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The sustainability of economic recovery in the United States: The risks to consumption and investment

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The Levy Economics Institute of Bard College

Public Policy Brief

No. 77, 2004

THE SUSTAINABILITY OF ECONOMIC RECOVERY IN THE UNITED STATES

The Risks to Consumption
and Investment

PHILIP ARETIS and ELIAS KARAKITSOS

**THE SUSTAINABILITY
OF ECONOMIC RECOVERY
IN THE UNITED STATES**

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PHILIP ARETIS and ELIAS KARAKITSOS

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Preface

A rebound of consumption, investment, and consumer confidence in the second half of 2003 has raised hopes that the U.S. economic recovery from the 2001 recession is on a sustainable course. According to this brief by Philip Arestis and Elias Karakitsos, however, the trend in the short-term factors affecting the economy has changed for the better, but long-term factors remain at risk. Slow, rather than rapid, economic growth is better in 2004, the authors say, as rapid growth would result in higher long-term interest rates, which would threaten the property market boom and weaken investment in 2005 and beyond. The authors are sure, however, that the current administration will find it difficult to refrain from additional procyclical fiscal stimulus in light of the upcoming presidential election. The result could lead to a rapidly declining U.S. economic growth rate following the election in November.

The 2001 recession was very mild, thanks to the resilience of consumers, the buoyancy of real disposable income and the housing market, and easy fiscal policy (low interest rates and tax cuts). The business cycle following the 2001 recession, the authors observe, has been characterized by the highest private consumption level, but the weakest investment recovery, of all previous recessions. The current cycle is further characterized by more pronounced job losses combined with the slowest increase in average weekly hours of work, and a reduction in earnings for parts of the labor force.

Arestis and Karakitsos point out that contrary to the encouraging news in the short term, real estate costs, as a percentage of disposable income, and household debt service are at an all-time high, and the property boom was financed by debt accumulation. Furthermore, despite the buoyant economic recovery, employers are borrowing very cautiously. Although companies are restructuring their balance sheets faster than

during any other business cycle, part of this success comes from such one-off measures as income tax cuts, depreciation incentives, and lower geopolitical risks, and from larger government deficits. In addition, the benefit of switching into long-term debt has hindered the economic recovery.

Using a consumption and investment model of the U.S. economy, the authors assess the long-term risks to consumption and investment under two alternative scenarios: a weak and a strong economic recovery in 2004. If the recovery is weak, they find that consumption and investment peak early in 2004 and decelerate to the end of 2005. Economic fundamentals such as tighter monetary policy, declining profitability, and restructuring of corporate balance sheets deteriorate, and profitability declines as a result of robust job creation. The economy, however, continues to grow at 3 percent by the end of 2004, which would help the current administration in the presidential election. If there is a strong recovery (4.6 percent), the authors call for tighter monetary policy in the second quarter of 2004, but foresee that the Fed could afford to wait until after the election. The delay would cause the growth rate in 2005 to fall to only 1.4 percent.

Although the average growth rate over the 2004–2005 period is the same for both scenarios, the first scenario implies low growth volatility and high inflation volatility, whereas the second scenario implies high growth volatility and low inflation volatility. Likely policy actions by the current administration are seen to result in a precipitous decline in consumption and investment, which drags the economy into recession toward the end of 2005.

As always, I welcome your comments.

Dimitri Papadimitriou, *President*

May 2004

The Sustainability of Economic Recovery in the United States

Introduction

The current anemic economic recovery in the United States stems from weak investment, owing to excess capacity created during the “New Economy” bubble in the second half of the 1990s. In the aftermath of the bursting of the bubble, the consumer has been on a tightrope, as losses in equity markets have been partly offset by gains in real estate and as fiscal support and mortgage refinancing have been partly offset by consumer cautiousness.

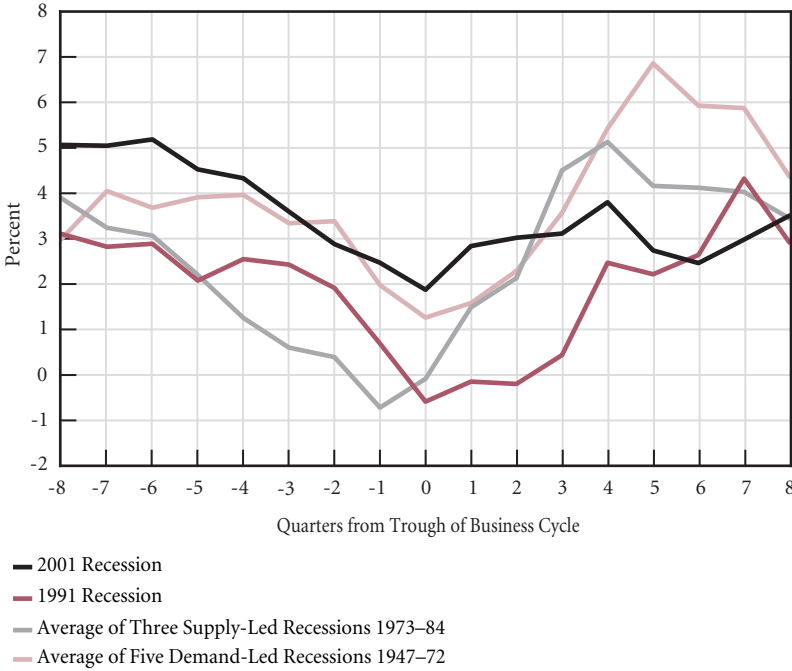
Imbalances in the corporate sector, which take time for correction, are preventing investment from picking up and laying the foundation for a new long-lasting economic expansion. Meanwhile, the fragile consumer might contribute to a deep and protracted recession if the economy stumbled in light of risks, such as a jobless recovery and a growing personal-sector imbalance that is fueled by a property bubble. Tax reductions may create a cyclical upturn in the U.S. economy in the short run, but this kind of government policy is unsustainable in the long run.

In this brief, we review the short- and long-term factors that affect consumption and investment in the U.S. economy. We subsequently simulate our models of consumption and investment in an attempt to examine the likely impact of the factors on the U.S. economy.

Recent Behavior of Consumption and Investment

Figure 1 shows the pattern of real consumer expenditures for eight quarters before and after the trough of recession. To simplify comparisons, four lines are shown: the average of five demand-led recessions in the 1947–72 period; the average of three supply-led recessions in the 1973–84 period; the 1991 recession; and the 2001 recession. Consumption during the 2001

Figure 1 Consumption

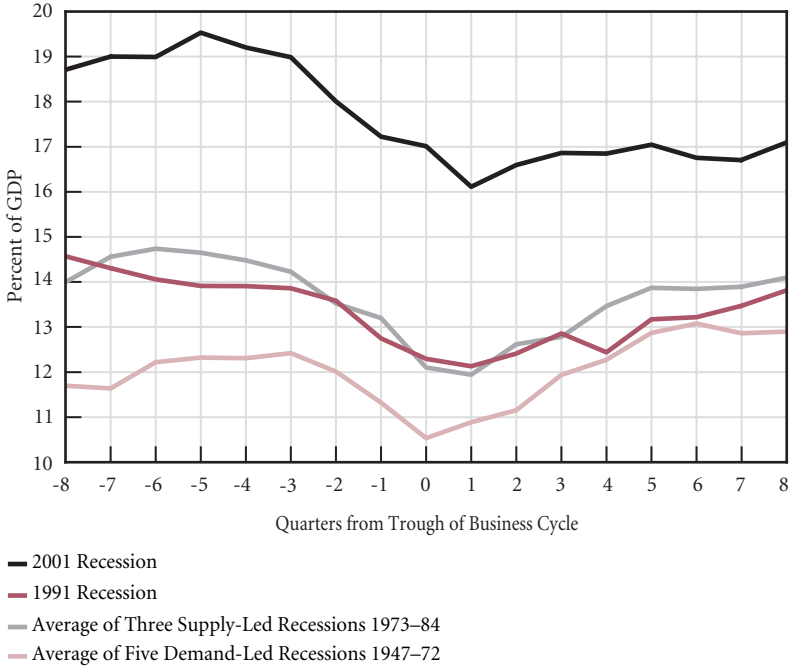


Source: Authors' calculations

recession fared better than any other business cycle, decelerating from an annual rate of 5.1 percent to 1.8 percent before resuming higher growth. A rebound of consumption in the second half of 2003, coupled with rising consumer confidence, has raised hopes that the economic recovery is on a sustainable path.

