

# **The U.S. External Deficit: A Soft Landing, Doomed or Delayed?**

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## Abstract

*The objective of this paper is to explore how the external balance of the United States might evolve in future years as the economy emerges from the recession. We examine the issue both from the domestic perspective of the saving and investment balance and from the external side in terms of the basic determinants of exports and imports and the role of the real exchange rate. We highlight the need for sustained depreciation of the dollar to improve the competitiveness of U.S. exports and argue that the current real exchange rate is consistent with a significant reduction in the size of the trade deficit to 3-4 percent of GDP. However, the favorable external outlook is very inconsistent with a projected domestic situation of low rates of private saving and a very large public sector budget deficit matched by a cyclically depressed rate of investment. A recovery of investment is likely to be accompanied by a widening of the current account deficit.*

## **The U.S. External Deficit: A Soft Landing, Doomed or Delayed?**

Barry Bosworth and Susan M. Collins<sup>1</sup>

The United States has had a substantial current account deficit ever since the early 1990s. For most of that period, the deficit has increased steadily, reaching a peak of \$800 billion or 6.7 percent of national income in 2006. There has been widespread agreement that deficits of that magnitude could not be sustained and thus a pervasive fear that the economy might be heading toward a hard landing—with an abrupt collapse of the dollar and severe economic disruptions both domestically and globally.

In the fully-employed economy of the mid-decade, the rebalancing of the U.S. economy was viewed as a relatively straight-forward, though politically-difficult two-pronged task. It would require: (1) changing the composition of domestic demand away from an over-emphasis on domestic consumption in order to free up resources for increased production in the tradable-goods sector, and (2) expenditure-switching aimed at directing those resources into increased exports. The first goal was often described as a need to increase national saving, and the second as a change in the relative price of U.S.-produced products to make them more competitive in world markets.

For a brief period in the middle of the decade, it appeared that a relatively benign adjustment might be underway. A real depreciation of the U.S. dollar improved the competitiveness of American products and the current account deficit gradually began to recede during 2007 and the first three quarters of 2008. The improvement would have been even more marked were it not for the sharp increase in the price of petroleum imports. Export volumes grew by 18 percent between the 2<sup>nd</sup> quarter of 2006 and the 2<sup>nd</sup>

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quarter of 2008, while import volumes were flat. The U.S. seemed to have begun a soft-landing.

However, there was little evidence of adjustment on the domestic side. The national saving rate continued to decline, turning negative in early 2008 due largely to sharply higher federal budget deficits. It was falling rates of investment, not increases in saving that freed up domestic resources. The government responded to a weakening of residential investment with a temporary tax cut aimed at stimulating consumption, further reducing saving.

All of this changed in the fall of 2008 with the onset of a global financial crisis centered on the United States. There has been a severe contraction of domestic demand and employment, and concerns about the composition of aggregate demand have largely vanished in the midst of extreme countercyclical policies aimed at stabilizing the economy. The external economy experienced an even larger collapse as global trade declined 25 percent below trend in the first half of 2009. U.S. exports fell 20 percent below year earlier levels, with imports falling an even larger 28 percent. In 2009, the U.S. current account deficit is estimated at only 3.5 percent of national income—half its value in the peak year of 2006. Perversely, the U.S. real exchange rate also soared—temporarily reversing about half of the prior decline from its peak as investors sought a safe haven in U.S. treasury securities

What will be the future of external rebalancing, and should it still be a major policy concern? The recession is ending, but most forecasts for the United States suggest a weak recovery with high levels of unemployment continuing for several years. Furthermore, distortions in the domestic saving and investment balance are far worse than before the crisis: the fiscal deficit has pushed the national saving rate highly negative and the rate of net investment is a third that of the pre-crisis years. In other countries that experienced severe financial crises, recovery was largely driven by improvements in the trade balance (export-led growth). However, such a scenario may be difficult in a global recession where most countries will see increased exports as a solution to their problems. Will the recovery of trade flows leave the United States with an imbalance comparable to that of the pre-crisis years?

The objective of this paper is to explore how the U.S. economy and its external balance might progress in future years. In the next section, we review the evolution of the external imbalance over the past quarter century -- both from the domestic perspective of the saving and investment balance and from the external side as reflected in the U.S. current account imbalance and international investment position. The bulk of the paper then focuses on challenges to external rebalancing from both the domestic and external perspectives. We examine the causes of low private saving in the United States and how saving might evolve in the future. Second, we highlight the challenges faced by the public sector as the result of the aging of the population and continued rapid growth of health care costs. On the external side, we summarize the recent research on the determinants of trade flows and other elements of the current account. We focus particularly on the sensitivity of trade to variations in the real exchange rate and on concerns related to U.S. export performance. Finally, we pull these strands together to consider the risks to a resumption of the soft-landing that the crisis has arrested.

## **Retrospect**

Much of the debate and confusion surrounding the sources and consequences of the U.S. imbalance in its economic relations with the rest of the world are due to the different perspectives from which the external imbalance can be analyzed. For example, the current account is defined as the difference between the incomes earned on exports and other transactions with the rest of the world and payments to foreigners for imports and other services.<sup>2</sup> The dominant role of exports and imports leads to a natural focus on the determinants of trade with other countries, such as exchange rates and the relative openness of markets. It also often leads to claims of “unfair” trade practices. From a domestic perspective, however, the current account is also the difference between the nation’s total income and its total expenditures: thus, a current account deficit can be said to be the result of the nation spending more than it earns, living beyond its means, and thereby borrowing from the rest of the world. It is useful to review the imbalance from

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<sup>2</sup> The current account is the sum of three main kinds of external transactions; trade in goods and services, net factor income receipts, and net transfer receipts. Most discussions of external economic relations focus on trade flows because they are the largest component.

both of these perspectives, recognizing the interactions and the importance of both sets of factors.

*External Balance.* Figure 1 shows the evolution of the U.S. external balance over the past quarter century. The balance of net resource flows as measured by the current account is shown in the top panel, and the cumulative net international investment (stock) position of the United States is shown in the lower panel. As the chart makes clear, there have been two episodes of large current account deficits: the early 1980s and the current episode, which emerged in the aftermath of the Asian financial crisis and has resulted in much larger and longer-lasting deficits. The top panel also shows the recent beginning of a correction after 2006 although it is exaggerated in 2009 by the effects of the economic crisis. The result of a quarter-century of current account deficits is the buildup of a highly negative international investment position that plummeted from a surplus in excess 15 percent of national income in 1980 to a net indebtedness of 27 percent in 2008. It is noteworthy, however, that the balance sheet has not deteriorated as much as would be expected on the basis of the large current account imbalances of the last decade. This is shown in the lower panel of figure 1 by cumulating the current account deficits since 1980 and expressing the result as a share of national income. This indicator suggests that the U.S. debt position would have been expected to exceed 50 percent of national income by 2008. The large difference between the two measures reflects the greater valuation gains on U.S. investments abroad relative to those on foreign investments in the United States.<sup>3</sup> The official balance of payments accounts exclude those capital gains and losses.

The U.S. imbalances are placed in a broader global context in table 1, which provides a simple summary of the distribution of current account balances across major regions of the world for the period of 1980 to the present. Absent errors and omissions, the sum of the current accounts across all economies should equal zero. Thus, the deficits

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<sup>3</sup> For example, half of U.S. investments abroad are allocated to direct investment and corporate equities, compared to only a quarter of foreign investments in the United States. The role of capital gains is highlighted in Gourinchas and Rey (2007). In a previous paper, we also argued that some of the discrepancy can be traced to the shifting of reported income by multinational companies to avoid U.S. taxation (Bosworth, Collins, and Reich, 2007).

of some countries will be offset by surpluses of others.<sup>4</sup> The table highlights the sharp dichotomy between the external position of the United States and everyone else. The United States consistently reports large deficits, which are matched by surpluses in most other regions of the globe. Europe's surplus has declined, however, since the mid-1990s; and Japan's surplus has remained basically unchanged for nearly a quarter of a century. Similarly, little has changed in Latin America. Instead, the offsets to the increased U.S. deficit are concentrated in the emerging economies of Asia and the oil-producing states of the Middle East. Given the rise of oil prices, the surge of saving within the oil-producing regions is not a surprise, but the sudden emergence of a large excess of saving over investment in Asia was less expected.

Trade in goods and services constitutes the largest component of the current account and its balance is driven by rates of growth in foreign incomes ( $Y_f$ ) and domestic incomes ( $Y_d$ ) and the relative price of domestic versus foreign-produced goods ( $q$ ):

$$(1) \quad NX = f(Y_f, Y_d, q).$$

The concept of the real exchange rate provides a simple measure of relative prices and it is defined as the nominal exchange rate ( $e$ ) multiplied by the ratio of foreign and domestic prices ( $P_d/P_f$ ):<sup>5</sup>

$$(2) \quad q = e \times (P_d / P_f).$$

Two alternative measures of the U.S. real exchange rate are shown in figure 2. Both are weighted averages of the exchange rates with major trading partners with weights based on bilateral trade flows, and an appreciation of the dollar is shown as a rise in the index.<sup>6</sup> The Federal Reserve reports a measure that uses consumer price indexes to adjust for differential rates of inflation, while JPMorgan publishes an index that is based

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<sup>4</sup> Prior to the 1970s, current account imbalances were strictly limited, as most national financial markets operated as closed systems. With the emergence of large scale cross-border capital flows, countries have become capable of financing increasingly large imbalances on a sustained basis.

<sup>5</sup> We measure the exchange rate as the foreign price of domestic currency so that an appreciation of the currency is recorded as an increase in the exchange rate index.

