

Low Investments Pose Risk for Innovation

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With his American Competitiveness Initiative, President Bush has at least found one correct economic policy target. But strengthening the U.S.'s position in the global market will require more investments in research and development, education, and physical capital, such as computers and machinery. Here the trend is troubling. In recent years, businesses invested less than in the past to build up the country's capital base. Increasingly, businesses are investing in things that lose their value very quickly, such as computers and software. At the same time overall investment is comparatively low, which means that actual new additions to the nation's capital stock are the smallest of any business cycle. The net effect is that American businesses are not consistently contributing to our capital stock, one of the most important keys to the global competitiveness of the U.S.

A clear measure of the U.S.'s competitiveness is to compare the value of high tech products sold by U.S. producers overseas with the value of high tech products bought from abroad by U.S. purchasers. By this count, the country is increasingly falling short. Since 2002, the U.S. has imported more high tech products, also called advanced technology products (ATP), than it has exported. In 2005, the ATP deficit widened again to \$44 billion.

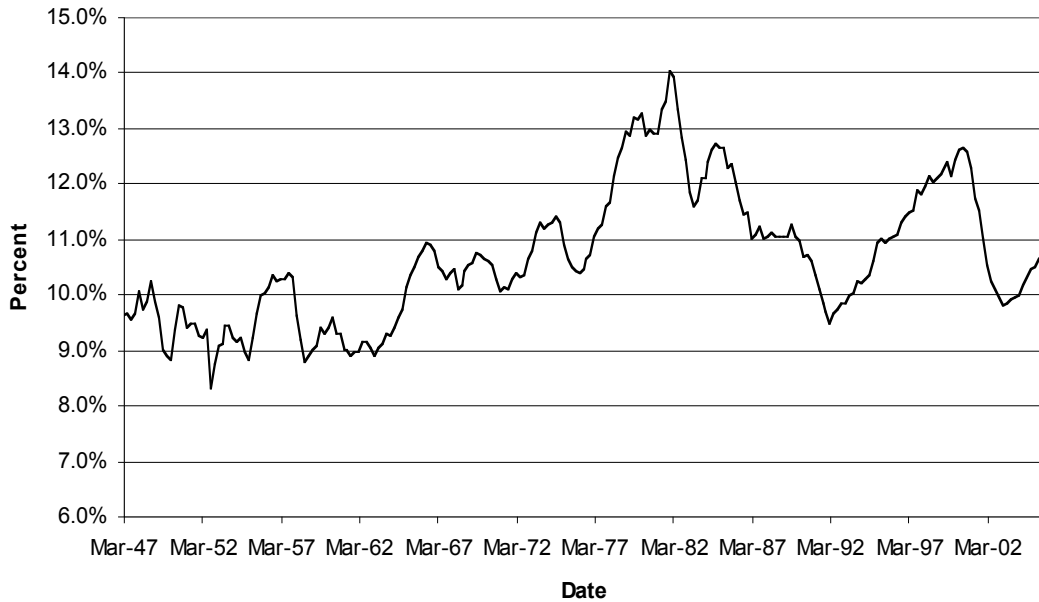
The problems for the U.S. in high tech products are widespread. In two of the four largest areas of ATP trade – life sciences and information and communications technology – the U.S. had deficits in 2005 and in a third area – electronics – the U.S. had a shrinking surplus. Only aerospace trade saw a growing surplus, but not enough to compensate for the losses elsewhere.

To counter the loss of competitiveness, the country needs to invest more, both in its people, but also in its physical capital base. Early in this business cycle, which started in March 2001, investment actually declined. In inflation adjusted terms, non-residential fixed, or business, investment declined for nine consecutive quarters – the longest losing streak since World War II. Consequently, the share of investment relative to gross domestic product (GDP) fell from a high of 12.6 percent to a low of 9.8 percent (figure 1). This decline followed a substantial gain in investment in the 1990s. However, the rise in investment only managed to recover most of the ground lost in the 1980s (figure 1). Investment relative to GDP never exceeded the previous high mark of 12.7 percent, although it came very close with 12.6 percent. After the long slide in the initial stages of this business cycle, investment has again grown faster than GDP since March 2003. By the end of 2005, investment equaled 10.8 percent of GDP.