Real gross private domestic investment in fixed capital is the most volatile component of aggregate demand that invariably leads an economy into recession. Investment fell 11 percent in the three quarters leading up to the trough of the 2001 recession compared with an average of 15 percent in the last ten recessions. Investment peaked in the second quarter of 2000, bottomed twice in 2001, recovered strongly in the first quarter of 2002, but lost steam until March 2003. To a large extent, the spectacular recovery of investment in the first quarter of 2002 reflected the end of destocking and the introduction of depreciation incentives on

Figure 2 Investment



Source: Authors' calculations

investment in equipment and software. Replacement investment also played a role (e.g., the rush to buy computers before 2000 resulted in the need to replace them by 2003). Residential investment has been the strongest component of investment because of the buoyancy of the housing market.

Figure 2 shows the behavior of investment before and after the trough of recession. Since investment bottoms either at the trough of the business cycle, or at a one-quarter lag, it is a coincident or lagging indicator. The fall in investment in the 2001 recession—3.4 percent of GDP—was the steepest of all recessions. Moreover, investment grew just 1 percent of GDP in the first two years after the trough, thereby making the recovery from the 2001 recession the weakest of all recessions.

The causes of the anemic recovery are the balance-sheet problems of the business and personal sectors (because of prior budget surpluses). In

the last two quarters of 2003, however, investment growth has accelerated, thereby raising hopes that the recovery is sustainable. There are downside risks to this expectation, however, which we explore below (Arestis and Karakitsos 2003a, 2003b).

Short-Run Factors Affecting Consumption and Investment

Short-run factors are factors that affect the economy over the next 12 months.

A. Consumption

The most important determinant of consumption is real disposable income, which is equal to personal income less taxes and adjusted for inflation in consumer prices. Although personal income and wages and salaries, which account for more than half of personal income, continue to recover from the 2001 recession, they are growing at a pace that is below the recovery following the 1991 recession (Arestis and Karakitsos 2004). The recovery in wages and salaries is uniform across services, distributive industries, and manufacturing, but continues to fall in nominal terms in manufacturing.

Although personal income grew only 2.4 percent in the first year of recovery (November 2001 to November 2002), disposable personal income grew 7.3 percent. The wide gap, which has since narrowed to less than 1 percent, was due to the fiscal support of the personal sector. Taxes as a percent of disposable income declined from a peak of 18.3 percent in March 2001 to 12.6 percent in October 2003 (*ibid.*).

The pattern of consumption in the recent downturn has followed that of real personal disposable income, although the latter has been much more volatile as households have attempted to smooth consumption in the face of variable incomes caused by the business cycle and changes in taxes and subsidies. The growth rate of real personal disposable income peaked at 5.6 percent a year before the trough and bottomed at 0.3 percent a quarter after the trough (*ibid.*). The volatile pattern is not dissimilar to the average demand-led and supply-led business cycles.

During a second round of retrenchment by the corporate sector, the growth rate of real disposable income was more than halved—from 5.7 percent in November 2002 to 2.4 percent in April 2003—but it accelerated

in the second half of 2003, thanks to new tax cuts. What are the prospects for growth of real disposable income?

Companies usually cut the number of hours in the workweek during a downswing of the business cycle and restore the number of hours in an upswing. In the current cycle, weekly hours were cut, on average, 1.5 hours—a pattern not dissimilar to previous cycles. However, average weekly hours have increased merely 0.7 hours during the early stages of the current recovery, which is the slowest pace of all cycles. Even worse, average weekly hours were cut during the recovery in the second round of retrenchment, as companies attempted to restore profitability and healthy balance sheets.

Job losses have been more pronounced than other cycles (*ibid.*). Job creation peaked nineteen months before the trough at 305,000 new jobs per month and bottomed two months after the trough at 234,000 job losses per month, which was the steepest decline in the last ten business cycles. Moreover, job creation in the recovery phase has been more anemic than that following the 1991 recession and, even worse, job losses resumed during the second round of retrenchment in spite of higher profits and balance sheet improvements.

Companies not only cut the workweek and laid off workers, but also managed, for the first time, to reduce the earnings of the labor force as a result of flexible labor markets introduced in the late 1980s and early 1990s. Real hourly earnings rose by only 2 percent from the trough of the cycle, but have since fallen to a new low. In the second half of 2003, however, earnings started to increase, which provides additional evidence that the recovery is sustainable.

Overall, the 2001 recession was very mild thanks to the resilience of consumers and to the buoyancy of real disposable income from easy fiscal policy. During the double-dip recession of the industrial sector that was caused by a second round of retrenchment, companies cut the average workweek, laid-off workers, reduced the hourly earnings of workers, and slashed investment. The slower growth in real disposable income caused a deceleration in the growth of consumption. The picture has changed markedly in the second half of 2003. Retrenchment was successful in restoring profitability and improving balance sheets, so wages have begun to rise, job creation has resumed (albeit sluggishly), and average weekly hours have increased. The latest round of tax cuts has also bolstered real

disposable income and will likely boost consumption. Therefore, all the short-run factors affecting consumption have improved and any risks to consumption will come from long-run factors.

B. Investment

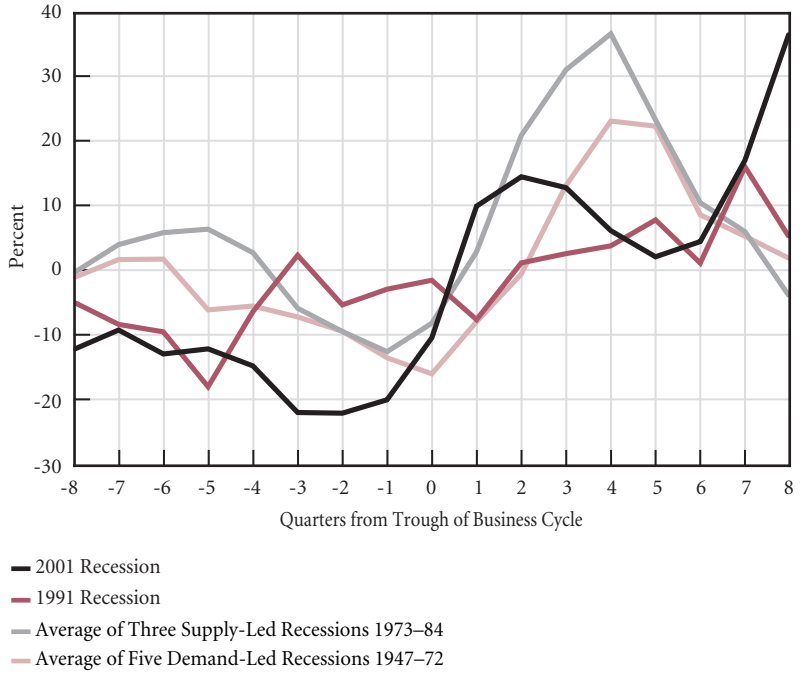
Investment must improve before the recovery is sustainable. This implies a recovery in profits and capacity utilization. However, capacity utilization kept falling during the first 18 months of recovery, which suggests that excess capacity was installed in the latter half of the 1990s and was not absorbed in spite of resilient consumption. In the period from May to December 2003, capacity utilization rose to 74.5 percent from 72.6 percent, thereby raising hopes that excess capacity might be absorbed if demand continued at a high rate.

