FIGURES

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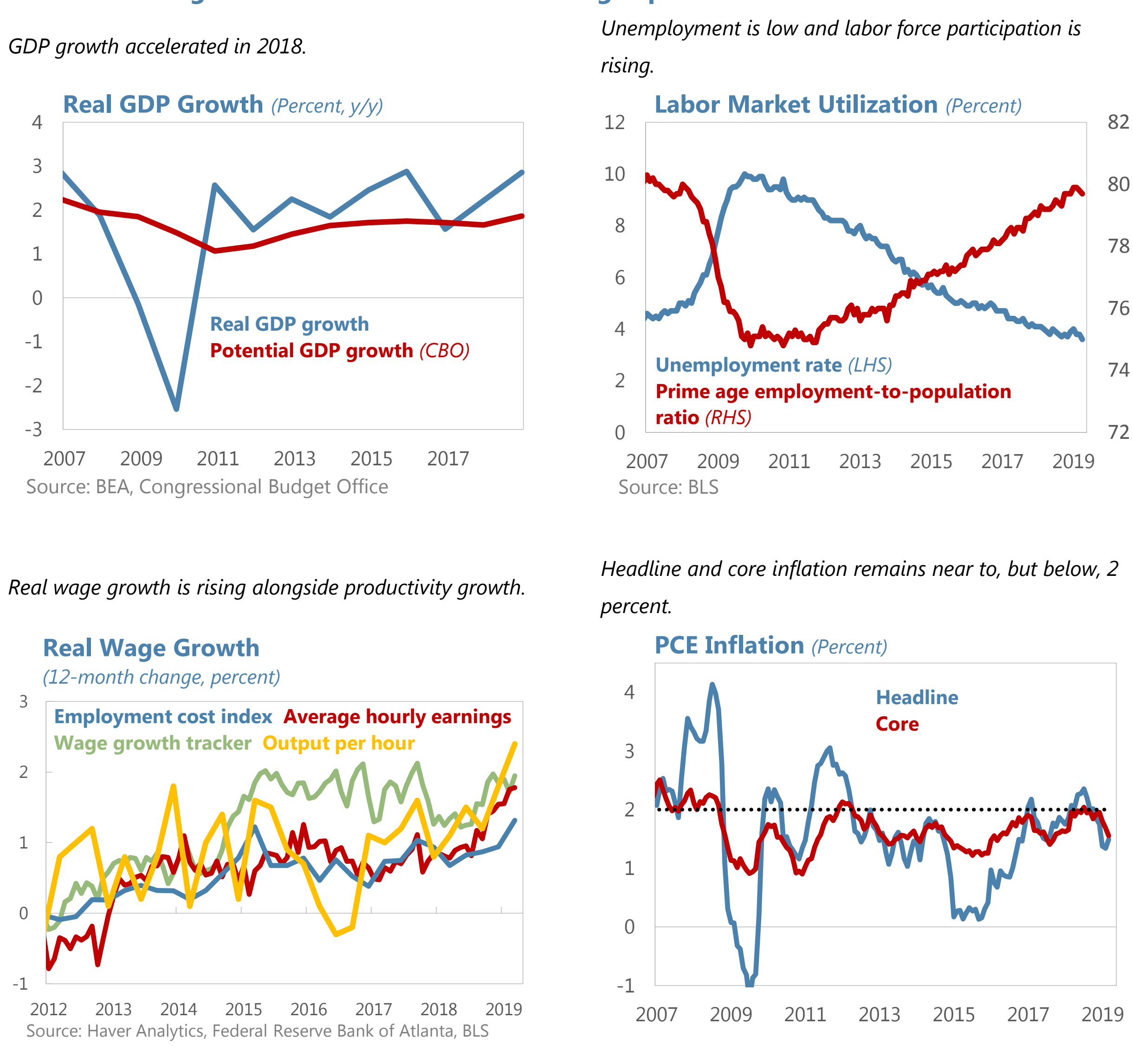
APPENDICES

A ROBUST AND CONTINUING EXPANSION

1. In July, the U.S. economy will achieve the longest expansion in recorded U.S. history. Since June 2009, the economy has repaired the damage wrought by the financial crisis and demonstrated extraordinary resilience, enduring both domestic policy tightening (in 2011-15 there was a cumulative 5¼ percent of GDP withdrawal of fiscal stimulus) and a range of external shocks. Unemployment has been on a downward trend for almost a decade and is now at levels not seen in 50 years. Over the course of this expansion an average of 2 million jobs per year have, on net, been created. Real wages are rising, including notably for those at the lower end of the income distribution, and productivity growth appears to be recovering. Against this backdrop, inflationary pressures remain remarkably subdued.

Figure 1. United States: An Enduring Expansion with Low Inflation



2. Real GDP is expected to grow at an annual rate of 2.6 percent this year, before moderating to 1.9 percent in 2020. A fiscal expansion that was put in place in 2018-19—with tax reductions and an increase in both defense and nondefense spending—has helped bring annual growth to 2.9 percent in 2018. Growth in 2019Q1 exceeded forecasts, reaching 3.1 percent (q/q, saar) with strong growth in inventory investment and net exports, as well as supportive financial conditions. Consumption and private investment growth are expected to strengthen in subsequent quarters, allowing for an increase in the growth forecast for the year as a whole, even as the temporary boost from inventories moves into reverse. However, as the effects of this fiscal impulse fade over the next few years, growth will gravitate back toward potential (of around 1¾ percent). The job market is expected to remain strong with robust job creation, steadily rising earnings, and a continuing positive response of labor force participation to the tightening labor market. Confidence about future job prospects and improving household balance sheets are expected to support household consumption (Box 1). Risks are viewed to be broadly balanced around this growth forecast. A deepening of ongoing trade disputes or an abrupt reversal of the recent supportive financial market conditions represent material risks to the U.S. economy (with concomitant negative outward spillovers). These risks are interconnected since trade policy uncertainty represents an important determinant of domestic and global financial conditions as well as of business investment decisions. On the other hand, a Congressional agreement to raise budget spending caps or a positive resolution of trade tensions could provide a supportive tailwind to activity.

Economic Forecasts (Percent)

	2018	2019	2020	2021	2022	Longer Run
		Projections				
Real GDP Growth (annual average)						
IMF	2.9	2.6	1.9	1.8	1.7	1.7
CBO		2.7	1.9	1.6	1.6	1.8
OMB		3.2	3.1	3.0	3.0	2.8
SPF		2.6	2.0	1.9	2.3	2.0
Real GDP Growth (Q4/Q4)						
IMF	3.0	2.3	1.9	1.7	1.7	1.7
CBO		2.3	1.7	1.6	1.6	1.8
FOMC		2.1	1.9	1.8	...	1.9
Unemployment Rate (eop)						
IMF	3.8	3.5	3.5	3.7	3.7	4.3
CBO		3.5	3.9	4.4	4.8	4.8
SPF (annual avg)		3.7	3.6	3.7	3.9	4.3
FOMC		3.7	3.8	3.9	...	4.5
Core PCE Inflation (Q4/Q4)						
IMF	1.9	1.8	2.1	2.1	2.0	2.0
CBO		2.2	2.2	2.1	2.1	2.0
SPF		1.7	2.0	1.9	...	...
FOMC		2.0	2.0	2.0	...	...
Federal Funds Rate (eop)						
IMF	2.4	2.6	2.9	2.9	2.9	2.8
FOMC		2.4	2.6	2.6	...	2.8
Budget balance (federal government, percent of GDP) 1/						
IMF	-3.9	-4.2	-4.0	-4.0	-4.3	-4.7
CBO		-4.2	-4.0	-4.2	-4.7	-4.7
OMB		-5.1	-4.9	-4.5	-4.2	-1.5

Sources: CBO projections are from the Budget and Economic Outlook January 2019; FOMC projections are from the March 2019 Summary of Economic Projections; SPF is the Federal Reserve Bank of Philadelphia's Survey of Professional Forecasts, April 2019; OMB is the Office of Management and Budget for the President's FY2020 Budget.
1/ Long-run refers to 2028.

Authorities' Views

3. The administration expects growth to remain at or above 3 percent over the medium-term. The economy is expected to benefit from a lower tax burden (that incentivizes investments in human and physical capital), and a reduction in regulatory restrictions (particularly those that hamper business and create barriers to entry such as occupational licensing requirements), which would encourage foreign profit repatriation, and remove disadvantages for U.S. corporations operating worldwide, and an investment of up to US$2 trillion over the next decade in new infrastructure investments. In addition, the TCJA regulations are still being implemented, which means not all capital investment that results from these changes has been made. The unemployment rate is expected to remain at historically low levels for the next few years, rising gradually to around 4 percent by 2023. The potential gains from ongoing investments in apprenticeship and other work-based learning programs could prove particularly valuable as a way to increase productivity, raise wages, and support medium-term growth. Such supply-side incentives are expected to strengthen labor force participation, increase capital formation, and raise productivity. As such, the 3 percent growth rate could be achieved with inflation remaining contained at around 2 percent.

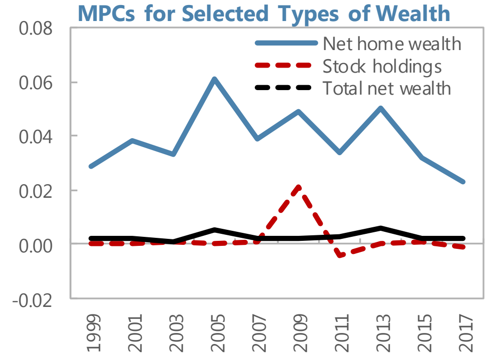
Box 1. Macro-Financial Links Between Household Wealth and Consumption [1]

Households consumption responds relatively little to changes in financial wealth but rising housing prices do provide support to household consumption, particularly for those at the lower end of the income distribution.

Drawing on an econometric model using household-level survey data, the marginal propensity of households to consume (MPC) out of housing, equity, and other forms of net wealth was estimated (in a panel for 1999-2017 across a sample of about 8,000 households with time fixed effects and controlling for various household-specific characteristics).

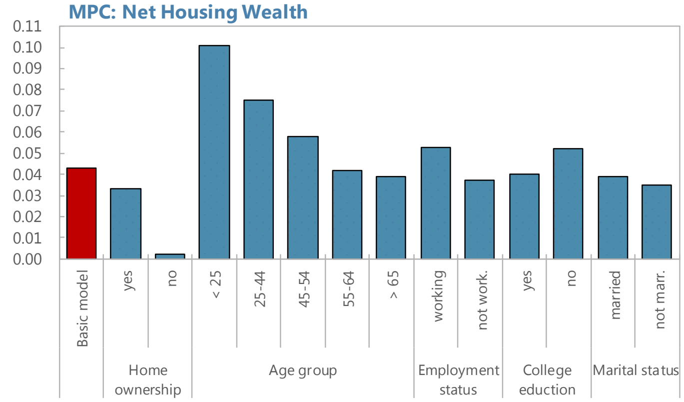
The results indicate that households raise consumption by around 4-5 cents per year for each US$1 dollar increase in their housing wealth (net of mortgage and home equity loans). The consumption response to changes in other forms of wealth—including holdings of financial assets—appears to be not statistically different from zero. Drawing on the response to changes in housing wealth across different income groups, the estimates would suggest that a persistent, broad-based 10 percent change in house prices would change aggregate consumption by around 1–1.4 percent, broadly in line with other estimates in the literature that use macro time series.

MPCs for Selected Types of Wealth



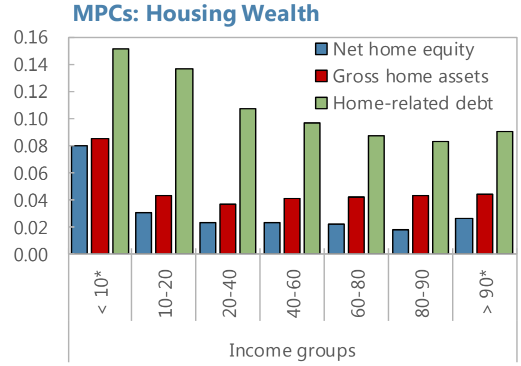
The propensity to consume out of housing wealth is closely linked to household characteristics. For example, working age individuals have a larger consumption response to wealth gains than do older cohorts. As such, the ongoing aging of the U.S. population would suggest the propensity to consume out of housing wealth at the aggregate level is likely to fall in the coming years.

MPC: Net Housing Wealth



Income distribution also plays an important role. Low-income households who own their home appear to respond most to increases in housing wealth (suggesting that poorer households are more likely to be cash constrained and that constraint is eased if they can extract some part of the increase in housing wealth to finance consumption). In addition, those with an outstanding stock of credit increase consumption by more in response to rising home equity than those without credit (and this incremental effect is larger for those with lower incomes).

MPCs: Housing Wealth

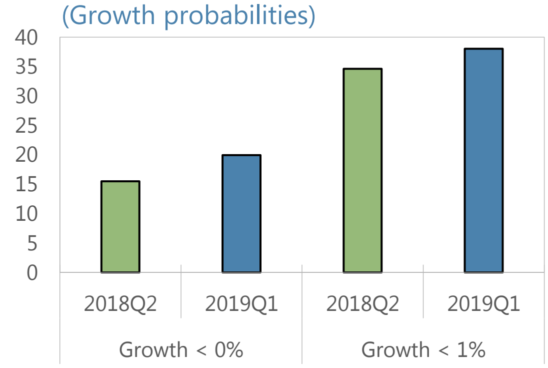


[1] See C. Caceres, "Analyzing the Effects of Financial and Housing Wealth on Consumption Using Micro Data", IMF Working Paper 19/115, 2019.

RISING MEDIUM-TERM FINANCIAL STABILITY RISKS

4. The financial system appears healthy but medium-term risks to financial stability are rising. U.S. banks are well capitalized and asset quality appears to be generally good. Credit remains available to both households and corporations and the cost of borrowing is relatively low. However, corporate leverage is historically high, the share of commercial loans that are non-performing is creeping up, and underwriting standards are weakening. In addition, asset valuations are rich, risk premia, term premia, and the market pricing of volatility are at low levels, and, as a result, financial conditions are extremely loose. This broad availability of relatively cheap financing is supporting near-term activity but adding to medium-term probabilities of low growth (as seen in changes in medium-term growth-at-risk estimates since the last Article IV). However, an abrupt reversal of this accommodative environment, interacting with leveraged corporate balance sheets, could create a significant downdraft to activity, investment, and job creation.

Medium-term Risks
(Growth probabilities)



Note: Growth-at-Risk estimates. Medium-term refers to three years ahead.
Source: IMF staff estimates

5. Accommodative U.S. financial conditions are supportive of global growth but could create negative outward spillovers in the event of an abrupt reversal in asset prices. Such a shift could expose liquidity and solvency vulnerabilities in other countries which would be particularly problematic for sovereigns and corporates that have significant balance sheet exposures in U.S. dollars or for those countries that rely on inward capital flows to finance their current account deficits.

6. It is of concern that there has been little institutional response to counter the growing risks to medium-term financial stability. Instead, the recent tailoring of financial regulation has led to a steady easing of regulatory constraints at a late stage in the cycle (Box 2). Given the evident build-up of leverage in the system, most notably in the corporate sector, but also with rising sovereign debt and a significant stock of full-recourse student loans, it is more urgent than ever to ensure that any further changes to the financial oversight regime not only preserve, but enhance, the current risk-based approach to regulation, supervision and resolution. Risk-based capital and liquidity standards, combined with strong supervision, need to be the central tools in incentivizing financial institutions to manage well the risks they undertake, including through a robust Comprehensive Capital Analysis and Review (CCAR) process. The FSOC should continue its efforts to respond to emerging threats to financial stability and, in this work, there is scope to strengthen and more fully resource the Office of Financial Research. Also, the U.S. should maintain its engagement in developing the international financial regulatory architecture while adhering to agreed international standards.

