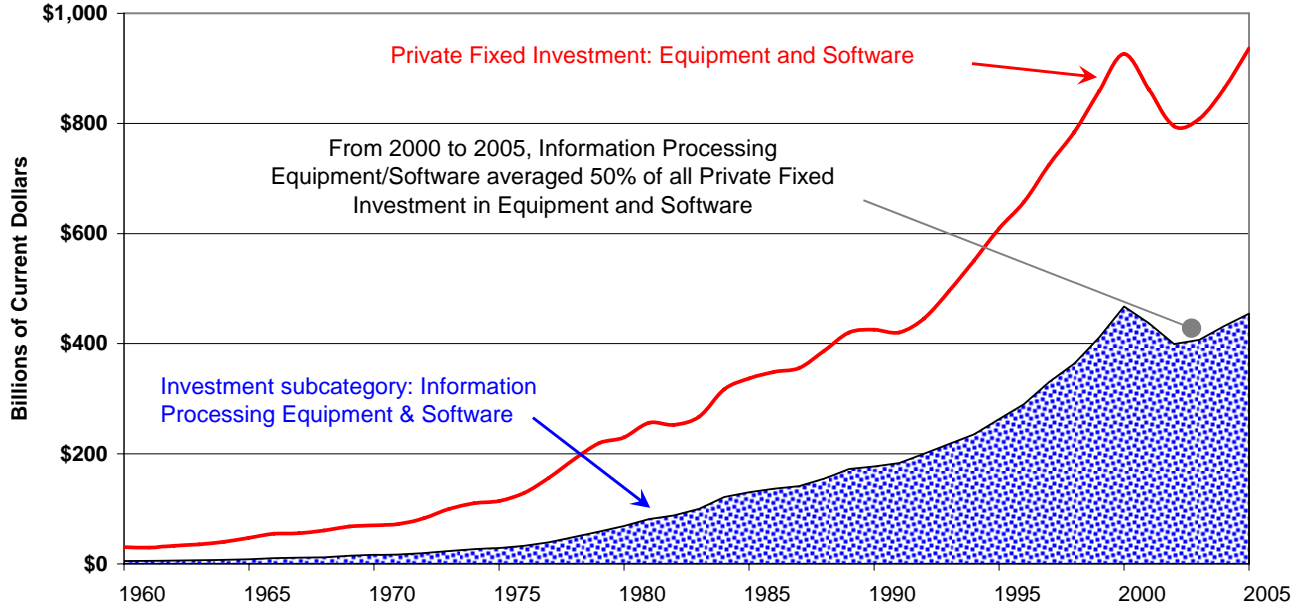


Figure 9 plots new orders and shipments data for computer and office equipment as well as aircraft, missiles, space vehicles and parts.¹¹ While these data series are in current-dollars, and not in units as in Figure 8, these series highlight the contrast in lags between orders and shipments for these two types of capital equipment. The small and shrinking lag between orders and shipments for computer and office equipment is also evident in another data series, that is, the ratio between unfilled orders and shipments. This ratio serves as a rough measure of the number of months it takes to fill an order. According to the Census Bureau, the ratio for computer and office equipment fell from an average of over 7 in the 1970s, to 0.7 in the late 1990s. A manufacturer of computer and office equipment, therefore, takes about a month to receive and ship an order.

¹¹ Ideally, the time series for Figures 9 and 10 would be of the same duration. Because of the conversion of classification systems from SIC to NAICS, the time series for SIC-based classification of industries and goods ends in 2000. This change in industry (and goods) classification also accounts for changes in the names of many industries (and goods). Because aerospace manufacturing is volatile and experiences long lags between orders and shipments, it is probably best to use the category of “non-defense capital goods, excluding aircraft” to chart orders and shipments of capital goods.

Figure 10. Private Fixed Investment: Equipment and Software

The speed of the stimulative effect of investment tax incentives has probably increased over time. Information Processing Equipment & Software, a category of capital expenditures, has virtually no lag between orders and shipments. Since 1960, this type of investment has increased dramatically and accounts for about 50% of all non-structural investment.



Source: Bureau of Economic Analysis/Haver Analytics. The category "Private Fixed Investment: Equipment & Software" is composed of all productive capital excluding residential investment (e.g., houses & apartments) and structural investment (e.g., buildings & railroads).

In recent years, as Figure 10 shows, the subcategory of investment in information processing equipment/software has accounted for 50 percent of all capital investment that is not residential equipment, a residence or a commercial structure. The high proportion of investment in information technology lowers the average ratio, or reduces the average time between orders and shipments, of all types of fixed investment. Information technology isn't the only capital good that has an insignificant gestation lag. The ratio for machinery fell through the 1990s to less than 2. In other words, it takes less than two months to ship an order for machinery. Indeed, the series for new orders for, and shipments of, non-defense capital goods, excluding aircraft, is not unlike the series for information technology.¹²

¹² The ratio of unfilled orders to shipments for all non-defense capital goods, excluding aircraft, has been hovering around 2.5 for the last five years.