Figure 3 shows the growth rate of nonfarm, nonfinancial corporate profits per unit of output. This measure is clearly a coincident or leading indicator of the trough of the business cycle. Unit profits bottomed three quarters before the trough of the 2001 recession and recovered sharply for a brief period, thanks to the one-off incentives for depreciation. Unit profits peaked just two quarters after the trough and subsequently decelerated for a year, as the effect of one-off incentives faded away. Profits have rebounded strongly in the last two quarters and have raised hopes that the worst is over, but part of the rebound has been caused by depreciation incentives in the 2003 fiscal package (a one-off factor).

Profit margins depend on unit labor costs in relation to pricing power, so they cannot improve until unit labor costs peak and begin to decline. Unit labor costs, a leading indicator of the trough of the business cycle, peaked three quarters before the trough of the 2001 recession and bottomed a year after the trough. The deterioration in unit labor costs triggered a new round of retrenchment in the corporate sector, which successfully reduced unit labor costs in the following two quarters. The end of the Iraq war, the dissipation of uncertainty, the decline of the dollar, and the accommodative fiscal and monetary policy have also improved the outlook for profits. These events bode well for a sustained recovery in investment.

Another factor requiring correction before a sustainable economic recovery is the liquidation of inventories of unsold goods. The inventory-to-sales

Figure 3 Corporate Unit Profit



Source: Authors' calculations

ratio in manufacturing is a leading indicator of the trough of the business cycle, preceding it by one or two months. In the current cycle, the ratio peaked four months before the trough and bottomed nine months after the trough, before increasing slightly in the following seven months.

In a typical cycle, production resumes after excess inventories are liquidated. Hence industrial production is a lagging indicator of the trough of the business cycle by one or two months. In the recent downturn it bottomed two months after the trough, and the recovery fizzled after the first year. During the second round of retrenchment, production cuts led to a double-dip recession in manufacturing, but a reduction in unit labor costs, the restoration of profits, and lean inventories paved the way for a growth in production. The upturn in the last nine months is not an aberration, but confirmation of a new trend.

Overall, investment has been lackluster in the last two years and has played a significant role in an anemic recovery. Because investment improved in the last two quarters of 2003, however, our analysis suggests a change in trend, as all short-run factors that affect investment have improved.

Long-Run Factors Affecting Consumption and Investment

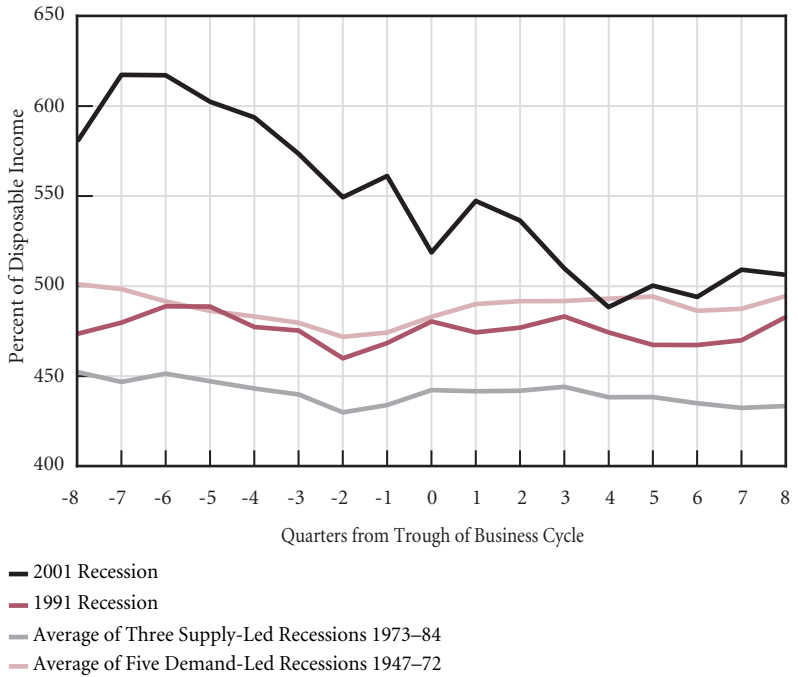
A. Consumption

An increase in the savings ratio contributed to an anemic recovery in the early 1990s. In the 2001 downturn, the savings ratio also increased by approximately the same amount: from 1.9 percent seven quarters before the trough to 3.5 percent eight quarters after the trough (Arestis and Karakitsos 2004). The outlook for the savings ratio over the next two years will determine the fate of the latest tax cuts and the income boost from higher employment in stimulating consumption.

In a leveraged economy the savings ratio moves countercyclically: i.e., it falls in a boom and rises in a recession. This trend occurred in the early 1990s and in current business cycles. In the short run, consumption depends on real disposable income and the savings ratio. The factors that determine the savings ratio are net wealth and the degree of uncertainty about job security and income growth (Frowen and Karakitsos 1996).

Figure 4 shows net wealth as a percentage of disposable income during various business cycles. In the most recent and longest bull market (1982–2000), net wealth steadily increased, leading to a steady decline in the savings ratio. During the second half of the 1990s, net wealth rose to unprecedented levels and the savings ratio fell precipitously until the peak of the bubble. When equity prices declined during the period from March 2000 to March 2003, net wealth subsequently fell toward its long-term average (480 percent of disposable income), while the savings ratio increased to 4 percent. Between the peak of the bubble (March 2000) and the trough of the business cycle (September 2001), financial assets fell \$6.8 trillion, while rising property prices boosted the value of tangible assets by \$3.3 trillion. Thus the erosion of gross wealth was limited to \$3.5 trillion (see Table 1). The latest figures from the third quarter of 2003 show that the picture has changed, as losses in financial assets narrowed to \$3.6 trillion, while tangible assets soared to \$4.6 trillion. Gross wealth is now \$1 trillion higher than it

Figure 4 Personal Sector Net Wealth



Source: Authors' calculations

was at the peak of the bubble. This is impressive, and could lead one to conclude that consumption is no longer a problem. What matters, though, is net wealth rather than gross wealth, and net wealth has not recovered.

Real estate as a percentage of disposable income is at an all-time high (191 percent). Unfortunately, the property boom was financed by debt accumulation, which reached 110 percent of disposable income by the third quarter of 2003. Since the peak of the equity bubble, debt has increased \$2.5 trillion, so the \$1-trillion gain in gross wealth becomes a \$1.5-trillion loss in net wealth. Although this imbalance has narrowed from \$5 trillion, it remains worrisome, since it can only be corrected either through retrenchment by the personal sector that raises the savings ratio, or by a rebound in asset prices. Now that economic recovery is under way, it is less likely that the personal sector will respond to the imbalance through retrenchment.

