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DESTABILIZING AN UNSTABLE ECONOMY

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Introduction

Last year saw another year of continued growth for the US economy. GDP expanded and the unemployment rate decreased to 5 percent in the last quarter of 2015, its lowest level since the beginning of 2008 and the start of the global financial crisis. The growth recovery and the decrease in unemployment led the Federal Reserve to change course and increase the federal funds rate in December 2015. This was the first increase in the federal funds rate in almost 10 years, and it carried the implicit expectation that there would be further tightening in the near future.

However, the current US recovery, now well into its seventh year, is like no other. The Federal Reserve press release announcing the rate hike was extremely cautious, and many economists—including ourselves—have warned about the possibility of an extended period of secular stagnation.[1] Dissatisfaction with the performance of the US economy is dominating the 2016 presidential primaries: despite the relatively low 5 percent unemployment rate, the principal concern of voters and most of the candidates is "economy/jobs" (as it appears in the questionnaires of those conducting the various polls).

It is not hard to understand this dissatisfaction. This has been by far the slowest recovery in the postwar history of the United States. Compared to its precrisis peak in the fourth quarter of 2007, real GDP is only 11 percent higher (as of 2015Q4). Similarly, the number of employed civilian workers in December 2015 was only 3.3 million higher—representing an increase of 2.2 percent—than the corresponding employment level in November 2007, the peak of the previous cycle. Finally, the civilian-employment-to-population ratio is now only 1 percent higher than its trough after the crisis (2009Q2). This improvement took place between October 2013 and

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December 2014, and has since effectively stopped. The last time the employment-population ratio was at the current level was in April 1984.

In addition, the recent downturn in Brazil and Russia, the economic slowdown in China and the crash of the Chinese stock market (the Shanghai Stock Exchange Composite Index is now 44 percent lower than it was last June), and, more generally, the fragile condition of the global economy—especially the economies of US trading partners—pose another challenge for the US economy and threaten the already anemic recovery.

The weak foreign demand for US exports is further dampened by the appreciation of the dollar. In the course of the last one and a half years, the broad trade-weighted nominal exchange rate of the dollar has appreciated more than 25 percent.

An important exception to the poor overall performance of net exports during the current recovery is the net export of petroleum products. The extraction of shale gas, together with the drop in the price of oil, has led to a very significant improvement in the trade of petroleum products. Shale gas extraction has also contributed to aggregate demand through investment. However, the benefits from the oil market downturn seem to have been exhausted. The price of oil is now so low that new shale gas projects are not profitable, and there is little room for improvement in the trade of petroleum products.

Moreover, there are indications that the instability in the financial markets can spread to the developed economies, even the United States. The last couple of months have witnessed significant drops in the stock markets of Europe and the New York Stock Exchange. Still, the S&P 500 Index is far above the levels of early 2000 and 2007, and it is hard to see how the "fundamentals" of the US economy justify that (in the same way that they did not then).

However, we should not arrive at the hasty conclusion that the fragility of the US economy emanates from some exogenous shocks in foreign demand or the financial markets. At its core, the US economy remains fragile because of three deeply rooted structural characteristics. The first is the weak performance of US net exports. Starting in the mid-1980s, but especially since the 1990s, there has been a successful invasion of American markets by foreign products, increasing imports and the current account deficit. Net exports of petroleum products in the period 2011–15 are the one serious exception to this. Had it not been for the improvement in the trade balance of petroleum products, the United States' overall trade deficit would now be at its precrisis level of more than 6 percent of GDP. This problem of unbalanced trade is now *exacerbated* by the slowdown in the emerging markets, stagnation in the rest of the developed economies, and the appreciation of the dollar. The existence of this structural external deficit makes the achievement of a satisfactory growth rate for the economy and full employment dependent on the accumulation of domestic deficits, public and/or private.

Second, over the last 25 years policymakers in Washington have become increasingly fiscally conservative. The current recovery is the only one in the postwar period during which government expenditure has decreased in real terms. Fiscal austerity, together with weak foreign demand, has put the entire burden of supporting aggregate demand on the private sector spending in excess of its income and borrowing. This has led to a rapid increase in the private sector debt-to-income ratio in the United States.

This process is facilitated by asset inflation because rising asset prices make the balance sheets of debtors (and creditors) look better, enabling them to further increase borrowing and pushing debt-to-income ratios higher. Moreover, nominal increases in wealth also have a direct positive effect on consumption and aggregate demand. In that sense, the expansion of the 1990s was supported by the (hyper)inflated stock market of that period, and the expansion of the 2000s was supported by the recovery of the stock market together with the real estate market boom. Accordingly, the current recovery (weak as it is) has been supported by an extraordinary increase in stock prices. Therefore, a "correction" in the stock market will have a seriously negative impact on growth and employment.

The third serious structural problem in the US economy is the increase in income inequality over the last four decades, which has continued uninterrupted after the crisis. Besides the serious political ramifications it has, the increase in inequality also has dire macroeconomic consequences. The transfer of income shares from the middle class and lower-income households toward households at the top of the income distribution is a serious drag on demand, since the saving rate of the latter is much higher than that of the former.

Moreover, the aforementioned increase in the debt-to-income ratio falls unevenly on households at the bottom of the distribution. In a previous report (Papadimitriou et al. 2014), we showed that the debt-to-income ratio of the household sector as a whole increased from 0.6 in the mid-1980s to 1.1 on the eve of the crisis in 2007. This already striking increase—related to the developments in the foreign sector and the fiscal stance of the government—was unequally divided between the bottom and the top of the distribution. In the top 10 percent of the distribution the ratio remained virtually unchanged at a low level, fluctuating around 0.5, while households in the bottom 90 percent saw their debt-to-income ratio increase from 0.7 to 1.6 in 2007. This uneven distribution of debt has the dual effect of making the economy even more unstable while dampening aggregate demand when overindebted households try to deleverage in periods like the current recovery.

Thus, the fragile prospects for the US economy are not the result of some exogenous shock but are, rather, based on inherent characteristics of the economy and need to be primarily understood in terms of these three basic structural problems: (1) weak foreign demand for US exports, (2) fiscal conservatism, and (3) income inequality. It is these structural problems that are now being compounded by the weak economic performance of US trading partners, the appreciation of the dollar, and the possibility of a contraction in asset prices.

In the present report we discuss the state of the American economy and its prospects for the near future. We show that, given the current configuration of the US and global economies, full employment in the United States will become increasingly dependent on an implausible rise in private sector indebtedness, especially household indebtedness. Such a process, even if it happens, cannot be sustained infinitely.

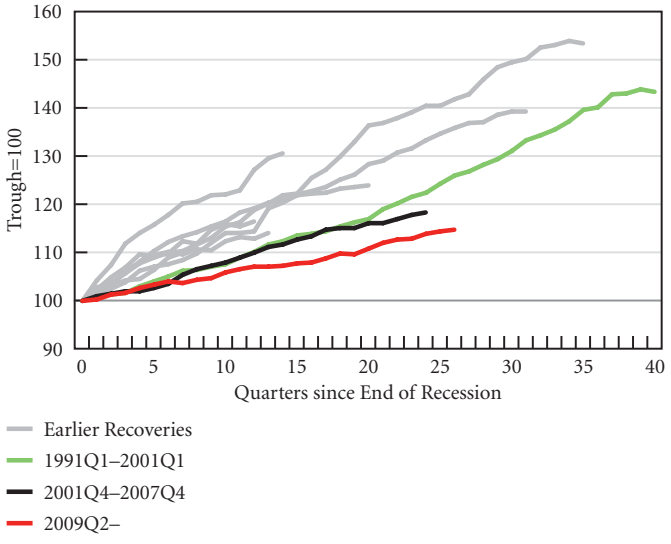
As always, we do not attempt to make short-run forecasts, and our simulations of the possible path of the US economy relate to the medium- and long-term future.

The Recovery So Far

GDP and Employment

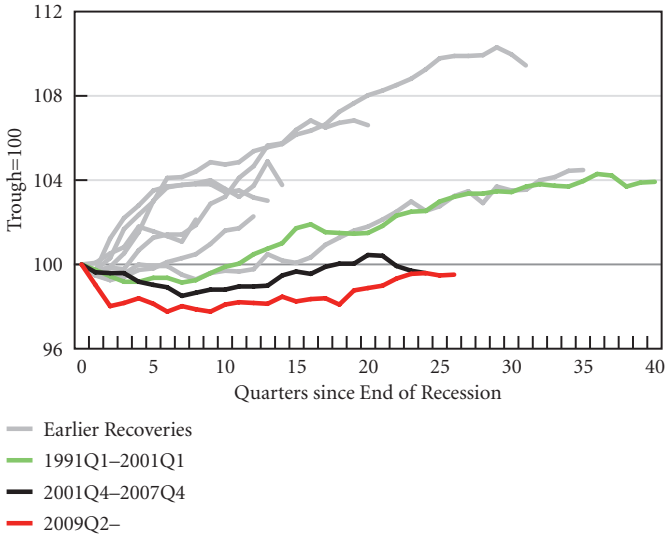
The slow pace of the recovery can be understood with the help of Figure 1, which depicts the path of real GDP from the trough to the peak of each post-WWII economic recovery, at quarterly frequency. Each line in the figure includes the trough of each business cycle recession—normalized to 100—and the peak of the subsequent recovery. The recession dates