7. There is a need to strengthen the oversight of nonbanks and to address continuing data blind spots that impede a full understanding of the nature of financial system risks, interlinkages, and interconnections. As has been highlighted in previous consultations, there are potential weaknesses in oversight arising from the absence of harmonized national standards or consolidated supervision for insurance companies. Recent proposals to limit the engagement of federal authorities in international supervisory fora could prove cumbersome for the insurance standard setting process and the development of the global capital standard. Progress has been made in money market reform but vulnerabilities—in repo markets and for money market funds—remain. There is also a need to introduce a comprehensive liquidity risk management framework for asset managers (that includes liquidity risk stress tests). Little progress has been made in reforming the housing finance system or the government sponsored enterprises. Finally, impediments to data sharing among regulatory agencies remain and there are continuing data blind spots, particularly related to the activities of nonbanks, that preclude a full understanding of the nature of financial system risks, interlinkages, and interconnections. These topics will be a focus of the ongoing Financial Sector Assessment Program (FSAP) for the United States.

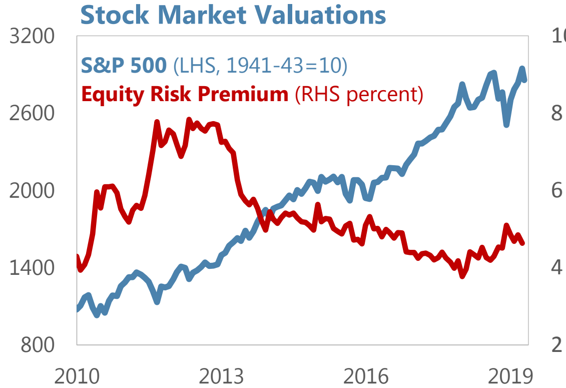
Authorities' Views

8. Overall, the risks to financial stability were assessed to be moderate. Nonetheless, the prolonged credit expansion has created potential vulnerabilities, particularly visible in the increase in nonfinancial corporate leverage. In part these higher corporate debt levels are mitigated by strong interest coverage ratios and healthy liquidity positions. Nonetheless, if there were a sudden or prolonged deterioration in business earnings there would likely be an increase in default rates with attendant downward pressures in the price of risk assets. Other salient vulnerabilities that were highlighted include the potential for a destabilizing cybersecurity event, the increased concentration of activities and exposures in central counterparties and in the tri-party repo market, and the ongoing transition away from LIBOR as a reference rate for a range of financial contracts. However, work was ongoing in all of these areas to better understand interlinkages, manage vulnerabilities, and improve risk management practices within financial institutions. U.S. regulators have also taken steps to improve the effectiveness and efficiency of financial regulations including by tailoring prudential standards for bank holding companies based on size and complexity, better integrating the CCAR process with the rules on regulatory capital buffers, and proposing simplification of the Volcker Rule requirements. There was agreement that it was critical to continue to make progress in addressing data gaps and U.S. regulators have been working with the Financial Stability Board, the Bank for International Settlements, International Organization of Securities Commissions and other international standard-setters to tackle these issues.

Figure 2. United States: Financial Sector Vulnerabilities

Risk assets rebounded strongly in the first quarter of 2019 resulting in a return to very expansionary financial conditions.

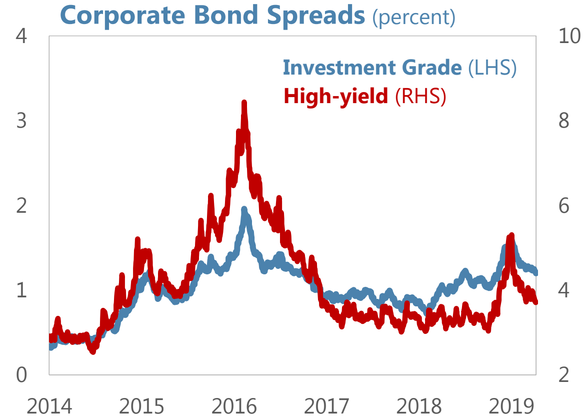
Stock Market Valuations



Note: Equity risk premium is defined as earnings yield - the yield on ten year TIPS. Source: Bloomberg

There has been a broad-based rally across all asset classes leaving valuations close to historic highs.

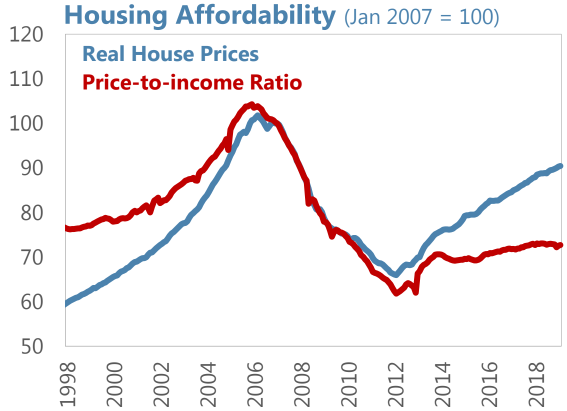
Corporate Bond Spreads (percent)



Source: ICE/BAML, Haver Analytics

House prices are rising but broadly in line with disposable incomes.

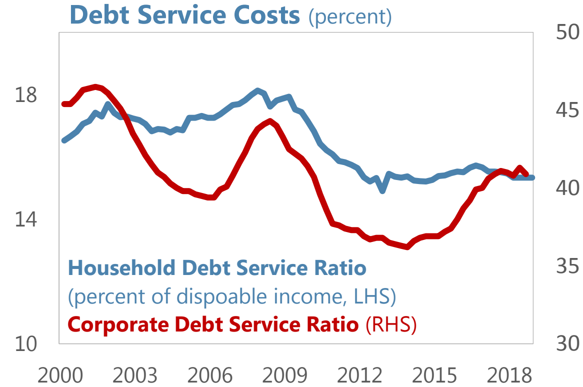
Housing Affordability (Jan 2007 = 100)



Source: BEA, BLS, and Case-Shiller

While debt levels are high, much of this debt (for both households and firms) is at low interest rates and long duration, implying less burdensome debt service.

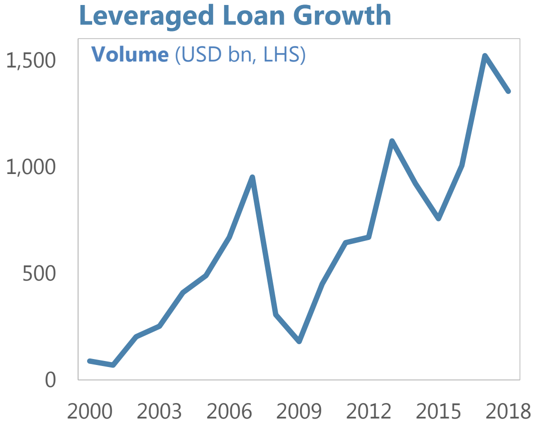
Debt Service Costs (percent)



Source: Federal Reserve and BIS

The leveraged loan market continues to expand.

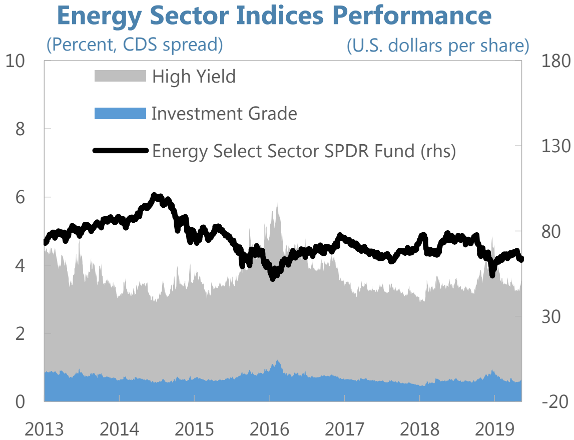
Leveraged Loan Growth



Source: Bloomberg

The oil sector has been prone to bouts of stress but has weathered recent commodity price volatility well.

Energy Sector Indices Performance



Source: Bloomberg, Markit, author's estimates

Box 2. Financial System Oversight Since the 2018 Article IV

Since the passage of the May 2018 Economic Growth, Regulatory Relief, and Consumer Protection Act (EGRRCP), U.S. financial regulators have instituted several regulatory changes and have put forward other proposals for public comment (both to implement the EGRRCP and as part of the broader effort to tailor financial regulations):

Changes in Oversight

- Prudential standards for banks between US$50-100 billion in assets have been lowered, including for liquidity, capital, risk management requirements, and resolution plans.
- Bank holding companies with less than US$3 billion in assets will be allowed to incur more debt and are now exempt from minimum capital requirements at the consolidated level. However, depository institutions that are part of the holding company will still be subject to minimum capital requirements.
- The qualitative assessment in the Comprehensive Capital Analysis and Review process will be phased out.

Proposed Changes in Oversight

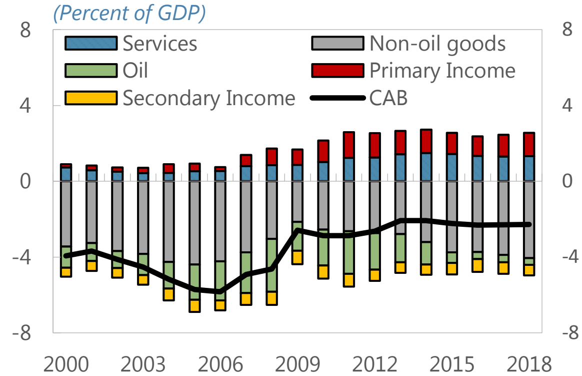
- The Federal Reserve has proposed reducing the enhanced supplementary leverage ratio for GSIBs from 6 percent of assets to 3 percent of assets plus a buffer of one-half of the entity's risk-based capital surcharge.
- The Financial Stability Oversight Council has proposed replacing the size-based approach to designation of nonbank financial companies with an activities-based approach, with various changes to the process and criteria for making designation decisions.
- The Federal Reserve has proposed sorting domestic banks into four categories based on the size of assets, cross-jurisdictional activity, short-term wholesale funding, nonbank assets, and off-balance sheet exposure.
  - Category I and II banks (GSIBs and non-GSIBs with more than US$750 billion in assets or with sizable cross-border activity) would see little change to their regulatory requirements.
  - Category III banks (with US$250-750 billion in assets) would face less restrictive capital and liquidity standards and would conduct company-run stress tests every other year (while remaining subject to annual supervisory stress tests).
  - Category IV banks (with US$100-250 billion in assets) would be relieved from the Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR) requirements as well as company-run stress tests. This category of banks would be subject to less frequent supervisory stress tests.
- The Federal Reserve is considering a framework for sorting foreign banks into different categories (similar to that for domestic banks) with requirements calibrated to the risks these foreign institutions pose to the U.S. financial system.

THE POTENTIAL FOR A RISING EXTERNAL IMBALANCE

9. The current account deficit has been broadly stable over the past several years, but external imbalances are expected to grow over the medium term. Despite a very expansionary fiscal policy and output rising above potential, the current account deficit has been remarkably flat (remaining at 2¼ percent of GDP in 2018). Part of the compression of the current account has come from a shift in energy production (Box 3) that has offset a worsening in the non-energy balance. In addition, relatively low returns on U.S. bonds combined with buoyant global equity markets have led to an improvement in the net income flows in the current account. The trade and current account deficit are, however, still expected to rise over the next few years as the economy grows faster than potential and the positive output gap widens. The 2018 external position is judged to be moderately weaker than implied by medium-term fundamentals and desirable policies and the real exchange rate remains somewhat overvalued (see Annex I). The persistent current account deficits are expected to lead to the net international investment position becoming increasingly negative, approaching -50 percent of GDP by 2025.

Current Account Balance

(Percent of GDP)



Source: BEA

10. Addressing these external imbalances will need to involve fiscal adjustment, a continued improvement in the oil balance, and supply side reforms that improve productivity and competitiveness. Efforts to contain bilateral trade deficits through tariff measures will be unable to impact the U.S. current account and will be damaging to both U.S. and global macroeconomic outturns (see April 2019 World Economic Outlook and Box 4).

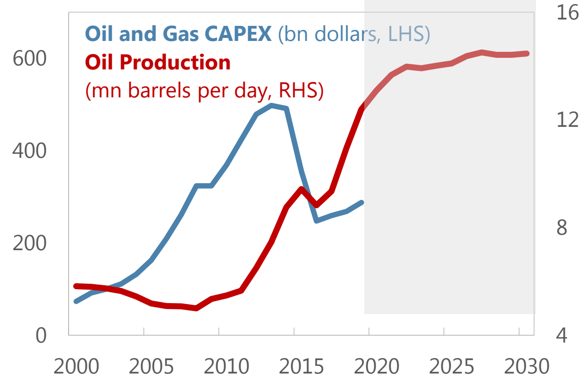
Authorities' Views

11. There was agreement that the recent rise in the fiscal deficit was putting upward pressure on the U.S. current account deficit. However, the administration's policies to take advantage of the U.S. abundant energy resources were expected to continue putting a structural downward pressure on the current account deficit (the U.S. is already a net exporter of natural gas and is expected to become a net exporter of energy by 2020). Officials highlighted addressing excess savings or low investment in other systemic economies would more productively address global current account imbalances while strengthening global growth. Officials agreed that trade restrictions, standing alone, would not address the U.S. external imbalance. However, insofar as these restrictions were able to create the conditions whereby other countries address their distortions and unfair trade practices, they would eventually lead to more balanced trade and a reduction in global imbalances. The worsening of the U.S. net international investment position was not viewed as a significant concern, given the dollar's status as a reserve currency.

Box 3. Recent Developments in the U.S. Energy Sector[1]

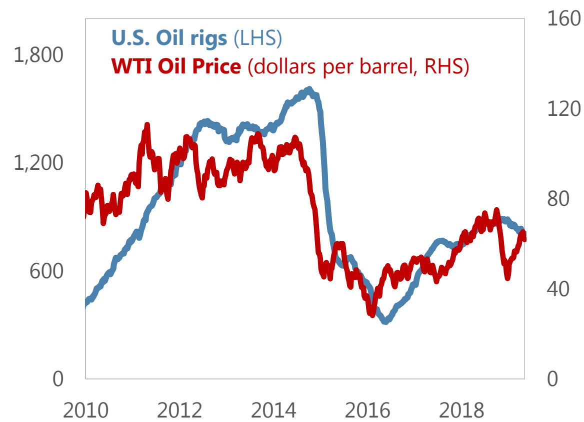
The U.S. has now become the world's largest producer of oil and natural gas and is expected to become a net exporter of petroleum products by 2021.

The past decade has seen a rapid transformation in the U.S. energy industry driven by shale oil and gas production. The initial widespread adoption of hydraulic fracturing was associated with a surge in oil and gas capital expenditures causing the U.S. share of global oil and natural gas liquids production to rise (from 11 percent in 2010 to 20 percent in 2018). The sector's rapid expansion in upstream production, downstream demand for inputs, and product transportation have been a boon to manufacturing and employment in many parts of the country.



Note: 2019 values are estimates by the sources
Source: Bloomberg, EIA.

Since the oil price shock of 2014-15, the sector has become leaner, more capital efficient, and is now, for the most part, cashflow positive. The sector appeared to weather well the 2018 price decline and subsequent volatility. As technology improves and drilling becomes more targeted, new wells are achieving substantially higher output. The short production cycles of shale wells (they can often be drilled and begin producing in less than 45 days) as well as the ability to leave wells uncompleted until prices become more favorable, implies a high elasticity of both production and investment to changes in world prices. This means that the U.S. oil and gas sector can serve as a global shock absorber that can dampen price volatility, creating positive outward spillovers for the global economy.



Sources: Baker Hughes, Haver Analytics

Assuming WTI prices remain above US$60 per barrel, industry experts forecast U.S. oil production to reach 16 million barrels per day by 2030 (i.e. around 2 million barrels per day above the EIA's current baseline scenario). The Permian Basin in West Texas and New Mexico is expected to drive the bulk of production increases given the field's proximity to refining capacity and ports on the Gulf Coast. By 2020, the U.S. will become a net energy exporter which will be an important force in reducing the U.S. current account deficit. Even now, as a net energy importer, it is empirically ambiguous whether a change in oil prices has a positive or negative impact on U.S. activity (given the countervailing effects of oil prices on consumption and investment behavior).