<sup>6</sup> Market shares of U.S. goods in foreign markets and foreign goods in U.S. and third-country markets are used to construct the currency weights. The weights are updated on an annual basis in the FRB index, while those of JPMorgan change about once per decade.

on producer price indexes for manufacturing goods excluding food and fuels. The long-term movements in the two indexes are very similar, but the JPMorgan index indicates a slightly larger decline prior to the 2008 crisis and a sharper initial rise. Both indexes suggest that an adjustment was underway prior to the crisis.

The real exchange rate also shows a very strong negative correlation with the current account balance reported in figure 1. It seems evident that a currency appreciation is associated with a deteriorating current account balance. But, it is also true that the exchange rate only affects trade flows only with a substantial lag because it takes time for exporters and importers to adjust to their competitive positions. A simple means of summarizing the relationship is provided in figure 3, which graphs the non-oil trade balance against a three-year weighted average of the exchange rate.<sup>7</sup> While trade is affected by other factors, it seems very evident that the lagged exchange rate plays a fundamental role. There is also evidence that the relationship has been shifting down over time. We explore these issues more fully in a later section.

The continuing deterioration of the U.S. investment position generated frequent forecasts of hard-landing scenarios based on a view that foreign investors would ultimately become unwilling to accumulate steadily rising shares of U.S. assets in their portfolios. Many of those scenarios envisioned a ‘sudden stop’ of capital inflows to the United States, leading to an uncontrolled fall in the value of the dollar and sharply higher U.S. interest rates. Paradoxically, the crisis that emerged in 2008 seems more related to a surplus of capital inflows rather than any shortage, and the dollar surged in value with the onset of the crisis. Many of these observers now perceive the crisis to be the result of an excessive willingness of foreigners to allocate funds to the U.S., which in turn contributed to a series of speculative bubbles in U.S. asset markets.

***Internal Balance.*** It is notable that for most of the past three decades a growing trade deficit has been associated with a buoyant domestic economy, rapid job growth, and a decline of unemployment to unprecedented levels. This domestic strength suggests that

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<sup>7</sup> The non-oil trade balance is measured as a percent of GDP and the exchange rate is a weighted average of the FRB index with weights of .25, .5, and .25 on the rates lagged one, two, and three years. The figure is based on an earlier presentation in Baily and Lawrence (2006).

the trade deficit was not something forced on the U.S. economy by outside pressures, but rather a response to changing domestic economic conditions that pushed aggregate demand beyond the nation's productive capacity. Those pressures could only be met by scaling back exports or importing more. For example, the changing composition of aggregate demand, shown in table 2, highlights the growing emphasis on private consumption as the secular counterpart to the growing trade deficit. However, the two episodes of marked reduction in the trade deficit—the early 1990s and the current period—are notable for sharp cyclical reductions in domestic investment, rather than a scaling back of consumption.

A domestic perspective also emphasizes the relationship between the nation's current account and its balance of domestic saving and investment. This follows directly from the basic national accounts identity that total domestic output (GDP) equals the sum of public and private consumption expenditures (C), investment (I), and exports (X), minus imports (M):

$$(3) \quad GDP = C + I + X - M, \text{ which can be rewritten as}$$

$$(4) \quad X - M = GDP - C - I, \\ = S - I.$$

That is to say, the trade balance is equal to saving minus investment.

The situation is slightly more complex in practice because the residents of a country can earn income from overseas activity as well as domestic production. Thus, the national accounts distinguish between gross domestic production (GDP) and gross national income (GNI), where GNI includes net earnings from abroad. In addition net transfers are added to both sides of the identity. The result is a small redefinition of national saving:

$$(5) \quad CA = (GNI - C) + NTR - I, \text{ or}$$

$$CA = S - I.$$

Thus, the current account (external) imbalance is precisely matched by an (internal) imbalance between national saving and investment. Finally, the U.S. national accounts

are structured to measure, income, saving, and investment net of the depreciation of physical capital.<sup>8</sup>

A summary of the U.S. saving and investment balance is shown in table 3 for the period of 1960-2009. For several decades prior to the mid-1980s, variations in the net national saving were largely driven by changes in government saving, as the private saving rate was very stable and largely free of any trend. The simultaneous emergence of a large federal budget deficit and a current account deficit in the early 1980s, for example, gave rise to an emphasis on the “twin deficits.” The two were viewed as linked through the financial pressures of financing a large budget deficit leading to higher U.S. interest rates, an appreciation of the exchange rate, and a trade deficit. However, the re-emergence of a large current account deficit in the late 1990s, despite a rapidly improving fiscal situation, suggested that the notion of a special link between government budget deficits and the external balance was an overly simplistic interpretation. Instead, the gap between saving and investment in later years can be traced to a large drop in the private saving rate—due in turn to sharply lower rates of household saving—and strong investment demand. The boom in information technology during the 1990s made the United States a particularly attractive location for business investment, and a strong expansion of residential investment also contributed. The magnitude of the decline in household saving remains a puzzle, despite extensive research; but some of the potential reasons are discussed more fully in a following section.

The economic crisis has brought on another major realignment with household saving showing a modest increase, but investment demand has collapsed. Moreover, government budget deficits have reemerged during the current decade as a significant source of the low national saving rate, and extraordinary fiscal measures in 2008-09 turned the national saving rate negative.

Finally, the national accounts include a significant statistical discrepancy that at times has made it difficult to fully reconcile short-run changes in the current account with the domestic S-I balance. For example, there is much less evidence of an improvement in

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<sup>8</sup> The emphasis on net measures of saving and investment is also common for other advanced economies, but many developing economies do not undertake detailed estimates of capital depreciation and present estimates of saving and investment on a gross basis.

the S-I balance after 2006 than is observed in the reported current account. Instead, the statistical discrepancy changed from a large negative residual in 2005-06 to a positive value for 2008-09.

### **Why Don't Americans Save**

As we look ahead at the potential for a correction of the U.S. external imbalance, the greatest uncertainty is concentrated in the question of the future pattern of change in private saving. The unprecedented magnitude of the saving decline is most evident in figure 4. The personal saving rate has fallen from an average of seven percent of national income in the early 1980s to less than two percent in the middle of this decade. Prior to the 1980s, the saving rate had actually shown evidence of a modest upward trend with very limited annual fluctuations. The broader measure of private saving, which includes corporate retained earnings, indicates a very similar pattern. Retained earnings are very volatile over the business cycle, but they have not contributed to the secular decline in saving. Thus, the puzzle is largely one of accounting for the decline in the household saving rate.

The cause of the reduced saving has been the subject of a significant volume of research, but without the emergence of any consensus. The failure of saving rates to rise as the baby boom generation moved into its peak earning years, has shifted the focus away from demographic explanations to a greater emphasis on the role of wealth in consumption. Others have challenged the standard measures of saving as being misleading indicators of the nation's actual condition.

Some scholars have argued that the perspective of the United States as a low-saving nation is distorted by inappropriate definitions of saving and investment. The current line of demarcation between consumption and investment is somewhat blurry and a case can be made for an expanded definition of investment. Lipsey and Kravis (1987) pointed out that compared to other nations Americans devote an unusual proportion of their consumption to the purchase of consumer durable goods and their children's education, and that both of these outlays should be more properly viewed as investments. Like home purchases, consumer durables yield services over a long period of time, rather than being consumed in the current period. Similarly, they believed that the definition of

capital formation should be expanded to include all forms of human capital investment, e.g. education and job training. In addition, the United States stood out in past years for the magnitude of its investments in research and development (R&D). All of these proposed adjustments have their advocates, and would increase the reported rate of national saving relative to most other countries. The U.S. national accounts are also being expanded to incorporate some of these factors in a series of satellite accounts. Preliminary calculations, however, suggest that most of these adjustments, while interesting in their own right, have only a modest impact on the observed decline in the U.S. saving rate over the past quarter century (Reinsdorf and Perozek, 2002).

More difficult conceptual issues are raised by the need to reconcile the low and falling rate of national saving with other statistics showing a sharp rise in the nation's wealth-income ratio. In other words, if Americans save so little, why are they so rich? The conventional measure of saving excludes all forms of capital gains; yet many economists have argued that wealth changes are a far better measure of changes in economic well-being than rates of saving alone.<sup>9</sup> Indeed, at the individual level there is much to be said for focusing on wealth accumulation rather than saving. By enabling greater future consumption, wealth is an important element of economic well-being, and it matters little how the individual accumulated it.

At the aggregate level, however, the issues are more complex (Auerbach, 1985). It is necessary to understand *why* wealth levels are rising. For example, increases in home values are seen as a gain to current homeowners, but in the aggregate they are largely reflective of an intergenerational transfer as younger families pay higher prices to older homeowners to purchase the same flow of housing services. In the more general case of a change in the market valuation of U.S. corporations, we need to distinguish between two situations. An increase in market valuations may result from changed expectations of future growth in the underlying stream of corporate income—increased capital or higher expected rates of innovation. Alternatively, the increase might simply reflect the use of a lower discount rate in the evaluation of an unchanged expected flow of future returns. The first type of change might reflect greater real value; but the second

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<sup>9</sup> Some of the most cited references are Auerbach (1985), Bradford (1991), Eisner (1989), Gale and Sabelhaus (1999), and Peach and Steindel (2000).

is more comparable to the variation in wealth values that we associate with inflation, and often proves to be quite transitory.

In any case, there are limited advantages to introducing valuation changes directly into the national accounts. While most economists would agree that wealth and income are both important determinants of consumption, few would go so far as to argue that the marginal propensity to spend out of wealth is anywhere near that for changes in income. It seems preferable to maintain the existing framework, but to include wealth and its changes as a major determinant of saving.