Figure 1 **Index of Real GDP in US Recoveries, 1949Q4–2015Q4**



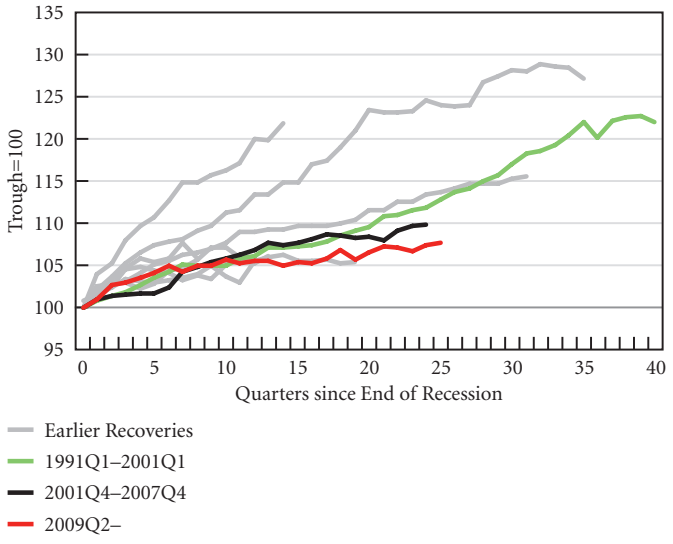
Sources: Bureau of Economic Analysis (BEA); National Bureau of Economic Research (NBER); authors' calculations

Figure 2 **Index of Employment-to-Population Ratio Recoveries, 1949Q4–2015Q4**



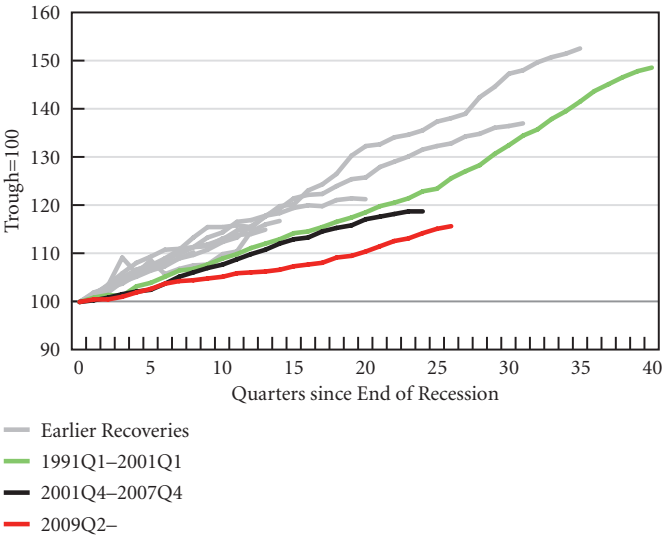
Sources: Bureau of Labor Statistics (BLS); NBER; authors' calculations

Figure 3 Index of Labor Productivity Recoveries, 1949Q4–2015Q3



Sources: BLS; NBER; authors' calculations

Figure 4 Index of Real Personal Consumption Expenditures in US Recoveries, 1949Q4–2015Q4



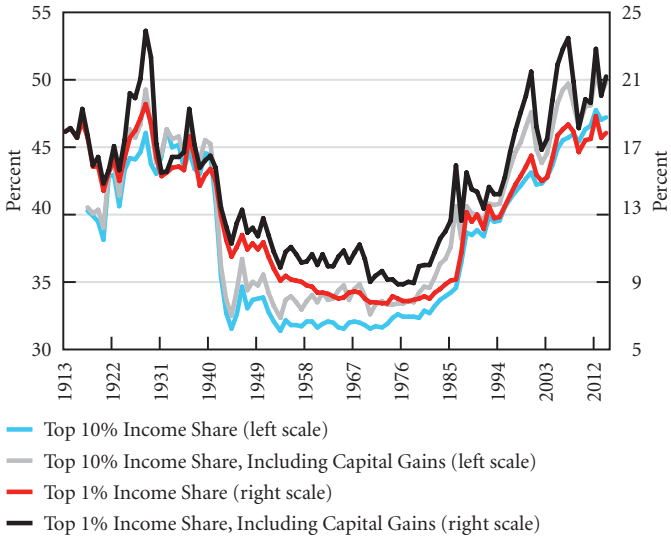
Sources: BEA; NBER; authors' calculations

we use are those published by the National Bureau of Economic Research. The three colored lines correspond to the three latest economic recoveries, including the current one. The gray lines correspond to the previous postwar recoveries.[2] It is important to keep in mind that by comparing the cycles from trough to peak and not from peak to peak we present a flattering picture of the current recovery, since the drop in income and employment during the downturn was sharper than in any other postwar cycle.

Two things stand out in Figure 1. First, we note that the three most recent recoveries have been the shallowest in US postwar history. Second, the current recovery is the weakest of them all.

We notice the same picture in Figure 2, which examines the recovery of the employment-to-population ratio over the postwar business cycles. Again, we see that the three latest recoveries have been the weakest in postwar history (with the exception of the cycle in the 1960s that traces the recovery of the 1990s). Most important, Figure 2 shows that in the latest two cycles, 25 quarters into the recovery—more than six years—the employment-to-population ratio had not recovered to the level it was at in the trough of the cycle. As we mentioned above, Figure 2 plays down the underperformance of the labor market in the latest cycle, because the drop in the employment-to-population ratio during the recession (from peak to trough) was the steepest in the postwar period. Taken together, Figures 1 and 2 explain the reasons for the latent discontent with the recovery despite the low level of unemployment.

Figure 5 Top Income Shares, 1913–2014



Source: Alvaredo et al. 2016

Moreover, as Figure 3 depicts, the recovery in labor productivity over the last six years has also been the slowest compared to all postwar business cycles. Indeed, compared to the fourth quarter of 2010, labor productivity has increased by only 2.6 percent. The sluggish growth in labor productivity has allowed unemployment to shrink despite the slow recovery of output. However, it signifies that the new jobs that have been created are largely low productivity and low paid.

Consumption, Inequality, and Debt

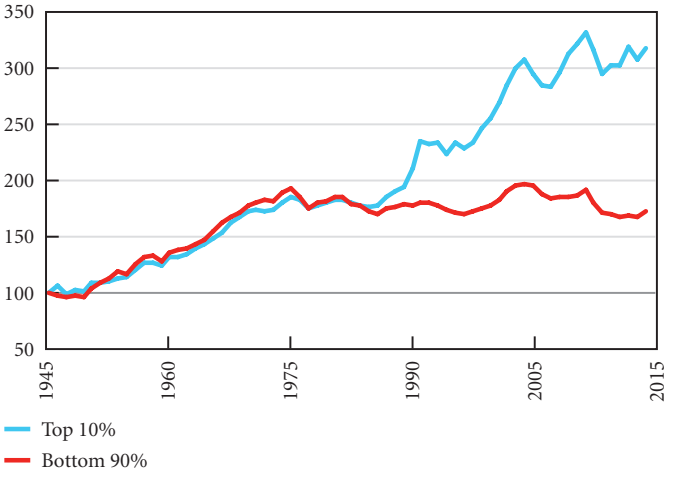
We can gain some further insights into the weak recovery if we break down GDP into its major components. Figure 4 presents the recoveries of real personal consumption expenditures. Not surprisingly, since consumption is the largest part of GDP, the pattern is similar to that in Figure 1. The recovery of consumption over the last three recoveries appears markedly weaker compared to those in the past, and the current recovery is by far the weakest in postwar US economic history.

The main reason for this behavior of consumption is the high level of income inequality, with the high indebtedness of the household sector and its effort to deleverage also playing a significant role. As many researchers have convincingly documented, since the early 1980s there has been a very significant increase in income inequality in the United States. According to the most recent data, this process, which was one of the most important factors in the crisis of 2007, has continued unabated. Figure 5 shows the well-known data for the income shares of the top 10 percent and top 1 percent of households for the period 1913–2014 (Alvaredo et al. 2016). The data show a clear decrease in the top income shares, and thus in income inequality, in the late 1930s and early 1940s. This situation continued until the late 1970s, when the top income shares started increasing again. We observe that on the eve of the 2007 crisis the income share of households at the top of the distribution had reached pre-1929 levels. The important difference between the post-1929 period, the so-called Great Depression, and now is that in recent years income inequality has maintained its upward, precrisis trend.

The increase in the income share of households at the top of the distribution effectively meant that the average real income of the remaining 90 percent stagnated. As Figure 6 shows, the rapid increase in the average real income of households at the top in the period after 1980 was accompanied by stagnant average incomes for the remaining 90 percent. In fact, the average real income of households at the bottom of the distribution was lower in 2014 than in 1973.

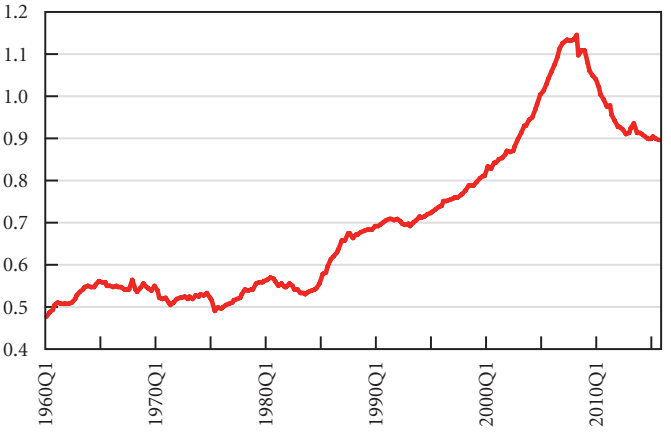
Two more observations around Figure 6 are interesting. As we could also infer from Figure 5, during the first three and a half decades of the postwar period the growth of average real income was identical for the two classes of households.