[1]Authored by Peter Williams.

Box 4. Outward Spillovers of Trade Tensions[1]

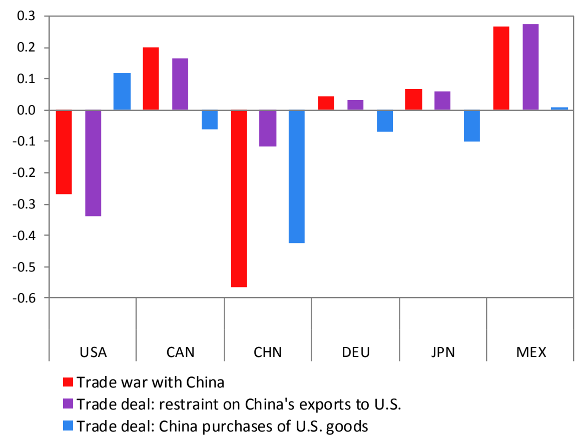
Estimates from a detailed sectoral model show that ongoing trade tensions with China are likely to create an important drag on specific U.S. industries and states. These economic losses could potentially be further amplified by either short-run adjustment costs, by long-run effects on labor and capital formation, or through heightened policy uncertainty. Outward spillovers from higher tariffs on Chinese imports can be large, depending on the industrial structure of trading partners.

A multi-sector trade model calibrated to 165 countries is used to examine the effects of changes to the U.S. trading relationships with China. The model captures medium-term sectoral and global value chain disruptions (although it does not capture medium-term effects on the stock of capital and size of the labor force).

A U.S.-China trade deal could represent an important step forward for the global system if it is able to multilaterally eliminate some of the existing trade restrictions and trade-distorting policies (e.g. non-tariff barriers or disincentives to investment like weak intellectual property protection or required transfers of technology). However, a managed trade deal that focuses on reducing the bilateral trade deficit could create new structural rigidities. To compare sectoral and macro outcomes, three scenarios are analyzed:

- An intensification of trade tensions with China that increases bilateral tariffs by 25 percentage points.
- A trade deal where China puts in place administrative restraints on its exports to the U.S.
- A trade deal where China agrees to larger purchases of U.S. goods (mainly primary sector products and aircrafts).

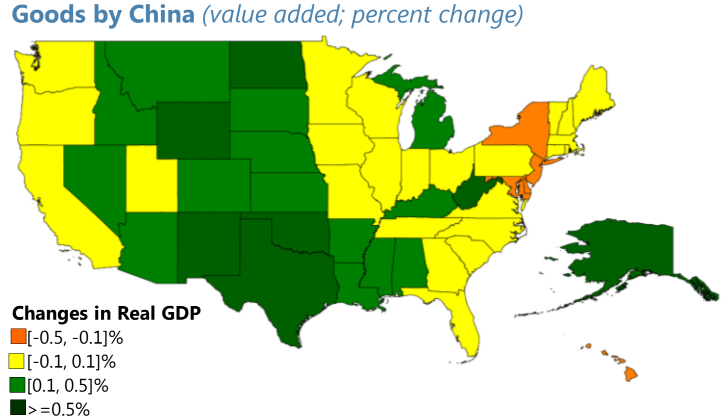
Real GDP Impact on U.S. and Selected Trading Partners from Sectoral Trade Model *(percent change)*



Higher tariffs and export restraints both reduce U.S. and China's GDP, while an agreement for China to purchase more U.S. goods is supportive of U.S. activity but reduces Chinese income. The negative effects arise because protected sectors in each country are unable to expand sufficiently to offset the negative impact that tariff distortions have on other parts of the economy. Broader macroeconomic effects on investment and labor supply, that are not considered here, would likely amplify these effects (for example, as described in the April 2019 WEO, a broad-based 25 percent tariff lowers GDP by around 0.5 percent for both countries).

The three scenarios are a headwind to the Chinese economy but countries with large direct trade exposure to the U.S. (e.g. Mexico and Canada) could gain from trade diversion effects (although they may lose from other effects not considered here). For some, there could be sizable spillover effects as the shifts in U.S.-China trade feed through global supply chains.

Impact of Trade Deal that Entails Larger Purchases of U.S. Goods by China *(value added; percent change)*



Even though aggregate effects are relatively small, the sectoral and regional effects in the U.S. can be large. The regional implications are closely linked to the sectoral specialization of each state. For example, those with a large agriculture or energy presence benefit from an increase in China purchases of U.S. goods but most other states face a modest loss.

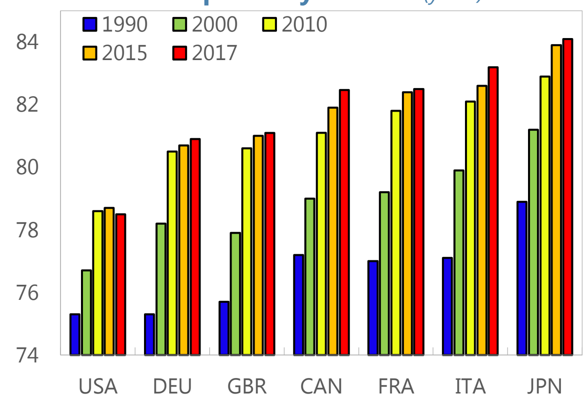
The distributional effects can vary greatly across different trade scenarios. For example, higher tariffs between the U.S. and China would disproportionately be borne by poorer states (creating a consequent increase in overall poverty). By contrast, increased Chinese purchases of U.S. goods would benefit those states with lower average incomes and a higher proportion of lower earners.

[1] See C. Caceres, D. Cerdeiro, and R. Mano, "Trade Wars and Trade Deals: Estimated Effects Using a Multi-Sector Model", IMF Working Paper, 2019. Broadly similar effects are found in Chapter 4, April 2019 World Economic Outlook.

TROUBLING SOCIAL OUTCOMES

12. **Real per capita GDP is at an all-time high, almost 10 percent above the pre-financial crisis peak, but metrics of welfare have not matched those income gains**. Most notably, after rising steadily (from 70 years in 1960 to almost 79 years in 2017) Americans' life expectancy has declined over the past three years and is well below that of other G7 countries (despite having been near the G7 median in the 1980s). Cancer and heart disease remain the leading causes of death even though the mortality rate for both diseases has been declining. Rising suicide rates and, particularly, deaths linked to drug overdose (Box 5) have been important contributors to diminished longevity. The rising cost of healthcare—which, over the past 20 years, has increased by 1.4 percent per year faster than median incomes and leaves the U.S. with the highest per capita healthcare costs among the OECD countries—has reduced access and been a headwind to improving health and longevity outcomes. As one indication of the implications of the rising cost burden, according to a recent Gallup survey, 29 percent of Americans have decided not to seek medical treatment because of high costs.

G7 Life Expectancy at Birth *(years)*



Sources: OECD and World Bank

13. **On the positive side, it is important to recognize that less than 9 percent of the population are now without health insurance, half the rate of uninsured relative to that of a decade ago**. This increase in coverage has been a result of the Affordable Care Act (ACA) raising income limits for Medicaid, a greater share of the population becoming eligible for Medicare (as the population ages), greater use of non-employer provided insurance (largely purchased through ACA health insurance exchanges), and the expansion of the Children's Health Insurance Program (which now covers 9.5 million children and has measurably improved health, labor market, and education outcomes for participants).

14. **Despite the current favorable macroeconomic and labor market conditions, poverty rates remain close to levels that prevailed immediately before the financial crisis**. According to the supplemental poverty measure (which measures poverty after accounting for the impact of government programs), almost 45 million Americans (or 13.9 percent of the population) are living in poverty with a little under one-half of adults that are below the poverty line working either full or part-time. This includes one-in-six American children, 27 percent of female-headed households, and more than one-fifth of blacks and Hispanics. This population is particularly reliant on federal and state-administered social programs that provide nutrition, healthcare, education, and housing.

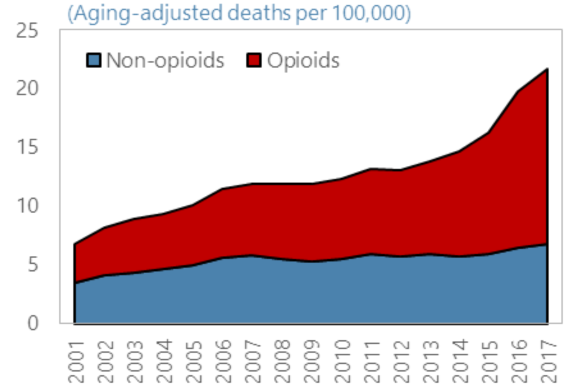
Box 5. The Social and Macroeconomic Toll of Opioid Addiction[1]

Over the past 15 years the U.S. has seen a worrisome rise in opioid usage, addiction, and deaths, particularly in the Northeast, Midwest, and Appalachia. A study by the Center for Disease Control estimated the economic cost in 2013 at US$78.5 billion while the Council of Economic Advisors estimates an economic cost of US$504 billion in 2015. There is a broad consensus that the economic costs are rising over time.

This crisis is just one aspect of what has been termed the rise in "deaths of despair" arising from diminished economic opportunities, a growing sense of hopelessness, rising substance abuse, and, increasingly, suicide (see Case and Deaton, 2017).

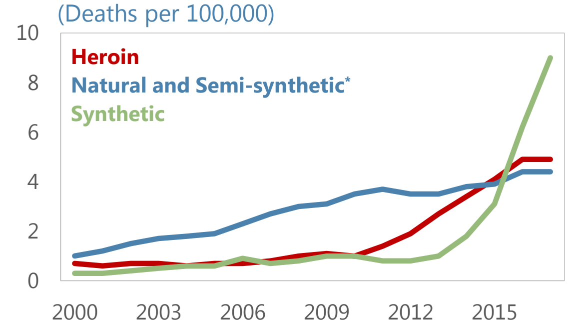
An assessment by the Centers for Disease Control (CDC) indicates that the current opioid epidemic was catalyzed by a widespread expansion of doctors' prescribing of non-morphine opioids for pain management in the late 1990s. During the 2000s, a steady increase in addiction to those pain medications led first to rising fatalities from prescribed opioids and, since 2010, a surge in heroin usage. By 2016, deaths from heroin, prescription opioids, and synthetic opioids were roughly at the same level. Since 2016, though, the wide availability of potent synthetic opioids (such as fentanyl) has led them to now become the leading source of U.S. overdose deaths.

Overdose Mortality Rates
(Aging-adjusted deaths per 100,000)



Source: Kaiser Family Foundation

The Rise of Opioid Overdoses
(Deaths per 100,000)



Source: Centers for Disease Control
* Include prescription drugs

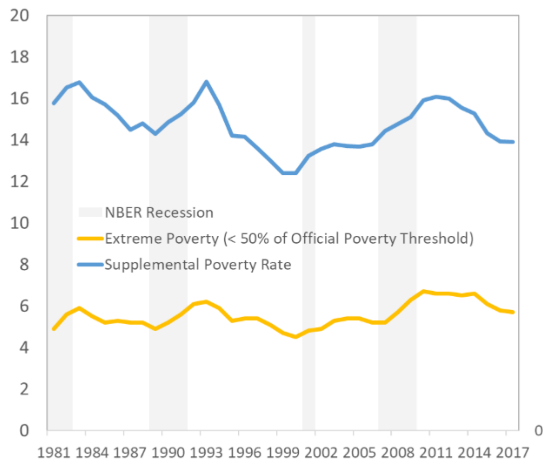
Most public health interventions have, so far, been undertaken at the state and local level but with Federal support (e.g. through State Opioid Response Grants to states and other programs of the Substance Abuse and Mental Health Services Administration, National Institutes for Health, and the CDC). Programs typically combine efforts to equip emergency services with anti-overdose medication, providing medication-assisted treatment (often funded through Medicaid), improving pain management practices (to restrain the prescribing of opioids), expanding prescription drug monitoring programs, and undertaking education campaigns targeted at both the medical community and the general public.

There are some preliminary signs these efforts are starting to bear fruit. In 2017, seventeen U.S. states saw a decline in fatal drug overdoses (with the steepest falls occurring in Massachusetts and New Hampshire). Among the subset of states that are collecting data under the CDC's Enhanced State Opioid Overdose Surveillance program, there has been a 15 percent decline in opioid overdoses since 2016.

[1]Authored by Peter Williams.

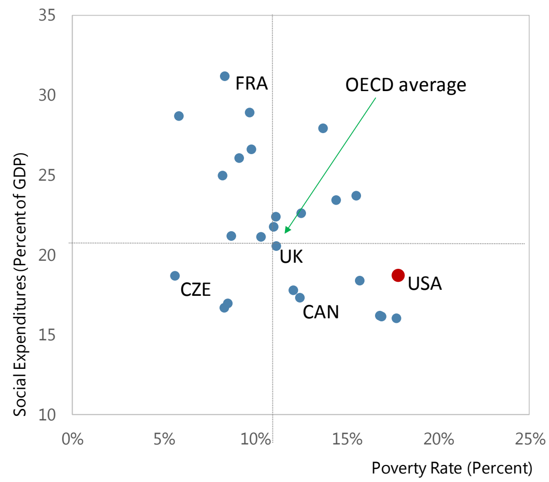
Figure 3. United States: The Nature of Poverty in the United States

A significant share of Americans live in poverty. One in 20 Americans experiences extreme poverty.



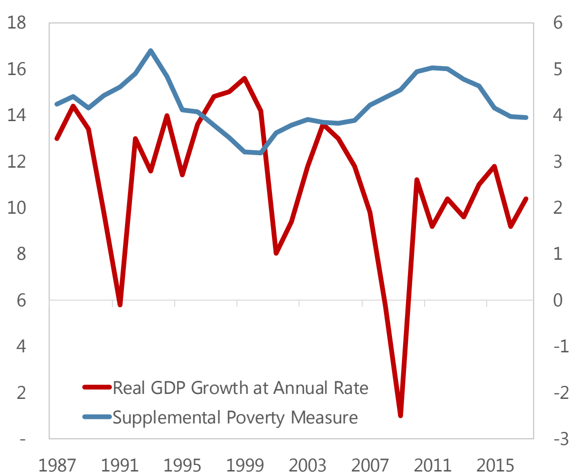
Source: Census, NBER.

Among OECD countries, the U.S. spends less on social benefits and has one of the highest rates of poverty (when defined as the share of the population that earns below 50 percent of median income).



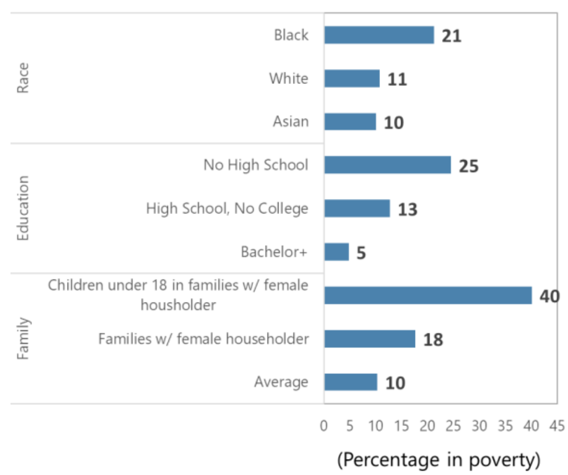
Source: OECD
Note: Poverty line at 50% of median household income

While the poverty rate has come down as the economy recovered, it remains stubbornly high.



Source: Census, CPS (2017-2018 Annual Social and Economic Supplements).

Education levels, family situation and race largely determine poverty outcomes.