From this perspective, however, it would appear that the strong capital gains in equities and home ownership over the past two decades may have played an important role in stimulating consumption. In figure 5, we show the pattern of change in the household wealth-income ratio since 1980 and separate the contribution of saving to wealth accumulation from that of valuation changes. Prior to the mid-1990s, valuation changes were a minor source of wealth gain, as most asset prices simply rose in line with the overall rate of price inflation. Household wealth varied within a narrow range of 4-5 times disposable income. More recently, increases in the relative prices of housing and equities raised the wealth-income ratio to 6 times income in 1999 and 2004-07. In contrast, the contribution of saving was relatively constant in the 1980s, but began to decline in the 1990s; and by 2007, the wealth-income ratio exclusive of capital gains had fallen to 3.5. Thus, it is evident that valuation changes have played a greatly increased role in the accumulation of household wealth.

In the typical empirical formulations of the life-cycle model of consumption, researchers estimate a long-run effect of a change in wealth on consumption of about 0.05.<sup>10</sup> That magnitude would suggest that an increase in the wealth-income ratio from 4.5 to 6, contributed to a rise in the share of consumption in disposable income of 5-7 percentage points—a large proportion of the observed decline in the saving rate since the early 1980s. However, there is a wide variation in the empirical results and some studies maintain that the effects differ among the various categories of wealth, such as equities and housing. It is even more difficult to distinguish a causal relationship from the fact

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<sup>10</sup> Poterba (2000) provides a review of previous articles. More recent macroeconomic studies are those of Case, Quigley, and Shiller (2005) and Belsky and Prakken (2004).

that consumption and asset valuations are influenced by many common factors. Furthermore, it is notable, as shown in a comparison of the saving rate in figure 4 and the wealth-income ratio in figure 5, that a significant portion of the decline in saving preceded the surge in wealth valuations that began in the mid-1990s.

The effect of variations in housing wealth on consumption is particularly controversial. There are many studies that find a strong cyclical correlation of housing market activity and consumer spending. However, the argument that causation flows from housing wealth to consumption has been much more difficult to establish. Increases in home prices might be correlated with consumption for several reasons. First, higher home prices raises overall wealth and thus desired consumption. Second, they increase the level of collateral for households that were previously credit-constrained. And third, they could both be influenced by common cyclical factors.

Buiter (2008) and Sinai and Souleles (2005) have argued that home ownership is largely a hedge against future rent costs; and to the extent that the home value is equal to the present value of future consumption of housing services, fluctuations in home prices should imply no net aggregate wealth gain. Empirically, the evidence has been mixed. Case, Quigley and Shiller (2005) argued that the effect of variations in housing wealth was greater than that of changes in equity valuations. However, Calomiris and others (2009) concluded that the results were very sensitive to changes in the estimation method, and they argued that there was no stable relationship between housing wealth and consumption in the Case, Quigley and Shiller data set. Attanasio and others (2009) also found that the correlation between consumption and home prices was present for both renters and homeowners, lending support to the explanation of a common cyclical factor.

A variety of other factors have also been put forth to explain the collapse of saving. For example, it has long been recognized that inflation can seriously distort the measures of capital income; in periods of high inflation, a large portion of nominal interest payments should be viewed as a repayment of principal rather than income. To the extent that investors anticipate inflation and understand its effects, they will demand a higher nominal interest rate premium to maintain the purchasing power of their assets. Roughly, the effect on nominal incomes will be equal to the rate of inflation times the net stock of interest-bearing assets, and the same amount should pass through to saving. The

effects on reported household saving were on the order of three percent of income in the early 1980s when inflation was high and households were large holders of government and corporate debt. However, with the slowing of inflation in recent years, the adjustment has declined to less than one percent (Reinsdorf, and Perozek, 2002). In addition, households now have large offsetting mortgage liabilities of their own.<sup>11</sup> Thus, lower inflation is a potential explanation for some of the decline in the saving rate over the past two decades. In addition, some analysts reclassify the purchase of consumer durables as investment/saving with a subsequent service flow being imputed back to consumption. While the adjustment smoothes the cyclical pattern of consumption, it has little effect on longer- term measures of the saving rate.

Retirement saving accounts may also have played a significant role in the overall saving decline. The capital income of employer-provided pension programs is generally exempt from income taxation, but they are subject to some restrictions on withdrawal prior to retirement. Both the national income accounts and the flow of funds accounts classify net additions to these funds as part of the saving of the household sector, but workers may have very little knowledge of the changing valuation. Retirement saving was a slowly rising share of total household saving throughout the period of 1952 to 1985, and reached a peak equal to two-thirds of the total in the mid-1980s, but the magnitude of the annual accumulation has declined in subsequent years. For some of the funds, the magnitude of capital gains from equities reduced the need to make new contributions. In other cases, the funds have been maturing, leading to a rise in the benefit payments relative to contributions. Furthermore, there has been some erosion in the proportion of workers who are covered by the private pension system.

Alternative saving measures do provide some insight into the sources of the fall in the household saving rate. However, as emphasized by Reinsdorf (2007), none of the adjustments change the fundamental conclusion of a large secular decline in the saving rate. More importantly, the alternatives provide little reason to anticipate a future turnaround.

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<sup>11</sup> Due to this, households are no longer net direct holders of debt instruments. They do hold significant amounts of debt indirectly through pension plans. However, foreign investors have now emerged as holders of large portion of U.S. debt instruments.

The research on household saving behaviour has left us with a great deal of uncertainty about future trends. The link in the life-cycle model between saving and desired wealth accumulation would suggest that saving will rise in future years because the forces that have sustained wealth accumulation in the face of depressed saving cannot continue indefinitely. As we have learned from the current crisis, neither equity nor housing prices are likely to outrun the growth of nominal incomes and substitute for saving to the extent of that have over the past two decades. The magnitude of the asset losses during the crisis should accelerate that process. However, some of the recent research has minimized the link between housing wealth, which was the source of much of the excess capital gains, and consumption. Other explanations that emphasize demographic factors, the growth of the public pension system, and behavioural factors would point to a more permanent shift toward a low rate of household saving. We would conclude that a large reversal of the private saving rate is unlikely in the near future and that an increase in the national saving rate will require a substantial contribution from the public sector.

### **Public Sector Fiscal Balance**

As mentioned earlier, there is no longer much support for the “twin deficits” notion of a direct one-for-one link between budget deficits and the current account. Government saving and investment, however, are still important components of the overall accounting identity linking national saving, investment and the current account, and rejection of the twin deficits view does not imply that variations in the fiscal deficit have no implications for the current account. Yet, because the components are all endogenous with common determinants, it is difficult to measure the effect of an exogenous shift in the fiscal balance with any degree of precision. Recent empirical efforts to measure the net relationship between the two components suggest that 30-40 percent of a change in the fiscal balance will be reflected in the current account.<sup>12</sup> The remainder is absorbed by offsetting changes in the private saving-investment balance.

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<sup>12</sup> A recent empirical study with references to the earlier work is Bartolini and Lahiri (2006). They interpret the results as supporting a view that reductions in the fiscal deficit cannot play a major role in a correction of the external imbalance.

Some researchers have interpreted the finding of a limited link between the fiscal and external balance to imply that deficit reduction cannot play a critical role in reducing the external imbalance. Perhaps that was true a few years ago when the projected fiscal deficit was a relatively modest percent of GDP. However, as shown in figure 6, the financial crisis and the measures taken to reverse it have dramatically altered the fiscal outlook of the United States. The deficit exceeded 11 percent of GDP in FY2009, and is projected at 10 percent in 2010. Those deficits are sufficient to turn the net national saving rate negative for 2009 and 2010. The budget projections of the Congressional Budget Office (CBO) indicate that the deficits will remain above 3 percent of GDP in future years. Yet, because they must be based on current law, the baseline projections are normally overly optimistic. A more realistic alternative would suggest a deficit that remains well above 5 percent of GDP throughout the next decade.<sup>13</sup> Even with the baseline assumption, the debt to GDP ratio will nearly double in the next three years to 65 percent and slowly rise thereafter. Under the alternative projection, the debt will be about 85 percent at the end of the 10-year projection period.

An alternative perspective that highlights the conflict between a rising share of GDP being devoted to government expenditures and a stable or falling revenue share is provided in figure 7. For several decades, government expenditures were a constant share of GDP as declining defence spending offset steadily rising outlays on medical and income transfers to the elderly. In future years the total will rise at an accelerating rate due to increased costs for a retiring baby-boom generation and interest on the public debt. Meanwhile, government revenues remain at or below their historical share of GDP.

There is, however, no political support for either a scaling back of programs for the aged or tax increases. The Obama administration has committed to a PAYGO rule of paying for new future programs with offsetting budget actions, but they have exempted the items in the above budget projections. And with current projections of continuing high levels of unemployment in the short run, there is little sense of urgency about reductions in the budget deficit.

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<sup>13</sup> The alternative assumes that the Congress will extend the bulk of the Bush Administration tax cuts (as the Obama administration has proposed) and an indexation of the alternative minimum tax (AMT) for inflation. The Congress has also acted every year to prevent the implementation of a law reducing Medicare reimbursements.

## **Why Is the U.S. Trade Deficit So Persistent?**

We have already documented the persistently large US external deficits over the past quarter century and in particular the period from the early 1990s through the mid 2000s in which the deficit increased steadily to over 6% of GDP. We have also argued that a gradual tapering of this deficit began in 2006 – associated with a substantial real depreciation of the US dollar (and expenditure switching) but with little evidence of the internal rebalancing (expenditure reductions) also required for a sustainable transition to lower imbalances. While the onset of the economic crisis, with its sharp dollar appreciation, arrested the fledgling ‘soft-landing,’ the collapse in world trade cut the US trade deficit in half 2009.