Figure 6 **Index of Real Average Income, 1945–2014 (1945=100)**



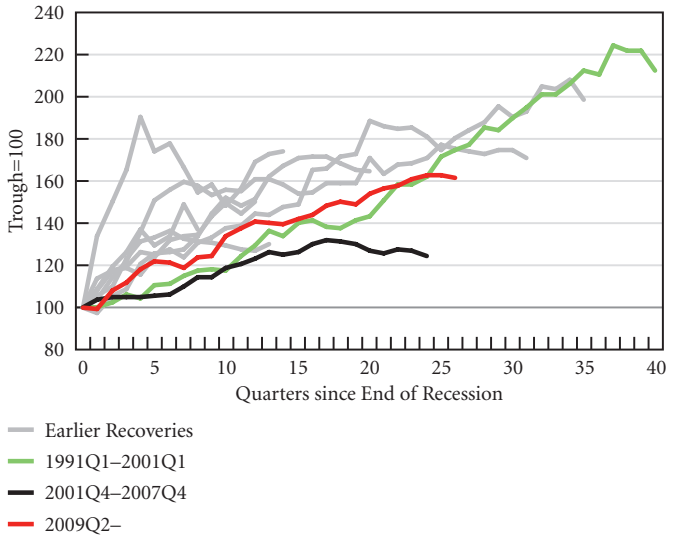
Source: Alvaredo et al. 2016

Figure 7 **Household-Debt-to-Disposable-Income Ratio, 1960Q1–2015Q3**



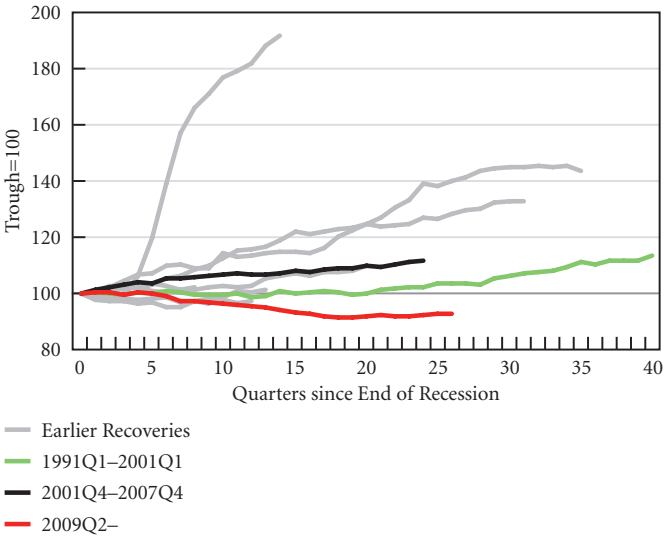
Sources: Federal Reserve; BEA

Figure 8 Index of Real Gross Private Investment in US Recoveries, 1949Q4–2015Q4



Sources: BEA; NBER; authors' calculations

Figure 9 Index of Real Government Expenditure in US Recoveries, 1949Q4–2015Q4



Sources: BEA; NBER; authors' calculations

Moreover, the difference between the period of stagnation of the 1970s and the current one is striking. In the former case, both classes of households shared the experience of stagnant real incomes; in the latter, real incomes at the top bounced back while incomes at the bottom kept falling.

The rise in income inequality is confirmed by other studies that approach the issue from a different perspective. For example, the Levy Institute Measure of Economic Well-Being (LIMEW)—which takes into account all sources of disposable income, noncash transfers, public consumption, imputed income from wealth, and the value of household production—indicates that in accordance with the latest available data, inequality of well-being also increased after the crisis of 2007–8, and reached historically high levels in 2013 (Rios-Avila, Masterson, and Zacharias, forthcoming). Another recent study (Berube and Holmes 2016) shows that inequality at the city and metropolitan level in the United States was also on the rise as of 2014.

From a macroeconomic standpoint, the increase in inequality means a transfer of income from households with high propensity to consume to households with lower propensity to consume, and as a result dampens consumption. From this point of view, it is easy to understand the weak performance of consumption since 1990.

Given this stagnating average income level of the majority of households, the performance of consumption should have been much worse. There were two factors that allowed consumption to increase at the pace it did. The first was the increase in the indebtedness of households. Figure 7 presents the household sector debt-to-disposable-income ratio for the period 1960–2015. It is no coincidence that the ratio was stable for the period before 1980, when inequality remained constant, and increased after 1980, when inequality started rising.

This increase in debt ratios was unevenly distributed among the households at the top and the bottom of the income distribution, with the households at the bottom recording the higher increases in their debt-to-income ratios. In effect, lower-income and middle-class households increased their debt-to-income ratio in order to finance normal consumption expenditures in the face of stagnating incomes.[3] This increase in the debt-to-income ratio of the household sector was one of the main reasons behind the crisis of 2007–8. As Figure 7 documents, this ratio reached 1.15 on the eve of the crisis, up from 0.55 two decades earlier.

In turn, the slow recovery of consumption in the post-2009 period can be explained by the efforts of households to reduce their indebtedness. Figure 7 shows the rapid decrease in the debt-to-income ratio between 2008 and 2012, and the

stabilization of the ratio since. However, even today the ratio remains at a high level by historical standards.

A related factor that allowed for and sustained the increase in consumption was asset inflation. The period after 1980 and especially after 1990 was marked by rapidly increasing prices of stocks and real estate. Asset inflation has a positive impact on consumption through two different channels. First, it hides the real vulnerability of highly indebted households (or firms) by inflating the asset side of their balance sheets. As a result, the increase in the debt-to-income ratio of households did not seem that worrisome as long as the other side of their balance sheets was growing at a similar pace. Moreover, the increase in asset prices led to a large increase in the wealth of the households at the top of the distribution, boosting their consumption. Second, asset inflation made the balance sheets of financial institutions look better than they actually were, and sustained their willingness to increase lending.

In other words, in an economy where a rapid increase in indebtedness is a precondition for growth, high asset inflation becomes necessary to support the increase in indebtedness. Thus, the increase in the debt-to-income ratio and asset price inflation are two sides of the same coin, of the same underlying process.

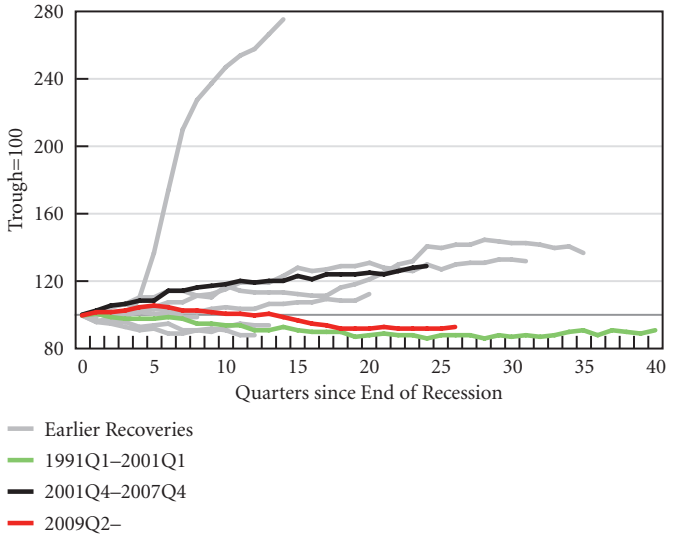
Under the current trend (or even the current level) of income inequality, a return to a "normal" rate of consumption growth would require another round of increases in the debt-to-income ratio of households, especially those at the bottom of the distribution, and further inflation in asset markets to support the increasing indebtedness.

Investment

There are many economists who dismiss the significance of the distribution of income and inequality. For example, the American economist Robert Lucas famously wrote that, "Of the tendencies that are harmful to sound economics, the most seductive, and in my opinion the most poisonous, is to focus on questions of distribution" (Lucas 2004).

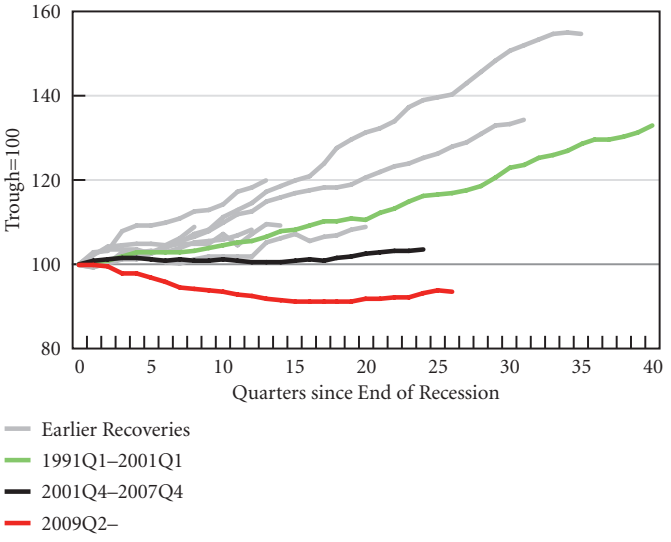
The rationale behind this approach is that distribution is determined by technology (the productivity of the factors of production, etc.), and any attempt to change it creates distortions in the market that yield suboptimal economic results. If distribution is left to be determined by market forces, profits will increase and investment will boom, and, at the end of the day, this improvement in economic activity will "trickle down" to wage earners, rendering everyone better off. This rationale has dominated economic and political debates in the United States over the last 40 years, and has provided the intellectual

