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Strategic Analysis

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THE PANDEMIC, THE STIMULUS, AND THE FUTURE PROSPECTS FOR THE US ECONOMY

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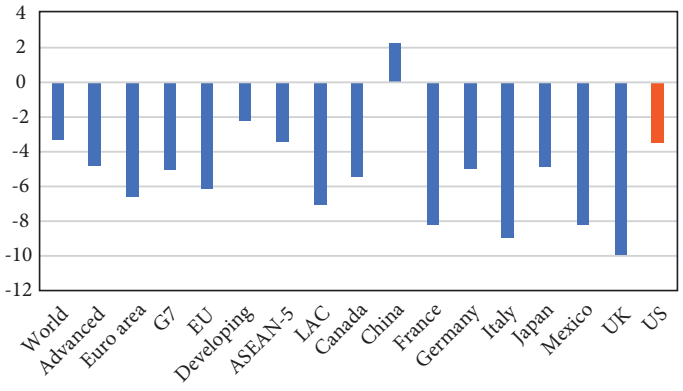
Introduction

The year 2020 was marked by the pandemic shock to the US economy and practically every other economy around the world. The shock and its implications—especially the lockdowns that were imposed—led to sharp reductions in economic activity. After the longest recovery in its history, which started in June 2009, the US economy fell into recession in February 2020. Real GDP in 2020 declined by 3.4 percent, from a growth rate of 2.2 percent in the previous year.

The decline in the growth rate was relatively small compared to most other economies around the world. As Figure 1 shows, the decline in US output was comparable to the global average, but significantly smaller than the average decline among the advanced economies (–4.7 percent) and

Figure 1 2020 Real GDP Growth Rate for Selected Countries and Groups of Countries (percent)



Source: IMF (2021)

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the euro area (–6.6 percent), as well as those for Japan (–4.8 percent) and neighboring Canada (–5.4 percent) and Mexico (–8.23 percent). As the figure shows, it was only China that managed to escape a negative growth rate, due to its relatively successful management of the pandemic—their economy returned from a severe decline in output in the first months of 2020 to eventually record a positive growth rate of 2.3 percent.

The *relative* success of the US economy compared to its neighbors and the other advanced economies is related to several factors and structural characteristics. However, the most important reason for the relative resilience of the US economy, despite the pandemic's increasing severity over the year, was the extraordinary fiscal response.

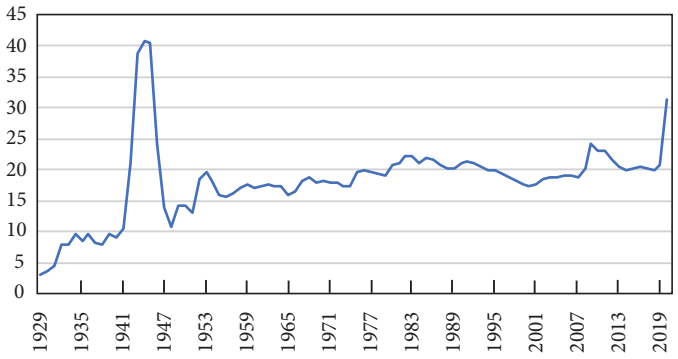
Figure 2 shows that as a result of automatic stabilizers and discretionary spending decisions, federal net outlays for 2020 reached 31 percent of GDP, up from 20 percent in 2019. This is significantly above any other postwar—or for that matter prewar—year. In 2009, the previous postwar peak, federal outlays reached 24 percent of GDP. Figure 2 also shows that federal outlays for 2020 were closer to their level during World War II mobilization than their average level in recent decades (around 20 percent of GDP). In the years 1943–45, federal outlays were 39, 41, and 41 percent of GDP, respectively.

A similar observation can be made if we look at the government deficit in Figure 3. In 2020, it reached 15.6 percent of GDP. Historically, the highest level of government deficit was recorded in 1944, when it slightly surpassed 25 percent.

As one would expect, the increase in the government deficit was mirrored by a large increase in the net lending of the private sector, which reached 12.6 percent of GDP. At the same time, the current account deficit also increased to 3 percent of GDP. Both of these developments are important. As we will discuss in more detail below, the fiscal stimulus and the corresponding increase in private sector net lending allowed the household sector to move through 2020 without an increase in its debt-to-income ratio, despite the recession. This was not the case with the corporate sector, which increased its liabilities at an accelerated pace. At the same time, the stock market is more overvalued than ever (or close to it) relative to any "fundamentals," while the trade deficit increased rapidly. Finally, the increase in the current account deficit is a prelude to the pressures on the trade deficit expected in the coming years as a result of the differential growth rates between the United States and its trading partners.

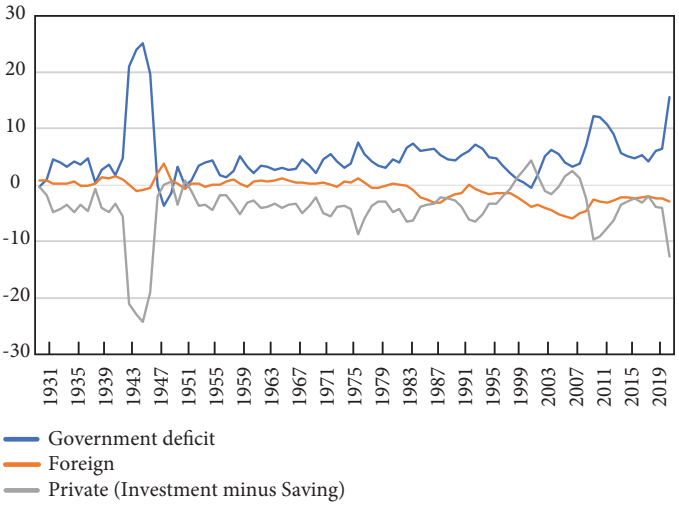
In this report, we discuss the consequences of last year's developments for the United States and analyze its medium-run economic prospects. We examine how close to full employment or full capacity the US economy was before the crisis. We show that the employment-to-population ratio of skilled workers decreased over the previous recovery (measured either peak-to-peak or trough-to-peak). Also, different measures of capacity utilization published by the Federal Reserve and the US Census Bureau point to the reduction of utilization over the last decades.