In this section we take a closer look at net exports, the main component of the current account. After briefly describing the evolution of US imports and exports, we turn to a review of their determinants and the implications for what might be required for a sustained rebalancing from this ‘external’ perspective. Also of interest is recent work examining experiences with current account reversals and with recovery from crises in advanced economies that may be quite relevant for the US.

Figure 8 shows the evolution of exports and (total as well as nonoil) imports as a percentage of GDP since 1980. While the US did become somewhat more open during this quarter century, it is notable that most of this increase is associated with import growth in the second half of the period. In 2005, exports were about the same share of output as they had been in 1980. The figure also shows the two episodes of large imbalances. In the mid 1980s, the trade deficit was primarily due to deterioration in exports. In the more prolonged second episode, the issues have been steadily rising imports combined with weak export performance. The figure also shows exports beginning to grow more rapidly than imports and to narrow the deficit during 2006-7 and most recently, the sharp drop in exports and especially imports.

***Determinants of the U.S. External Balance.*** A large empirical literature studies the determinants of US imports and exports, typically estimating the sensitivity of exports and imports to changes in (lagged) relative prices and incomes. During the past decade,

there has been a focus on examining what it would take to achieve a sustained reversal of the US current account deficits. However, there has been considerable variation in time period, specification and measurement of key variables resulting in a wide range of estimates.

Until relatively recently, the empirical results tended to support what became known as ‘elasticity pessimism’ for two reasons.<sup>14</sup> First, US imports were found to be quite insensitive to changes in relative prices. While exports seemed to be somewhat more price elastic, studies often found the overall price elasticities low enough that a depreciation of the dollar would only be associated with trade balance improvement because of the relatively low pass-through of nominal exchange rates into especially import prices. Conventional wisdom suggested that to accomplish a one percentage point of GDP decline in the US external deficit would require a relatively large real depreciation of the dollar -- by as much as 10 to 20 percent.

Second, the estimates tended to support a finding by Houthakker and Magee, that US imports are considerably more sensitive to increases in US income than are US exports to increases in the income of US trading partners. Thus, balanced growth in the US and its trading partners would be associated with a deteriorating US external balance, exacerbated in periods of relatively strong US growth.

More recent work benefits from improvements in specification and inclusion of data since 2000. In particular, researchers have explored issues related to vertical integration and trade in intermediates, as well as aggregation bias and the possibility that shifts in the composition of trade away from goods and towards services may have increased price and income responsiveness. While there is no clear consensus on the magnitude of the relevant elasticities, studies that use the same methodology to compare the past decade with prior periods tend to find that both exports and imports have indeed become more elastic, and furthermore, that the Houthakker-Magee asymmetry in income elasticities has disappeared. Thus, a one percentage point reduction in the aggregate trade

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<sup>14</sup> Examples include Hooper, Johnson and Marquez (2000) and Chinn (2004). Unlike the earliest studies, these authors incorporate the more recent estimation techniques that allow for feedback among key variables and address nonstationarity in the trade data. IMF (2007) provides a summary of the relevant literature, as well as new estimates of the relevant elasticities and an interesting review of 42 episodes since 1960 in which advanced countries achieved reversals of large, sustained external deficits.

deficit may now be associated with a smaller real dollar depreciation, perhaps in the range of 8 to 15 percent, and balanced growth need not imply trade balance deterioration.<sup>15</sup>

*Can U.S. Exports Compete?* While the US external deficit does respond to changes in the real exchange rate, Figure 3 showed that the relationship between relative prices and the non-oil balance seems to have shifted in the mid 1990s such that a given level of the external balance is now associated with a more depreciated dollar. Martin Baily and Robert Lawrence (2006) identify weak US export performance as the primary explanation. Similarly, our previous work<sup>16</sup> argued that the United States underperforms as an exporter of goods relative to a peer group of high-income European countries and Japan. Our analysis was based on a standard ‘gravity equation’ formulation that relates bilateral import and export flows to economic size, distance and other measures believed to be associated with degree of ‘trade resistance’ such as common language and existence of colonial ties. We pooled the data for the bilateral trade for each of three regions (the original 15 members of the European Union, Japan and the United States) with 162 other countries for the period of 1980 to 2005. We also included the real exchange rate for each of the three regions as a measure of relative price competitiveness. Those regressions are reproduced in table 4. A ‘dummy variable’ in the export equation for all trade with the United States is consistently negative and significant. In contrast, we find no evidence that the United States performs differently than Japan or than the EU in terms of imports.

Why has US export performance been so weak? This does not appear to be attributable to either a lack of growth in U.S. export markets or to the commodity composition of trade. A partial explanation may relate to the willingness of American multinational firms to use foreign affiliates as an alternative to exporting.<sup>17</sup> Foreign

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<sup>15</sup> See IMF (2007) and Crane, Crowley and Quayyum (2007).

<sup>16</sup> Bosworth and Collins (2008).

<sup>17</sup> Lowe (2008) shows that sales of foreign affiliates less their purchases from U.S. parents, at \$3.9 trillion in 2005, are 70 percent greater than comparable measures of net sales of foreign firms in the United States. However, in our earlier work, we found little difference between U.S. and Japanese affiliates activities in China.

observers often point to U.S. government restrictions on high technology exports, but the magnitude of potential trade covered by those measures is relatively small. While this is an area that would benefit from additional analysis, it is important not to exaggerate the concerns with export performance. Baily and Lawrence stress that only a quarter of the increased deficit between 1991 and 2005 can be attributed to the shift they uncover, with fully three quarters associated with the much stronger value of the US dollar.

***Impact of the Crisis.*** While trade flows typically fall during global downturns, the drop during the current crisis has been considerably more severe than historical evidence would have predicted. In partial explanation, Caroline Freund (2009) presents evidence that the sensitivity of world trade to global GDP has increased every decade since the 1960s, and that the cumulated rise in this income elasticity is large and significant. Furthermore, the sensitivity tends to rise in the midst of a recession. She also finds banking crises to be associated with somewhat larger import declines, supporting the hypothesis that the financial crisis may be partially to blame for the speed and extent of trade collapse. Other hypotheses have been advanced to explain the magnitude of the recent collapse in trade. One focuses on the implications of increased specialization in the global supply chain. Another notes that goods production tends to fall more sharply than services production during a downturn. Goods are a larger share of trade than of GDP, and the share of services in global output has been growing. While each of these factors seems likely to have played a role, it is too soon for a full analysis that might suggest their relative importance.

Unlike unemployment, trade flows tend to rebound relatively quickly as output growth recovers in the aftermath of a crisis.<sup>18</sup> Indeed, Freund (2009) finds that most of the trade adjustment occurs in a year. Thus the moderation of large imbalances seen in the midst of the down-turn is typically short-lived. She also finds that, on average, there is no lasting rebalancing for either those countries in deficit or those in surplus pre-crisis. Cases in which the crisis triggered a significant change in investment or fiscal policy are offset by those in which the imbalance deteriorated further post-crisis. However she, like other researchers, cautions against drawing too close parallels between the current crisis

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<sup>18</sup> Carmen Reinhart and Kenneth Rogoff (2008, 2009) and Caroline Freund (2009).

and past episodes -- due to its much greater pervasiveness and severity and the fact that it originated in the core, not in smaller more peripheral economies.<sup>19</sup>

### **Post-Crisis Outlook**

The financial crisis has greatly distorted both external trade flows and the internal U.S. balance of saving and investment. The external deficit has fallen to -3.2 percent in 2009, half its 2006 peak value (See table 3). Yet, during the same period the government budget deficit has exploded to over 10 percent of national income, and the net national saving rate has turned highly negative. A rise in private saving has offset a portion of the increase in the fiscal deficit, and there is an even larger decline in domestic investment. However, the net improvement in the domestic saving-investment balance, as currently reported, is quite modest and results in a large statistical discrepancy within the national accounts. The preliminary data for 2009 suggest that there is strikingly little direct evidence of a fundamental shift in household saving, and the reduction in the current account has been largely accommodated by the collapse of investment. There are known to be long lags in the effects of wealth changes on consumption, and it is possible that the recovery will be marked by higher rates of household saving in the future; but the domestic rebalancing that has occurred to date is far from the desired path.

On the external side, much of the rise in the exchange rate that occurred during the most severe months of the crisis has been reversed, and it is again close to its mid-2008 low. That value appeared to be consistent with a gradual reduction in the size of the trade imbalance. However, because both exports and imports remain far below their pre-crisis levels, it is difficult to project the future their evolution with much confidence.

Current expectations are for a weak recovery of the U.S. economy relative to the historical norm. In figure 9, we show the path of recovery as projected by the CBO in its August economic report and contrast it with the average recovery from the eight prior U.S. business cycles. The initial few quarters may incorporate sharp cyclical gains in

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<sup>19</sup> Stephen Cecchetti, Marion Kohler and Christian Upper (2009) study 28 financial crises since the 1980s and argue that the current crisis is unique. They use the variation in their sample (not the averages) to draw inferences. Interestingly they find that external factors (growth in trading partners and number of concurrent crises) do not affect the duration or depth of the crisis related down-turn.

inventory investment, but overall investment is likely to be relatively weak for several years due to excess capacity in residential and commercial real estate. Thus, GDP growth is projected at only 1.7 percent for 2010 and 3.5 percent in 2011. A similar weak recovery is projected by the IMF in its October 2009 report. U.S. income growth less rapid than its trading partners and a depreciated exchange rate are consistent with the current account remaining at a reduced level of about 3 percent of GDP; but it is an external balance matched by low rates of national saving and even lower rates of domestic investment. This scenario is far from the soft landing that seemed achievable in mid-2008.