Figure 10a Index of Real Federal Government Expenditure in US Recoveries, 1949Q4–2015Q4



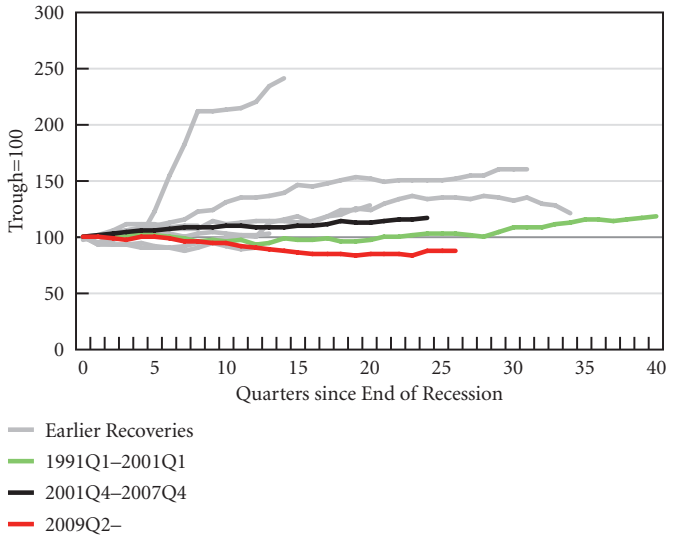
Sources: BEA; NBER; authors' calculations

Figure 10b Index of Real Local and State Government Expenditure in US Recoveries, 1949Q4–2015Q4



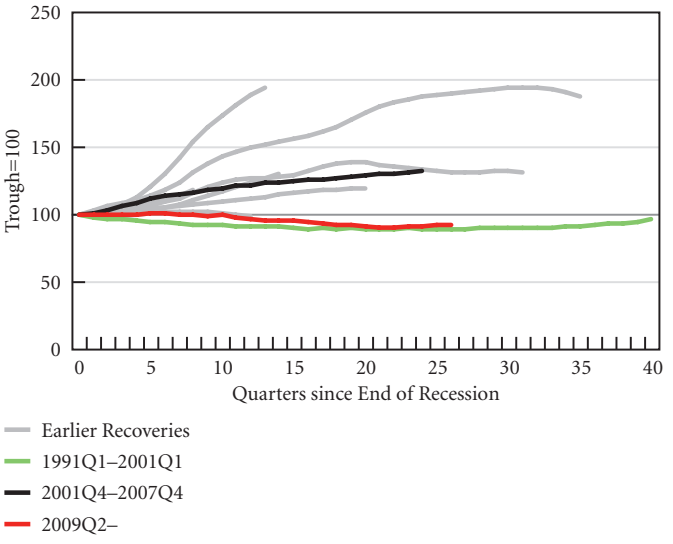
Sources: BEA; NBER; authors' calculations

Figure 11a Index of Real Government Public Investment in US Recoveries, 1949Q4–2015Q4



Sources: BEA; NBER; authors' calculations

Figure 11b Index of Real Government Expenditure on R&D in US Recoveries, 1949Q4–2015Q4



Sources: BEA; NBER; authors' calculations

justification against the need to change the patterns of income distribution that developed over the same period.

However, this investment boom never took place. If anything, the opposite occurred, as can be seen in Figure 8, which presents the postwar recoveries of investment. The break is not as clear as in the case of consumption; still, the last three cycles are on the low side of the postwar recoveries. The 2001–7 recovery of investment—from trough to peak—was by far the slowest. The current recovery, six years after the trough, has been the second slowest. The picture of the current recovery would be far worse if we compared the cycles from peak to peak. It was not until the first quarter of 2015 that real investment reached its precrisis peak.

Government Expenditure

Figure 9 shows that another major drag on aggregate demand during the current recovery has been government expenditure. Today, real government expenditure is 8 percent lower than it was when the recovery began in 2009Q2. This kind of fiscal consolidation is unprecedented for the postwar period and does not change even if we draw the same figure from the peak of the previous cycle in 2007Q4.

It is important to note that this fiscal consolidation is not confined to the federal government. The role of local and state government expenditure is also very important. It can be seen, in Figure 10a, that the fiscal stance of the federal government in particular, though restrictive, has not been as restrictive as it was in the 1990s. This is partly due to the American Recovery and Reinvestment Act of 2009, which increased government expenditure in the first two years of the recovery.

A significant part of the fiscal consolidation comes from local and state government (Figure 10b). Here, the difference with the previous recoveries is again striking. The current recovery is the only one in the postwar history of the United State with a reduction in local and state government expenditure.

Fiscal consolidation is far-reaching and affects almost every category of government expenditure. One kind of expenditure that is particularly important for the long-run prospects for US economic growth is public investment. Figure 11a shows that government investment follows the same pattern as total government expenditure, and that the current cycle has been the most restrictive of the last seven decades.

Similarly, if we focus solely on government investment in research and development (Figure 11b), the current cycle competes with the 1991–2001 recovery for last place. Recent studies (e.g., Mazzucato 2013) have shown the complementarity between private and public investment, especially public investment in R&D. From this point of view, the current fiscal

consolidation not only has a negative impact on aggregate demand but also undermines the long-run prospects of the US economy.

Exports and Imports

The remaining components of GDP that need examination are those associated with the foreign sector, exports, and imports. Figure 12 presents the path of exports in the postwar recovery cycles. As shown, exports performed well during the initial phase of the current recovery, the result of dollar depreciation and the relatively high growth rates of the US trading partners at the time. However, as the recovery proceeded, the situation reversed: the dollar stopped depreciating in 2011 and started appreciating rapidly in 2014, while growth in many of the US trading partners subsided. As a result, whereas the performance of exports was on the high side in the first phase of postwar recovery cycles, it is now on the low side. As the figure shows, real exports have remained completely stagnant over the last year. As we will discuss below, the factors that have led to this stagnation are likely to intensify in the near future.

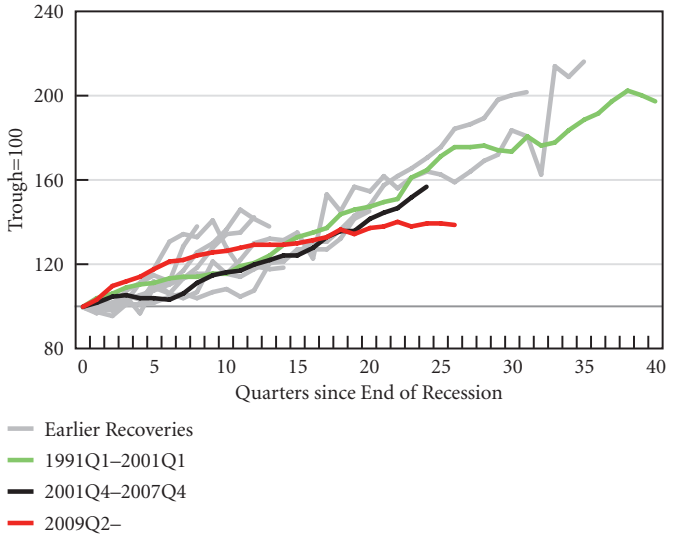
Finally, Figure 13 presents the postwar recoveries of imports. Notice that since imports have a negative impact on GDP, the higher the growth of imports, the lower the growth of GDP. What is striking in this figure is the very low increase in imports between 2011 and 2013. In the most recent period, imports have started rising again, but they are still below the level of all previous economic recoveries.

The relatively good performance of imports is obviously related to the relatively bad performance of GDP. Slow GDP growth created—all other things equal—slowly growing demand for imports. However, this improvement is also related to other factors, the most important being the development of new methods for extracting oil and gas (known as hydraulic fracturing, or "fracking"), which led to a very significant drop in the import of petroleum products.

The performance of the foreign sector of the US economy can be better understood with reference to Figure 14, which presents the overall trade balance in goods and services and its decomposition into petroleum products, all other goods, and services. The figure allows us to draw the following conclusions:

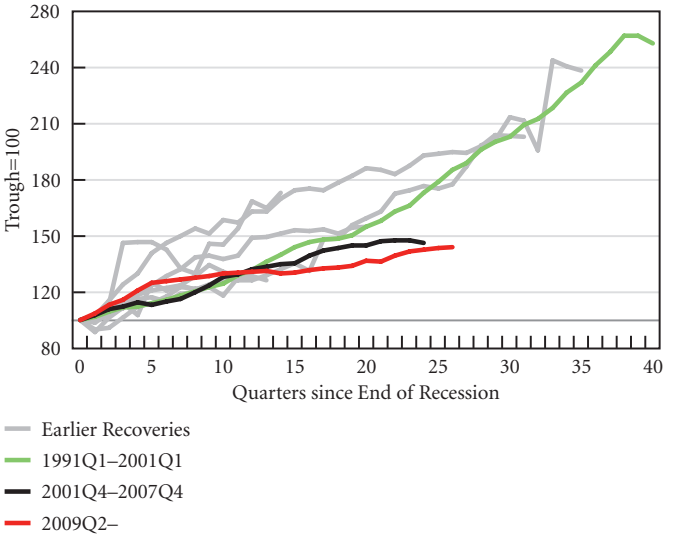
1. The trade deficit of goods other than petroleum products has been increasing during the current recovery at the same pace as in the previous recovery cycle. It is now close to its historical peak.
2. The major game changer has been the trade deficit in petroleum products. In the early period of the recovery the

Figure 12 **Index of Real Exports in US Recoveries, 1949Q4–2015Q4**



Sources: BEA; NBER; authors' calculations

Figure 13 **Index of Real Imports in US Recoveries, 1949Q4–2015Q4**



Sources: BEA; NBER; authors' calculations

trade deficit increased at a pace similar to previous cycles, but in 2011 it reversed course. It has continued to decrease, and now stands at around 0.5 percent, almost two percentage points lower than its postcrisis peak of 2.3 percent.