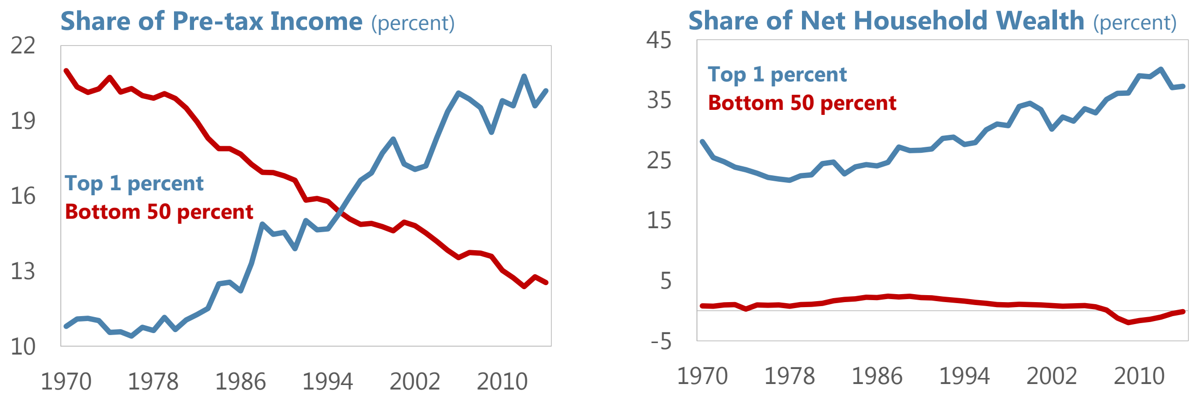
Source: Census, CPS (2017-2018 Annual Social and Economic Supplements).

15. The distribution of income is increasingly polarized. Although household incomes have been rising since 2014, the current level of the median household income is only 2.2 percent higher in real terms than it was at the end of the 1990s (this is despite real per capita GDP being 23 percent higher over the same period). Furthermore, as highlighted in past Article IV consultations, a growing share of the population is earning less than one-half of the median income.

Figure 4. United States: A Decades-Long Rise in Income and Wealth Inequality

The top 1 percent's share of national income has steadily increased as the bottom 50 percent's income share has declined.

Net wealth is even more polarized than income with the bottom 50 percent of the population having maintained close to zero net wealth throughout the last 50 years.



Source: World Inequality Database

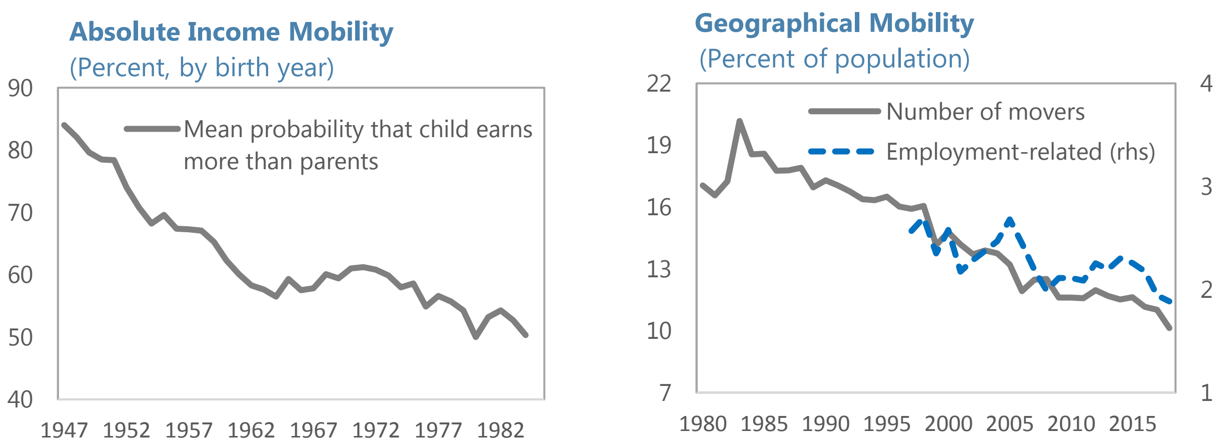
Source: World Inequality Database

16. Socioeconomic mobility has steadily eroded. Today, American children are considerably less likely than their parents to move up the economic ladder, and the probability that they earn more than their parents has seen a secular decline (from almost 90 percent, for those born in the 1940s, to 50 percent for the current cohort of young adults). This decline in income mobility has been broad based but with larger declines for the middle class. Americans have also become less geographically mobile, with only 10 percent of the population moving in 2018. This has exacerbated regional disparities and worked against a more efficient allocation of labor.

Figure 5. United States: A Secular Decline in Socioeconomic Mobility

The prospects for the earnings of young adults is worse than for previous generations.

And fewer households are moving, which is also being reflected in more limited labor market mobility.



Source: Chetty and others, 2017, "The Fading American Dream: Trends in Absolute Income Mobility Since 1940."

Source: Census, CPS, 1980-2018. Employment-related movers excluding retirees.

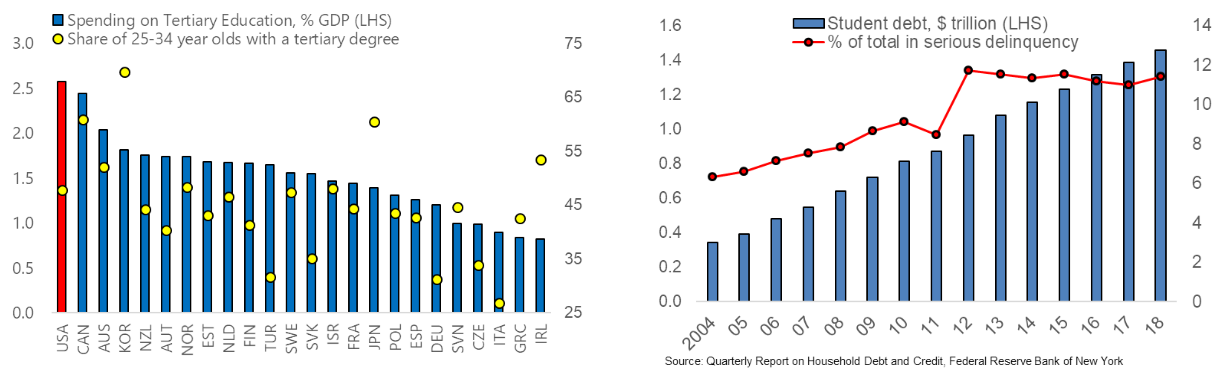
17. By many measures, the U.S. has some of the most prominent educational establishments in the world and devotes significant resources to investing in tertiary education (around 3 percent of GDP, almost twice that of Germany and Japan). There remains a sizable wage premium to investments in tertiary education: a bachelor's degree garners 60–80 percent more income relative to just having a high school degree which is suggestive of the productivity gains associated with these investments in human capital. However, according to recent research, this wage premium has been declining for successive cohorts and, given the rising costs of tertiary education and significant variability in the quality of undergraduate programs, the lifetime wealth premium from completing college is now close to zero for a large share of the population.

18. The high level of spending on education has not translated into a significant improvement in education outcomes relative to OECD peers. Part of the reason has been that the real cost of education (particularly at the tertiary level) has been rising rapidly (for example, over the past decade, college tuition (net of financial aid) has risen by around 4 percent per year). This, in turn, has led to a rapid rise in student debt (average student debt now totals US$37,172 per recent college graduate and 2.2 million Americans have student debt in excess of US$100,000). A second shortcoming is the high noncompletion rate. Only 60 percent of enrollees in four-year colleges graduate within 6 years resulting in less than one-half of 25-34 year-olds having an undergraduate degree.

Figure 6. United States: Education Indicators

The U.S. spends more on tertiary education as a share of GDP than other OECD countries but this is not matched by measures of achievement.

Levels of student debt and rates of delinquency are both rising, despite a solid labor market and sustained GDP growth.



19. The seeds of these disappointing tertiary education outturns are complex but are, in part, rooted in a range of inequalities in the PK-12 education system. Most U.S. states spend less today on K-12 education than they did prior to the financial crisis and, since education is locally funded, there are wide discrepancies in per-student funding across localities and very uneven access to publicly-funded pre-K. It is not surprising then that, on average, U.S. high school students consistently score below most G-7 countries in internationally comparable math and reading tests.

20. The troubling social outcomes described above are having negative effects at the macroeconomic level. For example:

- Those living in poverty have a narrower range of opportunities and resources, leading to lower labor force participation, higher rates of incarceration, worse education and health outcomes, and lower productivity. This is particularly pernicious for children that are growing up below the poverty line.

- The high cost of healthcare and lack of universal coverage diminish human capital, reduce working lives, and create important private and public costs that are increasingly weighing on the fiscal position.

- Variable quality, high costs, and unequal public funding of K-12 and college education serve to perpetuate inequalities and erode the supply of productive, skilled labor.

- The polarization in wealth and income suppresses aggregate demand (particularly household consumption), reduces social mobility, and worsens the inequality of economic opportunities (particularly for the young).

There are also important interconnections between these various social outcomes as well as a two-way feedback between these different dimensions of social welfare and macroeconomic outturns.

21. Addressing the growing divergences between the aggregate fortunes of the real economy and the standard of living for the bulk of the U.S. population is complex and will require action on many fronts. Such policies include:

Providing Family-Friendly Benefits

- Requiring employers to provide paid family leave.

- Providing means-tested assistance to families to help defray child and dependent care expenses.

Supporting the Poor

- Expanding the eligibility for, and increasing the generosity of, the Earned Income Tax Credit (EITC) to support lower income households and incentivize work. This should include more generous treatment for workers without dependents, those under 25, and older workers that are not yet eligible for social security.

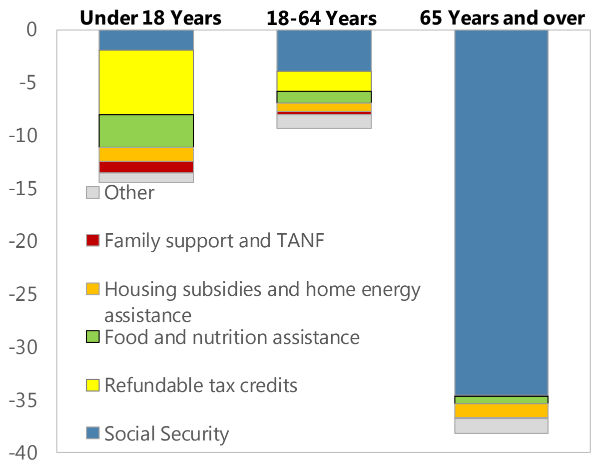
- To lessen the risk that an expanded EITC leads to a decline in pre-tax wages at the bottom of the income distribution, changes in the EITC should be combined with an increase in the federal minimum wage.

- Upgrading federal and state social assistance to simplify the multitude of programs, increase the generosity of direct transfer programs, avoid "cliffs" in the phase out of social benefits as disposable income rises (Box 6), and better target federal payments to program outcomes.

Box 6. Social Assistance Programs

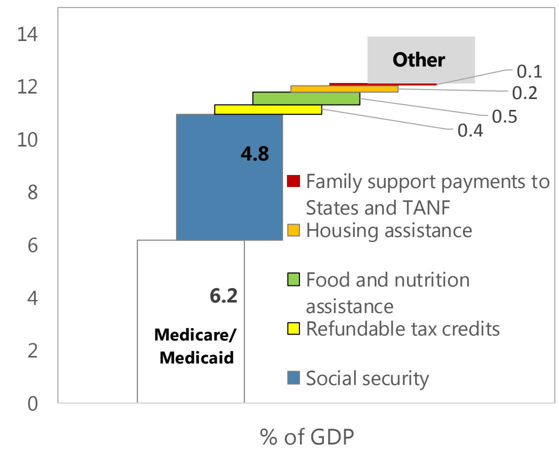
Social programs currently lift around 45 million Americans out of poverty (see Census, 2018).
The Supplemental Nutrition Assistance Program (SNAP), refundable tax credits—notably the Earned Income Tax Credit, the refundable portion of the Child Tax Credit, and health insurance premium tax credits (for lower income families that purchase health insurance through the Health Insurance Marketplace)—and Supplemental Security Income (for the elderly, blind and disabled) are the main programs in place to alleviate poverty. Poor children benefit particularly from refundable tax credits and the nutrition benefit programs (combined, the direct cost of these two programs is less than 1 percent of GDP).

Number of Americans Lifted Out of Poverty: 2017
(Million people)



Source: Census, CPS, 2017-2018 Annual Social and Economic Supplements.

Outlays for Payments to All Individuals: 2018
(Federal expenditures in percent of GDP)



Source: Office of Management and Budget (2019).

While eligibility varies by social program and by state, for most social assistance there is a phase out as personal income rises and benefits are sometimes cut abruptly at specific income thresholds resulting in "cliffs" (see Steuerle, 2012 for a graphical illustration of eligibility cliffs). Programs are typically not coordinated and benefits across multiple programs are sometimes eliminated simultaneously at certain levels of income. This phase-out typically occurs before a household reaches levels of income that would allow them to be fully self-sufficient. This could mean that increased earnings can push a household back below the poverty line (because of a loss of their social assistance benefits).

A smoother phase-out of social assistance programs as income rises—in the same way as the EITC currently does—would help improve social outcomes. Income eligibility limits for each individual program could be extended to higher levels of income and, in addition to a gradual phase-out, there could be a greater coordination in eligibility across programs (to harmonize eligibility thresholds and prevent several programs expiring around similar levels of income). Further, given the importance of assistance programs in addressing poverty for children, consideration could be given to increasing the generosity of benefits that are most incident on the young (such as SNAP, the refundable child tax credit, and support to child care services) to better support the challenges facing single-parent households with incomes at or close to the poverty line.

Expanding Healthcare Coverage and Tempering Healthcare Costs

- Protecting the gains in health care coverage that have been achieved since the financial crisis, particularly for those at the lower end of the income distribution.

- Drawing on existing pilot programs, and the deployment of new technologies, to provide incentives to increase efficiency and improve pricing transparency by healthcare providers. The goals should be to help improve market discipline, reduce pricing variability, and ultimately contain inflation in healthcare services.

- Capitalizing on the range of experiences at the state and local level to deploy, and fund, effective programs (including medication assisted treatments) to counter the upswing in opioid addiction and related deaths.

- Assessing the scope to apply antitrust or other solutions to cases where the market concentration of health providers or insurers has increased and there are unreasonable restraints of trade and/or where premiums for non-group policies have been rising rapidly.

Improving Education Outcomes

- Better prioritizing spending on education to provide greater resources for early childhood education and for universal pre-K (both of which have been linked to higher educational attainment).

- Designing Federal programs to provide greater support for science, technology, engineering and mathematics programs.

- Redesigning the funding model for public schools to reduce funding differentials across districts and to provide more resources to schools with a higher concentration of students from low-income households.

- Expanding apprenticeship and vocational programs to offer attractive, non-college career paths to workers of all ages.

- Increasing the focus on preparing students for college and, once those students are enrolled, expanding programs that foster retention and actively advise students (including to raise awareness of how to manage the financial dimensions of their college investment).

22. Some of these measures will imply higher fiscal costs that will need to be offset both by tackling entitlement spending and raising revenues (see below). However, addressing these troubling social outcomes will help strengthen human capital, increase labor force participation, boost productivity, support aggregate demand, and raise medium-term growth and job creation.

Authorities' Views

23. The administration noted any solution to poverty and material hardship needs to be couched in helping low-income households become more self-sufficient by bringing workers off the sidelines and into productive employment. This can be achieved by strengthening work requirements in a range of welfare programs (including SNAP and Medicaid) and increasing means-tested child care assistance. In this regard, the substantial expansion of the Child Tax Credit as part of the Tax Cut and Jobs Act has helped support lower income parents and increased their incentive to work. Significant gains could be made in K-12 education outturns by allowing families greater choice over where they attend school and allowing public education funding to follow the student to whichever school environment best fits their needs. The administration is committed to expanding apprenticeship initiatives to make such work-and-learn programs a viable path to a prosperous career. Finally, decisively tackling opioid abuse continues to be a priority for the administration through increased access to treatment and recovery services, prescription drug monitoring programs, and cracking down on illegal drug supplies.