Figure 2 Federal Net Outlays, 1929–2020 (percent of GDP)



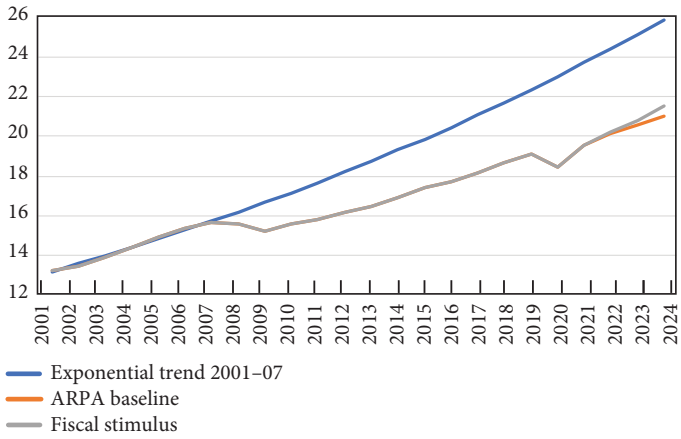
Source: FRED, Federal Reserve Bank of St. Louis

Figure 3 Financial Balances, 1929–2020 (percent of GDP)



Source: BEA

Figure 4 Real GDP: Trend and Two Scenarios ($ trillion)



Source: BEA; authors' calculations

Figure 5 Household Sector, Debt-to-Disposable-Income Ratio, 2000–20

Source: Federal Reserve

In turn, we examine possible future paths for the US economy using the Levy Institute's macroeconometric model. Due to the recent American Rescue Plan Act (ARPA), our projections point to a significant increase in the growth rate in 2021 and, to a lesser extent, in 2022 (as the related increase in expenditure is concentrated in 2021). Also, as in numerous previous analyses, our model shows that a large-scale infrastructure plan or one that contributes to education and childcare—like those now under discussion in Washington—will have significant positive macroeconomic effects, even if they are offset by an increase in the taxation of high-income households.

One reason for concern is that the current account deficit is likely to widen. In this case, if the government tightens its budget in the future, as it most likely will, US economic growth will once again become dependent on the private sector becoming a net borrower.

In the concluding section of the report, we discuss in detail the likelihood of a significant increase in inflation due to the "overheating" of the US economy. We argue that the chances are small. First, the economy was not close to full employment even before the pandemic. Second, because of the US economy's present structural configuration, the mechanisms that can propagate an acceleration in inflation are weak. In the near future, the US economy might experience higher inflation rates, but this will mostly be due to "base effects," as prices return to their normal trajectory after the pandemic, or because of bottlenecks in the global value chains, such as the recent shortage in semiconductors.

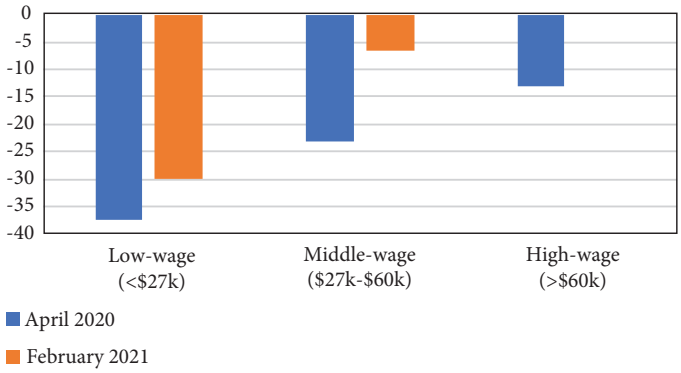
In order to put the rest of the discussion in some perspective, Figure 4 presents the exponential trend of real GDP for the period 2001–7. That was the second slowest recovery in the postwar period—had we calculated the trend over a more extended period, the trend line would lie above the one shown in Figure 4. The figure also presents two scenarios we have simulated: the baseline scenario, which includes the positive effects of the ARPA, and another scenario that adds a deficit-financed fiscal stimulus comparable in size to the proposed infrastructure plan. As we can see, in 2019, before the pandemic, real GDP was below the 2001–7 trend by 15 percent. In 2024, even under the stimulus scenario, it will be 17 percent below that trend. This stark divergence emphasizes the need to change the approach to economic policy that dominated during the previous cycle.

Pandemic Effects

Households

As mentioned above, the fiscal stimulus of 2020 allowed the household sector *as a whole* to move through the crisis without increasing its indebtedness relative to disposable income. Figure 5 shows that, if anything, government transfers led to a decrease in the household-debt-to-income ratio in the second and third quarters of 2020. As a result, the end of 2020 finds household indebtedness (relative to income) at the same level it reached at the turn of the millennium: still elevated by historical standards, but significantly below its 2008 peak.

Figure 6 Percent Change in Employment Rates of Different Worker Groups Relative to Their Pre-pandemic Level



Source: Opportunity Insights

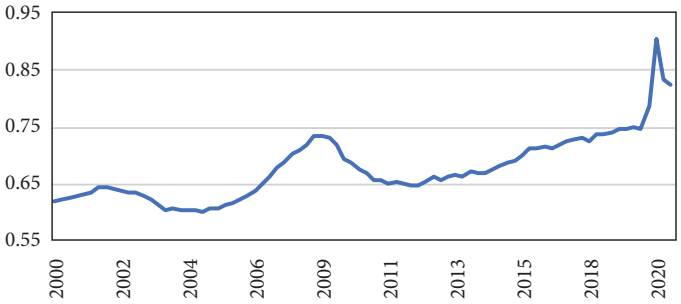
However, below the surface there is significant heterogeneity. The pandemic shock hit the low-productivity/low-wage sectors of the economy harder, and consequently employment decreased more and has recovered more slowly for low-wage workers (Nassif Pires et al. 2020; Taylor 2020). Figure 6 shows that at the trough of the pandemic, in April 2020, the employment rate of low-wage workers had fallen the most and it has barely recovered since: as of February 2021, it was still 30 percent below its pre-pandemic level. On the other hand, the employment rate of high-wage workers fell much less and has completely recovered.