3. Another significant improvement has come from the services sector, which recorded an increase in its surplus of around 0.6 percent of GDP between 2008 and 2013. This surplus has since remained steady.

As mentioned above, the improvement in the balance of petroleum products is related to both the new extraction methods for shale gas that decreased the importation of oil and the collapse in oil prices over the last one and a half years: it is now more than 70 percent lower than in June 2014. To understand the importance of this improvement we can compare the current trade balance with a counterfactual where the trade deficit of petroleum products would keep increasing along its pre-2011 trend. In this counterfactual scenario, the deficit in petroleum products would now be more than 3 percent of GDP—a difference of 2.5 percentage points compared to its actual current level. In this case, the overall trade deficit would have exceeded its precrisis peak.

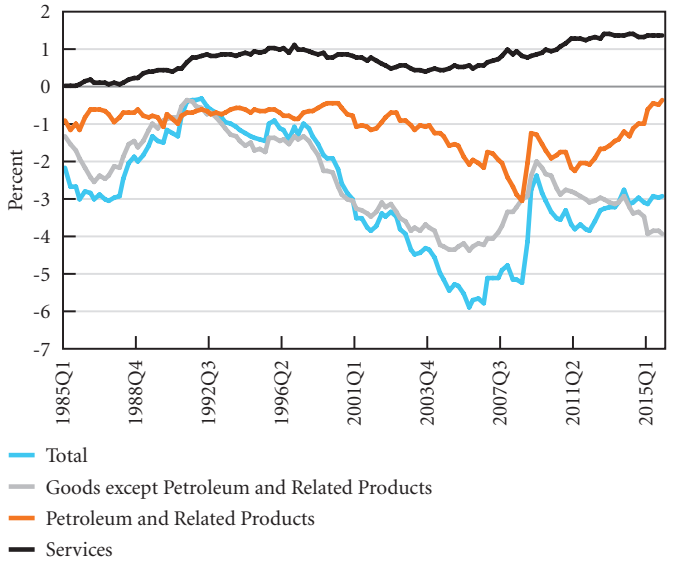
This improvement in the trade balance of petroleum products is unlikely to continue, because the price of oil cannot go much lower than it already is; and even if it did, the margins for improvement would be small. In addition, at this low price level, the exploitation of new oil fields becomes unprofitable, as does the substitution of imported petroleum. It is indicative that *real* imports of petroleum products stopped falling in 2014Q3 and have even risen slightly since then. This is also evident from investment in "Mining exploration, shafts, and wells," which in 2015Q4 was less than half its level just a year ago.

If the balance of petroleum products does stop improving, the overall trade balance will follow the path of the "goods except petroleum products." It is already evident from Figures 11, 12, and 13 that the appreciation of the dollar, together with the weakening of growth of US trading partners relative to the United States exerts significant pressure on that balance. This pressure is bound to continue if these factors persist. We will come back to this issue later.

Asset Prices

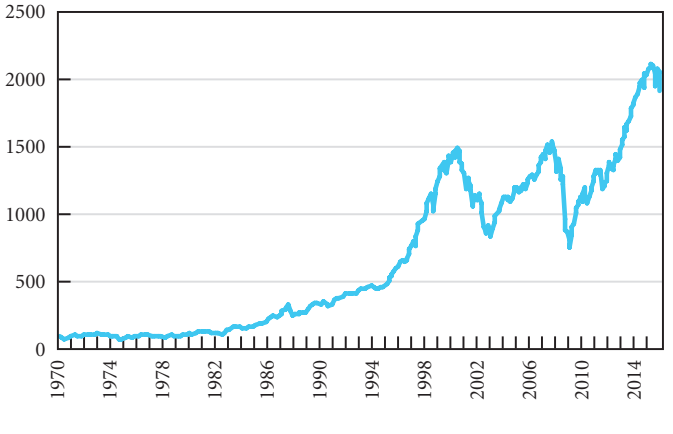
As we mentioned earlier, the high levels of income inequality, large external deficits, and fiscal conservatism of the last three decades have made growth and employment in the United States dependent on rising private indebtedness and asset inflation that supports this rise in private sector debt. Asset

Figure 14 Trade Balance, 1985Q1–2015Q4



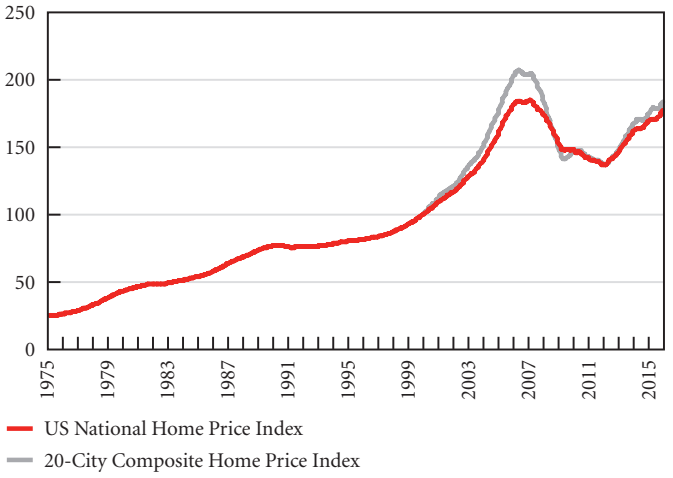
Sources: BEA; authors' calculations

Figure 15 S&P 500 Index, 1970–2015



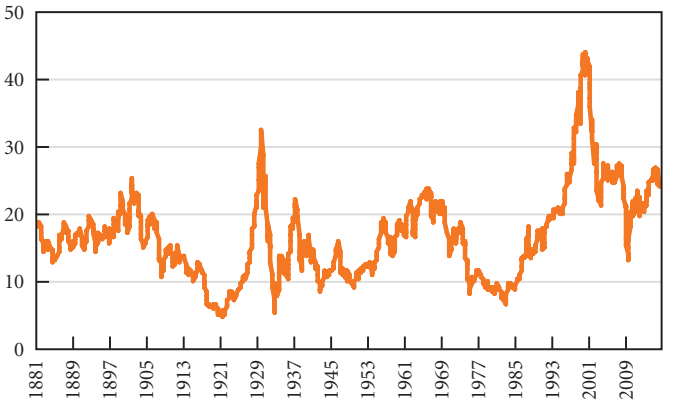
Source: Federal Reserve Economic Data (FRED), St. Louis Fed

Figure 16 S&P/Case-Shiller Home Price Indices, 1975–2015



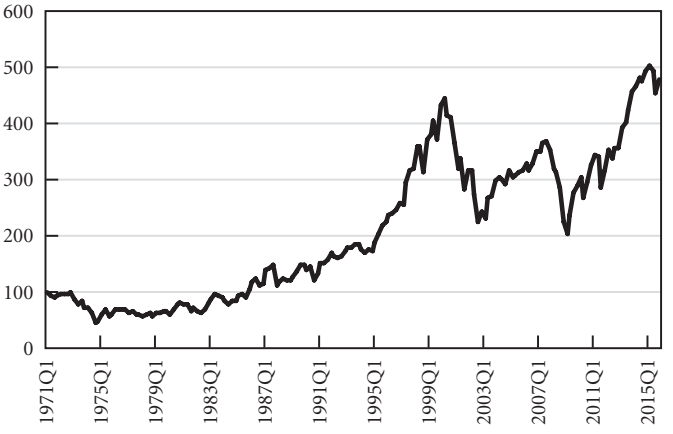
Source: FRED, St. Louis Fed

Figure 17a Shiller Cyclically Adjusted Price–Earnings Ratio P/E10, 1881–2016



Source: www.econ/yale.edu/~shiller/data.htm

Figure 17b Market-Capitalization-to-GDP Ratio, 1971Q1–2015Q4 (1971Q1=100)



Note: The index is calculated as the ratio of the end-of-period Wilshire 5000 index to nominal GDP.

Source: Federal Reserve

inflation, as long as it lasts, can have a positive direct effect on aggregate demand through various channels. The expansion of the 1990s was based on the stock market bubble of the time. Figure 15 shows that there was a fivefold increase in the S&P 500 Index between 1990 and 2000. The expansion between 2001 and 2007 was based on the recovery in the equities market and the ever-inflating real estate bubble. Figure 16 presents the S&P/Case-Shiller Home Price Indices, and shows that in the six years between 2000 and 2006 these indices doubled.[4]

The problem with asset inflation–fueled expansions is that when the music stops—when asset prices stop rising or, even worse, fall—economic activity suffers. It is thus worth taking a closer look at the main asset markets in the United States.

Figure 16 also shows that the real estate market has recovered from the crisis of 2007. Both indices—especially the National Home Price Index—are very close to their precrisis peaks. Is this rebound justified by the "fundamentals" of the US economy? If someone believes that there was a real estate bubble in 2006, and given the weak economic performance and low inflation of the last six years, then her answer would be no.

What about the equities market? Figure 15 shows that the S&P 500 Index has made a remarkable recovery over the last six years. Between 2009 and its peak last year the index increased by 270 percent, and it is now at historically high levels. Given the performance of the US economy over the same period, it is hard to justify this increase.

