



Levy Economics Institute of Bard College

Strategic Analysis

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“AMERICA FIRST,” FISCAL POLICY, AND FINANCIAL STABILITY

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Introduction

The US economy has been expanding continuously for almost nine years. This makes the current recovery the second longest in postwar history, as long as the recovery of the 1960s and second only to the long upswing of the 1990s. The recovery has been accompanied by a decline of the unemployment rate from its peak of 10 percent in October 2009 to 4.1 percent in recent months. This is the lowest unemployment rate since 2000. The decrease in the unemployment rate has led the Federal Reserve to cautious but successive increases in its effective federal funds rate, with its new chair signaling that further increases should be expected in the near future.

However, as Figure 1 shows, the current recovery is also the slowest recovery of the postwar period, despite the fact that the decline in output during the 2007–09 crisis was the largest compared to any other postwar downturn.

The weak recovery of output is mainly due to the weak recovery of consumption, the largest component of GDP. A plot of the postwar recoveries of personal consumption expenditure looks very much like Figure 1. As we have repeatedly discussed in the past (Papadimitriou et al. 2014, 2015; Papadimitriou, Nikiforos, and Zezza 2016; Nikiforos and Zezza 2017), two main factors account for this. The first is the increasing inequality in the distribution of income. Higher income households save at greater rates than lower income households; therefore, as the income share of the former rises, their contribution to growth declines. At the same time, a significant

role is played by the indebtedness of American households: despite some deleveraging after the crisis, the debt-to-income ratio of households remains high by historical standards. This also puts negative pressure on household consumption decisions. Figure 2 shows that in 2017 the growth rates of GDP and consumption were close to their postcrisis averages.

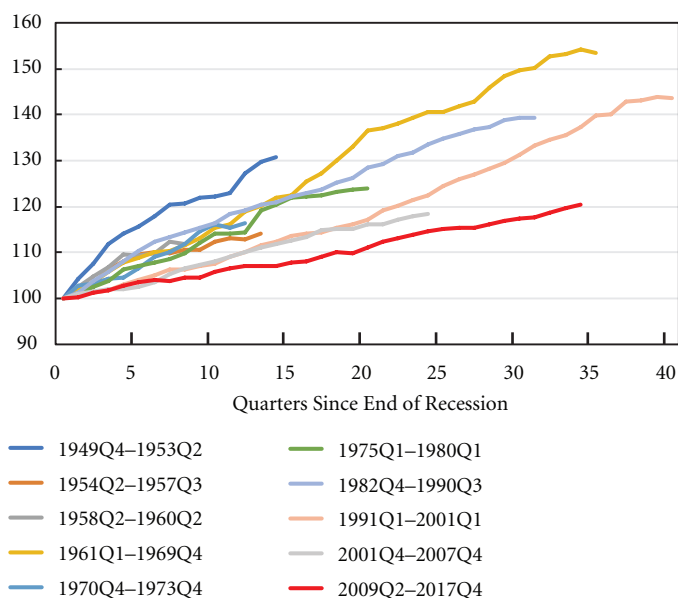
While investment initially grew faster than the previous two recoveries (though still not as fast as other postwar recoveries), it has been weak over recent years. Figure 2 demonstrates this slowdown in the contribution of investment to overall GDP growth. While investment performance in 2017 was better than the previous year (when it was negative), its contribution to GDP growth was still the second lowest in the postcrisis period.

Figure 2 also shows that the contribution of government expenditure has been either negative or very close to zero: its contribution to GDP growth in 2017 was 0.02 percent. Indeed, real government expenditure is now lower than at the beginning of the recovery in 2009. This persistent fiscal restraint represents one of the central structural problems for the US economy.

Assessment of the recent tax reform, which will increase government debt by around \$1.5 trillion over the next ten years, takes place against this background. As discussed in more detail below, it is unlikely that the tax changes will provide a major boost to the US economy, since the ability of large corporations to increase investment does not seem to be constrained by the availability of finance and the new provisions of the law for households are likely to increase income inequality. Simulations show that the tax cuts will lead to a cumulative increase in GDP of around 1 percent over a period of four years, compared to the baseline projections of unchanged tax policy. This increase in GDP growth should produce a permanent increase in the government deficit of around 0.9 percent of GDP.

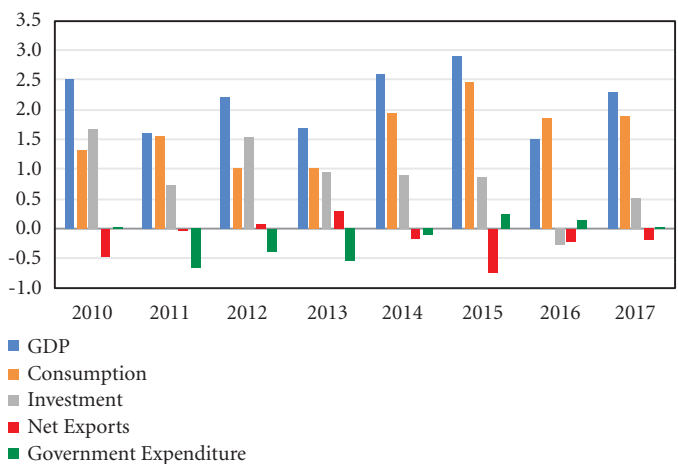
Compared to the tax cuts, a more efficient and straightforward way to boost the economy would be through an increase in direct government spending. The crumbling public infrastructure of the United States is an obvious case where government action is badly needed. Model simulations show that if the same ex ante deficit increase were used to finance such a public infrastructure program, the macroeconomic benefits would be roughly double those of the tax cuts: there would be a cumulative increase in GDP of around 2 percent over a period of four years compared to the baseline projections. And

Figure 1 Index of Real GDP in US Recoveries, 1949Q4–2017Q4 (trough=100)



Source: BEA

Figure 2 Contributions to Percent Change in Real GDP



Source: BEA

because the economy would grow faster compared to the tax cuts scenario, the ex post permanent increase in the deficit would be smaller (around 0.6 percent of GDP).

Although the promised initiative on infrastructure has yet to reach Congress, two recent legislative actions—the Bipartisan Budget Act and the “omnibus” bill—should provide a fiscal boost. The two bills will increase spending by around \$150 billion for each of the next two fiscal years and

will lead to a cumulative increase in the output of the economy of around 1.4 percent over the same period.

Finally, Figure 2 shows that net exports continued to have a negative impact on GDP growth. The weakening net export position is another structural problem facing the US economy. Beginning in the 1990s, the United States started running larger and larger current account deficits, which had surpassed 6 percent by 2006 on the eve of the crisis. The growing current account deficits, together with tightening fiscal and monetary policy, meant that growth could only be maintained through increasing the indebtedness of the private sector, and especially households. However, this private-debt-fueled growth was unsustainable and was bound to end in the crisis of 2007–09. The subsequent deleveraging is one of the reasons why growth has been so meager since that crisis—in the absence of an increase in indebtedness, there was no remaining engine to pull the economy.

An important exception to the recent behavior of the trade deficit has been the expansion of exports of petroleum products. Investment in and exploitation of improved shale extraction methods has led the trade deficit of these products to decrease from 3 percent of GDP in 2008 to almost zero at the end of 2017. This improvement has allowed the overall deficit on trade to stabilize, despite the trade deficit of all other products returning to its precrisis trend of persistent deterioration. This trend is manifest in the latest numbers from the US Census Bureau, showing that the trade deficit increased in February 2018 to its highest level since 2008.