These disparities were also reflected on household balance sheets. Data from the Distributional Financial Accounts of the Federal Reserve show that middle-class households—households between the 20th and 80th percentile of the distribution—decreased their liabilities during 2020. On the other hand, households in the bottom quintile—roughly corresponding to the low-wage households of Figure 5—saw an increase in their liabilities after almost a decade of deleveraging.

Firms

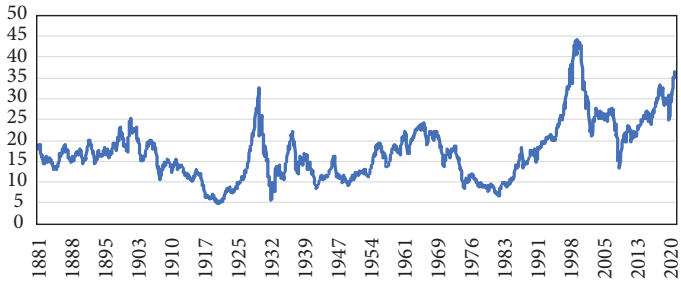
The picture is different when it comes to firms. Figure 7 shows that the pandemic crisis led to an increase in corporate liabilities of 9 percentage points of GDP. This is the single biggest one-year change in the period for which we have data (since 1960), and comes on top of an already elevated ratio of indebtedness for the US corporate sector. The spike in the debt-to-GDP ratio is not only due to the drop in GDP, but also because of a very significant rise in the corporate sector's stock of debt.

Figure 7 Ratio of Nonfinancial Corporate Business Liabilities to GDP, 2000–20



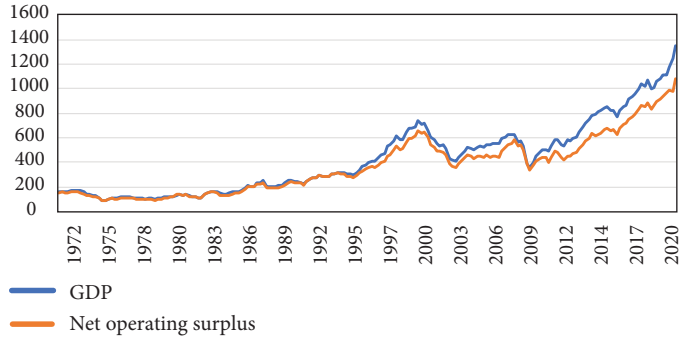
Source: Federal Reserve; BEA

Figure 8 Shiller Cyclically Adjusted Price-to-Earnings Ratio (1881 – April, 2021)



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

Figure 9 Ratio of Market Capitalization to GDP and Net Operating Surplus, 1971Q1–2020Q4 (1971Q1=100)



Source: BEA; Wilshire Associates; authors' calculations

The stock market

The year 2020 confirmed the decoupling of stock market prices from underlying fundamental economic conditions. Despite the crisis, the S&P 500 index increased by 30 percent between the beginning of February 2020, when the recession started, and the end of April 2021. Figure 8 presents the cyclically adjusted price-to-earnings ratio proposed by Robert Shiller. As of April 2021, the ratio was 4 points above its 1929 level and lagged behind only its late 1990s level.

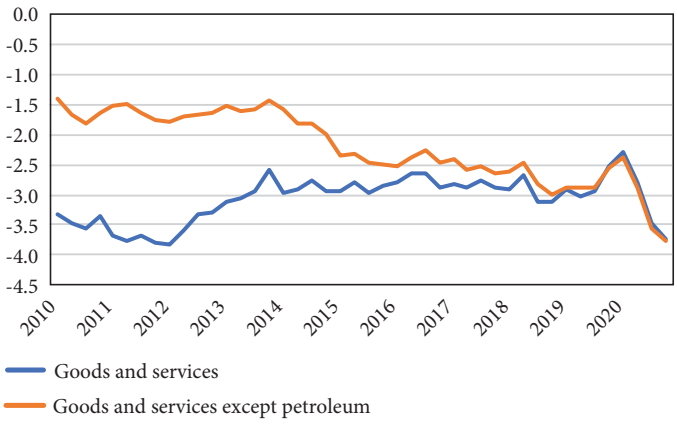
Figure 9 presents two alternative measures of market capitalization. The first one is the total market capitalization divided by GDP, and the second the total market capitalization divided by net operating surplus. The basic idea behind the distinction is that the increase in the share of profits over the last decades would justify (all other things equal) an increase in stock market prices. According to these two measures (available since 1971), the stock market valuation is now twice as high as it was at the turn of the millennium during the dot-com bubble.

Trade balance

In previous reports (e.g., Papadimitriou et al. 2015, 2016), we had pointed out that the last few years were marked by an increase in the trade deficit excluding petroleum that had been mitigated by a decrease in the trade deficit of petroleum products. As a result, the overall deficit remained relatively stable. This process is depicted in Figure 10.

Since 2019, the trade balance of petroleum products has converged to zero, so the two trade balances (overall and that without petroleum products) are at the same level. In 2020, there was a significant increase in the trade deficit, which approached 4 percent of GDP by the end of the year. This increase can be explained by the fact that, as discussed in the introduction, the US economy was affected less than most of its trading partners were by the crisis. According to the latest Census Bureau data, the trade deficit continued in the first months of 2021. Given the current fiscal expansionary plans of the US government, this deficit is bound to increase in the coming years.

Figure 10 Trade Balance (percent of GDP)



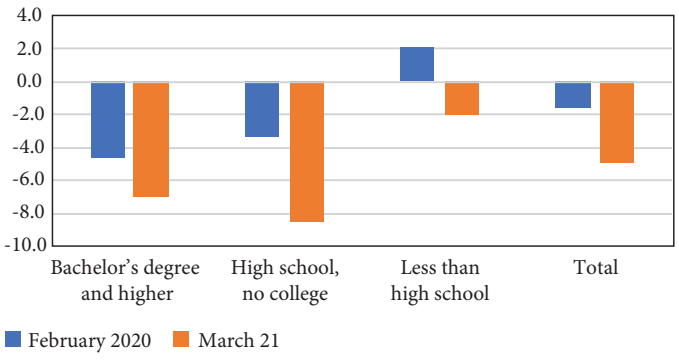
Source: BEA

How Close to Full Capacity Is the US Economy?