A closer look already reveals signs of trouble in business investment since its pace of growth slowed in 2005 as compared to 2004. The year-on-year growth of real investment in inflation adjusted terms was 6.4 percent by the end of 2005, down from 10.9 percent just a year earlier (figure 2). Similarly, the year-on-year percentage point change in investment relative to GDP was 0.3 percentage points in December 2005, down from 0.5

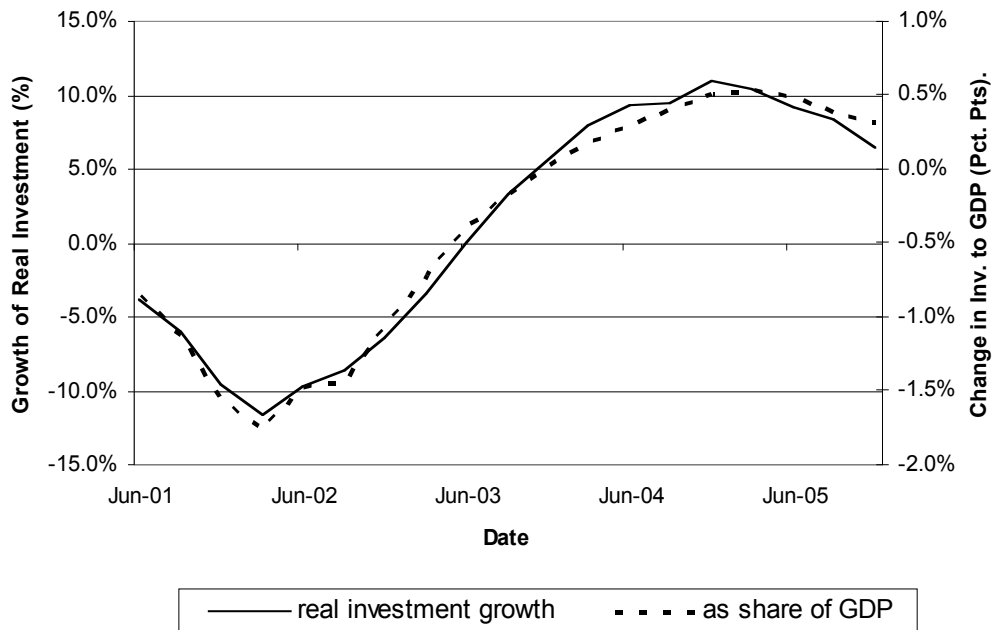
percentage points in December 2004. As a result, business investment recovered less than 40 percent – 39.4 percent to be exact – of the ground it had lost in the initial stages of this business cycle. Prior to this business cycle, business investment has not been this low since 1994 (figure 1).

Figure 1: Business Investment as Share of GDP



Notes: Author’s calculations based on data from Bureau of Economic Analysis, 2006, National Income and Product Accounts, Washington, D.C.: BEA.

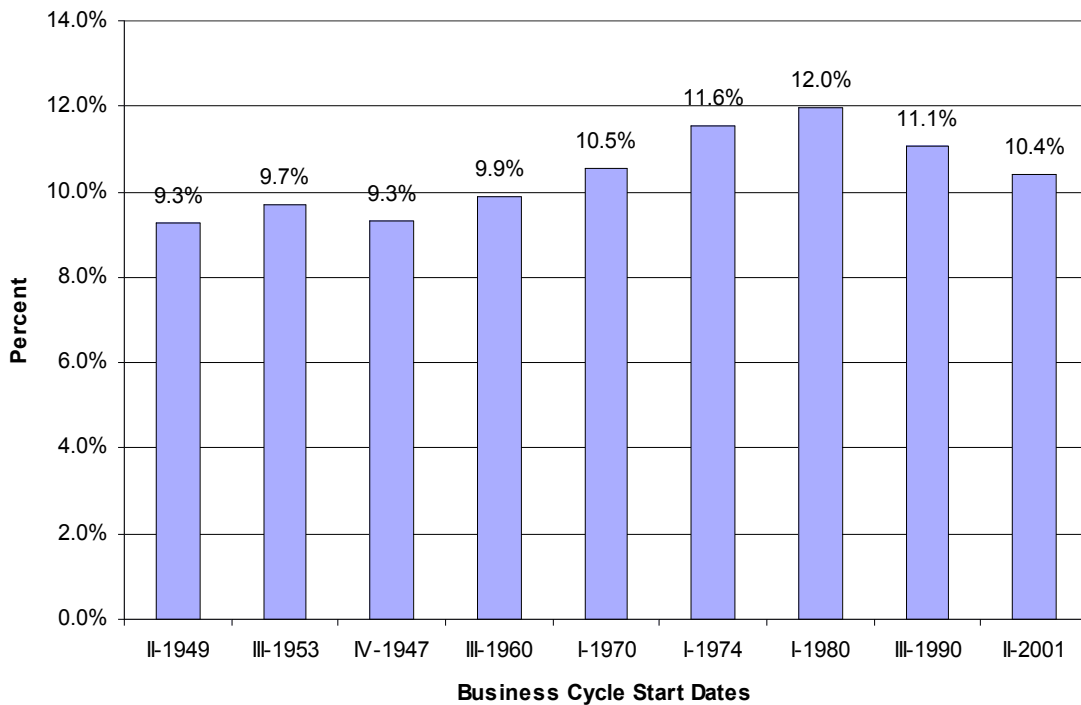
Figure 2: Year-on-Year Change in Investment, March 2001 to December 2005