The February 2018 numbers show a continuing deterioration in the trade deficit during the second half of 2017. Thus, despite the current administration's concern for large bilateral trade deficits, the imposition of import tariffs on steel and aluminum and the announcement of the imposition of tariffs on a range of Chinese imports do not seem to be adequate to produce a reversal of the trend that is being driven by overall macro and global policies. In fact, as we discuss in more detail below, some of the recent tax changes—most notably the move toward a “territorial” tax system, which would allow US corporations to avoid paying federal taxes on profits booked offshore—encourage US firms to move production abroad, which will have a negative impact on the trade balance.

While the reaction of trading partners remains uncertain, the recent example of the tariffs on imported steel put in place by President Bush in 2002 is instructive. After a World Trade

Organization dispute settlement ruled against the United States, the European Union (EU) threatened to impose tariffs on a wide range of US exports, leading President Bush to withdraw the tariffs. The most recent indications of retaliation by China, the EU, and other US trading partners suggest that the responses will be calibrated to hurt the exports of states with close races in the coming midterm elections; in which case, the recently announced measures will be withdrawn, as were the steel tariffs in 2003.

Against this background, the most likely scenario for the near future evolution of the US economy is an acceleration of the GDP growth rate, mainly because of the increase in federal spending and the new tax law. In what follows, and to be able to isolate the effects of the tax changes, we simulate a base-line scenario on the assumption that no tax changes or budget measures have taken place, and then a separate scenario—scenario 1—that takes the new tax law into account. In scenario 2 we simulate the effect of a budget measure of roughly the same magnitude, in terms of the ex ante deficit increase, as the tax changes. Scenario 3 simulates the effect of the increase in spending due to the recent Bipartisan Budget Act and the omnibus bill.

Finally, we update last year's projections (Nikiforos and Zezza 2017) of the effects of a financial crisis that would generate a sharp drop in the stock market and a decrease in the expenditure of households and firms. Such a situation is increasingly likely given the historically high valuation of the stock market and debt-to-GDP ratio of firms, the elevated (by historical standards) indebtedness of households, and the increase in the size of the shadow banking sector. A trigger for such a crisis could come from the tightening of the Fed's monetary policy, some shock abroad that would affect US net export performance, or the US financial system (through the labyrinthine path of the shadow banking system). Our simulations show that this would have severe effects for the US economy and would produce a recession. Ironically, if this were to occur, it would bring the US trade deficit close to zero.

The usual disclaimer applies here. Our aim is not to produce short-term forecasts for the US economy. Rather, the nature of our analysis and our simulations is to examine the medium-run prospects, challenges, and contradictions of the US economy.

The Labor Market

Much of the current macroeconomic policy debate is about whether the US economy has reached its potential and what is the appropriate policy response by the Federal Reserve. The usual proxy for measuring the economy's distance from potential output has been the unemployment rate (or rather the difference between the unemployment rate and the "natural" unemployment rate). Thus, the conventional view of the last decades has been that the Fed should raise interest rates as the unemployment rate decreases to avoid the overheating of the economy and inflation rising above the targeted 2 percent per year.

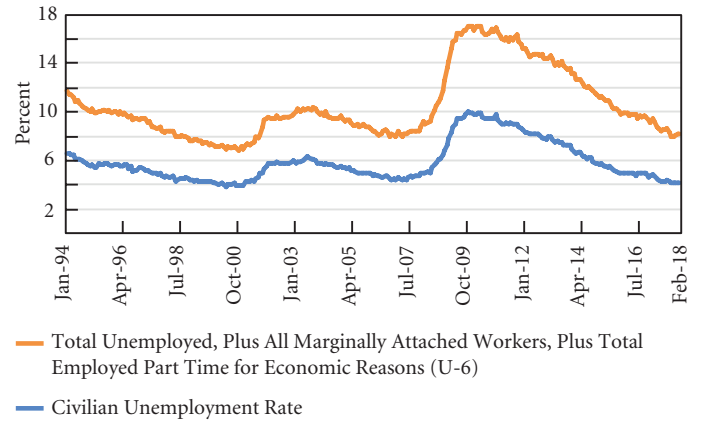
As we can see in Figure 3, the unemployment rate declined to 4.1 percent in November 2017 and has remained at that level since then—its lowest value since 2000 and almost 6 percentage points below its peak during the crisis. At the same time, the U-6 measure of unemployment, which includes marginally attached workers and workers employed part time for economic reasons, has also decreased to its precrisis level. These developments have led to the recent increases in the Fed's interest rate target and the announcements by the new chair that further increases will soon follow.

However, from other perspectives, the US economy is not that close to full employment. Figure 4a shows that the employment–population (E–P) ratio is 3 percentage points below its precrisis peak and almost 5 points below its level in 2000. From this point of view, the decline of the unemployment rate is the result of people dropping out of the labor force as much as an increase in employment.

A usual counterargument to that perspective is that the decline of the E–P ratio is due to demographic reasons: because the baby boomers are retiring and dropping out of the labor force. Recent studies (e.g., Dantas and Wray 2017; Mason 2017) have shown that this is not the case, and most of the drop in the E–P ratio can be observed within prime-age demographic groups.

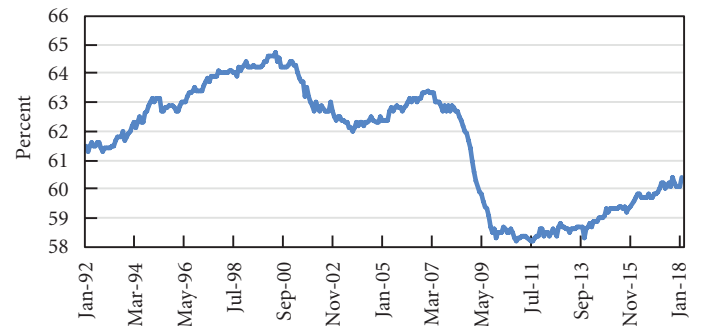
And as can be seen in Figure 4b, the E–P ratio has increased only for employees with less than a high school diploma. For high school graduates, the E–P ratio is now at the same level it was in the first months of 2009, while for employees with a bachelor's degree or higher, the ratio has been slowly *declining*. This is important for two reasons. First, it shows that most of the jobs that have been created during this recovery have been unskilled, low-paying jobs. Second, the supply of unskilled labor is highly elastic; therefore, the increase in its

Figure 3 Unemployment Rate



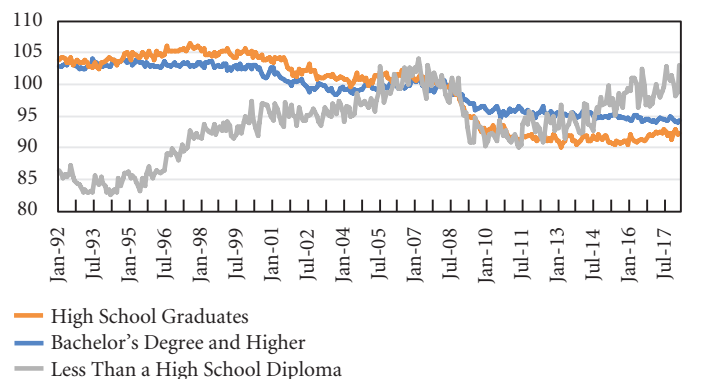
Source: BLS

Figure 4a Civilian Employment–Population Ratio



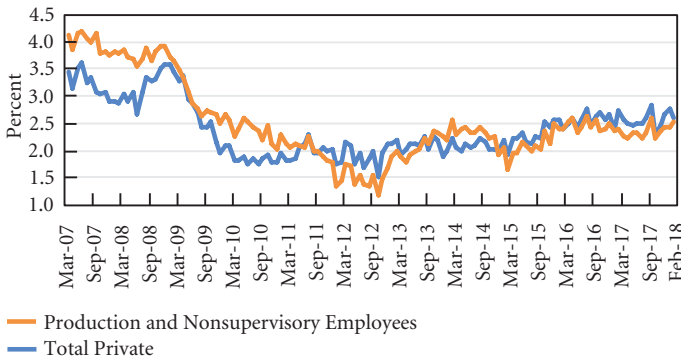
Source: BLS

Figure 4b Employment–Population Ratio, 25 Years and Older (December 2007=100)