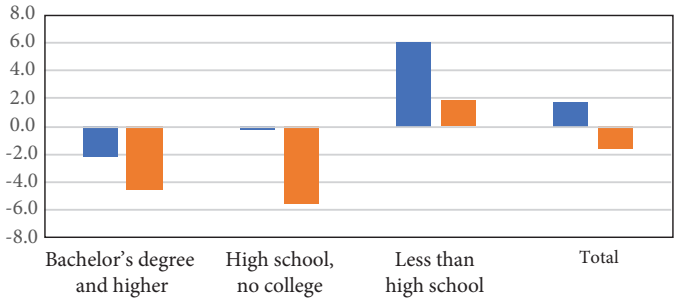
Given the US government's aggressive fiscal plans, one of the most important questions in the current macroeconomic policy debate is how close to full capacity the US economy is operating. Critics of the ARPA and the infrastructure plan

Figure 11 Change in Employment-to-Population Ratios by Educational Attainment, Ages 25 and Over

(a) Relative to December 2007



(b) Relative to June 2009



Source: FRED, Federal Reserve Bank of St. Louis

that is now contemplated—such as Larry Summers (2021) and Olivier Blanchard (2021)—argue that the US economy is not too far from its potential, and therefore such a large stimulus to demand will eventually be inflationary.

The underlying assumption behind this critique is that every economy tends to operate at full capacity—or at some nonaccelerating inflation level of capacity—in the medium run. If this is the case, then before the pandemic shock the US economy should have been close to that full capacity level after ten years of economic recovery. Hence, since the US economy managed to contain the decline of real output in 2020, an additional aggressive fiscal stimulus in 2021 is at best unnecessary and at worst potentially dangerous.

Although full capacity is an elusive concept, there are several reasons to believe that the US economy is now, and also was before the crisis, significantly below that level. One way to think about it is through the employment-to-population (E–P) ratio. Figures 11a and 11b present changes in the E–P ratios for different levels of educational attainment. Figure 11a presents the changes relative to the peak of the previous cycle in December 2007, while Figure 11b shows the changes relative to the trough of the cycle in June 2009. Each of the graphs presents the change from their respective starting points until just before the pandemic shock in February 2020 and until the latest available period in March 2021.

What becomes clear from these graphs is that, even before the pandemic shock, it was only the E–P ratio of workers with less than a high school diploma that had recovered. For workers with a bachelor's degree or higher, the E–P ratio was 4.6 percent and 2.2 percent below its December 2007 and June 2009 levels, respectively. The situation for workers with a high school diploma was slightly better, but they also had not reached their previous employment levels. In February 2020, their E–P ratio was 3.3 percent and 0.3 percent below its December 2007 and June 2009 levels, respectively. Obviously, as of March 2021 these changes are even more negative, given the recession of the months in between. In other words, whatever employment recovery took place in the almost 11-year upswing of 2009–20 affected only unskilled workers. The E–P ratios of skilled labor (with high school and especially bachelor's degrees) never recovered. This is a strong indication that on the eve of the pandemic the US economy functioned well below its potential. It is unlikely that any future recovery will be constrained by the availability of unskilled labor.

This seems to be one of the main reasons why wage inflation never picked up in the years leading up to the pandemic, despite the unemployment rate being at its lowest level in the last five decades. Many critiques were also warning that the US economy was "overheating" in 2016 and 2017. Clearly this was not the case then, for the same reasons we can assume that this is not the case now.

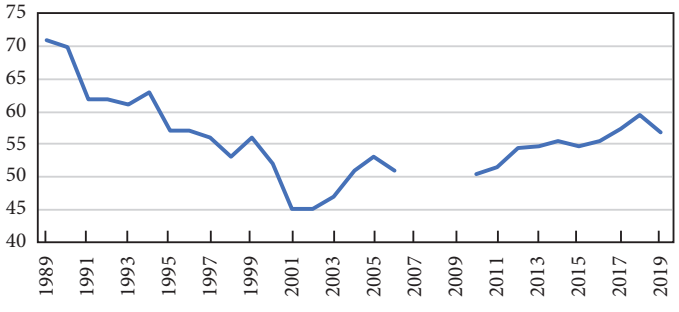
Another measure of proximity to full capacity is the rate of capacity utilization. A commonly used measure of capacity utilization is the one published by the Federal Reserve and presented in Figure 12a. It is clear in this figure that in the last two economic recoveries the rate of utilization has been lower compared to previous periods. In February 2020, after almost 11 years of recovery, the rate of capacity utilization was 77 percent, while the maximum value it attained during the 2009–19 period was 79 percent. As Figure 12a shows, the peak value for the rate of utilization in the 1960s and 1970s was close to 89 percent, while in the 1990s it approached 85 percent. Thus, the

Figure 12 **Measures of Capacity Utilization (percent of capacity)**

(a) Federal Reserve Measure

Source: Federal Reserve

(b) National Emergency Rate



Source: US Census Bureau

Federal Reserve measure shows that capacity has been underutilized in the last two decades.

As is explained in more detail in Nikiforos (2016, 2021), the Federal Reserve Board's measure of utilization is primarily intended to be a cyclical one and therefore underestimates long-run changes in capacity utilization. The main reason for this underestimation is that the measure of capacity used for its construction is subjective and tends to change in response to changes in actual output.

Another measure that is more suitable for our purposes is the National Emergency Utilization Rate (NEUR) published by the US Census Bureau and presented in Figure 12b. As its name suggests, the NEUR uses a "national emergency" measure of capacity, which is by definition less subjective than the measure used by the Federal Reserve Board. Figure 12b shows that over the period 1989–2019—both peak-cycle years—there was a significant decrease in the rate of utilization. More precisely, in 2019 the rate of utilization was more than 14 percent below its 1989 level.