Table 1 Personal Sector Balance

	Total Assets		Tangible Assets		Financial Assets		Liabilities		Net Worth	
	\$10 ⁶	% of Nominal Disposable Income	\$10 ⁶	% of Nominal Disposable Income	\$10 ⁶	% of Nominal Disposable Income	\$10 ⁶	% of Nominal Disposable Income	\$10 ⁶	% of Nominal Disposable Income
Peak of Equity Bubble (March 2000)	50,571	727	14,489	208	36,082	519	7,011	101	43,560	626
Trough of Equity Bubble (September 2002)	47,071	599	17,825	227	29,245	372	8,536	109	38,534	490
Latest Quarter (September 2003)	51,598	639	19,129	237	32,470	402	9,546	118	42,052	521
Loss between Peak and Trough of Bubble	-3,500	-128	3,336	18	-6,837	-147	1,525	8	-5,025	-136
Latest Gain or Loss since Peak of Bubble	1,027	-88	4,640	29	-3,612	-117	2,535	17	-1,508	-105

Source: Authors' calculations

Job security and income growth depend on the outlook of the corporate sector. It has been argued elsewhere (*ibid.*) that although the outlook for corporate profits and investment has improved, substantial risks remain. The newly proposed fiscal package by the U.S. government is controversial because it is intended to be tight, but may turn easy when it becomes law. The Bush administration has called for permanent tax cuts that are financed by spending cuts. The government may find it difficult to cut expenditures and unable to resist endorsing the proposed tax cuts. Moreover, President Bush is unlikely to veto increased expenditures in an election year. Although another fiscal boost would ensure that investment is booming at the time of the presidential election, higher long-term interest rates could weaken investment in 2005 and threaten the property market boom. Furthermore, if an economic boom in 2004 leads to strong job creation, then the growth in corporate profits will decline. These factors could affect consumer confidence in 2005. Deteriorating business and consumer outlooks could induce households to curb their spending, and the savings ratio would rise—an unlikely risk in 2004, but not in 2005.

Unemployment has declined to 5.7 percent of the labor force from its peak of 6.3 percent in June 2003. It could fall further if economic growth is strong in 2004. However, the official measure of unemployment may hide the strength of job creation because many discouraged workers during the downturn would probably return to the labor force. Hence the savings ratio is unlikely to be affected in 2004, but it would rise in 2005 if the risk factors materialized.

In spite of low interest rates and refinancing, household debt service costs are at an all-time high and are extremely worrisome (*ibid.*). The components of the financial obligations ratio, a broader measure than the debt-service ratio, are also at an all-time high. If interest rates rose, then households would find it difficult to service their debt and the savings ratio would rise. With growth at potential output, the Fed should tighten interest rates in the second quarter of 2004, but, with rapid growth, it could afford to wait. The required degree of tightening, though, would be greater in 2005 and would precipitate a retrenchment of the personal sector and a higher savings ratio (*ibid.*).

There is a risk to consumption from strong economic growth in 2004 that is a result of further fiscal policy measures by the government.

Investment would soften in 2005 because of higher long-term interest rates, and profitability would decline because of strong job creation in 2004. The deteriorating outlook for the corporate sector may induce caution on the part of consumers and raise the savings ratio. Higher long-term interest rates may also cause lower house prices and lead to falling prices of financial assets. The personal-sector imbalance would widen once more, and retrenchment could be the inevitable price. This scenario would be aggravated by debt-servicing costs that are already at an all-time high.

B. Investment

In every business cycle, debt levels have increased. In demand-led business cycles, debt as a percentage of GDP peaked at 28 percent at the trough, while in supply-led business cycles, it peaked at 33 percent. In contrast, debt soared to 43 percent in the 1991 recession and to 47 percent in the 2001 recession (Arestis and Karakitsos 2004).

High debt levels require expensive servicing and large volumes of new debt issues to replenish maturing debt. In an economic downswing, though, access to capital markets and terms of issuance deteriorate. Therefore, companies are forced to cut credit that is poised to finance investment and to focus on refinancing existing obligations. These actions combined with low product demand translate into an anemic recovery.

In the current downturn, debt levels rose during the recovery phase, a trend that has since reversed in light of the dramatic drop in the last two quarters (3.5 percent of GDP) in response to the growth rate exceeding the rate of debt accumulation. Debt reduction indicates that corporate-balance-sheet restructuring and government deficit spending are working, which bodes well for a recovery of investment. However, the net worth of the corporate sector has fallen 2.4 percent of GDP in the last two quarters and this trend signals that successful restructuring is not over yet.

The rate of growth of corporate debt peaks one or two years before the trough (*ibid.*). In the average demand- and supply-led business cycles, the growth rate of debt bottomed at a positive rate two quarters after the trough. By comparison, the growth rate of corporate debt in the early 1990s bottomed at a negative rate three quarters after the trough. For the first time, firms reduced debt levels in order to restore the financial health of their balance sheets. In the recent downturn, the annual demand for credit

declined from 11.2 to 1.4 percent five quarters after the trough and increased slightly thereafter. Hence companies are borrowing very cautiously despite the buoyant economic recovery in the second half of 2003.

Debt leverage, as measured by the stock of debt as a percentage of internal funds (net cash flow), affects other company decisions. Although companies usually cut the growth rate of debt in the downswing of the business cycle, internal funds decline faster, so the debt leverage increases. The reverse occurs during an economic recovery (*ibid.*). In the current downturn, the debt leverage soared 170 percent, but fell 204 percent in recovery. Hence companies managed to restructure their balance sheets faster than any other business cycle, although part of this success resulted from one-off measures, which boosted profits, and larger government deficits.

Retrenchment depends on the ease of refinancing the stock of debt, and the service burden is based on profits and net cash flow. The more companies rely on long-term debt, the easier it is to sustain a high level of debt in a cyclical downturn, all else being equal. In the average demand and supply-led business cycles, the ability of firms to switch from short- to long-term debt was limited. In contrast, companies during the 1991 downturn found it easier to switch, despite higher debt levels. In the recent downturn, companies switched into long-term debt earlier than before, and the switch amounted to almost 11 percent of total debt. The switch to more long-term debt in the last two business cycles represents a reversal of a long-term trend (the ratio of long-term debt to total debt was 53 percent in 1985, but it is 71 percent today).

The benefit of switching, however, depends on the relative cost of finance between capital markets and banks. In this context it is worth mentioning that the Fed dropped interest rates during the recent downturn much faster and more aggressively than in the early 1990s. But the benefit of switching into long-term debt in the current business cycle has quickly disappeared. In the first year of the recovery, it was more expensive for high-grade companies to borrow from capital markets than from banks. Hence the switch to long-term debt became a hindrance in recovery. This situation may not improve if yields on sovereign debt increase further and put upward pressure on corporate bond yields.

For low-grade companies the situation is worse. In the 1991 business cycle it became more expensive to borrow from the capital markets than

from the banks, which was another reason why the recovery was anemic. In the first year of the current recovery, the situation was worse than in the early 1990s, as the large switch into long-term debt was misconceived. The rate spread increased by nearly 5 percentage points and made borrowing from the capital markets totally unattractive, thereby contributing to the worst economic recovery. The situation has improved marginally in the second year of recovery (the rate spread declined by 0.5 percentage points), but the risk of rising spreads because of burgeoning budget deficits does not bode well for future investment.

The extent of the damage from long-term debt depends on the effect of the service burden on profits and net cash flow. Debt-service costs in the current cycle are only 14.6 percent of net cash flow (down from 19.3 percent at the peak). This is less than the average supply-led and early-1990s business cycles. The debt-service burden may not be the key variable in the current economic recovery.

Overall, the long-run analysis suggests that debt levels and leverage in the latest downturn are higher than in previous recessions, but debt levels are declining as a result of brisk economic growth, and interest rates are lower than other business cycles. Debt-service costs are the lowest in thirty years, and credit risk has abated somewhat. The long-run factors affecting investment have improved dramatically in the last six months, paving the way for a sustained recovery in investment.