This becomes clear with two other indices, shown in Figure 17, which normalize stock market prices to the earnings of firms and GDP. In the upper panel (Figure 17a) we present the Shiller cyclically adjusted price-to-earnings ratio. The index shows that, adjusted for earnings, the valuation of the stock market is at precrisis levels, albeit lower than the levels it reached in the late 1990s. According to the other measure, which normalizes the market capitalization to GDP (Figure 17b), we are now above the levels of the late 1990s. These conclusions do not change even if we take into account

the recent market correction (at the time of this writing, on February 29, the S&P 500 Index was 5 percent below its peak level two months before).

In conclusion, looking at the stock and real estate markets, we notice that they are at (or near) historically high levels. This recovery in asset prices has certainly helped the economic recovery, which would have been much weaker had it not been for asset inflation. However, current asset market levels are hard to justify based on the "fundamentals," and it seems reasonable that—in the best-case scenario—the asset price inflation of the last six years will slow down or stop. In the worst case, the "correction" that began in January of this year will continue. Given the reliance of the US economy on asset prices, this will certainly have a serious negative impact on macroeconomic performance.

The Foreign Sector

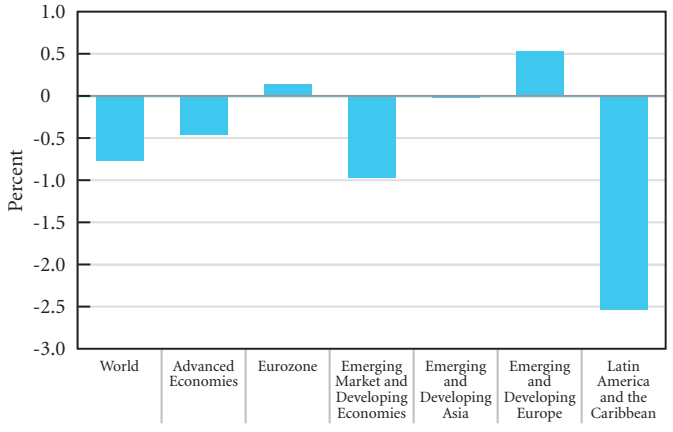
In our last policy report, issued in the spring of last year (Papadimitriou et al. 2015), we stressed that one of the main factors that exert negative pressure on the US economy is weak foreign demand due to (1) the appreciation of the dollar and (2) the weak demand for US exports due to the slowdown in the economies of US trading partners.

To get an idea of the intensity of this pressure, we simulated a scenario where the growth rate of US trading partners would be one percentage point lower than the projections in the October 2014 *World Economic Outlook* (*WEO*) issued by the International Monetary Fund (IMF 2014) and the exchange rate would further appreciate 25 percent over the following four years (slightly more than 6 percent each year). The result of these simulations was an annual decrease in the growth rate of slightly more than 1 percent compared to the baseline scenario.

Figure 18a presents the difference between the IMF's October 2014 projections for 2015 and the related estimates from the January 2016 update to the *WEO* for the major groups of countries. As one can see, world output growth was 0.8 percent lower than forecast one year ago. In general, the IMF's projections proved overoptimistic, with the exception of the eurozone (which was already in stagnation) and the emerging and developing European economies.

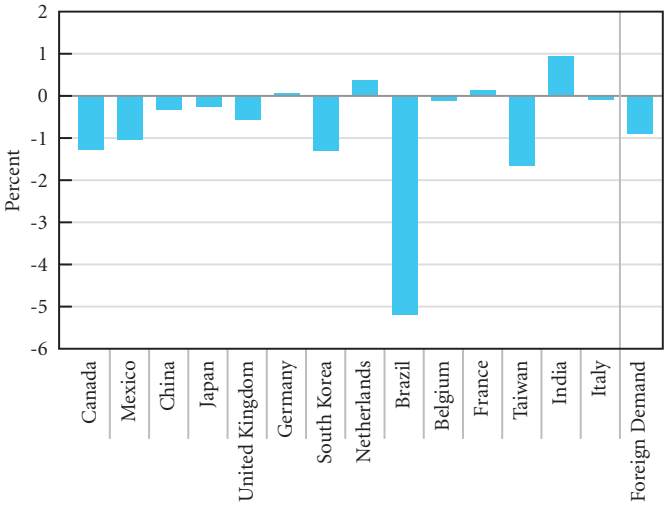
Figure 18b depicts the same difference between the October 2014 and more recent IMF projections for the major US trading partners.[5] The upward bias of the IMF projections for last year is evident here, too. It is also significant that the growth rate in Canada and Mexico—the United States' top two trading partners—slowed substantially. In total, the

Figure 18a **Percent Difference between the October 2014 *WEO* Projections and January 2016 *Update* Estimates for the Growth Rates of Selected Groups of Countries**



Sources: IMF; authors' calculations

Figure 18b **Percent Difference between the October 2014 *WEO* Projections and January 2016 *Update* Estimates for the Growth Rates of the Main US Trading Partners**



Sources: IMF; authors' calculations

growth rate of the export-weighted GDP of US trading partners was 0.9 percent lower than the IMF projections of October 2014. At the same time, the broad trade-weighted US dollar index appreciated by 9 percent between January and December of 2015.

According to advance estimates from the Bureau of Economic Analysis, the 2015 GDP growth rate (measured from the fourth quarter of 2014 to the fourth quarter of 2015) was 1.8 percent, down from 2.5 percent in the previous two years and 1.1 percentage points lower than the rate projected by the Congressional Budget Office last January (CBO 2015). In light of our projections last year, this comes as no surprise.

Is the situation bound to improve in the near- or medium-term future? The answer here is also, most probably, no. The economic prospects for Canada, the largest importer of US products, do not look encouraging. The drop in the price of oil has put a huge strain on the Canadian economy; in 2013, exports of energy products accounted for one-quarter of the country's total exports. Moreover, the Canadian economy is threatened by a high level of household debt, which as of 2015Q3 had reached 165 percent of disposable income—higher than the precrisis-related ratio in the United States. Finally, various measures show that the Canadian real estate market is overheated.

Moving south of the US border, the situation in Mexico, the second-largest importer of US goods, is not as dire, although the performance of the growth rate in 2015 was also one percentage point below the 3.5 percent forecast. This is still the highest growth rate since 2012. However, the industrial production index—probably the most important index for the state of the Mexican economy—shows signs of weakness. Mexico's economy is also vulnerable to the slowdown in Canada, the emerging markets, and the United States.

The eurozone is the third-largest destination for US exports. Figure 18a shows that, according to the IMF, the growth rate for 2015 was slightly higher (0.15 percent) than expected—based, however, on already very low expectations of only 1.35 percent. Besides these extremely low growth rates, the dire state of the eurozone economies is exemplified by an inflation rate of just 0.1 percent for 2015—which turned negative (-0.2 percent) in February 2016—and the European Central Bank's (ECB) *negative* base interest rate for overnight deposits: the ECB charges banks 0.3 percent to hold their cash overnight. Besides low growth, inflation and monetary policy are also important for the US trade balance. Low inflation abroad, all other things being equal, worsens the terms of trade. Similarly, diverging monetary policy has contributed to the recent appreciation of the dollar against the euro and other currencies.

China accounts for almost 9 percent of US exports—a significant level, but much lower than that of Canada, Mexico, and the eurozone (the Federal Reserve export weights for these three economies are 22.7 percent, 14.8 percent, and 17.5 percent, respectively). The Chinese economy is facing a transition from an export-led to a more domestic demand–oriented growth model. The difficulties of this kind of transition aside, China faces two other critical threats: first, a high level of private debt; and second, the stock market plunge of the last few months. Although China's share of US exports is not as large as some people might assume, it remains very significant, and a slowdown in the Chinese economy will have a negative impact on overall US exports. A Chinese slowdown can negatively impact US exports through a secondary channel as well, by leading to a slowdown in other economies that trade with the United States. Finally, the crisis in China will most probably lead to a further depreciation of the yuan. Such depreciation could have significant consequences for the US external sector because, even though the export weight of the Chinese economy is relatively low, the import weight is very high, around 25 percent.

Japan completes the list of the top five US trading partners, with exports and imports weighing 4.7 percent and 7.1 percent, respectively. The Japanese economy continues to find itself in a stagnant state; it did not grow at all in 2014 and expanded by only 0.6 percent in 2015, while the Bank of Japan (BoJ) recently joined the club of central banks that have adopted a negative interest rate policy.

These five economies—Canada, Mexico, the eurozone, China, and Japan—account for around 70 percent of US trade. Their weak economic performance is a general phenomenon and characterizes most global economies: Brazil is heading for its worst recession in a long time, growth in the UK and South Korea has slowed as well, and, finally, rounding out the list of the United States' main trading partners, Taiwan barely grew in 2015.

This global slowdown can affect US trade in three ways:

1. Through a decrease in the foreign demand for US exports because of lower GDP growth abroad.
2. Through the worsening of the US terms of trade, to the extent that lower GDP is accompanied by (or leads to) lower inflation abroad.
3. Through an appreciation of the dollar, due to either diverging monetary policy (e.g., between the Fed, the ECB, and the BoJ) or a reversal of the capital outflows of previous years, which kept the dollar at low levels.