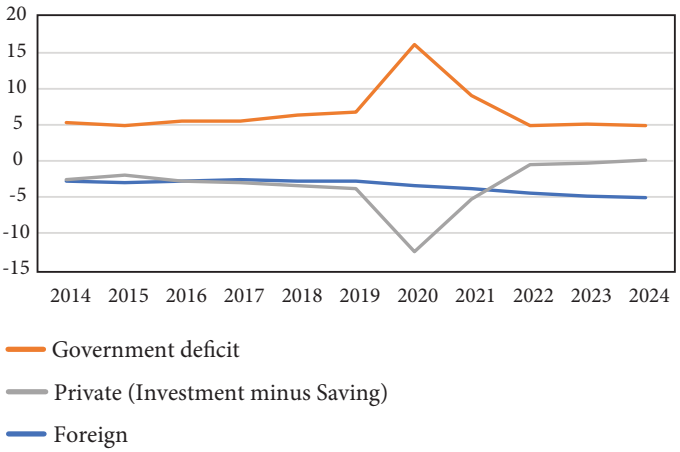
Overall, the measures of employment and capacity utilization that were presented here point to a significant degree of slack in the US economy. As a result, worries that the economy is close to full capacity and will not be able to accommodate the demand generated by the ARPA and the proposed infrastructure plan seem premature.

Table 1 CBO Baseline Projections, 2021–24

Year	Deficit	Outlays	Revenues	Growth Rate
2020	14.9	31.2	16.3	-3.5
2021	10.3	26.2	15.9	4.6
2022	4.6	21.9	17.3	2.9
2023	4.0	21.5	17.5	2.2
2024	3.6	20.9	17.3	2.3

Note: Deficit, outlays, and revenues as percentage of GDP

Figure 13 Baseline Scenario : Main Sector Balances, Actual and Projected, 2014–24 (percent of GDP)



Source: BEA; authors' calculations

Congressional Budget Office's Baseline Scenario

It is a common practice in our reports to build a baseline scenario around the Congressional Budget Office's (CBO) forecasts for the growth rate and the federal government's fiscal stance (published in the CBO's annual *Budget and Economic Outlook*). More precisely, the question we are asking is: What would the private sector's behavior have to be for the CBO's projections to materialize, given the US economy's structural configuration?

For our simulations, we make assumptions that are as "neutral" as possible: US trading partners have the growth and inflation rates projected by the International Monetary Fund (IMF). Equity and real estate market prices are assumed to increase mildly by 2 percent annually. The effective federal funds rate is assumed to grow according to the Federal Open Market Committee's median projection. Finally, during the projection period the household sector's debt-to-disposable-income ratio 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 post-2008 trend.

The projections for the next four years from the CBO's February 2021 *Budget and Economic Outlook 2021–2031* are summarized in Table 1. As can be seen, the CBO is projecting the federal deficit will decrease to 10.3 percent of GDP this year, and then further decrease to around 4 percent in the years after that—below its pre-pandemic level. At the same time, the CBO is projecting a jump in the growth rate to 4.6 percent this year, and then a convergence of the growth rate to slightly above 2 percent by 2024.

The results of our simulations are presented in Figure 13. The balance of the overall government broadly follows the CBO projections—assuming that the local and state government deficit will increase to around 1 percent of GDP.[1] At the same time, because of the growth differential between the US

economy and many of its trading partners, the current account deficit is expected to increase and reach 5.1 percent of GDP by the end of the projection period. The result of the decrease in the government deficit and the increase in the current account deficit is that the private sector's balance will converge toward zero by 2024. The last time the private sector's balance was so low was in the period 2007–8.

ARPA Baseline Scenario

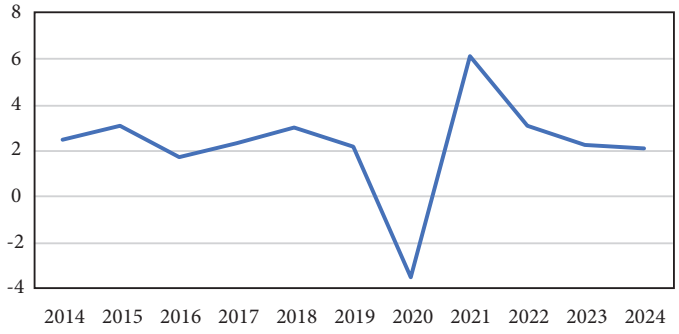
CBO's *Outlook* was published in February, before the adoption of the ARPA in March. The overall size of the ARPA, which aims to provide a significant stimulus to the US economy as it recovers from the pandemic, is $1.9 trillion. Key provisions include extending unemployment benefits, $1,400 payments to individuals, grants to small businesses, and funding for local and state governments. The ARPA's budgetary effects have been estimated by the CBO and are presented here in Table 2.[2] We have used these estimates to simulate the economic effects of the act. The results are presented in Figures 14 and 15.

Table 2 Estimated Budgetary Effects of American Rescue Plan Act of 2021 ($ millions)

	2021	2022	2023	2024	2021–30
Outlays	1,088,108	476,081	115,499	63,166	1,802,621
Revenues	-75,418	-52,443	1,188	4,125	-52,982
Deficit	1,163,526	528,524	114,311	59,041	1,855,603

Source: CBO (2021b)

Figure 14 Real GDP Growth Rate, Baseline Scenario Including ARPA

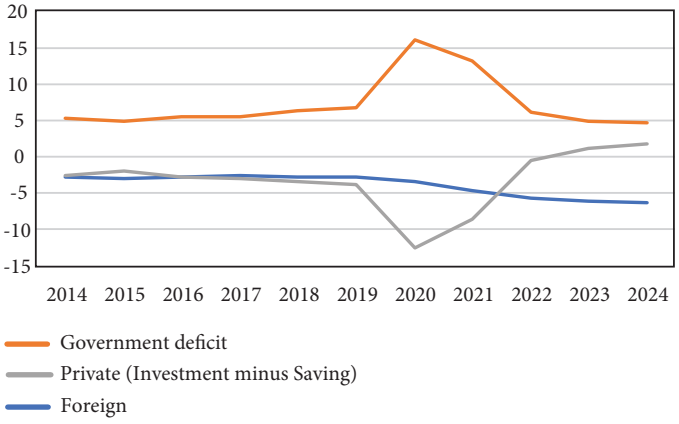


Source: BEA; authors' calculations

Figure 14 shows the US economy's growth rate when the effects of the ARPA are included. The projected growth rate for 2021 is 6.2 percent, which decreases to 3.2 percent in 2022 and then converges to the CBO baseline for the following years. In turn, Figure 15 presents the act's implications for the financial balances of the US economy's main institutional sectors. As one would expect, the government deficit is higher compared to the CBO baseline for the year 2021 and to a lesser extent in 2022. The deficit exceeds 13 percent of GDP in 2021 and 6 percent in 2022 (as opposed to 9 percent and 5 percent in the CBO baseline). On the other hand, the higher growth rate of the US economy leads to a higher current account deficit, which converges to 6.3 percent of GDP by 2024. Given that the government deficit is more or less the same at the end of the projection period, the private sector becomes a net borrower for the first time since 2007. The result of this situation is that the household sector's debt-to-disposable-income ratio picks up slightly after 2023.