The analysis so far enables us to construct models of U.S. consumption and investment behavior. In the next two sections we summarize both briefly, beginning with the consumption model (*see* Arestis and Karakitsos 2004 for full details).

The Consumption Model

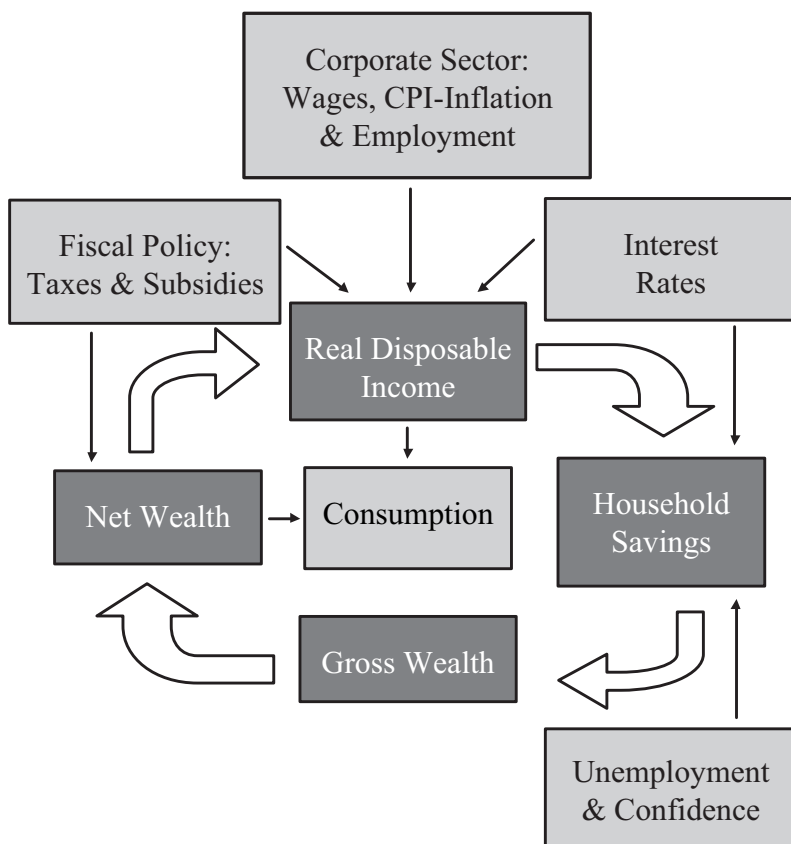
In the very long run (a period of many business cycles), consumption and real disposable income grow at the same rate, so the ratio of consumption to income is constant. In the short run (i.e., a business cycle), consumption can deviate substantially from income.

In the short run, consumption depends on real disposable income, the savings ratio, and the rate of interest. The wealth effect is very important in this theoretical framework, and has long-lasting effects.

Higher unemployment or a decline in consumer confidence increases uncertainty regarding job security and income growth, and raises the savings ratio, which lowers consumption. An increase in the interest rate also lowers consumption if the substitution effect is higher than the income effect.

The rationale of the consumption model is summarized in Figure 5. Shocks to the income spiral are introduced by monetary policy through changes in interest rates, by fiscal policy through taxes and subsidies, and by the corporate sector through wages, employment, and consumer price index (CPI) inflation. The increase in consumption from a shock is not explosive, as the income-consumption loop is stable. The stability is ensured if the

Figure 5 The Income-Consumption Loop



extra boost to consumption from a small increase in disposable income (the marginal propensity to consume) and net wealth is less than unity.

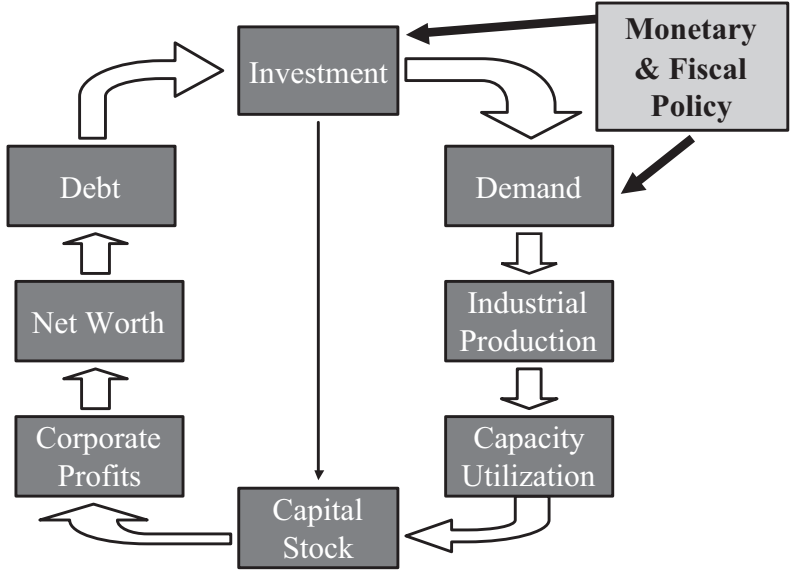
For example, assume that the economy is in long-run equilibrium, so that the income spiral is idle. Now consider a shock in policy or the state of the corporate sector that stimulates real disposable income. This would lead to higher savings, which increases gross wealth. The extra wealth would be invested in financial or tangible assets, which would further boost gross wealth as a result of capital gains. But higher gross wealth would lead to more borrowing, which, if it grows at a slower pace than assets, would augment net wealth. Realized capital gains would boost real disposable income, and a second round would be set in motion. Every subsequent round of higher real disposable income and net wealth would stimulate additional consumption, so that in the new long-run equilibrium, consumption, income, savings, and wealth are higher than in the initial equilibrium.

The Investment Model

The investment model is summarized in Figure 6. Shocks to the investment spiral are introduced by monetary policy through changes in interest rates and fiscal policy; by direct measures, such as depreciation incentives on investment; or by indirect measures that influence demand, such as changes in tax rates and government expenditures. If the shock arises from a change in monetary policy, it will increase demand and reduce the cost of capital that stimulates investment directly. If the shock stems from personal-sector tax cuts or from increases in government expenditure, demand is also stimulated and the effect could be permanent (e.g., if deficit spending is sustained). If the shock consists of depreciation incentives, like those that were implemented in 2001 and 2003, the effect on investment is direct and timely.

Higher growth boosts production immediately if inventories are lean, or, after a fashion, if inventories are high. Higher output lifts capacity utilization and corporate profits, which raise the net worth of the corporate sector and may induce increased borrowing. All of these factors, with the exception of borrowing, will boost investment, which, in turn, boosts demand, so a second round is set in motion. In each round, the increase in investment becomes smaller and the loop converges to a new long-run

Figure 6 The Investment Model



equilibrium. The increase in investment from any shock is not explosive because the investment spiral is stable.

It is clear that investment depends on six variables: four short-run variables (capacity utilization, industrial production, corporate profits, and interest rates) and two long-run variables (debt-to-investment ratio and, in the corporate sector, net-worth-to-GDP ratio). Financial factors are crucial determinants of investment, as exemplified in the works of Keynes (1936), Brainard and Tobin (1968), Tobin (1969, 1978), and Mayer (1994).

We propose that capacity utilization is mostly affected by industrial production, and that the association is strongly positive. In our modeling strategy, Keynes’s “animal spirits” and “uncertainty of expectations” hypotheses critically influence investment, but the relationships work, basically, through industrial production and profitability variables that are critical in determining gross investment and capacity utilization.