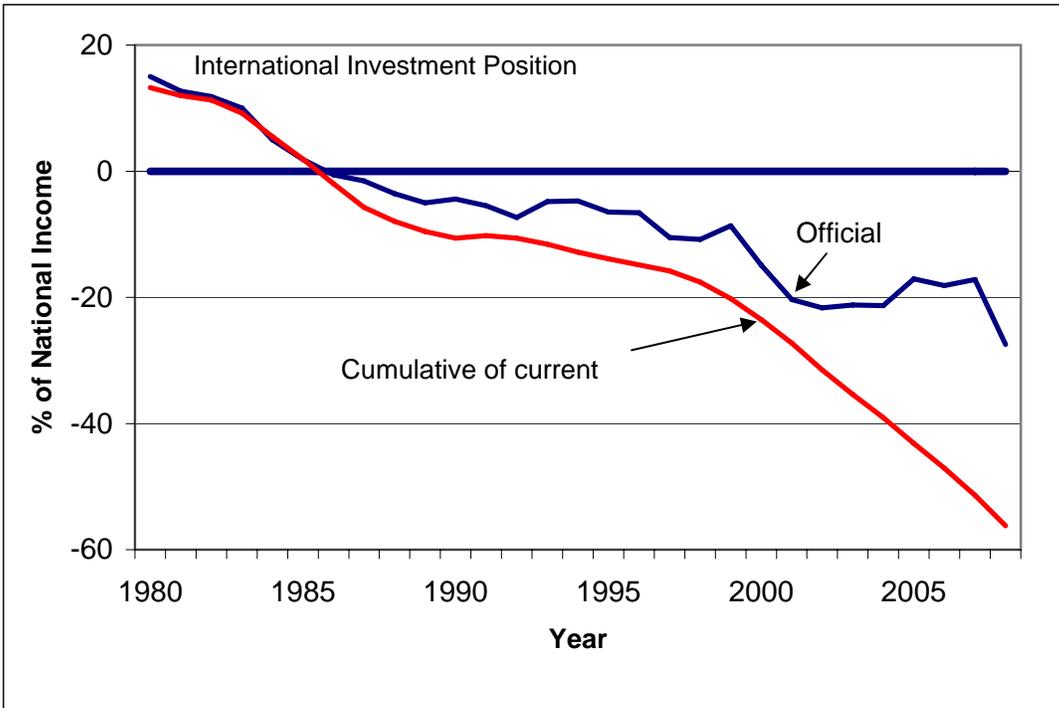
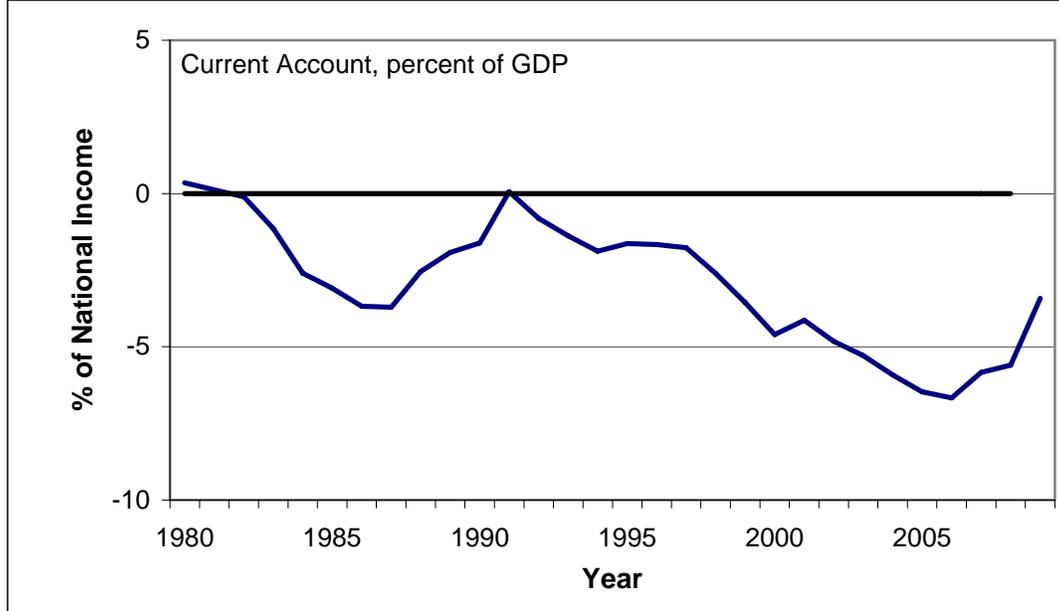
From a foreign perspective, it would seem that the era of strong expansion of U.S. markets and a strong dollar are clearly over. Given the large budget deficits already projected for the United States, further fiscal stimulus seems extremely risky and not easily financed domestically without a significant rise in private saving. Investment is very low, but the government lacks an effective means of influencing private investment decisions. Thus, economic recovery would seem to necessitate major improvements in exports and the overall trade balance, something that can only be achieved by further declines in the exchange rate as a means of improved competitiveness. A likely reliance on net exports to fuel an expansion reinforces expectations of a slow recovery.

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Figure 1. Stock and Flow Measures of the U.S. External Balance, 1980-2009



Source: the U.S. Bureau of Economic Analysis and authors' estimates

**Table 1. Current Account as a Share of World GDP, Selected Regions and Years**

Percent

Region	1980-89	1990-99	2000-05	2006-08	2009
U.S.	-0.50	-0.43	-1.41	-1.37	-0.65
Japan	0.26	0.36	0.35	0.33	0.17
Europe <sup>1</sup>	-0.01	0.09	0.23	0.15	-0.02
Emerging Asia <sup>2</sup>	-0.01	0.06	0.38	0.86	0.86
Emerging Latin America <sup>3</sup>	-0.11	-0.14	-0.02	0.04	-0.03
Middle East <sup>4</sup>	0.12	-0.04	0.21	0.51	0.11
Other countries	-0.31	-0.21	0.00	-0.11	-0.24
Discrepancy	0.54	0.30	0.27	-0.41	-0.20

Source: IMF World Economic Outlook, October 2009

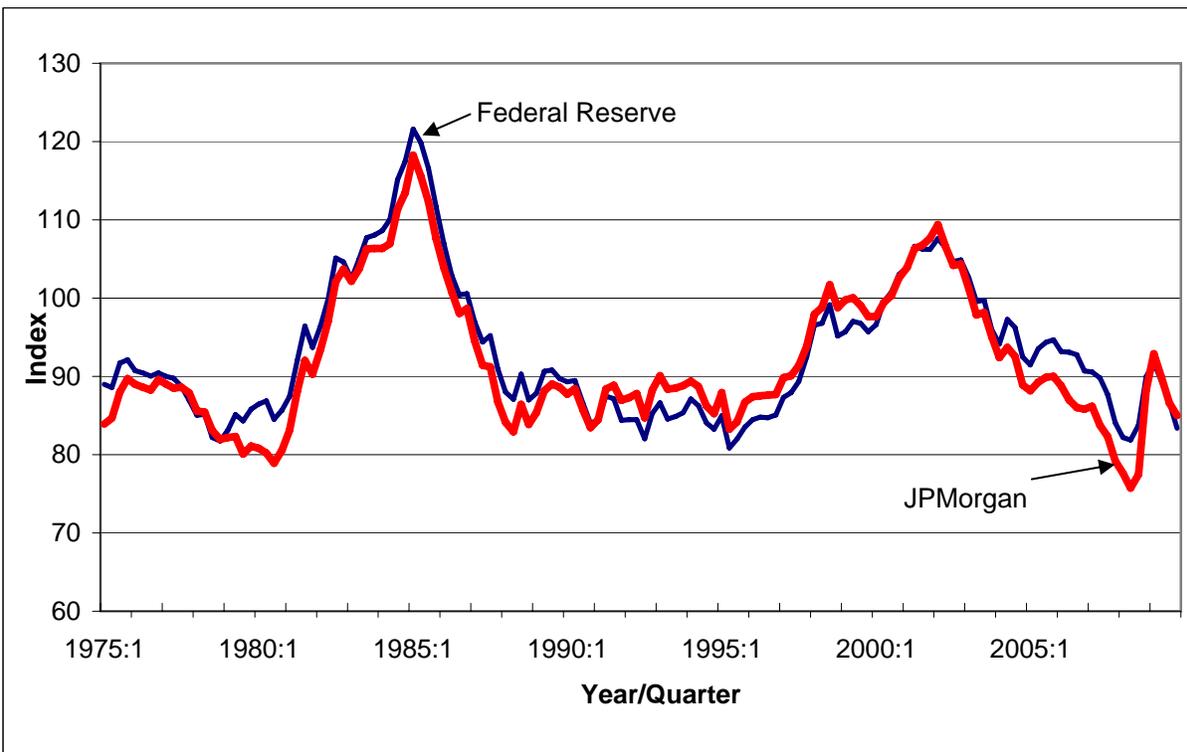
1. Austria, Belgium, Switzerland, Germany, Denmark, Spain, Finland, France, Great Britain, Greece, Ireland, Italy, Netherlands, Norway, Portugal and Sweden.

2. China, Hong Kong, India, Indonesia, Malaysia, Phillipines, Singapore, South Korea, Taiwan, Thailand. First column average for 1982-1989.