The sectoral balances highlight a weak point of the US economy that has been lurking in the background over the last decade. Unless net exports of petroleum products increase significantly, the United States will see its trade deficit increase in the near future. As a result, for the economy's growth rate to remain at some "normal" level in the medium run, the increase in the current account deficit will necessitate either a permanently expansive fiscal policy or the private sector becoming a net borrower again. In the latter case, the debt-to-income ratio of the private sector (including households) is bound to start increasing again. For this reason, controlling the trade deficit should be a priority for US policymakers.

Figure 15 Baseline Scenario : Main Sector Balances, Actual and Projected, 2014–24 (percent of GDP)



Source: BEA; authors' calculations

Infrastructure and Families Plans

In recent weeks President Biden announced an infrastructure plan (the American Jobs Plan) and the American Families Plan. The infrastructure plan aims to repair, upgrade, and modernize the aging infrastructure of the United States. Its size is $2 trillion over a period of eight years and will be offset by increases in corporate taxes. The families plan aims to expand access to education and childcare, at a projected $1.8 trillion over a period of ten years. The increase in spending will be offset by an increase in taxes on high-income households (an estimated $800 billion) and a reduction of the tax gap ($700 billion).

Both plans address significant problems in the US economy and society. In the past, we have repeatedly stressed the need for a large infrastructure plan of a similar magnitude—in some cases assuming that such a plan would be offset with higher taxes for high-income households—and showed that such a plan would also have broader positive macroeconomic benefits. In Papadimitriou et al. (2013) we simulated "a public sector stimulus of a little over 1 percent of GDP per year dedicated to physical infrastructure investment," and argued that this would help counter the continuing drop in private expenditure and boost the weak recovery.

In Nikiforos and Zezza (2018), we argued that the then-recent tax cuts for high-income households and corporations would have little or no impact on investment—and therefore growth and employment. Instead, we found a public infrastructure plan of the same "fiscal size" ($1.5 trillion over a ten-year period) would have had very significant positive macroeconomic effects.

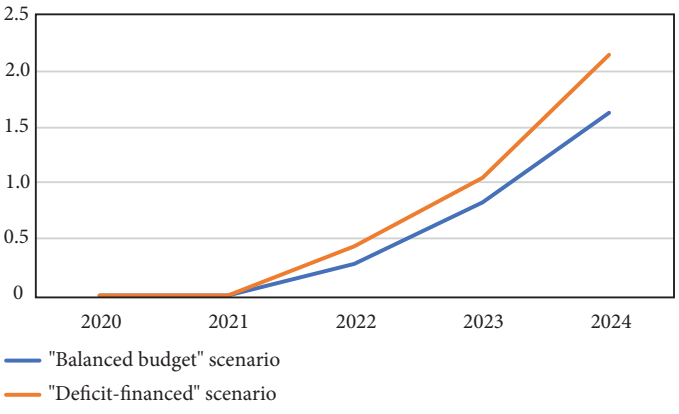
More recently, in Papadimitriou et al. (2019), we examined proposals by two of the Democratic Party's potential presidential candidates—Senators Bernie Sanders and Elizabeth Warren—to increase taxation on wealth and high-income households. For the evaluation of these proposals, we simulated a scenario of a 10 percentage point increase in the average tax rate paid by the top 1 percent of the income distribution, which would be accompanied by an equivalent increase in government expenditure, such as a public infrastructure plan.

These scenarios are relevant today because the simulated increases in government spending are of a similar magnitude to the aforementioned infrastructure and families plans, and can provide us with some insights on their macroeconomic effects. We therefore simulate two new versions of the scenarios examined in Papadimitriou et al. (2019): first, a "balanced budget" scenario (Scenario 1) in which, as described above, the increase in tax revenues from high-income households is accompanied by an increase in government spending of an equal amount; second, a "deficit-financed" scenario (Scenario 2) in which government spending increases by the same amount as the first scenario, but without any increase in taxation. These two scenarios can serve as extreme cases that allow us to frame a situation in which the increase in government spending is partially offset by an increase in taxation.

For these scenarios, we use information from the CBO's (2020) "The Distribution of Household Income, 2017." According to the data, the average pre-tax income of the households in the top 1 percent in 2015 was $1.96 million and these households paid an average tax rate of 31.6 percent, which results in an average post-tax income of $1.34 million. The total revenues from a 10 percentage point increase in the average tax rate paid by the top 1 percent of households would have been around $235 billion in 2017, or around 1.2 percent of GDP. This represents roughly $2 trillion spread over eight years, which is the size of the proposed infrastructure plan and slightly above the size of the proposed families plan.

For our simulations, we extrapolate the data, assuming that the top 1 percent's total market income for the period 2018–24 grows at the same rate as nominal income. We also assume, in line with the related literature, that higher taxation acts as a disincentive to generate and/or report more income. This disincentive is captured with the elasticity of top incomes with respect to the net-of-tax rate (if the tax rate is τ, then the

Figure 16 Percentage Difference in Real GDP Compared to ARPA Baseline



Source: BEA; authors' calculations

net-of-tax rate is 1-τ). More precisely, the elasticity measures the percent increase in average reported income when the net-of-tax rate increases by 1 percent. For our calculation, we use a value of 0.25 for this elasticity, which is the average estimated value in the literature.[3] Finally, we adjust for a marginal propensity to consume of 0.2 for the top 1 percent.

The two scenarios are implemented on top of the ARPA baseline scenario and the results are presented in Figure 16. As we can see, even the balanced budget scenario (Scenario 1) will have significant benefits, resulting in an increase in real GDP of around 1.6 percent above the baseline by 2024. On the other hand, the deficit-financed scenario leads to an increase of roughly 2.2 percent over the same time horizon. Overall, both scenarios have positive effects on demand and the US economy's macroeconomic performance.