Industrial production and capacity utilization were the main determinants of investment in the demand-led business cycles, while corporate profitability and real interest rates were additional variables that were required to explain investment in the supply-led business cycles. Moreover, long-run

factors were also needed to explain investment in the last two cycles. The structure of our model is unique, which implies that the importance of each variable in explaining investment has remained stable in all business cycles, but the volatility of the variables in each business cycle has been different.

The Long-Term Risks to Consumption and Investment

To assess the long-term risks to consumption, we simultaneously simulated our consumption model outlined above, along with our wage-price model and our house-price model (*see* Arestis and Karakitsos 2004 for full details). The wage-price model is essential because wages and salaries in private industries account for more than half of personal income, and CPI inflation, which is used to calculate real disposable income, is endogenous to the model. The housing model is also essential because of the relationship between the housing market and net wealth.

To assess the long-term risks to investment, we conducted a number of simulations using our investment model outlined above, our profits model, our wage-price model, and our model of existing and expected business intentions based on surveys conducted by the Institute of Supply Management (*ibid.*).

The models to which we have just referred, were simulated under two alternative scenarios:

Scenario I (weak recovery in 2004): What would happen to consumption and investment if the current recovery faltered in 2004 and once again became anemic?

Scenario II (strong recovery in 2004): What would happen to consumption and investment if the recovery that started after the Iraq war remained strong throughout 2004?

A. Underlying Assumptions Affecting Consumption

1. Scenario I (Weak Recovery in 2004)

The essence of this scenario lies in the assumption that the economic strength of the second and third quarters of 2003 resulted from one-off factors related to the fiscal package of the current administration (the Jobs and Growth Tax Relief Reconciliation Act) and rising confidence related to

lower geopolitical risks following the end of the Iraq war. The fiscal stimulus provided through depreciation incentives and tax relief is estimated to be 1.6 percent of nominal GDP. The Fed also eased monetary policy in June 2003 when it cut the federal funds rate to 1 percent.

The torrid 8-percent growth rate in the third quarter of 2003 was caused by such one-off factors as strong consumption owing to income tax cuts; the last-wagon effect of companies taking advantage of depreciation incentives on new structures; and improving confidence because of lower geopolitical risk. We expect the accommodative stance of fiscal and monetary policy to continue to support the economic recovery, but sector imbalances and the dissipation of one-off factors will cause the recovery to falter during 2004. Nonetheless, we expect the U.S. economy will grow at potential output (an average rate of 3 percent) during the 2004–2005 period.

We believe that the Fed should tighten monetary policy in the second quarter of 2004, whereupon bond yields would rise to 6.5 percent by the end of 2004 before falling back to 6 percent by the end of 2005, as a result of weakness in the housing market (and rising 30-year mortgage rates). Financial assets are assumed to grow modestly at 5 percent, while tangible assets, other than property, and other personal income are assumed to grow at the same pace as the recent past. Debt accumulation is assumed to slow over the next two years, while wages and salaries in the government sector are assumed to follow their recent downward trend. Net transfer payments (subsidies less personal contributions for social security) are hypothesized to grow at the same rate as in 2003, because we assume that the government will resist pressure to lower subsidies to low income groups in an election year. On the further assumption that the recent temporary tax cuts become permanent, the ratio of personal taxes to personal income is expected to remain unchanged.

Table 2 summarizes the assumptions underlying Scenario I, along with their current values between September and December 2003. Under these assumptions, the fiscal burden (taxes less subsidies) diminishes gradually throughout the period, and the pace of job creation is strong (approximately 170,000 new jobs per month). Wage inflation continues to decline in 2004, partly because of abating CPI inflation and partly because real wage rates exceed their equilibrium values. This trend reverses in 2005 as inflation picks up and excess labor demand puts

upward pressure on wages. Real disposable income growth decelerates after August 2004, however, as the effect of previous tax cuts unwinds. While net wealth of the personal sector increases in 2004, it declines in 2005. The rate of growth of consumer confidence peaks in the spring of 2004 and falls thereafter. Unemployment remains steady, as job creation brings many discouraged workers back to the labor force. Under these assumptions, consumption peaks early in 2004 and decelerates to the end of 2005, but it is still growing at 3 percent by the end of 2004 and will help the current administration in the forthcoming presidential election (*see* Arestis and Karakitsos 2004 for full details on the aspects touched upon in this paragraph).

2. Scenario II (Strong Recovery in 2004)

The essence of Scenario II lies in the premise that a combined fiscal and monetary stimulus lasts at least one year (probably 18 months) before tapering off. The accommodative stance of monetary policy prevents long-term interest rates from rising and prolongs the effects of the fiscal

Table 2 Effects on Consumption

Assumptions	Current Values Sept.–Dec. 03		Scenario I (Weak Recovery)	Scenario II (Strong Recovery)
Other Personal Income (% YoY)	3.0	1st Year 2nd Year	3.0 3.0	4.0 2.0
Net Transfer Payments (% YoY)	7.3	1st Year 2nd Year	7.3 7.3	8.3 6.3
Personal Taxes (% of Personal Income)	11.2	1st Year 2nd Year	11.2 11.2	10.2 12.2
Wages & Salaries in Government (% YoY)	3.2	1st Year 2nd Year	2.5 2.5	3.0 2.0
Financial Assets (% YoY)	5.3	1st Year 2nd Year	5.0 0.0	10.0 -5.0
Tangible Assets other than Property (% YoY)	0.1	1st Year 2nd Year	2.0 2.0	3.0 1.0
Liabilities other than Mortgages (% of Disposable Income)	2.4	1st Year 2nd Year	2.0 1.0	2.0 1.0
30-year Mortgage Rate (% YoY)	5.9	1st Year 2nd Year	6.5 6.0	7.5 7.0

Table 2 Effects on Consumption (continued)

	Real Consumption (% YoY)	Average Hourly Earnings, Total Private (% YoY)	Monthly Job Creation Nonfarm Payrolls (10^3)	Unemployment (% of Labor Force)	Unemployment plus Marginally Attached (% of Labor Force)	Fiscal Burden (% of Disposable Income)	Real Disposable Income (% YoY)	Consumer Confidence (% YoY)	Net Wealth (% of Disposable Income)
Effects on the Corporate Sector									
Current Level	3.6	2.4	1	5.7	9.5	0.5	3.3	12.3	506.3
Deviation from Long Run Equilibrium (LRE)	-0.8	-0.5	-5.2	0.0	0.0	0.0	0.0	-2.9	25.3
Scenario I (Weak Recovery)									
Future Short Run									
Equilibrium (SRE) 12M	2.9	0.0	171	5.7	9.6	-0.1	2.1	1.4	537.8
24M	1.0	1.9	222	5.7	9.5	-0.5	1.3	0.2	531.8
SRE and Current									
Level Difference 12M	-0.7	-2.4	170	0.1	0.1	-0.6	-1.1	-11.0	31.5
24M	-2.6	-0.5	221	0.0	0.0	-1.0	-2.0	-12.1	25.6
Scenario II (Strong Recovery)									
Future Short Run									
Equilibrium (SRE) 12M	4.8	1.0	225	5.5	9.2	-1.3	3.7	1.4	579.3
24M	-1.0	0.7	180	5.8	9.8	0.5	-0.8	0.2	548.5
SRE and Current									
Level Difference 12M	1.2	-1.3	224	-0.2	-0.3	-1.8	0.5	-11.0	73.1
24M	-4.6	-1.6	179	0.1	0.3	0.0	-4.1	-12.1	42.3

Source: Authors' calculations

stimulus. Despite the fact that short-term interest rates are at a 40-year low, long-term interest rates have risen sharply since June 2003 and the yield curve is extremely steep. If interest rates stay high or rise further, which is very likely, the stimulus from fiscal policy will peter out. This means that growth diminishes in 2005 and beyond, all things being equal. The growth rate of industrial production averages 4.6 percent in 2004, but falls to 1.4 percent in 2005. The average growth rate over the 2004–2005 period is the same as Scenario I (3 percent), but it is relatively stronger in 2004 and weaker in 2005.