Source: BLS

Figure 5 Nominal Wage Inflation



Source: BLS

E–P ratio does not have the same impact on wage inflation as the increase in the employment of skilled labor.¹

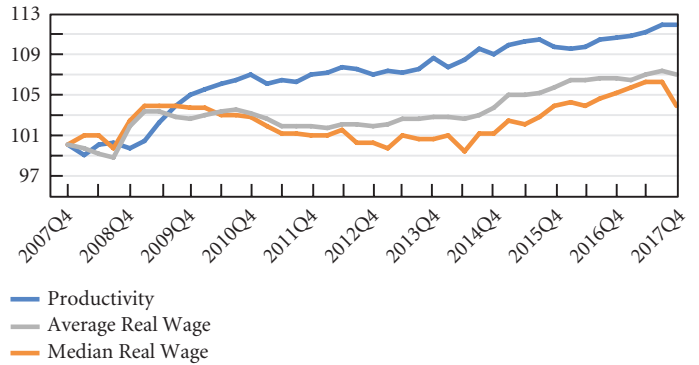
These factors help explain the very weak wage inflation despite a very low unemployment rate. As Figure 5 shows, nominal wages have been increasing around 2.5 percent since the fall of 2015. In the peak of the last three cycles, wage inflation has exceeded 4 percent.

Another way to evaluate the tightness of the labor market is to compare the increase in *real* wages with the increase in labor productivity. In tight labor markets, workers are able to negotiate increases in their real wages in excess of increases in productivity. In this case, the share of labor income in total income would be increasing. For example, nominal wage inflation of 2.5 percent implies that even with a productivity growth rate as low as 0.5 percent, the wage share will remain constant and the inflation rate will be at its 2 percent target.

Figure 6a, which presents indices for real wages and labor productivity, shows no evidence of a profit squeeze in the post-crisis period, and that the cumulative growth of productivity—weak as it may have been—has been considerably larger than that of the real wage. The data also imply that in 2017 the average growth rate of productivity was 1.1 percent. Given that in the same year the overall inflation rate was 2 percent, nominal wages would have had to increase by 3.6 percent for the wage share to remain constant.

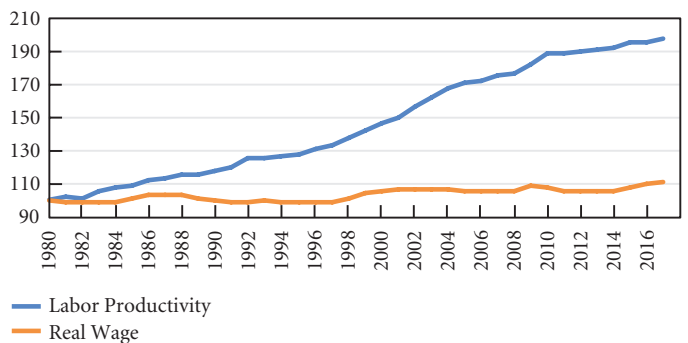
All of the above suggests that, notwithstanding the improvement in the unemployment rate figures, there are ample margins for increasing employment and getting people back to work, while the potential consequences for inflation do not seem to pose any imminent threat.

Figure 6a Productivity and Real Wages (2007Q4=100)



Source: BLS

Figure 6b Productivity and Real Wages (1980=100)



Source: BLS

A final comment is in order here. One cannot but notice the distributional aspects of the prevailing monetary rules. Saying that monetary policy has to ensure that the economy will not overheat and that real wage growth will not exceed labor productivity growth is tantamount to saying that the central role of the Fed is to ensure that the wage share will not increase. But reducing inequality—a policy objective that the Fed’s previous leadership had ostensibly embraced—would, by definition, require periods with real wages growing faster than productivity.

Moreover, while policymakers seem determined to ensure that real wages do not grow faster than productivity, they do not pay the same attention when real wage increases do not catch up with productivity gains. As a result, over the last four decades real wages have increased very little compared to productivity. Figure 6b (which measures the same thing as Figure 6a but over a longer time period) shows that, as of 2017Q4, the median real wage was 7.5 percent higher than in the first quarter of

1980; meanwhile, labor productivity has increased by 97.5 percent. This asymmetrical focus on high relative wage inflation is similar in nature to the asymmetrical reaction of monetary authorities to situations with inflation rates above and below the targeted 2 percent: the former cause a swift and vigorous reaction while the latter are usually treated with indifference.

Baseline Scenario

A common procedure followed in the Levy Institute Strategic Analyses is to anchor the baseline simulations to the *Budget and Economic Outlook* of the Congressional Budget Office (CBO). Usually this report is issued in January of every year and contains the CBO's budget projections as well as their projections for the macroeconomic performance of the US economy. When it comes to the CBO's macroeconomic forecasts, the first couple of years of their projections are explicitly produced using a dynamic stochastic general equilibrium (DSGE) model where demand plays a role, and after that the projections converge toward what the CBO estimates as the natural growth rate of the US economy.

For many years after the 2007–09 crisis, the CBO was repeatedly projecting an increase in short-run growth that would bring the US economy back to its precrisis trend in real GDP. In the long run, the economy was projected to grow at a rate of around 2.5 percent, which was believed to be the natural growth rate of the US economy. The failure of growth to pick up as the recovery continued at a relatively stable but low rate of growth has led the CBO to revise both its short- and long-term projections downward. The *Outlook* of January 2017 (CBO 2017a) projected a continuation of the slow postcrisis growth rate in the short run (a rate slightly above 2 percent) and a long-run rate of growth of around 1.5 percent (this seems to be the new “secular stagnation” normal).

The approach employed in the Levy Institute Strategic Analyses is different from the CBO's in that it is demand-led both in the short and the long run, and that it takes the financial sector into account. Thus, one question that our Analyses seek to elucidate is what needs to happen for the CBO projections of the growth rate and the government deficit to be confirmed. A central finding of this exercise over the last two decades is that acceleration in growth is associated with increases in the debt-to-income ratio of the private sector. The high growth rates of the precrisis period were sustained to a

large extent by the increase of the debt-to-income ratio of the private sector (especially households). This is why in previous Strategic Analyses this growth regime was characterized as unsustainable. Similarly, the low growth rates postcrisis can also be explained by the high levels of indebtedness and the inability and unwillingness of households to increase their debt-to-income ratios. Thus, one criticism of the overoptimistic CBO projections of the last decade has been that such an acceleration in growth would require another round of increasing indebtedness for households, which was considered unlikely—and if it had taken place, would have led to a crisis similar to 2007.

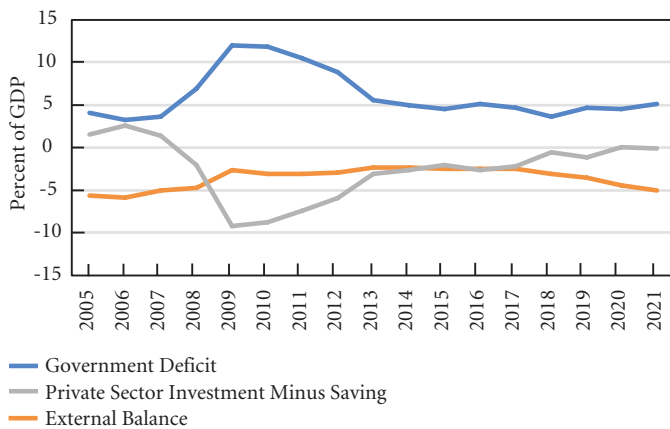
This year, as of March 20th, the CBO has not yet produced its annual report. This is most likely related to the complications arising from a detailed evaluation of the recent tax changes with respect to economic growth and the recently approved federal budget measures. For that reason, projections will be based on the update of last year's *Outlook* that was published in June 2017. This strategy has the additional benefit of focusing on the macroeconomic effects of the tax changes.