3. Argentina, Brazil, Chile, Columbia, Ecuador, Mexico, Peru, Venezuela.

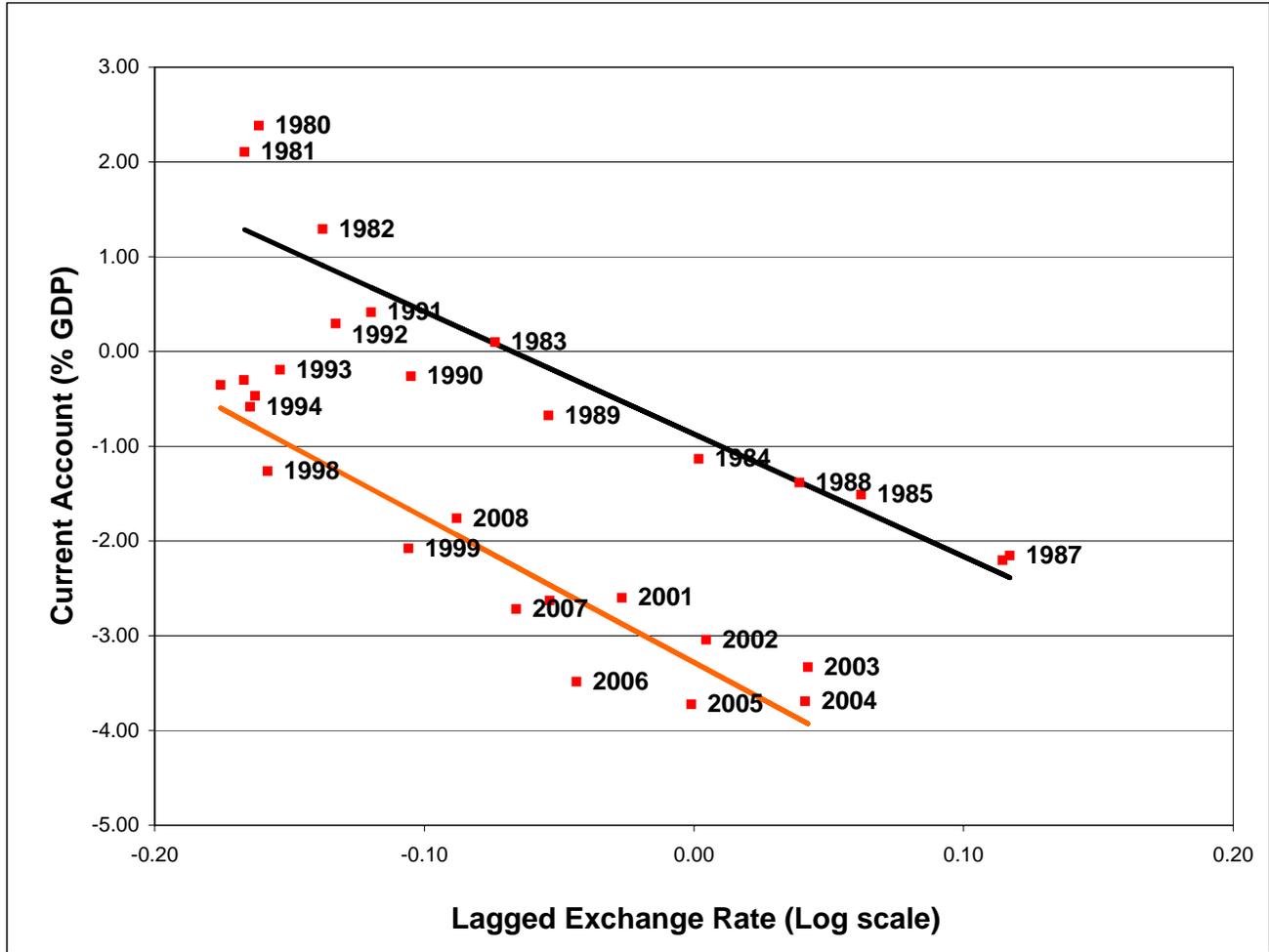
4. Bahrain, Egypt, Iran, Jordan, Kuwait, Lebanon, Libya, Oman, Qatar, Saudi Arabia, Syria, UAE, Yemen.

**Figure 2. Alternative Measures of the Real Exchange Rate, 1975-2009**



Source: JPMorgan and the Board of Governors of the Federal Reserve

Figure 3. Correlation of the Non-oil Trade Balance and the Real Exchange Rate, 1980-2009



Source: Bureau of Economic Analysis, Board of Governors of the Federal Reserve and authors' calculations.

**Table 2. Composition of U.S. Aggregate Demand, 1980-2009**

percentage of total

	1980-84	1985-89	1990-94	1995-99	2000-04	2005-07	2008	2009
Consumption	80.4	82.2	83.1	82.0	84.8	85.4	86.7	87.6
Private	63.4	65.2	66.7	67.3	69.6	69.7	70.1	70.7
Government	17.0	16.9	16.4	14.7	15.2	15.7	16.5	16.9
Investment	20.7	20.3	17.8	19.6	19.5	20.1	18.2	14.9
Private	17.2	16.6	14.3	16.5	16.3	16.9	14.8	11.3
Government	3.5	3.8	3.4	3.1	3.2	3.2	3.4	3.6
Net Exports	-1.1	-2.5	-0.9	-1.7	-4.2	-5.5	-4.9	-2.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Bureau of Economic Analysis, *National Income and Product Accounts*, and authors' calculations.

**Table 3. United States Net Saving and Investment by Sector, 1960-2009**

Percent of national income

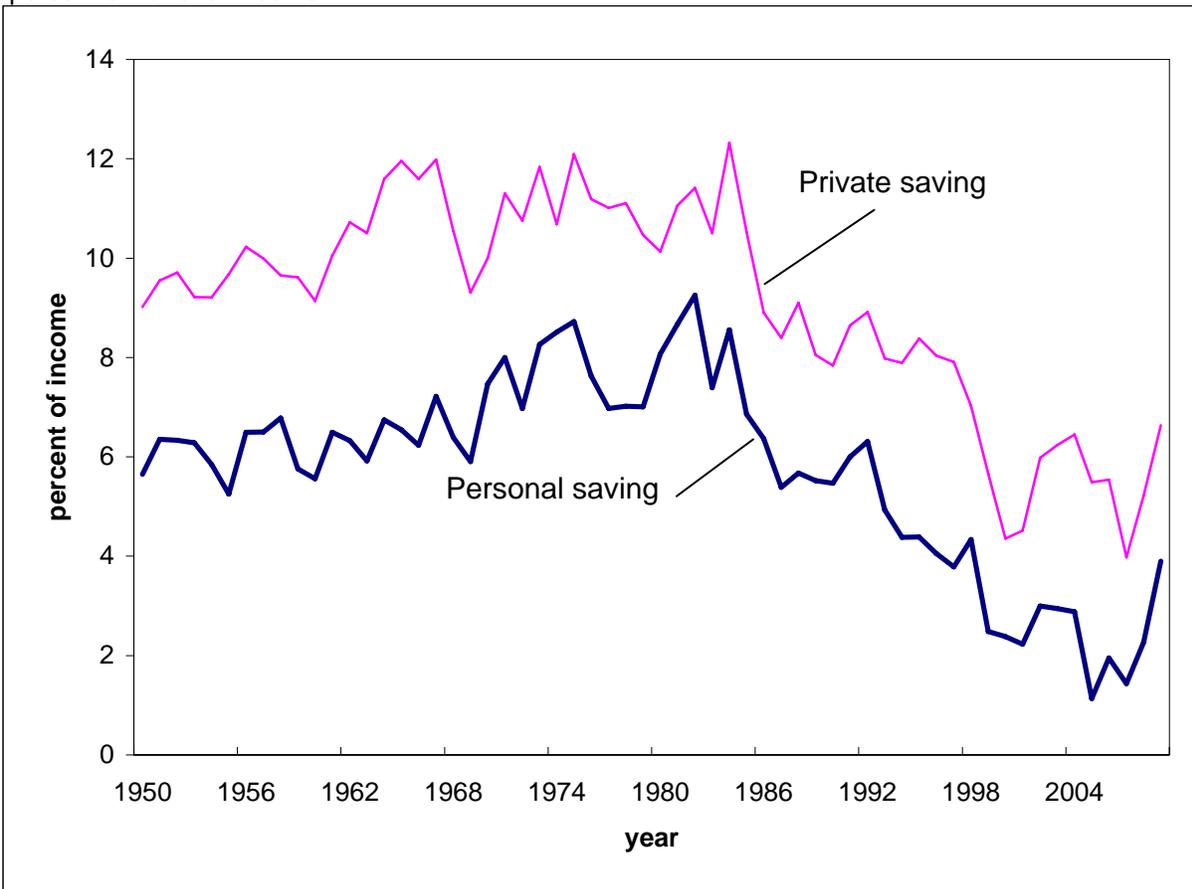
Sector	1960-79	1980-89	1990-99	2000-07	2008	2009
Saving	10.9	6.5	5.4	3.6	-0.2	-3.1
Private	10.9	10.0	6.9	5.3	5.3	6.8
Household	7.0	7.2	4.6	2.2	2.3	3.6
Government	0.0	-3.6	-2.4	-1.7	-5.4	-10.0
Domestic investment	11.1	9.4	7.9	8.4	6.2	2.1
Private	9.0	7.8	6.7	7.1	4.7	0.6
Government	2.1	1.6	1.2	1.3	1.5	1.6
Saving-Investment	-0.2	-2.9	-2.5	-4.8	-6.4	-5.2
Current account	0.4	-1.8	-1.7	-5.5	-5.6	-3.4
Statistical discrepancy	0.7	1.1	0.8	-0.7	0.8	1.8
Capital consumption	11.8	14.1	13.3	13.7	14.6	15.3

Source: Bureau of Economic Analysis, National Income and Product Accounts, and authors' calculations.