Finally, it is worth mentioning that our simulations here capture only the demand effects of such an increase in government expenditure. In reality, it is likely that a large-scale infrastructure plan or investment in education and childcare will also have significant productivity effects, which will lead to second-round economic benefits. As we mentioned in the previous section, containing the increase in the current account deficit without sacrificing economic growth should be one of the main targets of US economic policy. Thus, policies that will contribute to productivity increases can also be helpful in this respect.

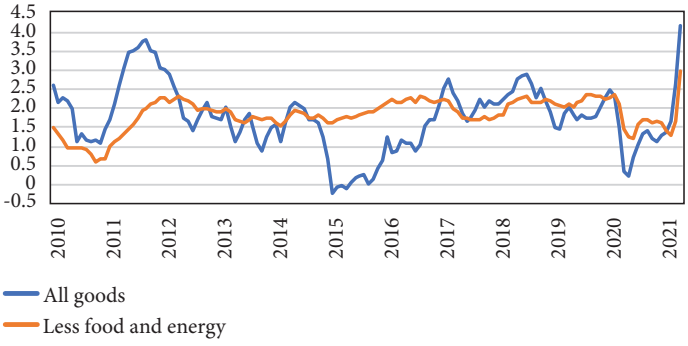
What about Inflation?

The major concern of many economists, journalists, and policymakers in the United States and around the world right now is that the federal government's expansive fiscal policy together with the Fed's loose monetary policy will lead to an inflationary spiral. These concerns come straight from a textbook version of standard dynamic stochastic general equilibrium (DSGE) models: if unemployment rises above its nonaccelerating inflation rate (NAIRU) (or if output rises above its potential), this will automatically lead to an increase in the inflation rate along the Phillips curve. If the central bank is not committed to tightening monetary policy and bringing unemployment back to its NAIRU level (or output in line with its potential), inflation expectations will get unanchored, and this will lead to an inflationary spiral. Hence, the argument continues, if the US economy was close to its NAIRU level and potential output before the pandemic—as it should have been after 11 years of recovery, according to this line of thought—we are now approaching this level again, therefore any efforts to push output and employment further will be inflationary.

We find these worries exaggerated. To begin with, as discussed above, the US economy did not seem to be anywhere near full employment and full capacity in the period before the pandemic. As shown in Figures 11a and 11b, the employment-to-population ratios of skilled labor (those with high school and bachelor's degrees) were still below their levels from December 2007 (the peak of the previous cycle) and June 2009 (the beginning of the recovery). Moreover, the rate of capacity utilization was also subdued (Figure 12).

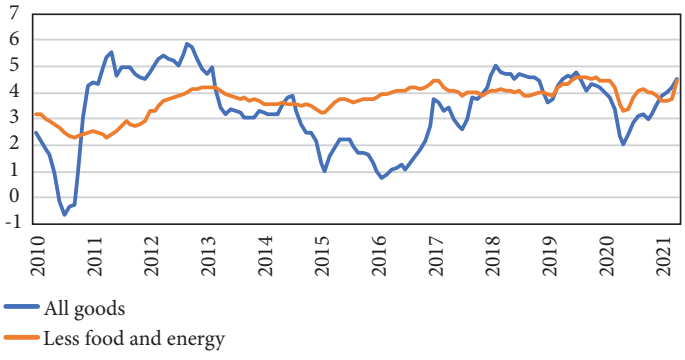
The inflation vigilantes point to recent inflation-rate increases as evidence confirming that we are entering a period of high inflation. As seen in Figure 17, the consumer price index in April 2021 was 4.2 percent above its level from a year ago, while the index for all items less food and energy was 3 percent higher than the previous year. Both of these are the highest numbers the US economy has seen in more than a decade.

Figure 17 Annual Inflation Rate (percent)



Source: BLS

Figure 18 Biannual Inflation Rate (percent)



Source: BLS

However, to a large extent this increase reflects not only the current situation (in April 2021) but also the situation a year ago in April 2020 at the peak of the pandemic. At that time, as the figure shows, the US economy experienced a significant deceleration of inflation. Therefore, as the economy recovers and prices catch up to their normal level, a year-on-year price comparison shows up as a rapid acceleration of inflation. In situations like this one, the base of comparison and its effects can be misleading.

To make this point clearer, in Figure 18 we present the biannual inflation rate for both baskets of goods. It becomes clear that the rate of inflation in April 2021 is not extraordinary: it is around 4.4 percent over the two years combined, i.e., close to the target annual rate of 2 percent.

To be sure, it is likely that the inflation rate will pick up over the coming months. However, this will not have to do with a supposed "overheating" of the US economy, but rather with problems in the global economy as it makes its way out of the pandemic. The pandemic shock of the last 18 months affected and continues to affect different economies and regions in the world in an asymmetric and asynchronous way. This has disturbed global supply chains and will continue to do so. Given that the production of most commodities depends on very complex global production chains, short-run bottlenecks in these chains will likely cause price increases in several markets.

The ongoing semiconductor shortage is a telling example. Everyone agrees that the main reason for this shortage is the pandemic and its effects on semiconductor production in Asian countries, while some analysts also point to the US–China trade war, as well as an unusual drought in Taiwan (semiconductor plants need a lot of water), as secondary potential causes.

By now it is well-known that if we look closely at the latest inflation data, the main culprit for the rise in inflation in April 2021 was used cars, whose prices increased by 10 percent compared to the previous month and 21 percent compared to April 2020. The reason behind this increase is clearly unrelated to the US economy being "overheated." First of all, it has to do with the base effects that were discussed above. Used car prices collapsed during the pandemic as people were in a lockdown, and increased rapidly in recent months as they wanted to travel more. Second, the semiconductors shortage has led to a decrease in production of new cars and an increase in demand for and prices of used cars. For these reasons, months with high inflation rates are to be expected in the period ahead, but this will not be the result of any overheating in the US economy.