Notes: Author's calculations based on data from Bureau of Economic Analysis, 2006, National Income and Product Accounts, Washington, D.C.: BEA.

The result of the sharp decline in business investment in the early part of this business cycle and the slowing investment recovery are reflected in the overall rather lackluster performance of business investment. As a business cycle average, business investment totaled 10.4 percent between March 2001 and the end of 2005. This is the lowest average investment performance since the 1960s (figure 3).

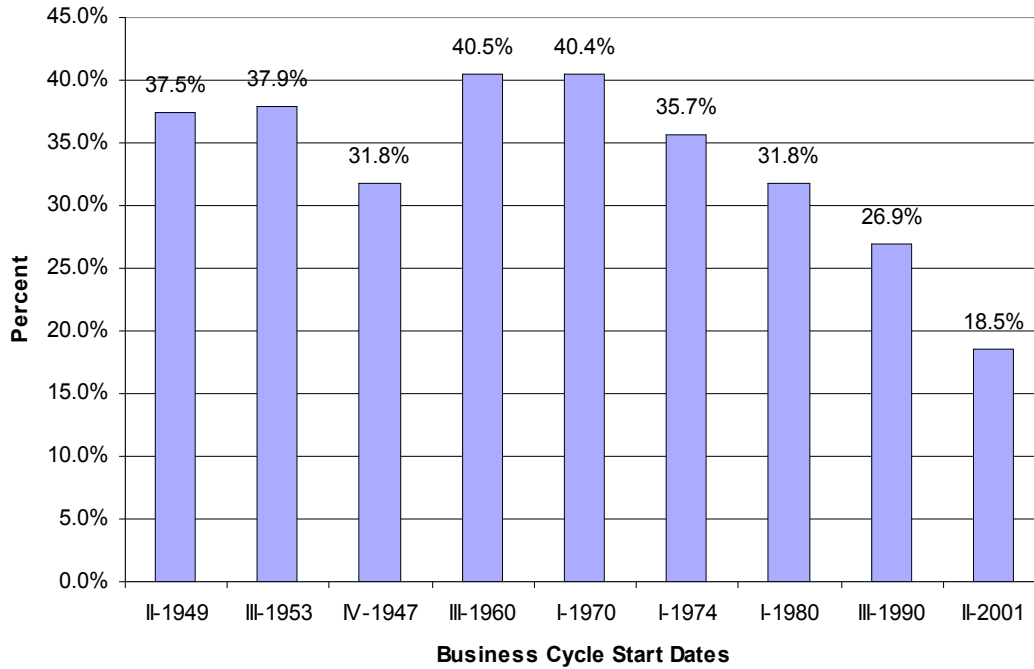
Figure 3: Gross Nonresidential Fixed Investment Relative to GDP, Business Cycle Averages



Notes: Author's calculations based on data from Bureau of Economic Analysis, 2006, National Income and Product Accounts, Washington, D.C.: BEA. Business cycle dates are from the National Bureau of Economic Research, 2006, Business Cycle Dates, Cambridge, MA: NBER.