THE U.S. FISCAL POSITION IS UNSUSTAINABLE

24. The structural primary deficit of the federal government has steadily deteriorated since the beginning of the current administration. Policy changes were put in place for 2018-19 that increased both defense and nondefense spending as well as significantly reduced taxes on both households and corporates. This fiscal expansion has supported economic activity and allowed the U.S. to achieve close to 3 percent growth in 2018 at a time when the global economic expansion was weakening. However, the shift in policy has also increased the debt-to-GDP ratio (to 78 percent of GDP for the federal government and 107 percent of GDP for the general government). Under current policies, the public debt burden is expected to continue its upward path throughout the medium-term, particularly as aging related spending rises. Although the U.S. is judged to have some fiscal space, it should not be using it at this stage in the cycle. The demand stimulus from U.S. fiscal policy is having positive demand spillovers to other countries for the time-being but is adding to medium-term risks (notably, the reversal in fiscal impulse planned for 2020 has the potential to create adverse effects for overseas corporates, households and sovereigns).

Federal Budget Deficit and Impact of Recent Fiscal Policy Measures, FY2017-19

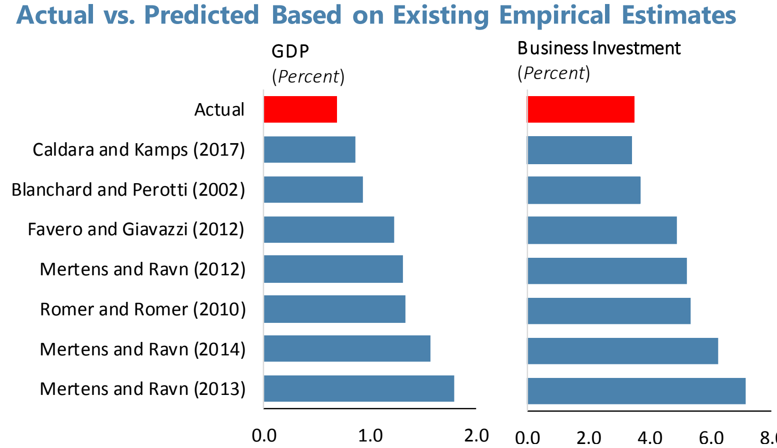
(percent of GDP)

Overall balance, FY2016	-3.2
Revenue losses from TCJA 1/	-1.4
Higher spending from Appropriations and Bipartisan Budget Acts of 2018	-0.5
Impact of higher growth	0.4
Other	0.4
Overall balance, FY2019	-4.2

1/ CBO, The Budget and Economic Outlook: 2018 to 2028 (April 2018) and IMF staff calculations

25. The estimated fiscal cost in 2018-2027 of the Tax Cuts and Jobs Act has risen from US$1.5 trillion (at the time of approval) to US$1.9 trillion (or 10 percent of current GDP) in most recent estimates. Despite this increased cost, the evidence so far suggests that businesses have either saved or redistributed to shareholders much of the tax windfall. There is less evidence the tax overhaul has led companies to increase outlays on physical capital and R&D. Indeed, the rise in investment that occurred in 2018 is largely explained by the increase in aggregate demand arising from the contemporaneous fiscal stimulus (rather than from a supply side response to a lower effective corporate tax rate). Although it is too soon after the entry into force of the tax overhaul to come to firm conclusions, one possible explanation for this tepid response of investment to a lower corporate tax burden could be a result of the higher market power of U.S. corporations when compared to previous tax cut episodes (Box 7).

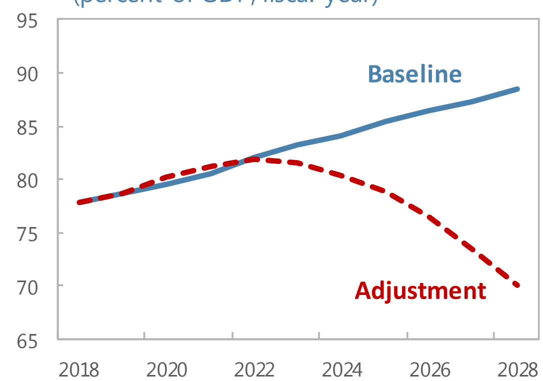
Impact of Tax Cuts and Jobs Act on 2018 Growth: Actual vs. Predicted Based on Existing Empirical Estimates



Source: Mertens (2018) and IMF staff calculations. Actual denotes real outcome compared with Fall 2017 IMF staff forecast, which assumes unchanged U.S. fiscal policies.

26. There is a menu of policy options to address the unsustainable U.S. fiscal position. Under current policies, the federal deficit will remain stuck at high levels (an average primary balance of around –2 percent of GDP over the next decade) and the federal debt will steadily rise (to 88 percent of GDP by 2030). This is not a sustainable policy path. Gradually increasing the primary fiscal balance of the federal government to around 1¾ percent of GDP (1 percent of GDP primary surplus for the general government) would serve to put the debt-to-GDP ratio on a downward path over the medium term. Measures that could achieve this sizeable adjustment could include:

Federal Debt Held by the Public
(percent of GDP, fiscal year)



- Raising the income ceiling for social security contributions.
- Indexing social security benefits to chained inflation.
- Front-loading the planned increase in the retirement age.
- Containing healthcare cost inflation through technological solutions that increase efficiency, encourage greater cost sharing with beneficiaries, and change the mechanisms for remunerating healthcare providers.
- Increasing the federal revenue-GDP ratio by putting in place a broad-based carbon tax, a federal consumption tax, and a higher federal gas tax.

Such a set of policies would both allow the public debt-to-GDP ratio to fall and create fiscal space to support low- and middle-income families, address social inequalities and improve welfare, expand public investments in human and physical capital, and increase medium-term growth, productivity, and job creation.

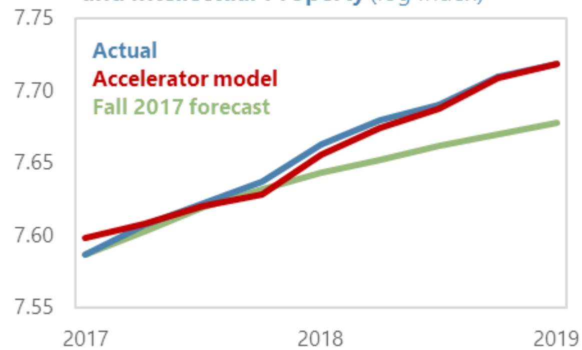
27. It is worth noting that other supply-side measures that sustainably raise potential growth would reduce the size of the policy adjustment that is needed to achieve fiscal sustainability. For example, legislating a skills-based immigration reform (a plan has recently been proposed by the administration) could increase both productivity and the size of the labor force as well as lessen the pressures from aging, with beneficial consequences for the debt-GDP dynamics. Other long-standing recommendations for raising potential output include upgrading public infrastructure, simplifying and harmonizing regulations across states, supporting low- and middle-income households, and improving education outcomes (see 2017 Article IV for a summary).

Box 7. The Impact of the Corporate Income Tax Cut [1]

U.S. business investment grew strongly in 2018. The overriding factor supporting this higher investment has been the overall strength in aggregate demand (in part driven by the large fiscal stimulus enacted in 2017-18). The reduction in the corporate cost of capital associated with the Tax Cuts and Jobs Act seems to have had a relatively minor supply-side impact on capital formation.

In 2018, U.S. business investment grew 3½ percent faster than had been anticipated prior to the enactment of the 2017 Tax Cuts and Jobs Act (TCJA) and the passage of the 2018 Bipartisan Budget Act (BBA). This increase is consistent with a forward-looking accelerator model in which investment responds to expectations of future overall demand (as measured by private-sector forecasts of growth in the non-investment part of output). This would imply that factors that boosted aggregate demand—including the rise in disposable household income from the TCJA and the government spending increase from the BBA—were the main forces supporting higher investment. Other factors, such as reductions in the cost of capital from the TCJA business tax provisions, appear to have played a more minor role.

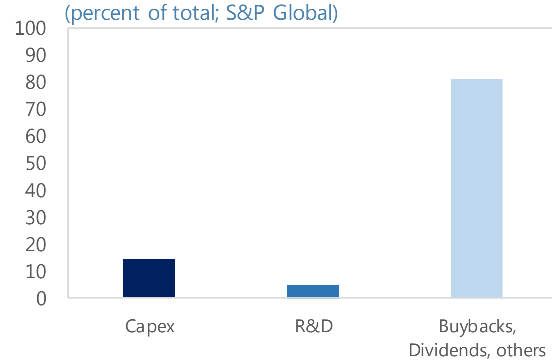
Real Business Investment in Equipment and Intellectual Property (log index)



The impact of the tax changes on investment appear to be corroborated by other data:

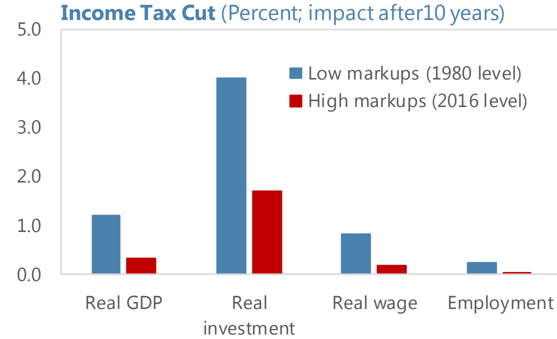
- Around 20 percent of the increase in corporate cash balances for S&P500 firms has been used for capital and R&D spending. The remainder has supported share buybacks, dividend payouts, and other asset-liability planning and balance sheet adjustments.
- Business surveys suggest that only 10-25 percent of firms chose to bring forward or increase investment as a result of the 2017 changes in the tax code

Change in the Use of Cash Since 2017
(percent of total; S&P Global)



What could explain this relatively muted response of investment to a lowering in the effective tax rate? Simulation results from a dynamic general equilibrium model suggest that the elasticity of investment to tax changes could have declined over the past 30 years due to the rise in corporate market power (as documented in Diez, Leigh and Tambunlertchai 2018 and IMF 2019). This is also borne out in firm-level data where the impact of tax changes on investment and employment in 2018 has been significantly smaller for those firms with higher markups when compared with those firms that price closer to marginal cost.

Macroeconomic Impact of 1% of GDP Corporate Income Tax Cut (Percent; impact after10 years)



Source: Global Integrated Monetary and Fiscal (GIMF) model simulations

[1] See E. Kopp, D. Leigh, S. Mursula, and S. Tambunlertchai, "U.S. Investment since the Tax Cuts and Jobs Act of 2017," IMF Working Paper 19/120, 2019.

28. The prolonged government shutdown earlier this year demonstrates, once again, the dysfunction inherent in the U.S. budgetary process. Such policy-induced uncertainty is not good for the U.S. economy and has negative outward spillovers for the rest of the global economy. It will be important, therefore, to find institutional mechanisms to avoid such self-inflicted wounds that are created by political brinkmanship. Solutions that should be considered include:

- Permanently shifting to a budget cycle where annual spending levels are agreed for a two-year period (helping to divorce budget decisions from the electoral calendar).

- Introduce provisions to automatically continue funding government functions, perhaps at reduced levels, if appropriations agreements cannot be met before spending authority expires.

- Contemplating new legislative approaches that trigger automatic revenue or spending adjustments in the event that congress-approved fiscal targets are breached.

- Replacing the existing debt ceiling with a bipartisan agreement on a clear, simple medium-term fiscal objective (that takes an integrated view of all budget functions and has explicit numerical goals for both debt and deficit). Failing such a broader agreement, it would be a step forward if legislation could, at least, be designed to automatically adjust the debt ceiling once an agreement is struck on appropriations.

Authorities' Views

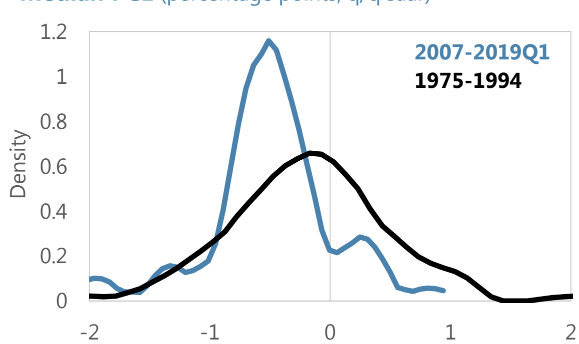
29. The President's Budget argues for reaching a federal primary surplus of 1.8 percent of GDP by 2029 without increases in federal taxes. Rather, this deficit reduction would be achieved through a reprioritization of Federal spending. and the Administration's "two-penny" plan budget proposal reduces non-defense discretionary funding by two percent per year from 2021 to 2029 and increases funding for border security, national defense, law enforcement, and programs to tackle the opioid epidemic. The administration also saw improving U.S. infrastructure as an important goal and has proposed providing up to US$200 billion in federal funding to incentivize state, local and private providers to invest in up to US$2 trillion in infrastructure projects over the course of the next 10 years. The Administration supports a clean and prompt increase to the debt ceiling. However, ultimately such changes were outside the authority of the Executive and would have to be legislated by Congress. Finally, as a broader reform of legal immigration, the administration has proposed increasing the number of legal immigrants that are selected based on skill or merit from the current 12 percent to 57 percent of total legal immigrants.

MONETARY NORMALIZATION—REST STOP OR END OF THE LINE?

30. After raising the federal funds rate in December, Federal Reserve officials and the FOMC markedly changed their communications in January. At the time of the December meeting, the median of Fed Board members and the regional Fed presidents envisaged 75 basis points increase in the federal funds rate in 2019-20. However, by early January, Chair Powell expressed concerns over the global outlook and indicated the Fed would be "listening sensitively to the message that markets are sending", "patient as we watch to see how the economy evolves", and "prepared to adjust policy quickly and flexibly and to use all of our tools to support the economy". This had an immediate effect on improving market sentiment and lessening risk aversion. These forces were further fueled at the January FOMC meeting when the forward bias for further gradual increases in policy rates and the assessment that risks to the outlook were balanced were both removed from the statement. Finally, at the March FOMC meeting, the Fed reaffirmed its guidance and indicated that most participants envisaged no further policy rate increases in 2019.

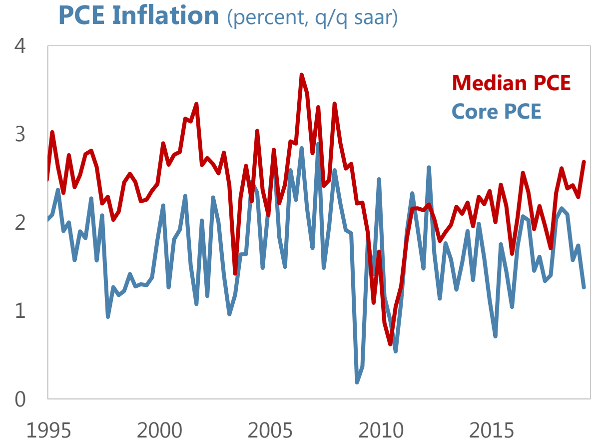
31. Over the past few months, inflation rates have again declined as a result of large, downward shifts in specific components of the PCE index. On the one hand, it can be argued that such temporary drags on core and headline inflation should be looked through since they will wash out of price statistics over time. However, looking over the past decade or more in the U.S., such idiosyncratic and temporary price changes have represented a persistent headwind to inflation outturns, keeping core PCE inflation persistently below other measures of underlying inflation (such as trimmed mean or median PCE).

Distribution of Deviations Between Core and Median PCE (percentage points; q/q saar)



Source: IMF staff calculations. Distribution of quarterly changes in core PCE relative to median PCE inflation.

PCE Inflation (percent, q/q saar)



Sources: BEA and IMF staff calculations.

32. In deciding future movements in the federal funds rate, the Fed should carefully weigh the balance of potential risks to employment and inflation (Box 8). On the one hand, further increases in policy rates at this stage run the risk of triggering an abrupt tightening of financial conditions (through a stronger dollar, lower equity prices, and a repricing of risk premia) which would damage growth and employment prospects. However, these considerations need to be balanced against the risk that wage or price inflation will accelerate as capacity constraints become more binding, requiring policy rates to rise at a faster pace than is currently anticipated (which would also potentially create future market volatility and put downward pressure on activity and employment).