Furthermore, there may be feedback effects among these. For example, there are many developing countries with a large stock of debt denominated in US dollars. As the dollar appreciates, servicing this debt becomes more expensive, setting the stage for a crisis in these countries that then leads to further weakening of aggregate demand for US products.[6]

Baseline Scenario: The Unstable Economy

A more precise evaluation of the prospects for the US economy can be performed with the help of the Levy Institute's macroeconomic model. As usual, we start with a baseline scenario and then build other scenarios upon it.

The baseline scenario builds on the projections of the Congressional Budget Office (CBO) for the US economy and examines both the prerequisites for and the implications of the recent projections in *The Budget and Economic Outlook: 2016–2026* (CBO 2016). More precisely, the CBO projects that the growth rate of real GDP will be 2.7 percent in 2016 and 2.5 percent in 2017, dropping to 2 percent by 2020. These numbers are significantly below the CBO's January 2015 projections and even farther below those made in 2014 (CBO 2014a, 2014b, 2015), testifying to the significant downward pressures that the US economy is subject to.

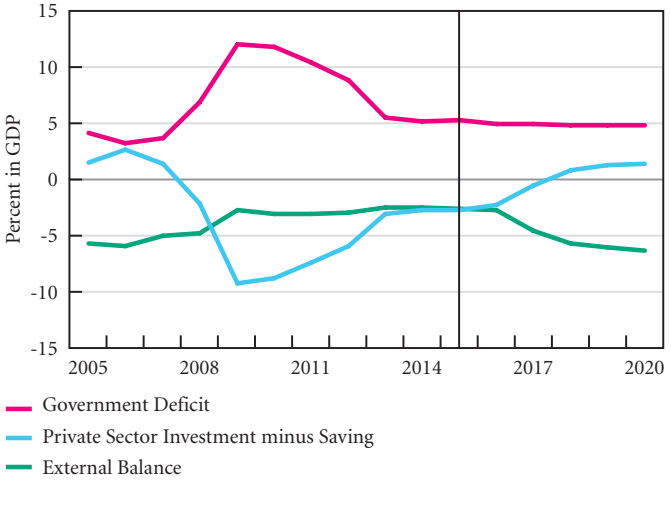
According to the CBO, the main contributor to growth will be private consumption expenditure (1.8 percent and 1.9 percent of the total 2.7 percent and 2.5 percent, respectively, in the next two years), followed by business investment (0.6 percent and 0.5 percent), residential investment (0.4 percent in both years), and a small contribution by the government (0.2 percent). Net exports are thus projected to have a negative contribution to growth (-0.3 percent and -0.5 percent).

At the same time, the CBO is projecting that the primary government deficit as a percentage of GDP will remain stable over the next five years. It also projects an increase in the overall deficit of roughly one percentage point over the same period, as a result of the increase in government interest payments due to the increase in US Treasury debt yields. For our simulations, we assume away this increase because (1) it is, in our opinion, unlikely that yields will increase, and (2) to the extent that this might happen, it is likely that there would be further government spending cuts at the state and local level.

In other words, our baseline scenario examines the conditions necessary for the general government deficit projected by the CBO to remain stable as a percentage of GDP, and for the US economy to grow with the pace projected by the CBO.

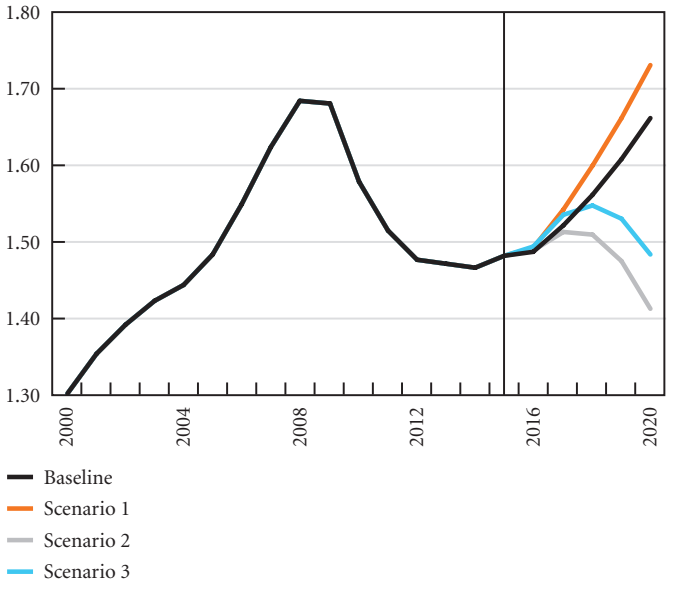
For our simulations we make assumptions that are as "neutral" as possible. We assume a mild increase in the price level and a constant nominal exchange rate. The growth and inflation rates of US trading partners follow the IMF's October 2015 *World Economic Outlook* (IMF 2015) and its recent January 2016 update (IMF 2016). Finally, we assume that equity and real estate market prices will increase mildly—by 2 percent annually—until 2020.

Figure 19 **Baseline Scenario: Main Sector Balances, Actual and Projected, 2005–20**



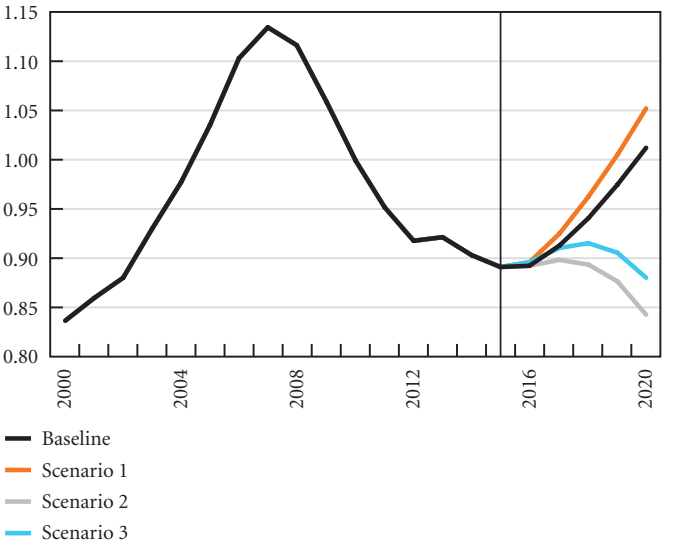
Sources: BEA; authors' calculations

Figure 20a Private Gross-Debt-to-GDP Ratio, Actual and Projected, 2000–20



Sources: BEA; Federal Reserve; authors' calculations

Figure 20b Household-Debt-to-Disposable-Income Ratio, Actual and Projected, 2000–20



Sources: BEA; Federal Reserve; authors' calculations

The results of our baseline simulations are presented in Figure 19. What we see is that the slowdown in the economies of US trading partners, the appreciation of the dollar, and the exhaustion of the economic benefits of the petroleum sector lead to an increase in the current account deficit, which reaches 6.3 percent in 2020—half a percentage point above its precrisis peak.

Given the stability of the government deficit, the increase in the current account deficit is mirrored by an equivalent decrease in the private sector balance. This balance becomes negative in 2018, reaching -1.5 percent in 2020—around its level in 1998 and 2005. If this occurs, private sector balance sheets will deteriorate rapidly. Figures 20a and 20b show that the private sector gross-debt-to-GDP ratio as well as the household-debt-to-disposable-income ratio will increase rapidly and converge toward pre-2007 levels. It is also important to keep in mind that the current, historically high level of income inequality implies that this increase in household indebtedness will once more fall disproportionately on households at the bottom of the income distribution.

Is this likely to happen? Probably not. But it is exactly this improbability that makes the baseline scenario interesting. In other words, our baseline simulations show that, given the current configuration of the US economy and the performance of its trading partners (as projected by the IMF), future growth will, once again, have to be fueled by a rapid increase in private sector indebtedness. Even if this happens, the experience of 2001 and 2008 shows how it will inevitably end.

Other Scenarios: Destabilizing an Unstable Economy

Our baseline scenario shows that under its current structural characteristics the US economy is unstable, and that raising the private sector debt-to-income ratio to pre-2007 levels is a necessary requirement for achieving the growth rates projected by the CBO in the period 2016–20.

As we explained in the previous sections, this unstable configuration is further threatened by a possible weakening of economic activity abroad, further appreciation of the US dollar, and a drop in asset market prices that could also trigger a new round of private sector deleveraging. We evaluate these possibilities by simulating three additional scenarios.

Scenario 1 employs the same assumptions as the baseline, with two important differences: (1) we assume that over the course of 2016–20 the nominal exchange rate of the dollar will increase by an additional 20 percent, and (2) that the growth and inflation rates of US trading partners will be 1 percent lower than the IMF projections. As we explained above—and in more detail in last year's Strategic Analysis (Papadimitriou et al. 2015) —the projections of the IMF tend to be overoptimistic, and the global economic situation signals that a further slowdown is possible.