When considering the competitiveness of the U.S. it not only matters that businesses invest, but also what they invest in. In particular, if businesses are only replacing obsolete equipment and buildings, the country's capital base does not grow and there should be no expectation of spreading innovation. The crucial measure thus is how much businesses spend in addition to replacing obsolete equipment and buildings. Over the course of this business cycle, businesses had the lowest net investments out of total investment during any business cycle since World War II (figure 4). Less than one-fifth of all business investment outlays were actually net additions to the country's private sector capital stock. This is well below the net investment share of total investment of any previous business cycle (figure 4). Even with the acceleration of investment, the net investment share of total investment did not go beyond 25 percent in 2004 and 2005.

Figure 4: Net Nonresidential Investment as Share of Gross Investment, Business Cycle Averages



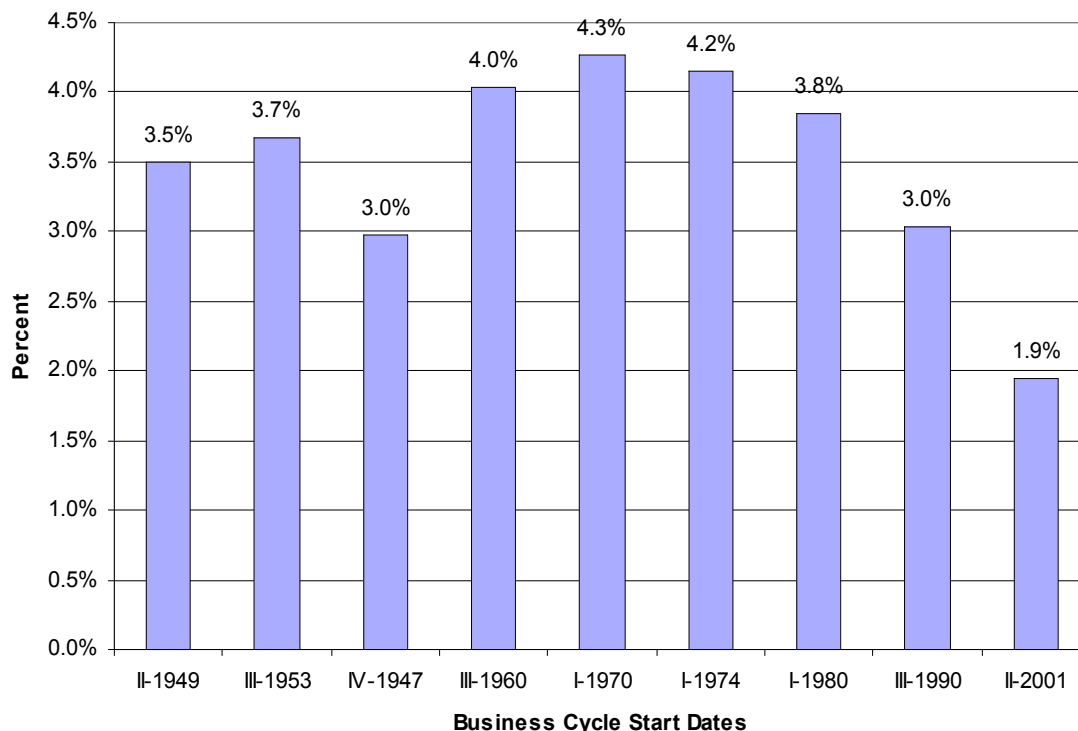
Notes: Author's calculations based on data from Bureau of Economic Analysis, 2006, National Income and Product Accounts, Washington, D.C.: BEA. Business cycle dates are from the National Bureau of Economic Research, 2006, Business Cycle Dates, Cambridge, MA: NBER. Quarterly capital consumption figures for domestic businesses are taken from NIPA table 5.1 and adjusted for discrepancies with annual data from NIPA table 5.2.6, such that net investment relative to GDP is defined as:

$$NI_t = \frac{I_t - Depr_t * \left(\frac{Depr526}{Depr51}\right)_{t-1}}{I_t}, \text{ where NI is net investment relative to total investment, I is gross}$$

investment, Depr is consumption of fixed capital by domestic businesses from NIPA table 5.1, Depr526 is consumption of fixed capital for the entire preceding year taken from NIPA table 5.2.6 and Depr51 is consumption of fixed capital for the entire preceding year taken from NIPA table 5.1.