33. On balance, further increases in the policy rate should be deferred until there are greater signs of wage or price inflation than are currently evident. Falling inflation, firmly anchored expectations, strong Fed credibility, evidence of a flat trade-off between inflation and slack and continued uncertainties around the global outlook and where the neutral interest rate is all argue in favor of a pause to further changes in monetary policy. Such a pause will give policymakers time to gauge the balance of risks to both inflation and employment outcomes and to build a clearer picture of whether further adjustments in the federal funds rate are warranted. It is also possible that continued policy accommodation could generate lasting, positive supply side effects as scarce labor resources are allocated more efficiently and as labor force participation increases (Box 9). The challenge in setting monetary policy will be to judge when this margin of supply side improvement may be exhausted. Furthermore, this pause in policy rate increases will have positive outward spillovers to other countries. As discussed in the October 2013 WEO, lowering the path for the federal funds rate by 25 basis points has positive outward spillovers to activity in other countries, increasing industrial production for the average country by around 0.2 percent. Historically, the largest effects are felt in Latin America and Asia.

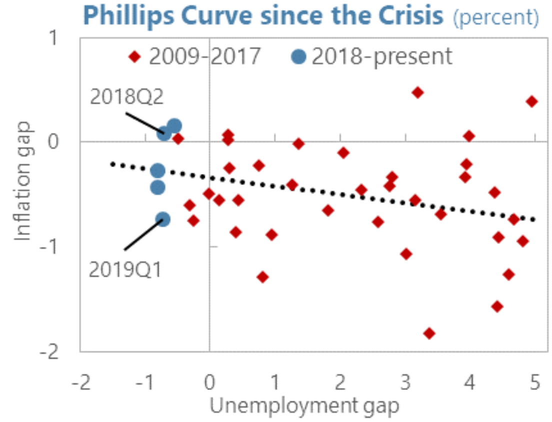
34. Given the likelihood and severity of downside risks to inflation and the asymmetries posed by the effective lower bound, the path for policy rates should accept some temporary overshooting of the Federal Reserve's inflation goal. This would allow inflation to approach the FOMC's 2 percent medium-term target from above. Given the apparent lack of inflation momentum, and barring an unanticipated steepening in the trade-off between slack and inflation, achieving such an overshoot will likely require leaving the federal funds rate at current levels for at least the next few FOMC meetings. Under staff's baseline forecast, the U.S. economy is expected to continue growing faster than potential both this year and next, the policy rate is forecast to resume its gradual upward path later in 2019 or during 2020, and both core and headline PCE inflation modestly overshoot 2 percent in 2020.

35. The Fed's continued adherence to the principles of data dependence and clear, forward-looking communication will be vital to avoid creating volatility in financial conditions or negative spillovers to the rest of the world. To assist in this communication effort, the Fed could consider publishing a quarterly monetary policy report that details a central economic scenario, that is endorsed by the FOMC, and is accompanied by a quantification of how FOMC members see the distribution of risks around that scenario.

Box 8. Salient Risks to Growth and Inflation

Risks to inflation. Over the past decade, the U.S. has maintained very well anchored inflation expectations. The output gap exerted downward pressure on inflation for much of that period and core PCE inflation struggled to rise to the Federal Reserve's 2 percent medium-term target. This past history, and the recent flow of data, suggest there are continued downward risks around staff's forecast of PCE inflation (likely either due to inflation expectations of prices setters being below 2 percent or because of headwinds from repeated negative relative price changes, perhaps associated with secular changes in technology).

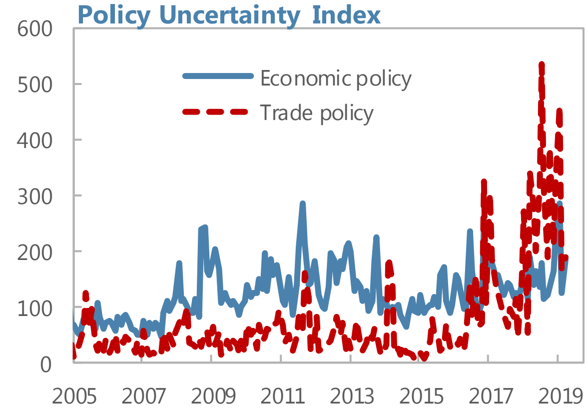
Phillips Curve since the Crisis (percent)



Source: BEA, BLS, and staff calculations

Trade-related risks. Ongoing trade tensions emanating from the U.S. are adversely impacting global trade and production (both directly and through increased policy uncertainty and the impact on confidence and on financial conditions). Estimates suggest that investment falls by 1-1¼ percent in response to a one-standard deviation shock to policy uncertainty. However, this is a two-sided risk. A swift resolution of ongoing trade tensions and approval of the U.S.-Mexico-Canada trade agreement could represent an upside risk to the outlook.

Policy Uncertainty Index



The policy mix. The expansionary fiscal policy that is current in place is creating domestic imbalances, particularly since it comes at a time when the economy is already operating above potential. Under current policies, the fiscal stimulus is expected to reverse in 2020 which could lead to a sharper-than-expected deceleration over the next two years.

Macro-financial risks. Nonfinancial corporates have seen a significant increase in indebtedness in recent years and lower-rated entities have had open access to debt financing. The rise in leveraged lending is one symptom of this overall weakening of lending standards. The combination of leverage, fragile balance sheets, a slowing economy, and potential for financial market volatility and a tightening of financial conditions (as was evident in late-2018) could create adverse macro-financial feedback loops, amplifying the impact from an expected slowing of growth, and increasing downside risks to the outlook.

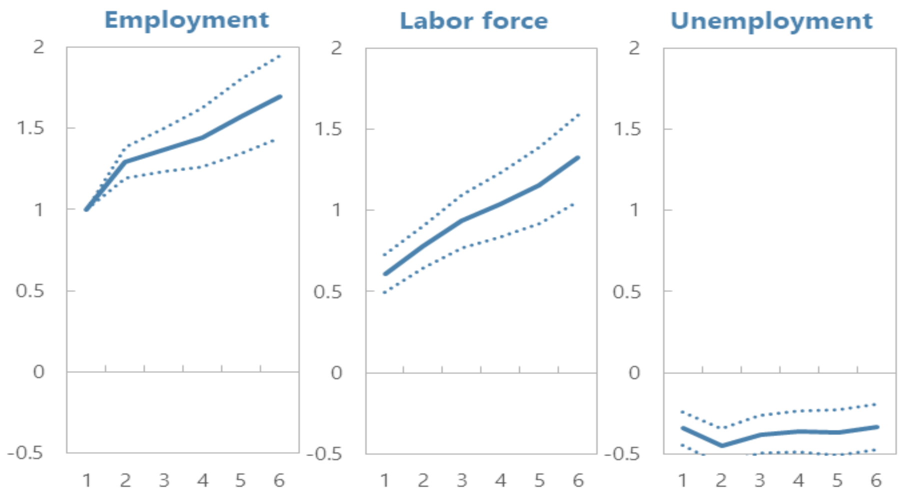
Box 9. Hysteresis and the Scope for Continued Monetary Accommodation[1]

Demand-driven labor market expansions appear to have persistent effects on both forecasts and outcomes, suggesting that maintaining an accommodative policy stance, even at a late stage in the economic expansion, may have positive long-run, supply-side benefits.

Conventional wisdom suggests that labor market booms typically have transitory effects. However, a number of studies since the global financial crisis find that cyclical fluctuations have longer-term effects, suggesting hysteresis.[2]

In line with these studies, new evidence from a panel of advanced economies over the last 30 years shows that professional forecasters tend to revise upward their outlook for longer-term employment and labor force participation in response to positive revisions to current-period employment. Specifically, the analysis isolates positive demand-side shocks (where unemployment unexpectedly falls and inflation unexpectedly rises) and finds that, during such episodes, forecasters increase not only their near-term forecasts but also raise their outlook for employment and labor force participation over a longer horizon (revising downward their medium-term forecast of the unemployment rate). The magnitudes of these revisions are not small. For a 1 percent surprise in current-period employment, the 5-year ahead forecast for employment rises by 1.7 percent, with a 1.3 percent upward revision in labor force participation.

Estimated Responses of Forecasts to a 1 Percent Demand-Driven Employment Expansion



Note: Years on x-axis. Dashes denote 90 percent confidence interval.

Furthermore, these medium-term forecasts appear to neither over- nor under-estimate realized labor market outcomes. As such, this combination of (i) persistence in forecast revisions and (ii) that forecasts are unbiased estimates of future outcomes suggests that positive demand shocks can generate long-lasting (supply-side) effects in labor markets (i.e., that there is "positive hysteresis"). Such longer-run effects could arise, as Yellen (2016), Blanchard (2018), and Powell (2018) discuss, as a result of being able to bring discouraged workers back into the labor force, encouraging more efficiency-enhancing job switches as labor markets tighten, enhancing human capital through on-the-job training, and prompting more investment into physical capital and research and development.

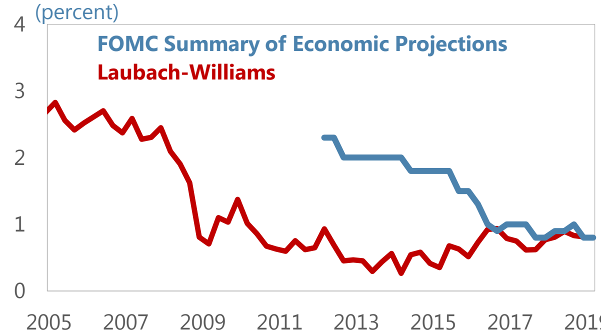
[1] See J. Bluedorn and D. Leigh," Hysteresis in Labor Markets? Evidence from Professional Long-Term Forecasts" IMF Working Paper 19/114, 2019.

[2] See Ball 2009 and 2014; Erceg and Levin 2014; Blanchard, Cerutti, and Summers 2015; Martin, Munyan, and Wilson 2015; Fatás and Summers 2018; Yagan 2018; and others.

36. With the federal funds rate now moving above the rate of interest on excess reserves, the Fed's announcement to end its balance sheet normalization by the end of this year appears warranted. Understanding changes in the demand for reserves and adjusting supply to ensure the fed funds rate is aligned within the target may become more challenging as balance sheet normalization progresses. Barring a significant negative shock (i.e. one where sufficiently accommodative monetary conditions cannot be achieved through reductions in the policy rate), the adjustments to the balance sheet should proceed as outlined in the March principles. It will be important to communicate clearly that decisions on the size of the Fed's balance sheet are technical in nature and not to be interpreted as a change in the monetary policy stance.

37. The Federal Reserve's ongoing review of its monetary policy strategy, tools and communications is a timely effort to assess how the Fed can best continue to meet its dual mandate. There is a growing consensus that the decline in various estimates of the neutral interest rate in recent decades has increased the likelihood that monetary policy will be constrained by the effective lower bound in future recessions. In addition, despite the Fed pursuing a symmetric target, personal consumption expenditures inflation has been stubbornly below the Fed's medium-term target for much of the past decade. The Fed's ongoing assessment of alternative strategies for meeting its dual mandate will, therefore, be invaluable in helping to inform the formulation of policies and to ensure the continuing credibility of the Fed's clear commitment to its mandate of maximum employment and stable prices.

Estimates of the Long-run Real Neutral Rate
(percent)



Sources: Federal Reserve Board of Governors and Federal Reserve Bank of New York

38. Beyond possible changes to the monetary policy strategy, providing greater clarity and a more holistic picture of the expected evolution of the operating framework for monetary policy would be valuable. The Federal Reserve has provided significant information about its expectations for the size of its balance sheet over the coming years. However, less is known about the broader future operating framework. The current "floor" system appears to be working well but has been associated with periodic spikes in short-term money market rates. A standing repo facility may, therefore, be helpful in capping spikes in money market rates during episodes where there is a temporary higher demand for reserves (e.g. at end-month or end-quarter). In addition, consideration should be given to moving away from the federal funds rate as the operating target (since it is currently transacted only between a narrow group of participants) and adopt instead a broader measure of the cost of overnight borrowing. Finally, there is a case to return to a point target for the chosen policy rate, rather than continuing with the current target range.

Authorities' Views

39. There was an expectation among monetary policy officials that, while the economy would slow, the expansion of economic activity would continue, and labor market conditions

would remain strong. Inflation outcomes had been softer-than-expected over the past few months. Nonetheless, officials were confident that inflation would, over the next few years, still rise back to the Fed's longer-run objective of 2 percent as labor markets remained tight and wage pressures were allowed to build. There was little to suggest that the recent fall in inflation away from the 2 percent reached for much of 2018 was anything other than a transitory phenomenon and there was little evidence of more persistent headwinds to PCE inflation. Nonetheless, the Fed was attuned to the possibility that low inflation expectations could be exerting downward pressure on inflation. Alternatively, there could possibly be more slack in the labor market than was suggested by usual measures. Officials did not want to pre-empt the broad-based assessment of monetary policy strategy, tools, and communications that was already underway but did expect the findings of this review to be considered by the FOMC in the latter part of this year and could lead to evolutionary changes in the framework. On the operating framework, the Federal Reserve intends to continue to implement monetary policy in a regime in which an ample supply of reserves ensures that control over the level of the federal funds rate and other short-term interest rates is exercised primarily through the Federal Reserve's administered rates and in which active management of the supply of reserves is not required. Beyond these general principles, officials saw little urgency to articulate more details about how the operating framework may evolve over the medium-term.

A MORE OPEN, STABLE, AND TRANSPARENT, RULES-BASED INTERNATIONAL SYSTEM FOR TRADE AND INVESTMENT

40. **Trade policy uncertainties remain high, creating negative consequences for the U.S. and for global activity.** Tariffs remain in place on steel, aluminum, and certain household appliances; tariffs on US$200 billion of imports from China have been increased to 25 percent (with a potential for a further expansion of tariffs); and the USMCA has not been approved by national legislatures. The U.S., Mexico and Canada Agreement (USMCA) could, if approved, alleviate uncertainty and provide some modernization in the areas of services, e-commerce, and data transparency. In addition, the recent elimination of U.S. tariffs on steel and aluminum imports from Canada and Mexico (as well as the elimination of the Canadian and Mexican retaliatory tariffs) was a positive development. Nonetheless, the USMCA still has important shortcomings including more stringent rules of origin requirements and a provision that discourages USMCA members from negotiating free-trade agreements with non-market economies. Finally, a decision on whether to raise tariffs on imported auto vehicles and parts—including those from North American trading partners—under Section 232 of the 1962 Trade Expansion Act has been deferred for 180 days.

41. **On May 23, the Department of Commerce issued a notice of proposed rulemaking that would allow the imposition of countervailing duties on countries that are viewed as subsidizing their own exporters by undervaluing their currencies relative to the U.S. dollar**. If the proposal is adopted, it would raise significant questions of how to judge the degree of such undervaluation and the consistency of the proposal with the U.S. international obligations, including at the WTO. Further, it could encourage trading partners to either respond with retaliatory trade

barriers or to themselves regard currency undervaluation as a subsidy and may have implications for a country's conduct of monetary policy.

42. On May 30 the administration invoked the International Emergency Economic Powers Act to impose a 5 percent tariff on all goods imported from Mexico, starting on June 10, unless Mexico takes effective actions to curb illegal immigration across the Southern Border. Should the U.S. deem Mexico's actions against illegal immigration are insufficient, the tariffs would, on the first day of each subsequent month, be progressively raised in 5 percent increments until they reach 25 percent on October 1.

43. As highlighted in the April 2019 World Economic Outlook, trade tensions and tariff hikes have had negative outward spillovers, contributing to the deceleration in the global economic expansion in the second half of 2018. Further the October 2018 World Economic Outlook illustrates that higher import tariffs imposed by the United States, along with retaliatory measures by trading partners, has the potential to inflict significant costs on the global economy, particularly if such policy choices were to feed into confidence and tighten financial conditions.