The baseline evaluates a “business as usual” scenario. The growth rate is assumed to be slightly above 2 percent for the first two years and converges toward 1.5 percent by the end of our projection period in 2021. The government deficit remains relatively stable; it is assumed to slightly decrease in 2018 and then increase slightly by the end of our projection period, with expenditure and revenues moving according to the CBO projections.

The simulations make assumptions that are as “neutral” as possible: a low level of inflation around 2 percent and a constant nominal exchange rate. US trading partners are assumed to have the growth and inflation rates that are projected by the International Monetary Fund's October 2017 *World Economic Outlook* (IMF 2017) and its recent January update (IMF 2018). Equity and real estate market prices are assumed to increase mildly—by 2 percent annually—until 2021. The effective federal funds rate is assumed to grow according to the median projection of the Federal Open Market Committee. Finally, during the projection period the debt-to-disposable-income ratio of the household sector is assumed to remain stationary, in line with its behavior over the last few years, while the debt-to-income ratio of firms increases along its postcrisis trend.

The simulation results are summarized in Figure 7. The government balance remains stable, albeit with some

Figure 7 Baseline Scenario: Main Sector Balances, Actual and Projected, 2005–21



Source: BEA; Authors' calculations

fluctuations. On the other hand, there is a small decrease in the net lending position of the private sector and an analogous increase in the current account deficit, which converges to 5 percent by the end of our projection period.

Macroeconomic Effects of the Tax Changes

In December 2017, after lengthy negotiations, the two chambers of Congress passed the Tax Cuts and Jobs Act, which was then signed into law by the President. The law includes important changes to both individual and corporate tax rates. The corporate provisions are permanent while the individual measures are to be phased out by the end of 2025. A detailed discussion of the changes is beyond the scope of this paper, but the most important for corporations include:

1. The reduction of the corporate tax rate from 35 percent to 21 percent.
2. The repeal of the corporate alternative minimum tax.
3. US firms can repatriate accumulated overseas income by paying a one-time tax of 8 percent on illiquid assets and 15.5 percent on cash. Under previous law, the tax rate for overseas income was 35 percent for corporate income, but tax payment could be deferred until the corporation repatriated that income.
4. The United States moves toward a territorial tax system.

And for individuals:

1. The law maintains seven income brackets but changes the thresholds and the tax rates.
2. There is an increase in the standard deductions.
3. Pass-through corporations can deduct 20 percent of their income (subject to limits that begin at \$350,000).
4. A cap of \$10,000 is imposed on the deduction for local and state taxes (no such cap existed before).
5. The thresholds for estate taxes are doubled to \$11 million for individuals and \$22 million for couples.

Importantly, and related to the individual provisions, the Affordable Care Act's (ACA) individual mandate is repealed. This will save a significant amount—close to \$200 million over ten years—by eliminating subsidies to poor households who could not afford to buy insurance.

According to CBO (2017c) estimates, the total cost of the law will be \$1.45 trillion for the decade 2018–27. As can be seen in Table 1, this cost is decomposed into roughly a \$2 trillion decrease in individual and corporate tax revenue, an increase

Table 1 Summary of the Revenue and Spending Effects of the Tax Changes (\$ billions)

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2018–22	2018–27
Tax Changes for Individuals	-86.1	-182.0	-171.8	-172.2	-174.0	-169.9	-169.6	-170.9	-62.2	30.4	-787.1	-1,329.3
Business-Related Tax Changes	-127.1	-131.5	-111.2	-90.6	-48.5	-16.5	-16.0	-24.2	-28.5	-49.5	-508.1	-644.1
International Tax Changes	68.9	42.6	26.0	28.0	22.9	22.5	36.7	48.7	29.1	-0.8	188.2	324.4
Total Estimated Changes in Revenues	-144.3	-270.9	-257.0	-234.8	-199.6	-163.9	-148.9	-146.4	-61.5	-19.8	-1,107.0	-1,649.0
Total Changes in Direct Spending	-8.6	9.1	1.8	-13.9	-21.8	-26.0	-28.8	-32.1	-21.1	-52.9	-33.3	-194.1
Impact on Deficit	135.7	280.0	258.8	221.0	177.8	137.9	120.1	114.3	40.4	-33.1	1,073.7	1,454.9

Source: CBO (2017c)

in tax revenue of \$324 billion from corporate income abroad, and the aforementioned decrease in spending of around \$200 billion related to the repeal of the ACA's individual mandate. Thus, the overall stimulus to the economy over this decade will be around 7.5 percent of 2017 nominal GDP. For our projection period 2018–21, the annual increase in the deficit will be 0.7 percent, 1.45 percent, 1.31 percent, and 1.11 percent of 2017 GDP, respectively.

The supporters of the law have emphasized the major boost in investment and consumption, and therefore GDP growth, that should result from these tax cuts. Undoubtedly, a fiscal stimulus of this magnitude will have a positive impact on GDP. However, for several reasons caution is indicated.

The usual rationale for the positive effect of tax cuts on investment is that they increase the cash flows of firms. In turn, higher cash flows mean that firms are better able to finance new investment. Moreover, the increase in cash flows will lead to an increase in firms' expectations of future profitability. For these two reasons, according to this rationale, the lower tax rate will lead to more investment.

In theory, both of these channels are important, but in practice their significance varies over time. A central macroeconomic stylized fact of the last decades has been the gradual decoupling of investment from cash flows. As the share of cash flows in total income has increased, their effect on investment has decreased. Instead, firms have been using more and more of their profits to repurchase their stocks or to distribute dividends.² This shows that firms' financial constraints have become increasingly lax and that current profitability is not considered a good indicator of future profits.

An interesting case study of the probable impact of higher cash flows on firms' investment is the repatriation tax holiday included in the 2004 American Jobs Creation Act. As extensive research has shown, the impact on investment of the funds that returned to the United States at that time—estimated around \$360 billion—was negligible. Most of these funds were used for share buybacks and dividends, despite the law explicitly forbidding the use of repatriated funds for those purposes. For example, Dharmapala, Foley, and Forbes (2011) estimate that every \$1 repatriated was associated with \$0.79 in share repurchases and a \$0.15 increase in dividends.³ This does not mean that the related firms violated the law, but rather that they used the repatriated funds for legal purposes (e.g., investment in capital and R&D) and used the “freed-up” cash to repurchase

shares and distribute dividends (Clausing 2005; Graham, Hanlon, and Shevlin 2010).

The outcome of the 2004 tax holiday is a good predictor for what will happen with the funds that will be repatriated with the recent reform, especially since there are no limits on how these funds can be used. At the same time, it is clear that a significant portion of the foreign-held assets will not return to the United States, even if the companies pay the related taxes, since under the new law they will be able to repatriate these funds whenever they want.