When considering the issue of gestation lags in investment, this is not your father's economy. The speed of the stimulus associated with tax incentives for investment is hindered more by legislative lags than the ability of firms to produce capital equipment. But even legislative lags seem to have been compressed in recent years. The Bush Administration and Congress have received high marks for the well-timed passage of the tax legislation, even from those who are not enamored of the legislation.¹³ It appears that tax legislation to encourage investment expenditures can be as swift and effective as tax relief to consumers.

Other Issues

There are several other points of contention between the supporters and detractors of stimulating investment to reinvigorate economic growth. It has been argued, for example, that a rush to invest in capital goods would not increase the *real* capital stock – that is, the stock of capital after the effects of prices changes were taken into account – but would simply result in higher prices for capital goods. In other words, in the rush to invest, corporations would bid up prices for capital goods resulting in capital goods manufacturers earning windfall profits. As it happens, House and Shapiro found that, in addition to stimulating investment in capital that qualified for the bonus depreciation provisions of the tax acts of 2002 and 2003, prices had little tendency to increase.¹⁴

Another prominent point of contention is the so-called “bang for the buck” associated with the tax bills. The bang for the buck is an assessment of the benefit of the economic stimulus relative to the cost of the legislation in terms of tax revenue lost to the Treasury. While there may be controversy over some of the provisions in the tax bills of 2001, 2002 and 2003, even those who are critical of using the tax code to manage the economy admit that investment credits or bonus depreciation can have a relatively large bang for the buck.¹⁵

Proponents of stimulating investment and the economy through tax legislation – rather than merely stimulating consumer demand – also call attention to the benefits of capital investment that go beyond the economic boost.¹⁶ Capital

¹³ See, for example, William G. Gale and Peter R. Orszag, “Bush Administration Tax Policy: Short-Term Stimulus,” *Tax Notes* (1 November 2004): 747-755. Gale and Orszag are not fans of the Bush tax packages, but they do give the Bush Administration credit for responding rapidly to a slowing economy.

¹⁴ Christopher L. House and Matthew D. Shapiro, “Temporary Investment Tax Incentives: Theory with Evidence from Bonus Depreciation,” unpublished manuscript, January 13, 2005, <http://www.nber.org/~confer/2005/pes05/house.pdf> (accessed June 6, 2006).

¹⁵ See, for example, Peter K. Clark, “Tax Incentives and Equipment Investment,” *Brookings Papers on Economic Activity*, 1 (1993). The reader may find this paper's Comments and Discussion to be especially helpful.

¹⁶ Economists who research investment are not unanimous about the magnitude of benefits associated with spillover effects. Many criticize targeted investment incentives because they place a wedge between classes of assets. The critics would highlight the fact that favoring one type of investment over another, say

investment also boosts productivity and, historically, as productivity rises, so does the standard of living.¹⁷ Recent research estimates that “capital deepening” – that is, increasing the ratio of capital inputs relative to labor inputs – accounts for about half of the marked productivity growth increase the economy has experienced since 1995.¹⁸ Because productivity growth is the pathway to increasing prosperity, encouraging capital investment is a prudent approach to stimulating the economy.

CONCLUSION

Investment collapsed in 2000 and, as a result, the pace of economic growth eased. The tax legislation of 2001 and 2002, and JGTRRA in 2003, combined with accommodative monetary policy, helped the economy regain its footing. By late 2003, investment returned to its pre-recession trend and economic growth increased its pace as well. As the benefits of JGTRRA took full force in 2004, the economy expanded at a healthy rate of 3.9 percent. In 2005, despite the economic dislocations associated with the hurricanes and the steep rise in energy prices, the economy registered 3.2 percent growth.

JGTRRA, and its earlier cousins, were timely and effective.

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industrial equipment over commercial buildings, creates capital market distortions. The tax code can create wedges between asset types, but some distortions are considered socially desirable. For example, one can argue that the mortgage interest deduction has distorted the allocation of capital among asset types and has resulted in Americans being too well housed, but one is not likely to find a significant audience.

¹⁷ See Joint Economic Committee, “*Productivity: The Path to Prosperity*,” June 2006, <http://www.house.gov/jec/news/news2006/rr109-39%20Productivity%20Expanded.pdf> (accessed July 12, 2006).