Paradoxically, the higher growth rate implies that the Fed could afford to wait until after the November 2004 presidential election before tightening monetary policy. The explanation of this paradox is that inflation remains muted with strong growth, whereas inflation falls more in 2004 and rises more sharply in 2005 with slow growth. Although there is no trade-off between growth and inflation, there is a trade-off between the volatility of growth and inflation. Scenario I implies low growth volatility and high inflation volatility, whereas Scenario II implies high growth volatility and low inflation volatility. High growth volatility would cause high volatility in real disposable income growth, gross and net wealth, and consumption.

Net transfer payments in Scenario II are assumed to grow at almost the same rate as Scenario I. We assume, however, that personal taxes are cut relatively more in 2004, but rise in 2005 to curb the ballooning budget deficit. These fiscal policy assumptions cause the fiscal burden of the personal sector to fall much more in 2004, but to rise in 2005, as some relief measures are probably reversed in a post-election year. Similarly, wages and salaries in the government sector fall relatively less in 2004, but rise relatively more in 2005, although the average for the two-year period is assumed to be the same as in Scenario I.

Other personal income and financial and tangible assets, other than property, are assumed to grow relatively faster in 2004, but slower in 2005, as house prices decline and the economy slows. Again, the average for the two-year period is the same as in Scenario I, but the volatility is higher.

Under these assumptions, wage earnings and employment increase more in 2004, but less in 2005 in line with inflation, excess demand for labor, and growth. Given that the fiscal burden is lower in 2004 and higher

in 2005, real disposable income growth is higher and much lower, respectively. Unemployment declines more in 2004, but rises in 2005.

House prices continue to rise in 2004, but fall more sharply in 2005. The combination of falling house and financial asset prices reduces gross wealth in 2005 and induces households to repay their debts. Therefore, net wealth is higher than in Scenario I.

As a result of these developments in real disposable income, unemployment, consumer confidence, and interest rates, consumption is stronger in 2004, but falls precipitously and drags the economy into recession toward the end of 2005.

B. Underlying Assumptions Affecting Investment

The four models used to simultaneously simulate the effects on investment incorporated the following assumptions: (1) corporate debt and net worth remain unchanged from the third quarter of 2003; (2) there is no further news on economic fundamentals, so the purchasing manager's index, based on a survey of business intentions, follows its own momentum, peaking at the beginning of 2004 and returning to equilibrium by the end of 2005; (3) industrial production continues to gather steam, and its growth rate peaks at almost 10 percent in October 2004, but the rate decelerates thereafter, reaching zero by the end of 2005; (4) profits decline throughout the period; (5) investment accelerates in the first quarter, but decelerates to almost 7 percent by the end of 2004 and to less than 2 percent by the end of 2005; and (6) capacity utilization climbs throughout 2004 and peaks at 80 percent before declining moderately in 2005.

In a second set of simulations, we used the investment model (with industrial production exogenous), the profits model, and the wage-price model.

1. Scenario I (Weak Recovery in 2004)

We expect the Fed to tighten monetary policy in the second quarter of 2004, with the prime lending rate climbing to 4.5 percent from 4 percent. The rate of debt accumulation continues to be less than the rate of economic growth, owing to the budget deficit, so the debt-to-investment ratio falls slightly (from 624 percent in the third quarter of 2003 to 615 percent). Balance-sheet restructuring, along with declining profitability, erodes the

net worth of the corporate sector (from 88.5 percent in the third quarter of 2003 to 84 percent by the end of 2005).

Table 3 summarizes the assumptions underlying Scenario I, along with their current values between September and December 2003. Profits decelerate rapidly to -6.2 percent by the end of 2005. Investment peaks in the first quarter of 2004 and decelerates rapidly to a meager 1-percent rate before recovering. Capacity utilization continues to recover throughout the two-year period.

The conclusion of this simulation is that investment is near its peak, as the buoyant rate of the past six months resulted from one-off factors. Economic fundamentals deteriorate in 2004, as the Fed will likely tighten monetary policy, profitability declines, and the corporate sector continues to restructure its balance sheets. Part of the reason for the risk to investment lies in the assumption of falling profitability, owing to robust job creation. Although growth is assumed to be weaker than the alternative scenario, it is still near potential output and is sufficient to induce companies to hire at the rate of 170,000 new employees per month. If companies are more cautious in hiring, then profits do not fall as much and the risk to investment is lower.

2. Scenario II (Strong Recovery in 2004)

With strong economic recovery in 2004, the prime lending rate remains at 4 percent before rising to 5 percent in 2005. Corporate profits fall less drastically in 2004, but more strongly in 2005 than in Scenario I. Strong economic growth induces companies to expand borrowing in 2004, but reduce borrowing in 2005. The volatility of the debt-to-investment ratio is assumed to be higher than in Scenario I. The net worth of the corporate sector remains unchanged in 2004, but improves in 2005. Capacity utilization rises to a higher rate in 2004 before converging to the rate in Scenario I by the end of 2005 (*see* Figure 7). The overall effect of these factors is strong, investment growth throughout 2004 (9 percent by the end of the year), but with some volatility. However, investment decelerates rapidly in 2005 and falls below the level in Scenario I (*see* Figure 8).

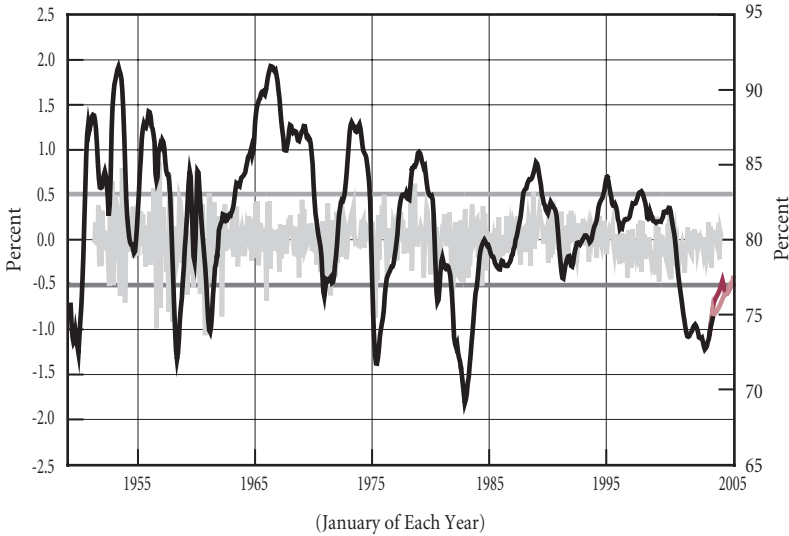
The overall conclusion of the rapid-growth scenario is that investment remains very strong in 2004, but falls precipitously in 2005. Economic fundamentals are relatively better in 2004, but worse in 2005, which explains the stark difference in the risk to investment between the