44. For the global economy to function well, it needs to be able to rely on a more open, more stable, and more transparent, rules-based international trade system. Rising import tariffs and other steps taken by the administration are undermining the global trading system, increasing restrictions on trade in goods and services, and catalyzing a cycle of retaliatory trade responses. The U.S. and its trading partners should work constructively to better address distortions in the trading system that are partly rooted in the system's inability to adapt to long-term changes in the international environment. It is especially important that the trade tensions between the U.S. and China—which represent a threat to the global outlook and create important negative spillovers to other countries—are quickly resolved through a comprehensive agreement that strengthens the international system (not through a managed trade deal that targets a compression in the bilateral U.S.-China trade deficit). As highlighted in the April 2019 World Economic Outlook, tariff measures are likely to be ineffective at containing bilateral trade deficits and will be damaging to the U.S. and to global macroeconomic outturns. Instead, the U.S. external imbalance will need to be addressed through fiscal adjustment and supply side reforms that improve productivity and competitiveness.

45. The U.S. would gain by working with international partners to strengthen the rules-based, multilateral trading system. This should include advancing trade negotiations in areas such as e-commerce and services and ensuring the continued enforceability of existing WTO commitments through a well-functioning WTO dispute settlement system.

46. Finally, greater attention needs to be paid to the welfare of those workers dislocated by the ongoing reshaping of the U.S. economy by technology and trade. This will require intensifying policy efforts including through greater public investments in training and education, temporary income support, and job search assistance.

Authorities' Views

47. The administration recognized the benefits of international trade and investment, while pointing to the need for reforms to address the shortcomings of the WTO and other trade rules. They viewed China as pursuing policies that were unfair and discriminatory, creating burdens on U.S. companies, some of which were not adequately remedied through the WTO. Key concerns include pressure on U.S. companies to transfer technology, weak protection and enforcement of intellectual property rights, sponsoring cyber theft and intrusion into the commercial networks of U.S. companies for commercial purposes, tariffs and non-tariff barriers, including subsidy practices that lead to excess global capacity, and services and agricultural market access. The U.S. is seeking to end such practices and to achieve a more fair, balanced, and reciprocal trading arrangement with China. The administration noted one of its top priorities is to obtain Congressional approval of the USMCA. The administration is confident that approval of the USMCA will modernize and rebalance America's trade relationship with Canada and Mexico, boost economic growth, and create jobs for American workers, particularly in manufacturing. On the question of considering currency undervaluation as a countervailable subsidy, this evaluation would be one component of a case initiated by the International Trade Administration in the U.S. Department of Commerce to provide relief to U.S. industries from the harmful effects of unfairly traded imports. The U.S. Treasury would be consulted regarding the analysis of undervaluation.

GOVERNANCE AND TRANSPARENCY

48. According to the latest (2016) Financial Action Task Force (FATF) Mutual Evaluation Report of the United States (MER), the U.S. is substantially effective at investigating and prosecuting money laundering and cooperating with other jurisdictions over corruption proceeds in the U.S. The authorities understand that the U.S. is often a desirable destination for the proceeds of foreign predicate offenses, including corruption.[1] They have also identified that complex legal structures are often used to hide ownership and control of illegal proceeds and that the high-end real estate sector may be vulnerable to money laundering abuse. To help mitigate these circumstances in relation to foreign corruption, the Department of Justice has a dedicated Kleptocracy Asset Recovery Initiative which focuses on recovering the proceeds of foreign official corruption. Since 2010, it has restrained US$2.8 billion in assets, and repatriated over US$150 million to countries affected by corruption.

49. Since the MER was published, the U.S. has continued to take non-prosecutorial efforts to combat corruption. In December 2017, the United States issued an Executive Order declaring a national emergency with respect to, amongst other things, corruption around the world and providing for the imposition of sanctions on actors engaged in corrupt activities which have resulted in 66 corruption-related designations (as of May 16, 2019). The U.S. Treasury has issued numerous

[1] This understanding is reflected in successive National Money Laundering Risk Assessments. For example, the 2018 version recognizes that the proceeds of domestic and foreign corruption continue to represent a significant threat to the U.S. financial system.

corruption-related advisories to inform financial institutions, governments, and non-governmental organizations about the ways in which corrupt officials and their facilitators abuse the international financial system.[2]

50. Nonetheless, the U.S needs to address serious weaknesses identified by the FATF in entity transparency and the content and coverage of preventive measures that may make it easier for foreign corrupt officials to hide their proceeds in the U.S. More needs to be done to address the following weaknesses, some of which were identified by the FATF:

- The measures currently in place to prevent the abuse of companies are inadequate and the lack of readily accessible beneficial ownership information about companies means that the U.S. authorities are unlikely to undertake a resource-intensive investigation on behalf of a foreign counterpart unless the case is of a high priority. Fundamental improvements are needed to strengthen the legal framework to facilitate timely access to beneficial ownership information and thus speed up investigations and help prevent the abuse of legal entities for money laundering purposes.

- The U.S. only complies partially with preventive requirements for regulated firms regarding the identification and verification of beneficial ownership for customers and politically exposed persons (PEPs).[3] However, in practice, many banks do apply requirements regarding PEPs more broadly than they are obliged to do, due in large part to supervisory expectations regarding PEPs set out by federal banking supervisors. Beneficial ownership information is not collected in all cases and the definition of beneficial ownership does not comply with the FATF standard. Nonetheless, in 2018, the U.S. partially addressed its deficiency regarding beneficial ownership when it brought in a new requirement for major regulated firms (such as banks, securities firms, and futures firms) to obtain beneficial ownership information that the authorities believe meets the FATF definition when corporations, but not other customer types, open new accounts.

- Major improvements are needed to make lawyers, accountants, and trust and company service providers subject to customer due diligence and suspicious transaction reporting obligations even though some ML/TF risks faced by lawyers and accountants may be partially mitigated by cash reporting obligations, as well as by strong professional entry and continuing ethical requirements

- Action is also needed to address money laundering risks in high-end real estate, where real-estate agents are not subject to comprehensive AML/CFT requirements and where non-bank mortgage lenders and originators have limited awareness of obligations, especially with regard

[2] See, the Treasury Financial Crimes and Enforcement Network's June 2018 Advisory on Human Rights Abuses Enabled by Corrupt Senior Foreign Political Figures and their Financial Facilitators as well as e.g., FIN-2019-A002, "Updated Advisory on Widespread Public Corruption in Venezuela," May 3, 2019; FIN-2018-A005, "Advisory to Financial Institutions on the Risk of Proceeds of Corruption from Nicaragua," October 4, 2018; FIN-2017-A004, "Advisory to Financial Institutions on Political Corruption Risks in South Sudan," September 6, 2017.

[3] The main regulatory requirement is for covered financial institutions to conduct enhanced due diligence when opening private bank accounts (which must contain more that $1 million) for foreign PEPs.

to politically exposed persons. The use of Geographic Targeting Orders issued by Treasury's Financial Crimes and Enforcement Network (to collect information for high-end purchases by legal entities without financing) could be used to inform further action to address these risks.

Authorities' Views

51. The authorities recognized the importance of addressing the issue of corruption from all angles and welcomed the opportunity to discuss efforts to prevent foreign public officials from concealing the proceeds of corruption in the U.S. economy. They emphasized U.S. government efforts, including prosecutorial efforts as well as the use of sanctions designations and corruption-related advisories to communicate corruption-related risks and obligations to financial institutions, governments and non-governmental organizations. They acknowledged shortcomings regarding the collection of beneficial ownership information at the time of company formation and expressed their commitment to working with Congress on potential legislative solutions to address this gap.

STAFF APPRAISAL

52. The U.S. economy is in the longest expansion in recorded history. Unemployment is at levels not seen since the late 1960s, real wages are rising, and inflationary pressures remain subdued. Economic activity, while still growing above potential, is expected to slow to around 2.6 percent this year and 1.9 percent in 2020.

53. Despite these positive macroeconomic outcomes, the benefits from this decade-long expansion have not been shared as widely as they could. A broader set of social indicators shows a troubling picture. Average life expectancy is falling, income and wealth polarization have increased, poverty has fallen but remains higher than in other advanced economies, social mobility has steadily eroded, and education and health outcomes are discouraging.

54. The financial system appears healthy but medium-term risks to financial stability are rising. More accommodative guidance by global central banks has supported a broad-based increase in asset prices and a compression in the market pricing of volatility. At the same time, vulnerabilities in leveraged corporates and, potentially, in the nonbank system are elevated by historical standards. There has been little institutional response to counter these growing risks.

55. An abrupt reversal of the recent supportive financial market conditions represents a material downside risk to the U.S., with spillover implications for other economies. A sudden tightening of financial conditions could interact with high levels of corporate and public debt, creating a feedback loop between financial conditions and real activity, with negative implications for financial stability. This would undoubtedly have negative outward spillovers for non-U.S. corporates, sovereigns and financial institutions, particularly those with significant leverage or rollover needs in U.S. dollars.

56. **The U.S. public debt is on an unsustainable path**. Policy adjustments are needed to lower the fiscal deficit and put the public debt on a gradual downward path over the medium-term. There are a range of possible policy options, but any successful package will likely require steps to address the expected increases in entitlement spending on health and social security, to raise indirect taxes, and to institute a federal carbon tax.

57. **Further increases in the federal funds rate should be deferred until there are greater signs of wage or price inflation than are currently evident**. Faced with falling inflation, anchored inflation expectations, a flat trade-off between inflation and slack, and continued uncertainties around the U.S. and global outlook, monetary policy has appropriately paused. This gives policymakers time to gauge the balance of risks to both inflation and employment outcomes and to build a clearer picture of whether further adjustments in the federal funds rate are warranted.

58. **Providing greater clarity, and a more holistic picture, of the expected evolution of the operating framework for monetary policy would be valuable**. Operational changes could involve introducing a standing repo facility (to help cap spikes in money market rates); moving away from the federal funds rate as the operating target; and returning to a point target for the policy rate (rather than the current target range).

59. **For the global economy to function well, it needs to be able to rely on a more open, more stable, and more transparent, rules-based international trade system.** The U.S. and its trading partners should work constructively to better address distortions in the trading system that are partly rooted in the system's inability to adapt to long-term changes in the international environment. It is especially important that the trade tensions between the U.S. and China—which represent a threat to the global outlook and create important negative spillovers to other countries—are quickly resolved through a comprehensive agreement that strengthens the international system.

60. **The external position is judged to be moderately weaker than implied by medium-term fundamentals and desirable policies**. The current account deficit is expected to rise modestly over the medium-term, moving it further away from the estimated current account norm. The real effective exchange rate remains somewhat overvalued. As highlighted in the April 2019 World Economic Outlook, tariff measures are likely to be ineffective at containing bilateral trade deficits and will be damaging to the U.S. and to global macroeconomic outturns. Instead, the U.S. external imbalance will need to be addressed through fiscal adjustment and supply side reforms that improve productivity and competitiveness.

61. **The U.S. should address serious weaknesses in entity transparency and the content and coverage of preventive measures that may make it easier for foreign corrupt officials to hide their proceeds in the U.S.** The U.S. needs to do more to ensure law enforcement agencies have timely access to beneficial ownership information (to speed up investigations and help prevent the abuse of legal entities for money laundering purposes). Requirements should be strengthened for regulated firms regarding the identification and verification of beneficial ownership for customers and politically exposed persons. Improvements are needed to make lawyers, accountants, and trust

and company service providers subject to customer due diligence and suspicious transaction reporting obligations. Finally, there is a need to address money laundering risks in high-end real estate (where real-estate agents are not subject to comprehensive AML/CFT requirements and where non-bank mortgage lenders and originators have limited awareness of obligations, especially with regard to politically exposed persons).

62. It is recommended that the next Article IV consultation take place on the standard 12-month cycle.

Table 1. United States: Selected Economic Indicators

(Percentage change from previous period, unless otherwise indicated)

		Projections					
	2018	2019	2020	2021	2022	2023	2024
National production and income							
Real GDP	2.9	2.6	1.9	1.8	1.7	1.6	1.6
Real GDP (q4/q4)	3.0	2.3	1.9	1.7	1.7	1.6	1.6
Net exports 1/	-0.2	0.2	-0.2	-0.2	0.0	0.0	0.0
Total domestic demand	3.0	2.4	2.0	1.9	1.6	1.5	1.5
Final domestic demand	2.9	2.2	2.1	1.9	1.6	1.5	1.5
Private final consumption	2.6	2.3	2.2	1.9	1.8	1.6	1.6
Public consumption expenditure	1.2	0.6	1.0	1.1	0.8	0.7	0.6
Gross fixed domestic investment	4.8	2.7	2.4	2.4	1.5	1.7	1.8
Private fixed investment	5.2	3.1	2.9	2.4	1.6	1.8	2.0
Public fixed investment	2.6	0.6	-0.1	2.0	0.7	1.1	0.1
Change in private inventories 1/	0.1	0.2	0.0	0.0	0.0	0.0	0.0
Nominal GDP	5.2	4.3	4.0	3.8	3.7	3.6	3.7
Personal saving rate (% of disposable income)	6.8	6.5	6.4	6.3	6.2	6.2	6.2
Private investment rate (% of GDP)	17.8	18.1	18.1	18.2	18.2	18.2	18.3
Unemployment and potential output							
Unemployment rate	3.9	3.6	3.5	3.6	3.7	3.8	3.8
Labor force participation rate	62.9	63.0	62.9	62.7	62.5	62.3	62.1
Potential GDP	2.0	2.0	1.9	1.8	1.7	1.7	1.7
Output gap (% of potential GDP)	1.1	1.7	1.7	1.6	1.6	1.5	1.4
Inflation							
CPI inflation (q4/q4)	2.2	2.4	2.6	2.3	2.2	2.2	2.2
Core CPI Inflation (q4/q4)	2.2	2.2	2.5	2.4	2.3	2.3	2.2
PCE Inflation (q4/q4)	1.9	2.1	2.2	2.0	1.9	1.9	2.0
Core PCE Inflation (q4/q4)	1.9	1.8	2.1	2.1	2.0	2.0	2.0
GDP deflator	2.3	1.6	2.1	2.0	2.0	2.0	2.0
Government finances							
Federal balance (% of GDP) 2/	-3.9	-4.2	-4.0	-4.0	-4.3	-4.1	-3.8
Federal debt held by the public (% of GDP)	77.8	78.7	79.6	80.6	82.0	83.3	84.2
General government budget balance (% of GDP) 2	-5.3	-4.9	-4.6	-4.6	-4.9	-4.5	-4.2
General government gross debt (% of GDP)	106.8	107.9	108.8	109.9	111.3	112.4	113.2
Interest rates (percent; period average)							
Fed funds rate	1.8	2.4	2.6	2.9	2.9	2.9	2.8
Three-month Treasury bill rate	2.0	2.4	2.6	2.8	2.8	2.8	2.7
Ten-year government bond rate	2.9	2.7	2.9	3.1	3.2	3.2	3.2
Balance of payments							
Current account balance (% of GDP)	-2.3	-2.1	-2.5	-2.7	-2.6	-2.5	-2.4
Merchandise trade balance (% of GDP)	-4.3	-4.2	-4.5	-4.6	-4.6	-4.6	-4.5
Export volume (NIPA basis, goods)	4.7	3.5	3.1	3.9	4.7	4.3	4.4
Import volume (NIPA basis, goods)	4.8	1.9	4.1	3.9	3.2	3.2	3.1
Net international investment position (% of GDP)	-47.4	-47.5	-48.2	-49.1	-50.0	-50.7	-51.4
Saving and investment (% of GDP)							
Gross national saving	19.0	19.3	18.7	18.7	18.8	18.9	19.0
General government	-3.2	-2.7	-2.5	-2.5	-2.7	-2.4	-2.2
Private	22.2	22.0	21.3	21.2	21.5	21.3	21.3
Personal	5.1	4.9	4.9	4.8	4.8	4.8	4.7
Business	17.1	17.1	16.4	16.4	16.7	16.5	16.5
Gross domestic investment	21.1	21.3	21.3	21.4	21.3	21.4	21.4
Private	17.8	18.1	18.1	18.2	18.2	18.2	18.3
Public	3.3	3.3	3.2	3.2	3.2	3.1	3.1

Sources: BEA; BLS; FRB; Haver Analytics; and IMF staff estimates.
1/ Contribution to real GDP growth, percentage points.
2/ Includes staff's adjustments for one-off items, including costs of financial sector support.