Notes: Net income, saving, and investment exclude capital consumption allowances. The statistical discrepancy is measured as investment, plus the current account, minus saving.

**Figure 4. Private and Personal Saving, 1950-2009**

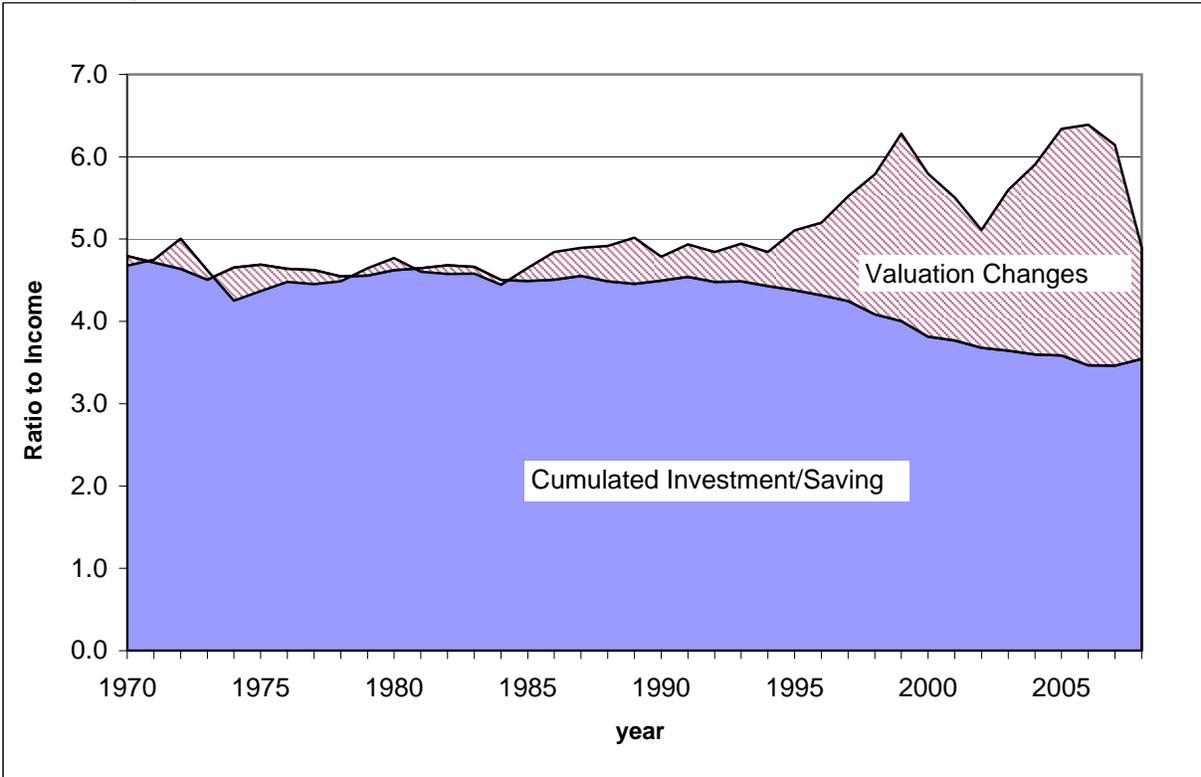
percent of national income



Source National Income and Product Accounts.

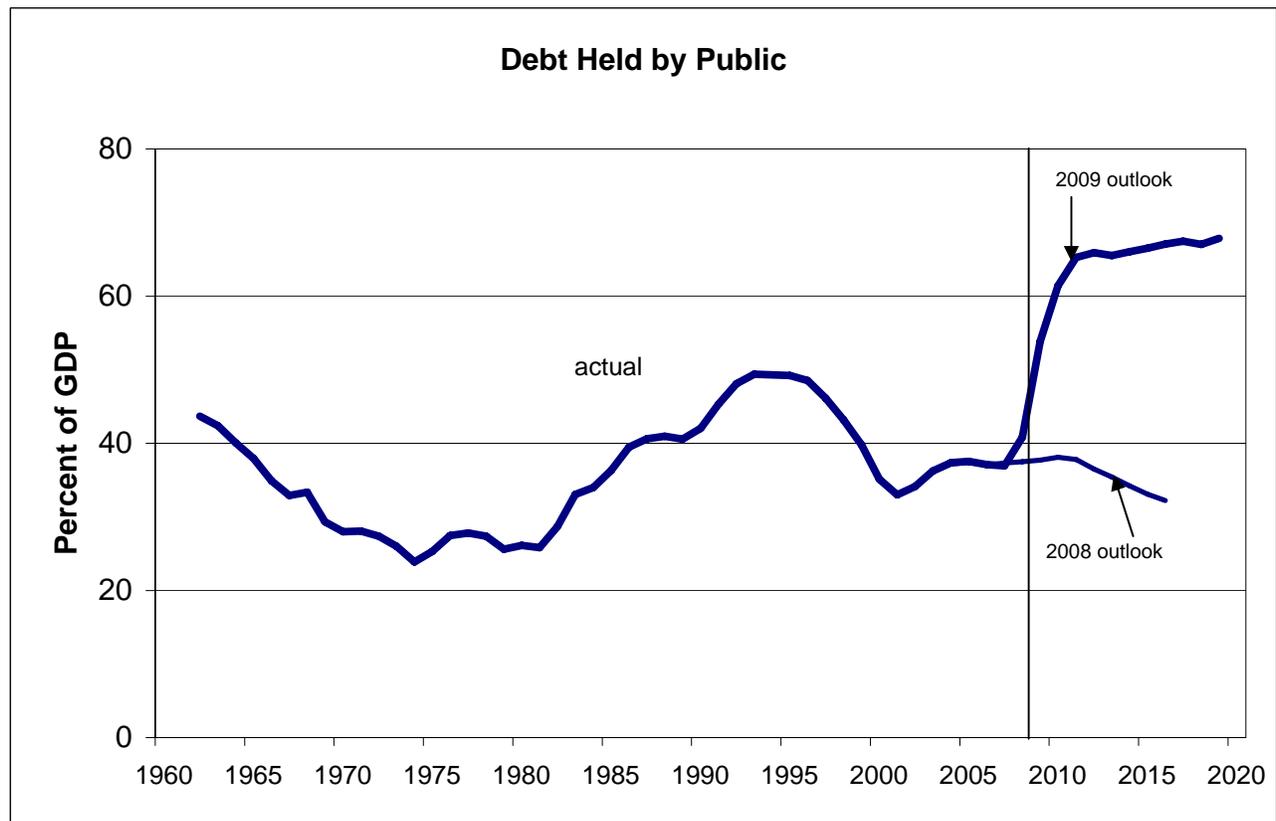
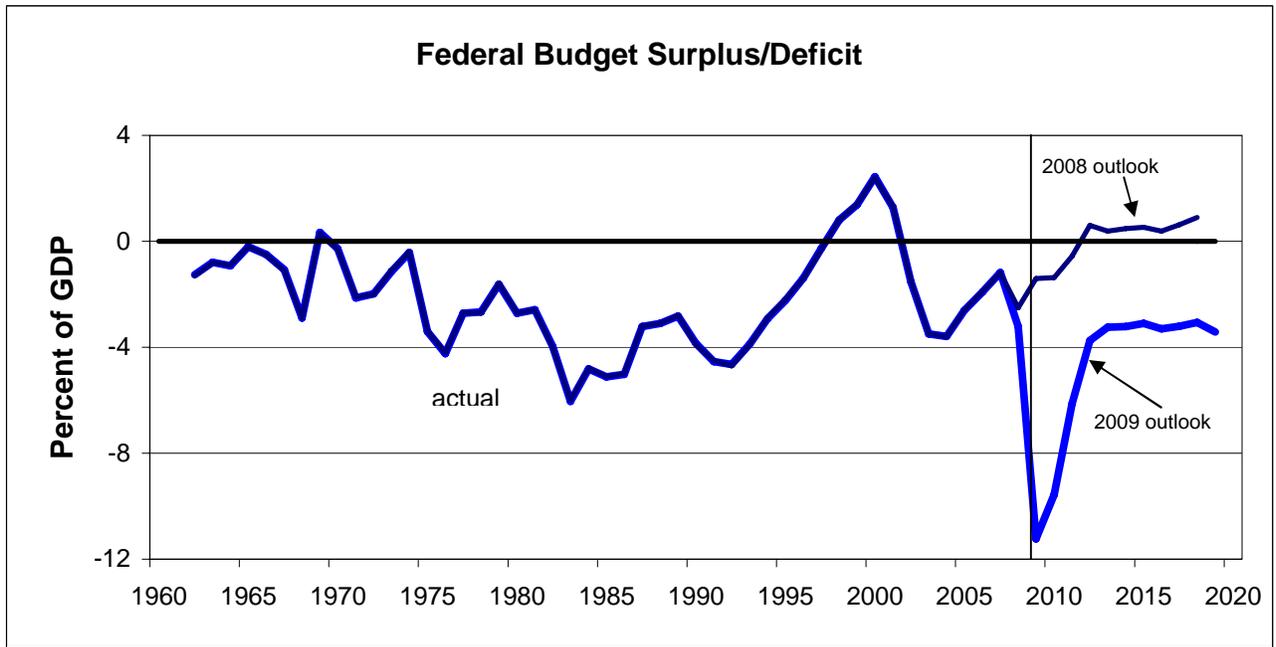
**Figure 5. Household Wealth as a Ratio to Income, 1970-2008**

ratio to disposable income



Source: Computed from tables B100 and R100 of the Flow of Funds Accounts. Net investment flows are converted to real values, cumulated, and converted back to nominal values. Wealth includes consumer durables.