Table 3 Effects on Investment

Assumptions	Current Values Sept.–Dec. 03		Scenario I (Weak Recovery)	Scenario II (Strong Recovery)
Industrial Production (% YoY)	2.4	1st Year 2nd Year	3.0 3.0	4.6 1.4
Corporate Debt (% of Investment)	623.5	1st Year 2nd Year	615 615	630 600
Prime Lending Rate (% YoY)	4.0	1st Year 2nd Year	4.5 4.5	4.0 5.0
Corporate Sector Net Worth (% of GDP)	88.5	1st Year 2nd Year	86.2 84	88.5 81.7
Effects on the Corporate Sector	Real Gross Private Domestic Investment (% YoY)	Corporate Profits (% YoY)	Capacity Utilization Index	Monthly Job Creation (10 ⁵)
Current Level	3.6 0.6	33.1 22.0	74.5 0.0	12 -5.2
Scenario I (Weak Recovery)				
Deviation from Long Run Equilibrium (LRE)				
Future Short Run Equilibrium (SRE) 12M 24M	1.1 0.8	-4.0 -6.2	76.0 77.5	171 222
SRE and Current Level Difference 12M 24M	-2.4 -2.8	-37.1 -39.3	1.5 3.0	160 210
Scenario II (Strong Recovery)				
Future Short Run Equilibrium (SRE) 12M 24M	4.2 -2.2	0.5 -13.2	77.3 77.0	225 182
SRE and Current Level Difference 12M 24M	0.6 -5.8	-32.6 -46.3	2.7 2.5	213 170

Source: Authors' calculations

Figure 7 Capacity Utilization–Short-Run Equilibrium



- Actual Capacity Utilization Rate in Manufacturing 3M MA
- Equilibrium Capacity Utilization Rate in Manufacturing (Scenario I)
- Equilibrium Capacity Utilization Rate in Manufacturing (Scenario II)
- Forecast Error %
- Mean plus 2 standard deviations
- Mean minus 2 standard deviations

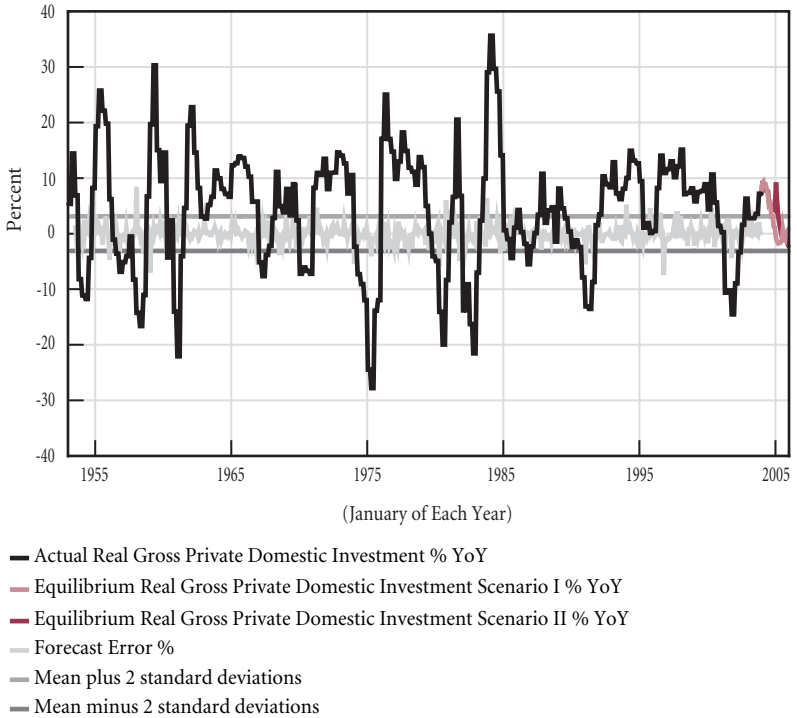
Source: Authors' calculations

two scenarios. Investment is obviously better in Scenario II than in Scenario I, which shows no change in economic fundamentals.

Summary and Conclusions

The recent recession was very mild, thanks to the resilience of the consumer. This is partly due to the buoyancy of real disposable income, which was boosted through easy fiscal policy, and partly due to the buoyancy of the housing market, which was boosted by the low interest rates. During the double-dip recession of the industrial sector, caused by a second round of retrenchment, slower growth in real disposable income caused a deceleration in consumption growth. The picture changed markedly, however, in the second half of 2003. The corporate sector has been successful in

Figure 8 Real Gross Private Domestic Investment– Short-Run Equilibrium



Source: Authors' calculations

restoring profitability and improving balance sheets, so wages have risen and job creation has resumed. The latest round of tax cuts has bolstered real disposable income, and all the short-run factors affecting consumption have improved.

As a result of the phenomenal boom in the property market, gross wealth is higher than at the peak of the equity market in March 2000. But net wealth, which matters in terms of consumption, is still 3.5 percent (\$1.5 trillion) lower because the property boom was financed by debt accumulation, which is at an all-time high.

There is a risk to consumption if economic growth in 2004 turns out to be very strong as a result of a further boost by fiscal policy. Investment would soften in 2005 because of higher long-term interest rates, and

profitability would decline as a result of strong job creation in 2004. The worsening outlook for the corporate sector may raise the savings ratio and adversely affect consumption, while higher long-term interest rates may lower housing and financial asset prices. This scenario would be aggravated by debt-servicing costs, which are at an all-time high in spite of historically low interest rates.

A strong economy at the end of 2004 would provide an incentive for the government to tighten fiscal policy and curb the budget deficit in a post-election year. If this event happened, then a slowing economy combined with tight fiscal policy would result in another recession.

The conclusion is that slow growth in 2004 is better than rapid growth, as growth at potential output would keep a cap on long-term interest rates and would not jeopardize investment, the housing market, and economic growth in 2005. The long-term risk to consumption stems from procyclical fiscal policy (i.e., continuous easing in the upswing of the business cycle).

In the current recovery, investment is growing at a slower pace than any other business cycle. In the six-month period following the Iraq war, however, the short- and long-run factors affecting investment have improved. Our analysis suggests that the double-dip recession in the industrial sector has helped to turn the short-run factors positive. Labor costs continue to fall, profit margins and corporate profits have improved, and lean inventories in the face of higher demand have increased industrial production. Higher economic growth is finally taking care of the excess capacity that was installed in the euphoria years of the 1990s. Hence our short-run analysis suggests that investment should remain buoyant in 2004.

Our long-run analysis shows that debt levels and leverage are higher than before. The switch into long-term debt was helpful during the economic downswing, but it has been a hindrance in recovery, as companies have not benefited from the introduction of low interest rates by the Fed. Credit risk soared after the bubble burst and the interest differential between capital markets and banks widened. Those problems contributed to the anemic recovery of investment in the business cycle following the 2001 recession. However, the long-run factors have improved dramatically in the last six months. Companies have quickly restructured their balance sheets, and debt levels have declined in line with brisk economic growth. Interest rates are lower than other business cycles, debt servicing is at the lowest rate in

30 years, and credit risk has abated. The improvement in the long-run factors has paved the way for a sustained recovery of investment.

The conclusion of Scenario I is that investment is near its peak, as buoyant economic growth in the last six months is a result of one-off factors. Part of the risk to investment is falling profitability from robust job creation. The conclusion of Scenario II is that investment remains strong in 2004, but falls precipitously in 2005, and high growth volatility causes high investment volatility.

The two sets of simulations conducted for this brief show that the current accommodating stance of fiscal and monetary policy is probably sufficient for the economy to be booming at the time of the presidential election in November 2004. But the long-term hazard is that the current U.S. administration would not risk an economy growing only at potential output by the end of 2004. It is therefore considering an additional fiscal package to stimulate the economy before the election, which would raise the risk of even higher long-term interest rates and foster forces that would ultimately weaken investment in 2005 and beyond.

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