The combination of comparatively lackluster overall investment and the lowest share of net investment out of total investment also meant that businesses' additions to the country's capital stock relative to GDP were the smallest of any business cycle. From March 2001 to December 2005, business investment included net investments equal on average to less than 2 percent of GDP (figure 5).

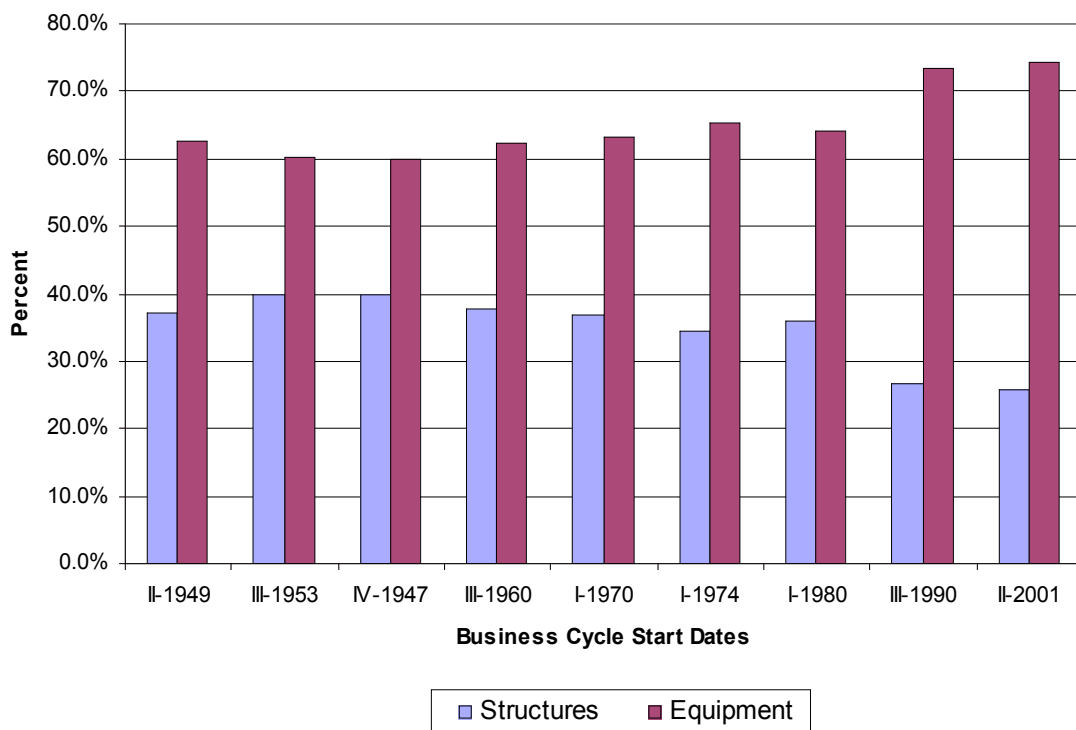
Figure 5: Net Investment Relative to GDP, Business Cycle Averages



Notes: See note to figure 4

The low share of net investment relative to total business investment can best be explained by a shifting composition within equipment investment. In particular, net investments declined in the 1990s because businesses shifted their attention towards more investments in equipment than in the past. However, equipment, especially computers and software, tend to depreciate much faster than structures, such as office buildings and manufacturing plants. Thus, a larger share of investment in the 1990s than in previous business cycle went towards replacing obsolete equipment, keeping net investment fairly low. This decline in the share of net investment went along with an acceleration of overall investment, maintaining a reasonable level of net investment. Since March 2001, though, business investment did not continue its deceleration of investments in structures and its acceleration of equipment investment. The share of business investments that went to structures, such as office buildings and manufacturing plants, was approximately the same in this business cycle as in the last (figure 6). Thus, the lack of investment in structures cannot explain the decline in net investment.