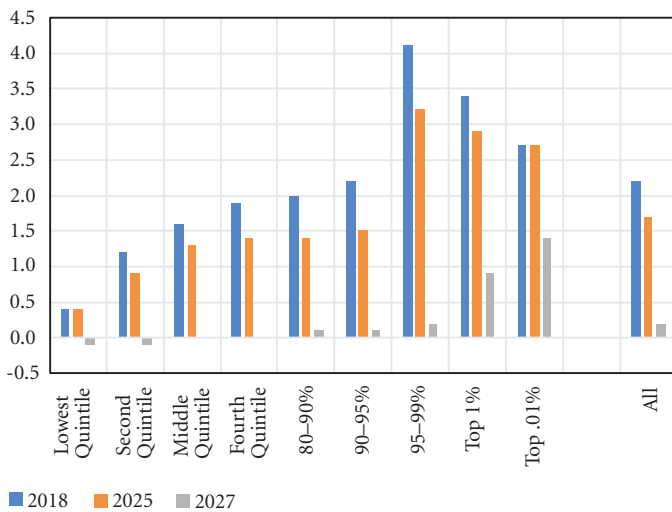
It is also noteworthy that the move toward a territorial US tax system creates a disincentive for US firms to increase their domestic investment as long as there are countries with lower tax rates. For example, as long as the effective tax rate in the United States remains above Ireland's 12.5 percent tax rate, there is no reason for US multinational corporations to bring back their operations or to establish future operations in the United States that would otherwise be located in Ireland. In other words, there will be a boost in investment in the United States only to the extent that the effective tax rate becomes competitive with those of the various tax havens around the world.

Moreover, the experience of the last three decades shows that corporate tax cuts in the United States are imitated by the other major economies. For example, Gravelle (2014) argues that the decrease in the corporate tax rate among OECD countries seems to have been triggered by the reduction in the US tax rate from 48 percent to 35 percent in the period 1986–88 due to the Tax Reform Act of 1986. If a similar reaction is produced by the latest round of US cuts, the original positive effects of the tax cuts on investment—whatever they might be—will weaken. This is the kind of “race to the bottom” policy that has been adopted around the world in the last three decades.

All the above suggests that the impact of the changes in corporate taxation on investment and economic activity are not very likely to confirm the optimistic expectations of those who introduced them. A more possible outcome is a very small impact on investment and a secondary positive impact through an increase in distributed profits and appreciation of stock prices (to the extent the increase in the cash flows is used to repurchase stocks, there will be a tendency toward an increase in equity prices).

With reference to individual provisions, the tax changes will further increase inequality of disposable income. Figure 8, using data from a recent Tax Policy Center report, shows that the

Figure 8 Percent Change in After-Tax Income by Income Bracket



Source: Tax Policy Center

percentage increase in disposable income is positively related to the level of income. By far the biggest winners are the households at the very top of the income distribution. The gains for these households are also the most persistent. Only the households in the top quintile will have a higher disposable income in 2027 when most of the individual provisions will have sunsetted—or even reversed, as is the case with the households in the two lowest quintiles.

The numbers in Figure 8 do not include the effect of the repeal of the ACA’s individual mandate. In fact, as Table 2 shows, if this is taken into account, the households at the bottom of the distribution will be worse off even in absolute terms in the first years of the implementation of the new law. Table 2 also shows that, like in Figure 2, only households toward the top of the distribution are better off in 2027. Note that this is coming on top of a four-decade-long increase in inequality.

Irrespective of the normative views one might have about income inequality, from a purely macroeconomic point of view this configuration of tax policy diminishes the positive impact stemming from the reduction in taxes. It is well demonstrated that households at the top of the distribution have much higher saving rates compared to the households at the bottom. Therefore, the effect of the tax changes on consumption will be significantly lower compared to a scenario in which the same fiscal resources had been used to increase the disposable income of the quintiles at the bottom of income distribution.

Table 2 Net Changes in Revenue and Outlays Due to Tax Law, by Income (\$ millions)

Income Category	2019	2021	2023	2025	2027
Less than \$10,000	1,530	5,890	7,540	8,790	10,120
\$10,000 to \$20,000	150	8,120	10,700	11,320	16,290
\$20,000 to \$30,000	-1,090	7,910	9,440	11,430	17,100
\$30,000 to \$40,000	-4,770	310	2,490	2,840	7,850
\$40,000 to \$50,000	-6,450	-2,590	-1,240	-590	5,510
\$50,000 to \$75,000	-23,050	-18,760	-14,910	-14,380	4,030
\$75,000 to \$100,000	-22,580	-21,030	-17,090	-17,240	-1,720
\$100,000 to \$200,000	-70,690	-65,880	-50,780	-49,790	-7,600
\$200,000 to \$500,000	-65,650	-62,040	-47,250	-48,140	-6,680
\$500,000 to \$1,000,000	-23,990	-21,800	-14,180	-13,790	-3,300
\$1,000,000 and Over	-36,940	-30,130	-10,160	-9,960	-8,920
Total, All Taxpayers	-253,500	-200,000	-125,440	-119,500	32,690

Note: A decrease in federal deficits, such as an increase in taxes or a decrease in spending, is shown as a positive value. An increase in federal deficits is shown as a negative value.

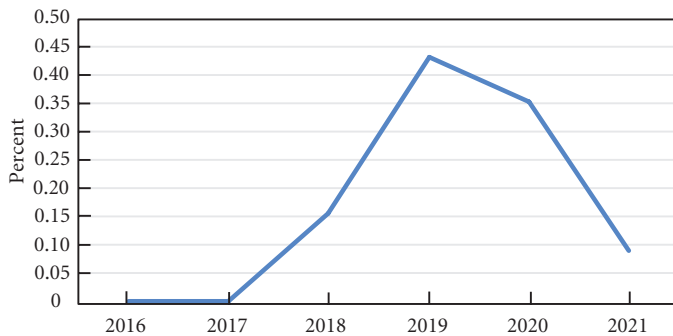
Source: CBO (2017d)

It is also worrisome that several members of Congress have started talking about a reform of “entitlements” in order to reduce the fiscal deficit (which increased with the tax reform and the new budget bill). This will lead to another round of decreases in disposable income for households in the lower income quintiles.

In order to get a better idea about the macroeconomic effects of the tax changes, the first scenario seeks to capture these effects. The simulations are based on CBO calculations of the changes in federal revenues and spending and their distributional decompositions, as presented in Tables 1 and 2. We need to stress that these are obviously crude estimates, since the details of the 500-page bill are still being digested.

The results of these simulations—denoted as scenario 1—are presented in Figures 9 and 10. The first figure presents the growth rate and the second one the balances of the three institutional sectors. Both graphs show the differences compared to the baseline scenario.

Figure 9 Scenario 1: GDP Growth Rate (difference from baseline)



Source: Authors' calculations

In Figure 9 we can see that the boost to the growth rate will be 0.15 percent, 0.43 percent, 0.35 percent, and 0.09 percent in the four years of the projection period, 2018–21. For the period after 2021 (not presented in the figure) the growth effect is close to zero or even slightly negative, since a small portion of the spending cuts kick in after 2021. In total, the tax changes generate a cumulative increase of around 1 percent of GDP compared to the baseline.

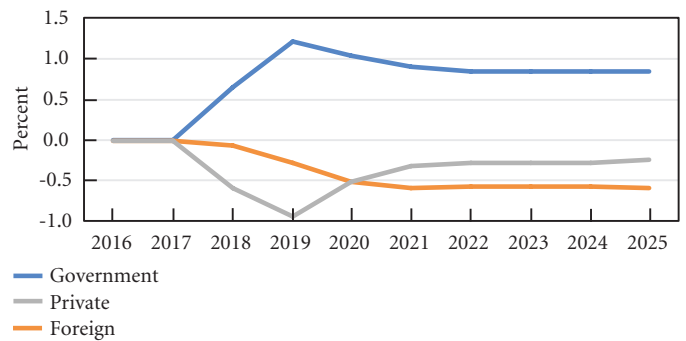
Figure 10 shows that this is associated with a medium-run increase in the government deficit of around 0.9 percent of GDP (in 2019 the increase is around 1.2 percent). On the other hand, the private sector balance improves by 0.3 percent in the medium run (mirroring the government deficit, the improvement is larger in the short run—around 0.95 percent in 2019). Finally, the current account deficit increases monotonically by around 0.6 percent in the medium run.