Two final related comments are in order. First, based on several different attempts to estimate the effect of higher growth and utilization of capacity and lower unemployment on inflation, we found that whatever increase in output is produced by the ARPA and the proposed infrastructure and families plans will have minimal and insignificant effects on inflation. The reason is simple. Over the last several decades there has been a very weak correlation between inflation on the one hand and the rate of growth and unemployment on the other. For example, over the last two recoveries there were only very small increases in the rate of inflation in the quarters before the peak. Some people have referred to this as the "flattening" of the Phillips curve, although as we explain below this way of thinking is misleading. In any case, any attempt to forecast future inflation based on what has happened in recent decades will unambiguously produce small inflation increases even in the face of very large demand shocks.[4]

Second, in public debates about inflation there is often confusion around what inflation really is—a subtle yet important issue. Inflation is the *rate* of change of the price level, it is not the change in the price level. Therefore, accelerating inflation means that the rate of change of prices accelerates. If we assume that an economy somehow reaches full capacity, this will cause an increase in the price level, which will also lead to an increase in inflation. However, unless policymakers keep pushing against capacity, the increase in the inflation rate will be temporary. In order to have accelerating inflation, there has to be a mechanism that propagates higher inflation from one period to the next. As mentioned above, the usual neoclassical/new-Keynesian argument, which goes back to the famous argument by Milton Friedman (1968), is that an increase in output above the level defined by the NAIRU will cause an increase in the inflation rate along the Phillips curve; this increase will in turn feed back into inflation expectations, further increasing inflation in the following period and so on. If one takes this model at face value, even small decreases in unemployment below the NAIRU level will (eventually) lead mechanically to a very high level of inflation or even hyperinflation. Hence, the role of the central bank is to credibly commit to an inflation target in order to anchor expectations. It is on the basis of this argument that critics of the current stimulus have argued that we will end up with a stagflationary condition similar to the 1970s.

This story—and the argument that we are about to move back to the 1970s—is not convincing because it ignores the institutional and structural characteristics that link changes in the rate of inflation between periods.[5] An increase in inflation in the present does not automatically lead to even higher inflation tomorrow. The most fundamental mechanism for such propagation is conflict between firms and their workers—the related theory of inflation is sometimes called conflict inflation.[6] An increase in inflation this period will lead workers to demand a higher rate of nominal wage increases in the next period, which will lead to a further increase in inflation in the subsequent period. The other factor that affects inflation is the prices of imported commodities, which increase firms' production costs and lead to an increase in prices. Through this lens, we can understand the high inflation rate of the 1970s as the result of the two oil shocks that affected the cost of imported goods and the conflict between firms and labor.[7] At that time—unlike today—labor in the United States was strong enough to claim higher nominal wages in the face of an increase in the price level. Eventually this conflict was resolved with the recession induced by the increase in interest rates under Paul Volcker and the Reagan administration's policies in the 1980s.

The institutional and structural characteristics of the US economy today are very different and organized labor does not have the power to translate increases in inflation into the increases in nominal wages that would probably lead to a further increase in inflation in the future. It is this weakness of labor that has led to the "flattening of the Phillips curve" that many economists who approach this issue mechanically find surprising. In addition, as we explained above, increases in commodity prices or increases in the prices of some goods due to bottlenecks in the global value chains are largely orthogonal to the internal dynamics of the US economy and the size of the fiscal stimulus. It is also unlikely that the increases in these prices will approach the magnitude of the oil shocks of the 1970s.

Overall, if we either try to forecast future inflation based on the experience of the last few decades or we try to approach the issue from a more theoretical perspective and consider the analogies of the current situation to the 1970s, the worries about a rapid acceleration of inflation due to the US fiscal stimulus seem unwarranted.

Conclusion

In this report we analyzed how the US economy was affected by the pandemic and its prospects as it recovers from the shock of the previous year. It was explained that, as a result of the fiscal stimuli of 2020, the US economy was affected less than other advanced economies. The stimuli also allowed the household sector—with the important exception of households in the bottom quintile—to weather the crisis without an increase in their debt-to-income ratio.

On the negative side, the rate of increase of the indebtedness of firms accelerated, the stock market seems to be more overvalued than ever (or at least close to it), and the trade deficit increased quickly—to a large extent the result of the growth differential between the United States and its trading partners.

We also explained that even before the 2020 recession the US economy did not seem to be anywhere close to full employment or full utilization of resources, as measured by the employment-to-population ratio by educational attainment and capacity utilization rates published by the Federal Reserve and the US Census Bureau.

Looking into the future, we showed that based on our model we expect a significant pickup in the growth rate in 2021 as a result of the ARPA. Moreover, based on our past analyses and proposals, as well as the scenarios we simulated for the present report, we believe that the infrastructure and families plans that are now under negotiation in Washington will have a positive macroeconomic effect.

At the same time, US policymakers should prioritize decreasing the trade deficit. If this deficit keeps increasing, maintaining growth will require either continuous and very high government deficits—way above their historical average—or the private sector once again becoming a net borrower.

Finally, we explained that the worries about a sharp increase in inflation spurred by the fiscal stimulus seem to be unwarranted: first because the US economy was not close to full employment before the pandemic, and second because the propagation mechanisms that could lead to accelerating inflation are not in place anymore. It is possible that inflation will remain elevated in the next few months, but this is because of "base effects" as prices increase to their normal trajectory after the pandemic, or because of bottlenecks in the global value chains that are unrelated to the size of the fiscal stimulus in the United States.

Notes

1. In 2020, the deficit of local and state governments was 0.2 percent of GDP, its lowest level since 1986, and its fifth lowest in the postwar period.
2. The budgetary effects of the act extend beyond 2024 and into 2030. However, as one can infer from Table 2, the effects in the period 2025–30 are trivial. They account for 3 percent of total outlays and -0.5 percent of the overall deficit (meaning that the overall increase in the deficit in the years 2021–24 is slightly above the increase for the total period 2021–30; this is related to increases in the revenues).
3. See, for example, Diamond and Saez (2011).
4. For a case in point, see the discussion and the forecast in Nikiforos, Steinbaum, and Zezza (2017).
5. Friedman's other theory of inflation, broadly following the quantity theory of money, has been discredited over the last decade after the huge expansion of central bank balance sheets did not produce the expected hyperinflation.
6. For a related discussion, see Rowthorn (1977).
7. Taylor and Barbosa (2021) provide a theoretical and empirical comparative analysis of different theories of inflation and conclude that, along the lines of the argument presented here, the main determinants of inflation are the wage share (through conflict between firms and workers) and import prices.

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