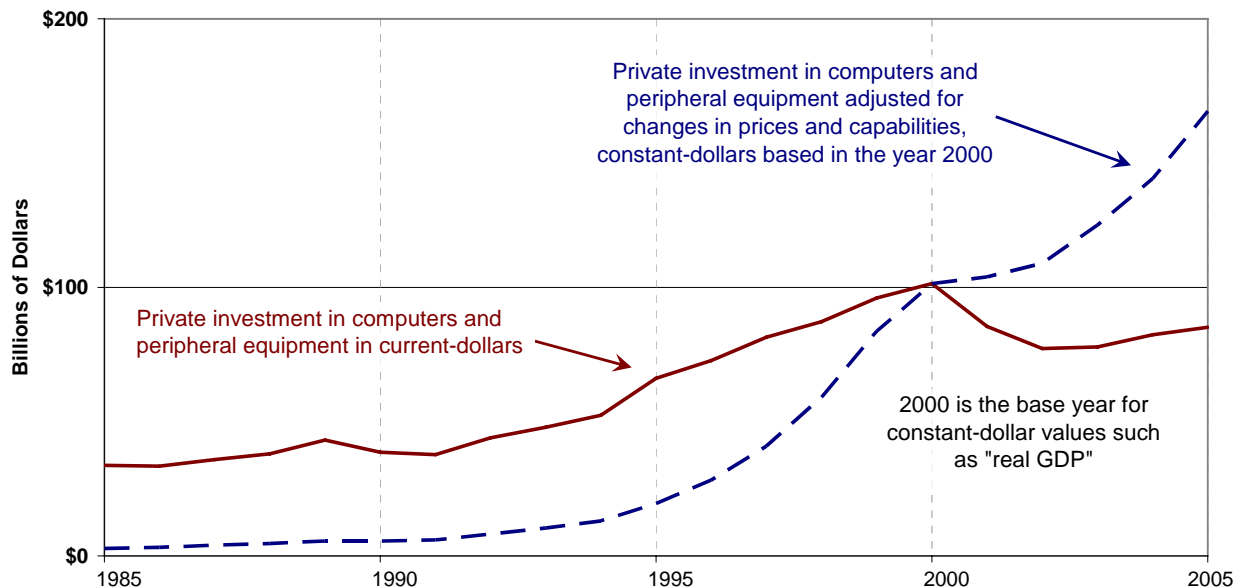
¹⁸ See Dale W. Jorgenson, Mun S. Ho and Kevin J. Stiroh, “Potential Growth of the U.S. Economy: Will the Productivity Resurgence Continue?” *Business Economics*, 41 no. 1, (January 2006).

APPENDIX

Appendix Figure 1 helps to explain why current-dollar data, rather than constant-dollar data, were used in this paper for plotting investment over time.

**Appendix Figure 1. Investment in Computers and Peripheral Equipment
Constant versus Current Dollars**

For goods like computers that have had significant improvements in performance and declining prices, adjusting for inflation -- that is, converting current-dollars into constant-dollars -- can result in a large difference in the two data series as one moves further away from the base year.



Source: Bureau of Economic Analysis/Haver Analytics.

This graph plots gross private investment in computers and peripheral equipment from 1985 to 2005, as reported by the Department of Commerce. The solid line represents current dollar spending, that is, spending in the prices of the day. Investment rose in the 1990s, crested in the year 2000, dropped in 2001 and began to recover in 2003. The dashed line is the same investment category expressed in constant (chained) dollars using 2000 as the base year. These constant-dollar estimates were adjusted for changes in the relative price level, or, to use the vernacular, were adjusted for inflation. For most economic analyses, the better practice is to use constant-dollar data. The trouble is, if one were to use constant-dollar estimates for this data series, one might conclude that computer investment in the year 1985 was a mere \$2.8 billion.

For this category of investment, constant- and current-dollar estimates diverge for a couple of reasons. First, computers have undergone profound changes in capabilities over the last twenty years and economic statisticians adjust the price indexes to account for changes in capabilities. Second, computers have also undergone dramatic price *declines*. These two factors result in the constant-dollar price of a late 1980s vintage computer being close to zero.

For most products, this practice of adjusting price indexes for changes in capabilities, called “hedonic pricing,” will not have a profound effect on a time series of data. In this case, however, using constant-dollars would distort the analysis. Another benefit of using current-dollar analysis is that the estimate of the growth rate of investment over time is more conservative. As Appendix Figure 1 shows, the growth of constant-dollar, private investment in computers and peripheral equipment since the year 2000 is striking. Current-dollar investment, however, is more moderate.

When charting investment data in current-dollars over a long time period, one merely needs to make a mental note that, in terms of the level of inflation for the economy as a whole, a 1985 dollar is worth almost two 2006 dollars.