A Public Infrastructure Plan

One of main takeaways of the discussion in the previous section was that the increase in the government deficit due to the new tax bill is inefficient, in the sense that other policies of the same “fiscal size” could have a bigger macroeconomic impact. In particular, we mentioned that if the individual tax provisions resulted in a more equitable income distribution, the macroeconomic outcome would be better. Another alternative would be for the increase in the government deficit to be geared toward a large public infrastructure plan.

The quality of American public infrastructure has been deteriorating over the last several decades. According to the

Figure 10 Scenario 1: Main Sector Balances, Actual and Projected, 2005–21 (difference from baseline)



Source: BEA; Authors' calculations

latest results from the American Society of Civil Engineers, US infrastructure scores a D+: a D for aviation, a D+ for public parks, a B for rail, a D for roads, a D+ for schools, a C+ for solid waste, a D- for transit, and a D+ for wastewater.⁴

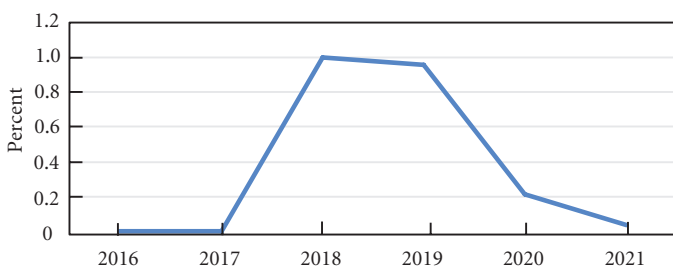
Thus, a big public infrastructure project would have a triple positive effect. First, it would have a direct impact on the quality of life by improving public infrastructure. Second, it would have a direct positive macroeconomic effect due to the increase in public expenditure and the related increase in demand. Finally, it would have indirect positive effects because it could improve productivity and the competitiveness of the US economy. In the long run, this is a most promising way to deal with the trade deficit. In previous Strategic Analyses (e.g., Papadimitriou et al. 2013), we have repeatedly made this claim and simulated the potential effect of such a plan.

A large-scale public infrastructure plan—\$1.5 trillion over ten years—was also one of the main electoral promises of President Trump. Unfortunately, so far very little has been done toward that end. The President recently announced that he is willing to commit \$200 billion over ten years, with the remaining \$1.3 trillion to be contributed by the private sector and local and state governments. However, it is hard to see how the cash-strapped local and state governments can play a significant role, or how the private sector will leverage the \$200 billion into \$1.5 trillion. In fact, at the same time that these vague plans are discussed, the 2018 budget and the recently proposed 2019 budget involve some significant cuts for the government departments related to infrastructure (e.g., funding for the Department of Transportation or the Highway Trust Fund).

An obvious question to ask is what would happen if, instead of the tax changes, Congress adopted a bill with the same price tag to improve public infrastructure. Scenario 2 simulates this idea. The results will not only tell us how much more (or less) efficiently the deficit due to the tax changes could be used, but also what would happen if Congress managed to pass such a bill. An important difference in our simulation as compared to the President’s various proposals is that we assume the plan will be carried out by the government and will involve an increase in federal spending of that size (\$1.5 trillion). As we mentioned above, it is hard to see how the private sector and local and state governments will manage to leverage \$200 billion into \$1.5 trillion. In another variation that was discussed last year, the President proposed a scheme to subsidize the private sector to carry out the infrastructure investment. We believe that the effects of such a plan would also be much weaker compared to direct public spending, since many of the projects involved would be carried out in any case.

The results of our simulations for scenario 2 are presented in Figures 11 and 12. The first figure presents the growth effect and the second one the financial balances of the private, government, and external sectors. Both graphs show the differences compared to the baseline scenario, as in Figures 9 and 10 above. For reasons of comparison with the simulations of scenario 1, the increase in public infrastructure spending is timed according to the ex ante increase in the government deficit in scenario 1. In other words, it is presumed that government investment increases by the same amount each year as the CBO’s calculations of the cost of the tax changes for that year (bottom line of Table 1).

Figure 11 Scenario 2: GDP Growth Rate (difference from baseline)



Source: Authors’ calculations

Figure 11 shows that the increase in the growth rate compared to the baseline will be 1 percent, 0.95 percent, 0.21 percent, and 0.03 percent in the four years of the projection period, 2018–21. For the period after 2021, the growth effect is close to zero. In total, there is a cumulative increase of around 2.2 percent of GDP. This is more than double the effect of the tax cuts in scenario 1.

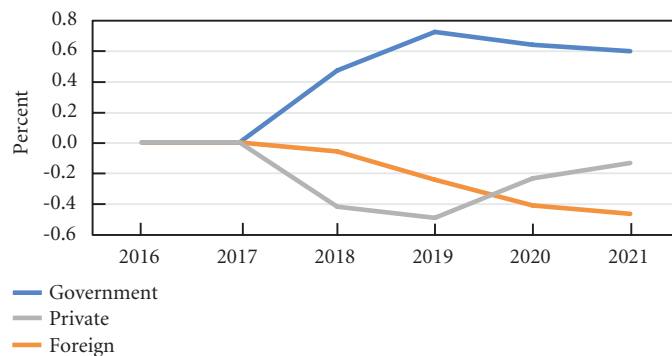
The higher growth of GDP also means that scenario 2 is associated with a smaller ex post increase in the government deficit. Figure 12 shows that in the medium run the government deficit increases around 0.6 percent of GDP. On the other hand, the private sector balance improves by 0.14 percent and the current account deficit increases monotonically by the remaining 0.44 percent in the medium run.

Note that these simulations take into account only the direct demand effects and therefore underestimate the real effects of such a plan. To the extent that the improved infrastructure will raise productivity, a large-scale infrastructure plan could have permanent growth effects (as opposed to the level effects shown here), and also lead to a substantial improvement of the US trade deficit.

The Bipartisan Budget Act and the Omnibus Bill of 2018

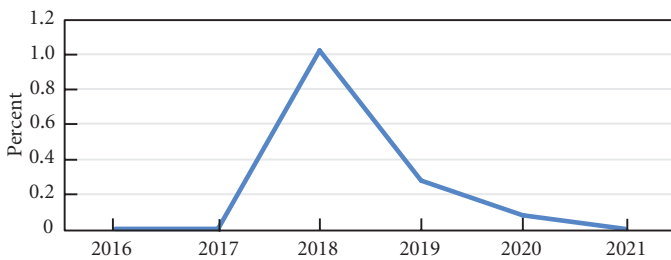
From a fiscal point of view, two important recent pieces of legislation are the Bipartisan Budget Act of 2018, agreed upon and signed into law in early February, and the Consolidated Appropriations Act, 2018, an omnibus spending bill for the

Figure 12 Scenario 2: Main Sector Balances, Actual and Projected, 2005–21 (difference from baseline)



Source: BEA; Authors’ calculations

Figure 13 Scenario 3: GDP Growth Rate (difference from baseline)



Source: Authors' calculations

federal government that was agreed upon in Congress and signed into law by the President on March 23.