Figure 6: Investments in Structures and Equipment Relative to Total Nonresidential Investment, Business Cycle Averages

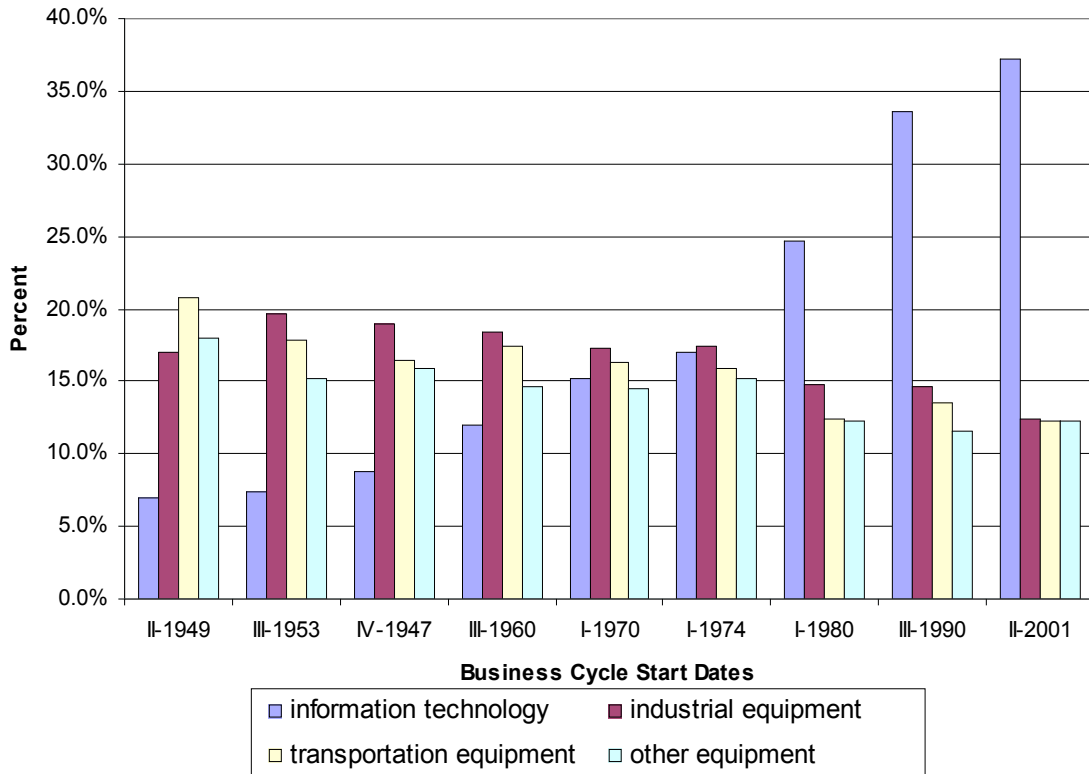


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Instead of shifting investment from structures to equipment, businesses appeared to have shifted their emphasis within equipment investment. A growing share of business investment is in the form of information technology, such as computers and software, i.e. among the items that tend to depreciate faster than transportation equipment, such as car parks, and industrial equipment, such as assembly lines (figure 7).

Because an ever larger share of investment depreciates ever more quickly, businesses have to spend more money than in the past just to maintain the existing capital base. However, since total investment in this business cycle has been fairly modest, the country's net capital base has experienced its smallest additions during any business cycle since World War II.

Figure 7: Equipment Investment as Share of Total Nonresidential Investment, Business Cycle Averages



Notes: Author's calculations based on data from Bureau of Economic Analysis, 2006, National Income and Product Accounts, Washington, D.C.: BEA. Business cycle dates are from the National Bureau of Economic Research, 2006, Business Cycle Dates, Cambridge, MA: NBER.

With slow growth of the country's capital base, U.S. competitiveness does not receive the boost necessary to regain ground lost in the global market place over the past few years. A recovery of private sector investment will require public support in some forms. For one, the uncertainty about the future costs of capital associated with massive budget and trade deficits can pose an obstacle to more business investments. Another aspect is comparatively slow income growth for households. After all, why should businesses invest more if they don't think the customers will be there to buy all the products made with the new equipment? Hence, if public policy pays more attention to getting America's middle class its fair share when the economy grows, business will also start investing at a faster pace again.