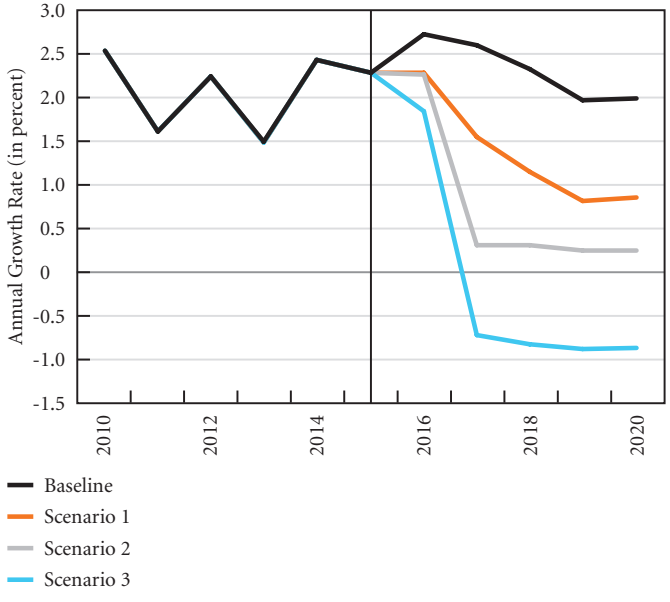
The further appreciation of the dollar and, most important, the slowdown in economic activity abroad lead to a decrease in foreign demand for US exports. The impact of these factors on the economic performance of the US economy can be seen in Figure 21. The growth rate in scenario 1 is significantly below the baseline growth rate: 1.6 percent in 2017 (as opposed to 2.5 percent in the baseline), decreasing to 0.85 percent by 2020 (slightly more than 1 percent below the baseline). These differences are similar to the ones we found in last year's estimations.

Moreover, in Figure 22 we see that the combination of lower foreign demand and deterioration in the terms of trade has a significant negative impact on the current account deficit, which reaches 8.7 percent of GDP in 2020, as opposed to 6.3 percent in the baseline. The slowdown will trigger automatic stabilizers, and thus the government deficit will increase, reaching 6.7 percent by 2020. These changes in the current account balance and the government deficit mean that the deficit of the private sector will also be higher. Figure 22 shows that by 2020 the private sector deficit converges to 2 percent, higher than the 1.5 percent in the baseline. Finally, as we can observe in Figure 20, the debt-to-income ratios are higher in scenario 1 compared to the baseline since the private sector is assumed to accumulate debt as in the baseline, but the economic activity slows down.

In scenario 2 the nominal exchange rate, growth rate, and inflation rate of US trading partners revert to their baseline behavior. In this scenario it is assumed that the stock market continues to fall throughout 2016 and then stabilizes for the rest for the projection period. More precisely, the S&P 500 Index falls to around 1450 by the end of the year (comparable to precrisis levels in 2000 and 2007).

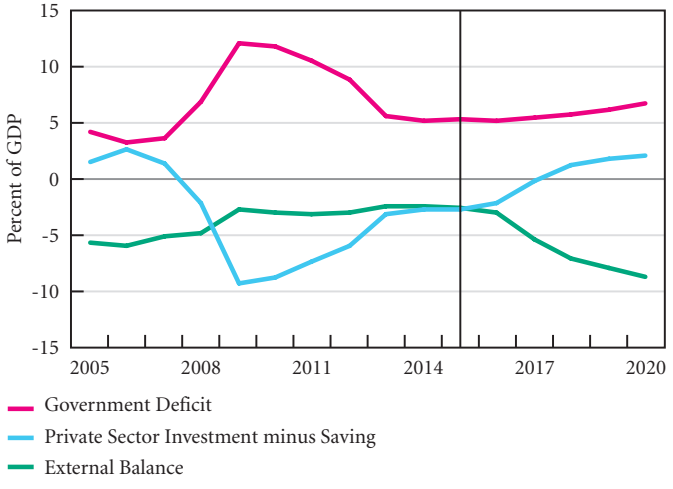
In addition, scenario 2 assumes that the private sector—partly induced by the drop in the stock market—moves at the

Figure 21 Real GDP Growth Rate, Actual and Projected, 2010–20



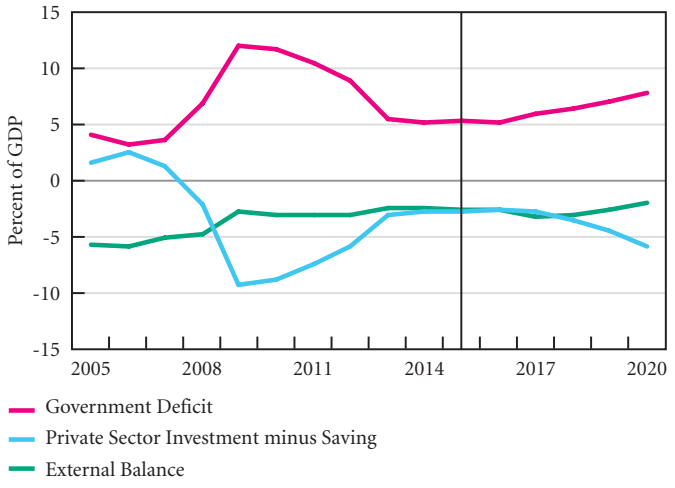
Sources: BEA; authors' calculations

Figure 22 Scenario 1: US Main Sector Balances, Actual and Projected, 2005–20



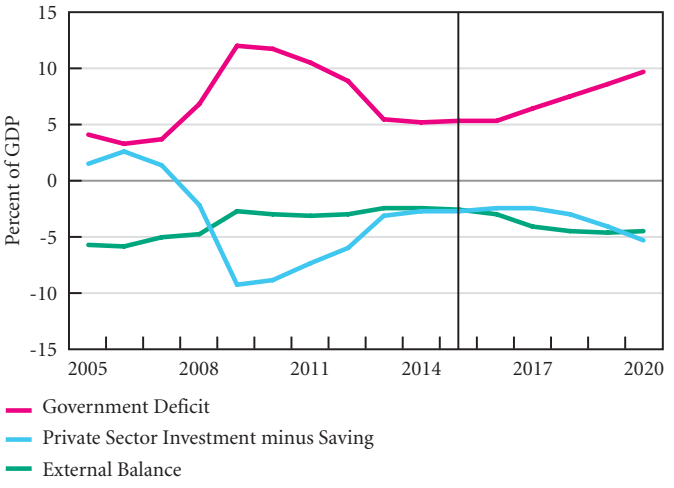
Sources: BEA; authors' calculations

Figure 23 Scenario 2: Main Sector Balances, Actual and Projected, 2005–20



Sources: BEA; authors' calculations

Figure 24 Scenario 3: Main Sector Balances, Actual and Projected, 2005–20



Sources: BEA; authors' calculations

end of 2016 toward a second round of deleveraging. As shown in Figure 20, the pace of the deleveraging is relatively slow and the debt-to-income ratios fall by 2020 to their early 2000s levels, which were already high by historical standards.[7]

The effect of the stock market slide and—more important—the deleveraging of the private sector is shown in Figure 21. The growth rate falls in 2017 to below 0.4 percent and remains at that level for the rest of the projection period. Figure 23 shows that the lower growth rate leads to a better current account balance compared to the baseline. On the other hand, deleveraging increases the private sector balance, which reaches 5.8 percent by the end of the projection period. The fall in the growth rate leads to an increase in the government deficit, which reaches 7.8 percent in 2020, up from 5 percent in the baseline scenario.

Finally, in scenario 3 we assume that there is a combination of the negative factors in scenarios 1 and 2. The stock market fall and private sector deleveraging are accompanied by weaker growth abroad and an appreciation of the dollar—unfortunately, not a far-fetched scenario. Figure 21 shows that this vicious alignment of adverse factors leads the growth rate into negative territory, around -0.7 percent in 2017 and -0.9 percent by the end of the projection period. In terms of the main sector balances, Figure 24 shows that the current account deficit increases only slightly, since the negative effects stemming from scenario 1 are counteracted by the lower demand for imports due to the lower growth rates. The private sector balance follows a trajectory similar to that in scenario 2, reaching 5.3 percent in 2020. As one would expect, the collapse in growth leads to an increase in the government deficit, which reaches 9.8 percent in 2020.

Conclusion

The weakness in many economies around the world and the turbulence in financial markets have induced many commentators to become cautious and warn about the possible risks these developments might have for the United States and global economies. We definitely agree with this position and have warned about these possible destabilizing factors in our previous reports.

However, as we explained above, it would be unwise to conclude that an otherwise robust and stable US economy is threatened solely by some exogenous shocks. The economy's instability is primarily structural, and is related to three main problems: (1) high income inequality, (2) high external deficits, and (3) the fiscal conservatism that—to paraphrase Keynes—has conquered Washington as completely as the Holy Inquisition conquered Spain.

These fundamental structural characteristics make economic growth in the United States dependent on increasing indebtedness and asset market inflation, which as the recent experience has shown is a highly unstable process. It is this unstable configuration that is now being further destabilized by the weakening of foreign demand and the turbulence in asset markets.

Therefore, achieving sustainable economic growth in the United States requires, first and foremost, addressing these fundamental issues: a decrease in income inequality, international cooperation to rebalance the global economy and improve the US external position, and relaxation of the government's fiscal stance. The alternative is a future of secular stagnation or debt-driven recoveries that will result in increasingly severe financial and economic crises.

Notes

1. For our recent discussions of secular stagnation, see Papadimitriou et al. (2014, 2015) and Nikiforos (2015). Two of the most well-known proponents of secular stagnation theory are Larry Summers (2014) and Paul Krugman (2014). A summary of the recent debates is provided in Teulings and Baldwin (2014).
2. We have omitted the short cycle of the early '80s (1980Q3–1981Q3).
3. Wolff (2012) provides a detailed analysis.
4. To be precise, the 20-City Index increased by 106 percent and the National Index by 84 percent in the period between 2000 and the first months of 2006.
5. The recent estimates can be found in the October and January updates of the *WEO* (IMF 2015, 2016).
6. For a discussion of the links between US monetary policy, the carry trade, and debt in emerging markets, see Bruno and Shin (2015) and McCauley, McGuire, and Sushko (2015).
7. For an examination of the debt levels at that time, see Godley (1999).

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