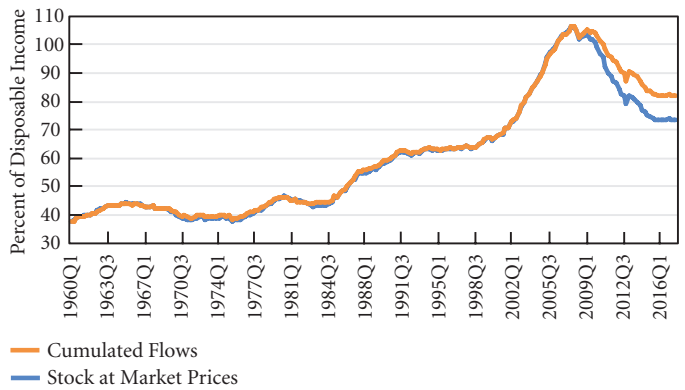
The first of these bills raised the caps on discretionary spending—caps imposed by the 2011 Budget Control Act (BCA) and its amendments—for the 2018 and 2019 fiscal years by \$143 billion and \$153 billion, respectively. More precisely, for FY2018 the defense discretionary spending cap is increased by \$80 billion and the nondefense cap by \$63 billion. The same numbers for FY2019 are \$85 billion for defense and \$63 billion for nondefense. The omnibus bill, a mammoth bill of 2,232 pages, provides funding for the federal government at these levels for the rest of FY2018.

This is a significant reversal in the fiscal stance of the federal government, which, under the provisions of the BCA and its amendments, has had a generally negative contribution to the recovery, as we saw in Figure 2.⁵

The CBO's *Budget and Economic Outlook* (2017b), which we used to construct our baseline scenario, was based on the BCA provisions. We can thus evaluate the impact of this increase in federal spending compared to the baseline in a similar way as in scenario 2. In a new scenario—scenario 3—we assume that government spending will increase by \$143 billion and \$153 billion in FY2018 and FY2019, respectively. We also assume that this increase of \$153 billion compared to the baseline will persist for the rest of projection period (that is, in 2020 and 2021).

The effect on growth is presented in Figure 13. The boost to growth in 2018 is around 1 percent. This is similar to scenario 2, since the increase in federal spending for that year is close to the tax bill's impact on the deficit. The impact for the remaining portion of the projection period is significantly

Figure 14 Household Mortgages



Source: BEA Integrated Macroeconomic Accounts

smaller, 0.3 percent in 2019, less than 0.1 percent in 2020, and nil in 2021. At the same time, this increase in spending will lead to a medium-run increase in the deficit of around 0.4 percent compared to the baseline.

Overall, the two recent budget bills, taken together with the changes in taxation, will have an important impact on the US economy's growth rate in the next two years: according to our calculations, the combined fiscal policy changes will increase the growth rate by a total of around 2 percent over those two years (1.15 percent in 2018 and 0.8 percent in 2019).

Private Sector Balance Sheets and Financial Markets

The last Strategic Analysis (Nikiforos and Zezza 2017) noted that several indicators related to financial markets were pointing to the formation of a new bubble, such as an increase in asset prices much faster than the increase in income needed to service the liabilities incurred to buy these assets. During 2017, the already highlighted trends continued or accelerated.

Household mortgage debt, relative to disposable income, has continued to decline to more sustainable levels. In Figure 14, we report the stock of household mortgages relative to disposable income. The stock at current market prices has stabilized at around 74 percent of disposable income, below its 2007 peak but well above its historical value. An increase in interest rates will thus lead to a significant increase in the mortgage debt burden, although its effect will be much lower compared to 2006.

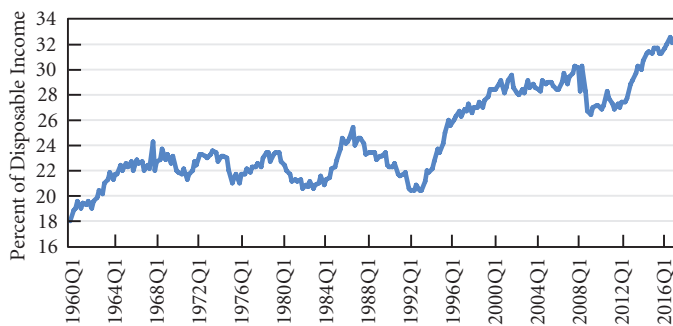
In Figure 14, we also report an alternative measure of the stock of mortgages, obtained by cumulating net flows: the difference between the two measures is an indirect estimate of the value of mortgages on which households defaulted. At its peak, in the second quarter of 2017, the loss for creditors was estimated at \$1.2 trillion, or 10 percent of the total stock of mortgages. The number of mortgage defaults started to decline in 2017Q3, the last quarter for which we have data.

On the other hand, the household sector is increasing its shorter-term debt (Figure 15) and, more importantly, non-financial corporations have reached an indebtedness level close to the peak of 2008, at 45.2 percent of GDP (Figure 16). Figure 16 reports the market value of the stock of the corporate equities of the nonfinancial sector, which, at 132 percent of GDP, have greatly exceeded the level reached before the 2007–09 recession, albeit still lower than the peak reached at the top of the dot-com bubble in 2000.

The data in Figure 16 show that firms’ funding relies less on bank loans and more on corporate bonds, with a growing role for the so-called “shadow” banking sector, which is further discussed below. Equities have grown rapidly in market value, but they have not played any role in funding. On the contrary, since the beginning of 2010, the net flow of corporate equities has been consistently negative, with the sector as a whole reducing the stock of equities by about 10 percent in 2016 (or \$2.3 trillion!) and a further \$1.1 trillion in the first three quarters of 2017. The data are consistent with companies adopting a strategy of buying back their own shares—from the household and the foreign sector—in order to keep the market price from falling. As discussed above, the recent tax cuts will likely accelerate this phenomenon in 2018.⁶

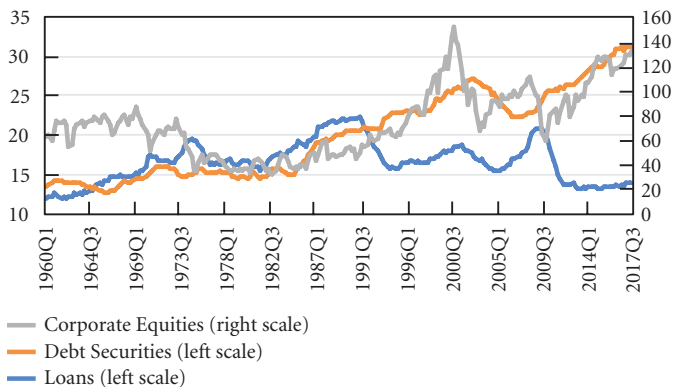
The indicators of stock market exuberance reported in the last Strategic Analysis have all accelerated during 2017. Figure 17 shows that stock market capitalization, as measured by the Wilshire 5000 Index scaled by either GDP or net operating surplus, has reached an all-time high—above its late-1990s level—with an increase of 16 percent in the fourth quarter of 2017 against the same quarter of 2016. At the same time, as Figure 18 shows, the cyclically adjusted price–earnings (CAPE) ratio is now 16 percent higher than a year ago, and 39 percent higher than in February 2016. Over the last 12 months, the CAPE ratio climbed above its October 1929 level, and it is surpassed only by its late-1990s level.