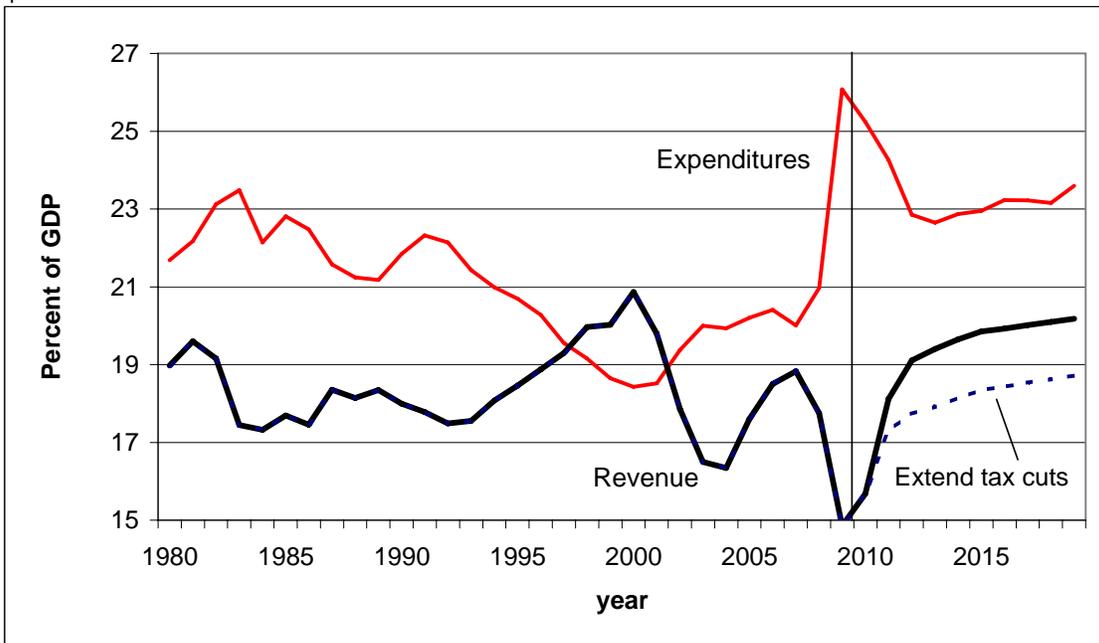
**Figure 6. The Federal Budget Balance and the Public Debt, 1960-2019.**  
percent of GDP



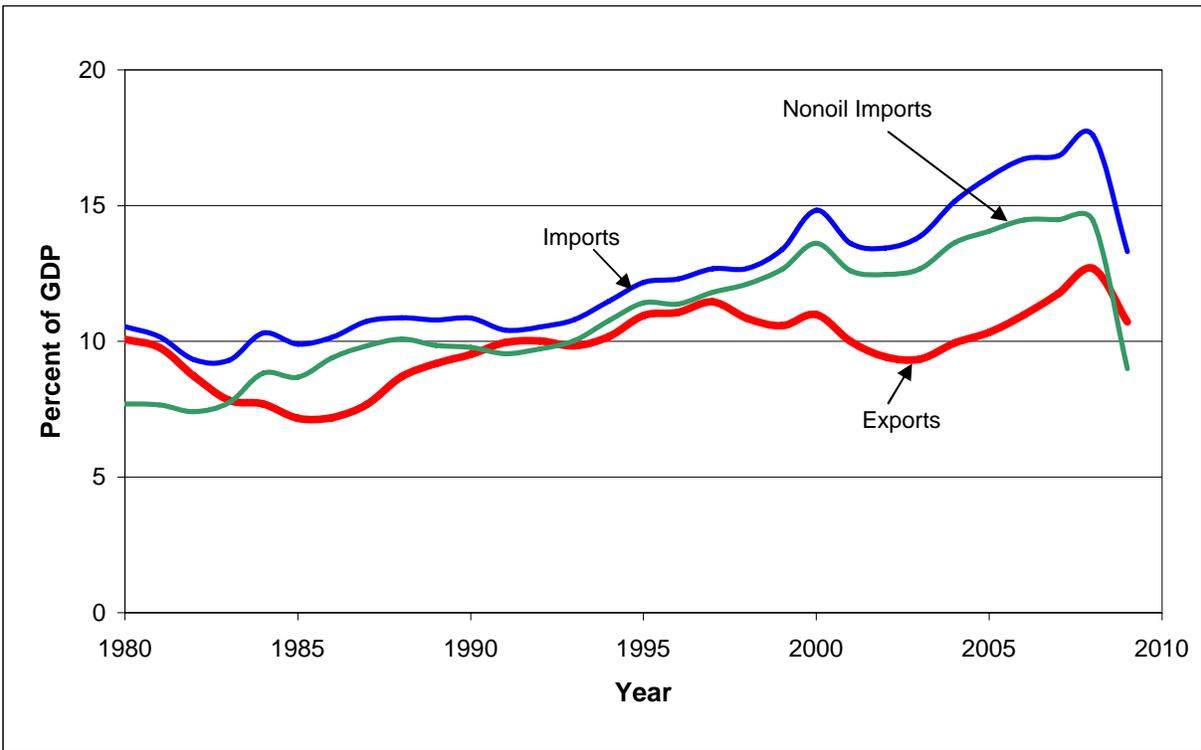
Source: Congressional Budget Office, Budget and Economic Update, August, 2009 and August 2008. Baseline Projections

**Figure 7. Federal Revenues and Expenditures, 1980-2019**

percent of GDP



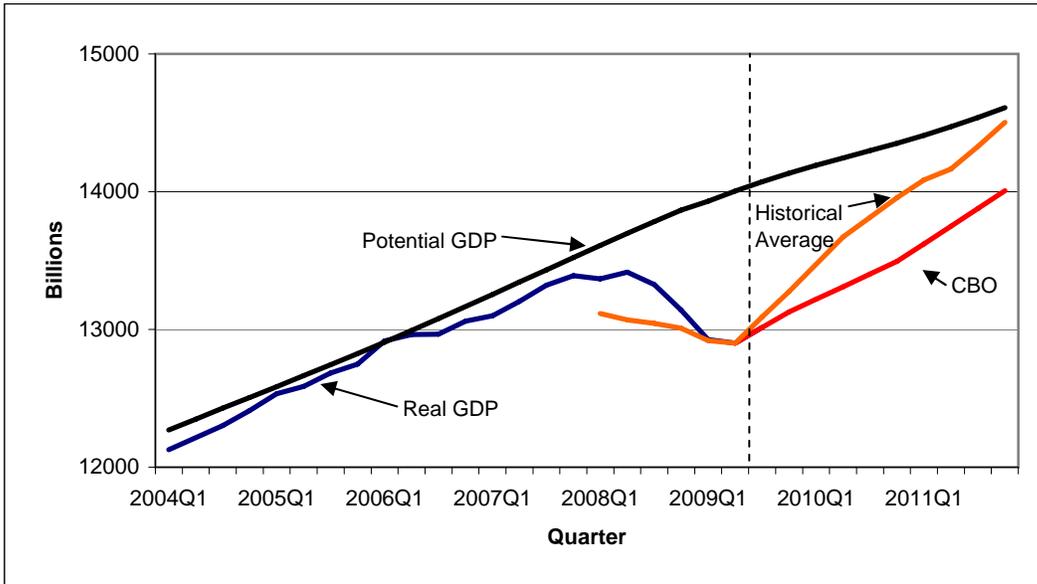
**Figure 8. Exports and Imports, 1980-2009**



Source: Bureau of Economic Statistics, National Income and Product Accounts.

**Figure 9. Projected Levels of U.S. GDP, 2004-2011**

Billions of dollars



Source: computed by the authors from the CBO mid-year economic and budget report.

**Table 4. Combined Gravity Model for US, Japan, and EU-15**

	Exports / GDP -1	Exports / GDP -2	Exports / GDP -3	Imports / GDP -1	Imports / GDP -2	Imports / GDP -3
Weighted Distance	-1.102 (-61.2)	-1.098 (-62.6)	-1.123 (-63.4)	-1.02 (-39.7)	-1.02 (-39.7)	-1.007 (-38.6)
Population	0.831 -172.3	0.837 -178	0.838 -178.8	0.976 -139.5	0.976 -139.4	0.975 -139.4
GDP per Capita	0.973 -153.1	0.974 -157.4	0.972 -157.5	1.062 -116.6	1.062 -116.6	1.063 -116.6
Common Language	0.258 -10.9	0.529 -20.7	0.544 -21.3	0.562 -16.7	0.562 -15	0.554 -14.7
Colony	0.556 -21.9	0.156 -5.2	0.326 -9.2	0.698 -19.3	0.699 -16	0.61 -11.6
East Asia Region	0.4 -15.1	0.407 -15.8	0.414 -16.1	0.755 -19.9	0.755 -19.9	0.751 -19.8
United States		-0.586 (-24.2)	-0.609 (-25.1)		0 0	0.012 -0.3
Log Average Exchange Rate*			-1.119 (-8.7)			0.586 -3.1
Constant	-34.325 (-170.8)	-34.249 (-175.1)	-28.94 (-45.1)	-38.49 (-133.9)	-38.49 (-133.8)	-41.276 (-43.6)
adj_R2	0.84	0.848	0.849	0.762	0.762	0.762
Observations	10570	10570	10570	10433	10433	10433

Source: Estimated by authors as described in text. All of the regressions are estimated within a fixed effects model allowing for shifts over years. All variables are measured as logarithms except for the categorical variables of common language, colony, the U.S., and the East Asia region.

\*Computed as the trade-weighted real exchange rates of the United States, Japan, and the EU-15, averaged over the prior 5 years. Data provided by JPMorgan.