Figure 15 Households Short-Term Loans



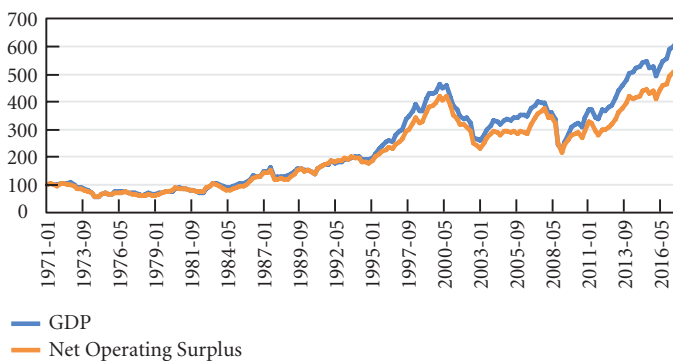
Source: BEA Integrated Macroeconomic Accounts

Figure 16 Liabilities of Nonfinancial Corporations (percent of GDP)



Source: BEA Integrated Macroeconomic Accounts

Figure 17 Ratio of Market Capitalization to GDP and Net Operating Surplus, 1971Q1–2017Q1 (1971Q1=100)



Note: The index is calculated as the ratio of end-of-period Wilshire 5000 index to GDP and net operating surplus, respectively.

Source: BEA; Wilshire Associates; Authors’ calculations

Figure 18 Shiller Cyclically Adjusted Price–Earnings Ratio P/E 10, 1881–2018



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

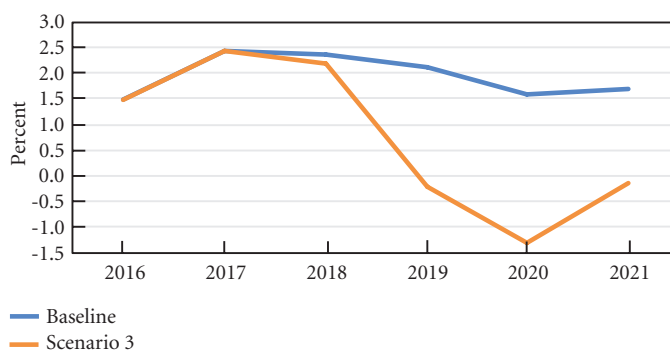
A correction in the price of financial assets must therefore be expected, sooner or later, and given that corporate equities are 22 percent of household wealth, a stock market crash would have a considerable impact. On the other hand, given the increased concentration in income and wealth, the immediate consequences of a stock market crash should mainly affect the top income decile. What is more worrisome is the indirect effect, that is, the possible propagation of a financial shock to the whole financial sector.

A factor that might contribute to that transmission is the growing size of the shadow banking sector. Examining the balance sheets of the different components of the financial sector shows the increasing relevance of nonbanks, from insurance companies and pension funds to mutual funds and the like. The lack of regulation is allowing the shadow banking sector to increase in size and scope.⁷ For instance, flow of funds data show that in 2016, mutual funds held debt securities worth 22 percent of GDP, up from 5.5 percent in 1990, and that the interconnectedness between domestic and foreign institutions has been growing, so that a financial shock arising in, say, China is now more likely to generate an unpredictable chain of consequences for the domestic financial sector.

Against this background, scenario 4 updates the 2017 projection; it assumes that the stock market falls in 2018Q3, 2018Q4, and 2019Q1 and then increases slightly for the rest for the projection period. More precisely, the S&P 500 Index falls to around 1800 by 2019Q2. This is a conservative change—at its trough in March 2009, the index fell to 676 points.

Moreover, it assumes that the fall in the stock market induces a second round of deleveraging, lasting from the end

Figure 19 Scenario 4: GDP Growth Rate (difference from baseline)



Source: BEA; Authors' calculations

of 2018 until the end of the projection period. The debt-to-income ratios of households and firms fall to their early-2000s levels by 2021. This was already an elevated level by historical standards.

The simulation results are presented in Figure 19. The fall in the stock market and the deleveraging of the private sector lead to a drop in the growth rate to slightly below zero in 2019, -1.3 percent in 2020, and again slightly below zero in 2021. Obviously, the real effects of a financial crisis like this will depend on the magnitude of the change in the stock market as well as on the changes in spending and the intensity of the deleveraging of the private sector. In such a case, the assumptions made here might very well prove to be conservative. These simulations also do not consider the effects of such a crisis on US trading partners and the feedback effects that this will have for the US economy.

Concluding Remarks

The US economy is about to enter the tenth straight year of economic recovery with the unemployment rate the lowest of the last 18 years. At the same time, despite the seeming determination of the Fed to increase the policy interest rate, inflation pressures are weak: according to the latest data, the core inflation rate excluding housing was only 0.9 percent in the 12 months between February 2017 and February 2018. The low inflation rate underscores the sluggish recovery of output and employment. As explained above, this has been the slowest recovery in the postwar history of the US economy. According to the baseline simulations, the US economy will continue to

grow along the “secular stagnation” path it has followed for the last nine years.

Two recent major political and economic events were the passage of the new tax law in December and the final passage of the budget for the current fiscal year. According to its proponents, the tax changes will lead to a leap in the rate of growth of the US economy. Not only will the tax changes not create any significant increase in investment, their positive impact on consumption will be mediocre because the changes favor high-income households. The simulations show that their overall impact, albeit positive, will be relatively small.

The Levy Institute model shows that the positive impact on growth would be much greater if the same increase in the deficit had been used toward a large public infrastructure plan instead. Such a plan would improve the quality of life for people around the country, increase aggregate demand, and could lead to productivity gains that would have permanent growth effects and make the US economy more competitive.

While the boost to aggregate demand we project for the following two years will be provided in part by the increase in government spending that was authorized in the recent Bipartisan Budget Act and the omnibus bill, the bills do not have any provisions about infrastructure spending. However, they do end an almost eight-year fiscal consolidation that started with the Budget Control Act of 2011.

Finally, it is increasingly likely that the recovery will be derailed by a crisis that will originate in the financial sector. By all metrics, the stock market is now at or close to its highest level in history. There is no convincing reason why this should be the case, or why this accelerated rise in equity prices should be different from the past. The model simulations show that a crisis in the stock market accompanied by deleveraging of the private sector could send the US growth rate into negative territory. Another related worrisome development is the increasing size of the unregulated shadow banking sector, which could exacerbate the consequences of a correction in the stock market or transmit shocks originating abroad.

The situation of the US economy is in a way reminiscent of the early 2000s, and that goes beyond the efforts of both Presidents Bush and Trump to impose tariffs. The tax cuts of 2001 and 2003, together with the increase in fiscal spending due to the wars in Afghanistan and Iraq, gave a significant boost to the US economy. Important as this may have been, it did not avert the meltdown of 2007, because the main structural

problems of the US economy persisted and eventually fiscal orthodoxy prevailed as government budgets tightened in the run-up to the crisis. These structural problems are still here and will eventually come home to roost.

Notes

1. The E–P ratio for workers with less than a high school diploma is also much lower compared to the ratio for workers with a high school diploma or university degree: in February 2018, they were 44 percent, 55 percent, and 72 percent, respectively.
2. For a discussion of these trends see, among others, Lazonick (2014, 2015).
3. In a more recent paper using a different methodology, Brennan (2014) criticizes the estimates of Dharmapala, Foley, and Forbes (2011). According to Brennan’s calculations, most of the repatriated funds were used for purposes that were permitted by the law (e.g., cash acquisitions, debt reductions). However, Brennan also finds a very small impact on investment or R&D expenditure (around \$0.10 for every repatriated \$1).
4. More details on the report can be found at <https://www.infrastructurereportcard.org/>. One could object that some perverse incentives might be involved in this kind of grading. However, most people, based on their everyday experiences, would likely assign similar scores.
5. Part of the decrease in government spending in Figure 2 is also related to local and state governments, which does not change with the recent bills.
6. The first available evidence seems to confirm this view (e.g., Phillips 2018).
7. A recent report by the Financial Stability Board (2018) stresses the growing relevance of the shadow banking sector at a global level. In another recent report, Wray (2018, 9) writes that a new Minsky moment is likely to “begin in the US financial sector, most likely off the balance sheets of the biggest banks.”

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