Table 2. United States: Balance of Payments

(Annual percent change unless otherwise indicated)

	2018	Projections 2019	2020	2021	2022	2023	2024
Real exports growth							
Goods and services	4.0	3.7	2.7	2.9	3.9	3.7	3.8
Goods	4.7	3.5	3.1	3.9	4.7	4.3	4.4
Services	2.6	4.1	1.9	1.0	2.4	2.7	2.8
Real imports growth							
Goods and services	4.5	1.9	3.6	3.5	2.8	2.8	2.8
Goods	4.8	1.9	4.1	3.9	3.2	3.2	3.1
Nonpetroleum goods	5.8	3.0	5.1	4.5	3.7	3.5	3.5
Petroleum goods	-4.8	-9.6	-7.9	-4.4	-5.0	-2.5	-4.5
Services	3.3	2.0	1.1	1.7	1.2	1.2	1.4
Net exports (contribution to real GDP growth)	-0.2	0.2	-0.2	-0.2	0.0	0.0	0.0
Nominal exports							
Goods and services	12.4	12.1	12.0	11.9	12.0	12.1	12.2
Nominal imports							
Goods and services	15.4	15.0	15.0	15.1	15.1	15.1	15.2
Current account							
Current account balance	-2.3	-2.1	-2.5	-2.7	-2.6	-2.5	-2.4
Balance on trade in goods and services	-3.0	-2.8	-3.1	-3.2	-3.1	-3.1	-2.9
Balance on income	0.7	0.8	0.5	0.5	0.5	0.5	0.5
Capital and Financial Account							
Capital account balance	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Financial account balance	-2.3	-2.0	-2.5	-2.6	-2.6	-2.5	-2.4
Direct investment, net	-1.8	-0.8	-0.8	-0.9	-0.9	-0.9	-0.9
Potrfolio investment, net	-0.2	-1.0	-1.0	-0.6	-0.6	-0.8	-0.6
Financial derivatives, net	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other investment, net	-0.3	-0.3	-0.7	-1.1	-1.0	-0.8	-0.9
Reserve assets, net	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Errors and Omissions	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net International Investment Position	-47.4	-47.5	-48.2	-49.1	-50.0	-50.7	-51.4
Direct investment, net	-4.8	-5.5	-6.1	-6.8	-7.5	-8.1	-8.7
Potrfolio investment, net	-36.4	-35.9	-35.5	-34.8	-34.3	-33.9	-33.4
Financial derivatives, net	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Other investment, net	-8.5	-8.5	-8.9	-9.7	-10.3	-10.7	-11.2
Reserve assets, net	2.2	2.1	2.0	1.9	1.9	1.8	1.7
Memorandum items							
Current account balance (US$ billions)	-478	-445	-565	-616	-622	-626	-618
Non-oil trade balance (% of GDP)	-2.7	-2.7	-3.1	-3.4	-3.3	-3.3	-3.2
Foreign real GDP growth	2.5	2.2	2.6	2.6	2.6	2.6	2.6
U.S. real GDP growth	2.9	2.6	1.9	1.8	1.7	1.6	1.6
U.S. real total domestic demand growth	3.0	2.4	2.0	1.9	1.6	1.5	1.5

Sources: BEA; FRB; Haver Analytics; and IMF staff estimates.

Table 3. United States: Federal and General Government Finances

(Percent of GDP)

		Projections									
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Federal government											
Revenue	16.5	16.7	16.7	16.8	16.9	17.1	17.3	17.4	17.9	18.3	18.2
Expenditure	20.3	20.9	20.7	20.8	21.2	21.2	21.2	21.6	21.9	22.1	22.5
Non-interest	18.7	19.2	18.8	18.8	19.1	19.1	19.0	19.3	19.5	19.6	19.8
Interest	1.6	1.8	1.9	2.0	2.1	2.1	2.2	2.3	2.4	2.5	2.6
Budget balance 1/	-3.9	-4.2	-4.0	-4.0	-4.3	-4.1	-3.8	-4.2	-4.0	-3.9	-4.2
Primary balance 2/	-2.3	-2.5	-2.0	-2.0	-2.3	-2.0	-1.6	-1.9	-1.6	-1.3	-1.6
Primary structural balance 3/ 4/	-2.4	-2.8	-2.4	-2.3	-2.6	-2.3	-1.9	-2.2	-1.9	-1.6	-1.9
Change	-0.3	-0.4	0.4	0.1	-0.3	0.3	0.4	-0.2	0.3	0.3	-0.3
Federal debt held by the public	77.8	78.7	79.6	80.6	82.0	83.3	84.2	85.3	86.2	87.0	88.1
General government											
Revenue	29.6	30.7	31.0	31.1	31.2	31.5	31.7	32.0	32.7	32.9	32.7
Expenditure	34.9	35.6	35.6	35.6	36.1	36.0	36.0	36.4	36.7	36.9	36.8
Net interest	2.4	2.1	2.0	2.0	2.1	2.2	2.2	2.2	2.4	2.4	2.4
Net lending 1/	-5.3	-4.9	-4.6	-4.6	-4.9	-4.5	-4.2	-4.4	-4.0	-4.0	-4.1
Primary balance 2/	-3.0	-2.9	-2.7	-2.5	-2.7	-2.4	-2.0	-2.1	-1.6	-1.6	-1.6
Primary structural balance 3/ 4/	-3.0	-3.5	-3.3	-3.1	-3.4	-2.9	-2.6	-2.6	-2.2	-2.0	-2.2
Change	-0.5	-0.4	0.2	0.2	-0.2	0.4	0.3	-0.1	0.4	0.3	-0.2
Gross debt	106.8	107.9	108.8	109.9	111.3	112.4	113.2	114.1	114.6	115.0	115.5
incl. unfunded pension liab.	140.5	138.3	138.9	139.5	140.6	141.4	141.8	142.3	142.5	142.6	142.7
Memorandum items											
Federal government deficit											
President's latest budget	-3.8	-5.1	-4.9	-4.5	-4.2	-3.5	-2.6	-2.2	-1.9	-1.6	-1.5
CBO budget assessment	-3.9	-4.2	-4.4	-4.0	-4.5	-4.1	-3.5	-3.5	-3.4	-3.5	-3.9
CBO baseline (current law)	-3.9	-4.2	-4.0	-4.2	-4.7	-4.5	-4.2	-4.5	-4.3	-4.0	-4.7
Federal government debt											
President's latest budget	77.8	79.5	80.7	81.6	82.1	81.9	80.7	79.3	77.7	75.9	74.0
CBO budget assessment	77.8	78.2	79.8	81.2	83.1	84.3	84.8	85.3	85.8	86.4	87.2
CBO baseline (current law)	77.8	78.2	79.5	81.0	83.0	84.8	85.9	87.2	88.5	89.4	90.8

Sources: Congressional Budget Office; Office of Management and Budget; and IMF staff estimates.

Note: Fiscal projections are based on the June 2017 Congressional Budget Office baseline adjusted for the IMF staff's policy and macroeconomic assumptions. Projections incorporate the effects of tax reform (Tax Cuts and Jobs Act, signed into law end-2017) as

1/ Includes staff's adjustments for one-off items, including costs of financial sector support.

2/ Excludes net interest.

3/ Excludes net interest, effects of economic cycle, and costs of financial sector support.

4/ Percent of potential GDP.

Table 4. United States: Core Financial Soundness Indicators for Deposit Takers

(Percent unless stated otherwise)

	2011	2012	2013	2014	2015	2016	2017	2018
Regulatory capital to risk-weighted assets	14.7	14.5	14.4	14.4	14.1	14.2	14.5	14.7
Regulatory tier 1 capital to risk-weighted assets	12.6	12.7	12.8	13.1	13.1	13.2	13.5	13.7
Non-performing loans net of provisions to capital	17.6	15.7	11.7	8.8	7.2	6.6	5.7	4.8
Non-performing loans to total gross loans	3.8	3.3	2.5	1.9	1.5	1.3	1.1	0.9
Sectoral distribution of total loans: residents	95.6	95.5	95.2	95.6	95.8	96.1	96.0	96.1
Sectoral distribution of total loans: deposit-takers	6.0	6.0	5.0	4.1	3.6	3.8	3.9	4.3
Sectoral distribution of total loans: other financial corporations	3.8	4.4	5.2	6.2	6.7	6.7	6.9	7.1
Sectoral distribution of total loans: general government	0.9	1.1	1.2	1.3	1.4	1.5	1.6	1.5
Sectoral distribution of total loans: nonfinancial corporations	31.8	32.1	33.3	34.2	35.0	35.5	35.4	35.5
Sectoral distribution of total loans: other domestic sectors	53.1	51.9	50.5	49.8	49.1	48.5	48.2	47.7
Sectoral distribution of total loans: nonresidents	4.4	4.5	4.8	4.4	4.2	3.9	4.0	3.9
Return on assets	0.3	0.3	0.4	0.3	0.4	0.4	0.3	0.4
Return on equity	2.3	2.7	3.3	2.8	3.0	3.2	2.9	3.7
Interest margin to gross income	65.2	60.8	63.5	63.7	63.4	65.1	67.0	67.1
Non-interest expenses to gross income	64.5	63.6	61.7	64.7	60.7	59.6	61.6	56.4
Liquid assets to total assets (liquid asset ratio)	12.7	13.4	14.5	14.5	13.2	12.8	13.2	12.9
Liquid assets to short term liabilities	66.1	74.1	88.3	90.0	91.2	98.2	97.7	91.3

Note: 2018 data is the 2018Q3 value.

<table>
<tr><th></th><th>United States</th><th>Overall Assessment</th></tr>
<tr><td>Foreign asset and liability position and trajectory</td><td>Background. The net international investment position (NIIP), which averaged about -33 percent during 2012-14, is estimated to have decreased further from -39.6 percent of GDP in 2017 to -43.4 percent of GDP in 2018 (before accounting for valuation effects, which amounted to +2.9 percent of GDP through Q3:2018). Under staff's baseline scenario, the negative NIIP is projected to expand by 4 percent of GDP over the next five years, on the back of sustained current account deficits.
Assessment. Financial stability risks from rising negative NIIP could surface in the form of an unexpected decline in foreign demand for US fixed income securities, which are the main component of the country's external liabilities. This risk, which could materialize due to a failure to re-establish fiscal sustainability, remains moderate given the dominant status of the US dollar as a reserve currency. Around 64 percent of US assets are in the form of FDI and portfolio equity claims.</td><td rowspan="8">Overall Assessment:
The US external position was moderately weaker than implied by medium-term fundamentals and desirable policies in 2018.
A strong economy and the fiscal stimulus imply a sustained CA deficit in the coming years, moving it further from the level justified by medium term fundamentals and desirable policies. The effects of actual and prospective changes in trade, taxation, and labor-market (including e.g. immigration) policies continue to add uncertainty to the assessment.

Potential policy responses:
Fiscal consolidation, aiming at a medium-term general government primary surplus of about 1 percent of GDP (a federal government primary surplus of about 1¾ percent of GDP) would be appropriate to put the debt-GDP ratio on a downward path and address external imbalances. Structural policies to increase competitiveness, while maintaining full employment, include: upgrading infrastructure, enhancing schooling, training and mobility of workers, and encouraging labor force participation. The recently-imposed tariff barriers should be rolled back, as trade and investment disagreements with other countries should be resolved without resorting to the imposition of tariff and nontariff barriers.</td></tr>
<tr><td>2018 IIP (% GDP)</td><td>NIIP: -44.4 — Gross Assets: 133.4 — Debt Assets: 38.3 — Gross Liab.: 177.7 — Debt Liab.: 85.0</td></tr>
<tr><td>Current account</td><td>Background. The US CA deficit was unchanged between 2017 and 2018 at 2.3 percent of GDP, compared with a deficit of 2.1 percent of GDP in 2014. The deterioration was led by the non-oil balance, which reached a deficit of 2.8 percent of GDP in 2018 compared with a deficit of 1.7 percent of GDP in 2014. The larger output gap did not result in an increase in the CA deficit in 2018 as these effects were offset by an improving oil balance and stronger income account, and because of weaker-than-anticipated (import-intensive) investment. However, trade-balance outturns have been difficult to interpret as a result of shifts in the timing of exports and imports due to tariffs. Going forward, the US CA deficit is expected to rise to 2.6 percent of GDP by 2020, as US demand rises further above potential output, partly driven by the projected fiscal easing.
Assessment. The EBA model estimates a cyclically adjusted CA of -2.0 percent of GDP, and a cyclically adjusted CA norm of -1.0 percent of GDP. The cyclically adjusted CA gap is -1.0 percent of GDP for 2018, reflecting policy gaps (-0.5 percent of GDP, of which -0.4 percent corresponds to fiscal policy) and an unidentified residual (about -0.5 percent of GDP). The External Sustainability Approach estimates a CA gap of -0.9 percent of GDP. On balance, and taking into account recent increases in oil production, staff assesses the 2018 cyclically adjusted CA to be -0.7 to -1.7 percent of GDP lower than the level implied by fundamentals and desirable policies. 1/</td></tr>
<tr><td>CA Assessment 2018</td><td>Actual CA: -2.3 — Cycl. Adj. CA: -2.0 — EBA CA Norm: -1.0 — EBA CA gap: -1.0 — Staff Adj.: -0.2 — Staff CA gap: -1.2</td></tr>
<tr><td>Real exchange rate</td><td>Background. After depreciating by about 7 percent in 2017 (eop), the real effective exchange rate (REER) appreciated by about 4 percent in 2018 (eop), yet as of end-2018 was about [18] percent higher than the average for 2014. Through [February] 2019, the USD appreciated [1.6] percent in real terms relative to the 2018 average.
Assessment. Indirect estimates of the REER (based on the EBA current account assessment) imply that the exchange rate was overvalued by 8 percent in 2018 (applying an estimated elasticity of 0.12). The EBA REER index model suggests an overvaluation of [8.2] percent, the EBA REER level model suggests an overvaluation of [12.1] percent, and the External Sustainability Approach estimates a REER overvaluation of 10 percent. Considering all the estimates and their uncertainties, staff assesses the 2018 average REER to be somewhat overvalued, in the 6-12 percent range.</td></tr>
<tr><td>Capital and financial accounts:
flows and policy measures</td><td>Background. Net financial inflows were about 2.3 percent of GDP in 2018, compared with 1.6 percent of GDP in 2017. Net portfolio investments and other investments decreased by 0.8 and 0.6 percent of GDP, respectively, in 2018 and were offset by stronger net direct investments.
Assessment. The United States has an open capital account. Vulnerabilities are limited by the dollar's status as a reserve currency with foreign demand for US Treasury securities supported by the status of the dollar as a reserve currency, and, possibly, by safe-haven flows.</td></tr>
<tr><td>FX intervention and reserves level</td><td>Assessment. The dollar has the status of a global reserve currency. Reserves held by the United States are typically low relative to standard metrics. The currency is free floating.</td></tr>
<tr><td>Technical Background Notes</td><td>1/ Small adjustor reflects correction to the terms of trade contribution which does not include recent increases in oil production.</td></tr>
</table>

Appendix II. Risk Assessment Matrix[1]

Nature/Source of Risk	Overall Level of Concern	
	Medium-term Likelihood of Realization	**Expected Impact if Risk Materializes**
Rising protectionism and retreat from multilateralism	**High** Escalating and sustained trade actions threaten the global trade system, as well as global and regional collaboration, and disrupt global value chains. Fraying consensus about the benefits of globalization could lead to economic fragmentation and undermine the global rules-based order, with adverse effects on growth and stability.	**Medium** Additional tariff and nontariff barriers and the threat of new actions reduce growth both directly and indirectly through confidence effects (increasing financial market volatility). A retreat from cross-border integration would have wide-ranging negative effects on trade, capital flows, growth, confidence, and global cooperation on financial regulation.
Weaker-than-expected growth in the U.S.	**Medium** As the current recovery matures and vulnerabilities build up, the risks of a sharper-than-expected slowdown increase. The proximate causes could be a fiscal contraction, accompanied by less monetary accommodation, associated with the eventual planned withdrawal of the tax stimulus or the partial non-renewal of expiring appropriations.	**High** The output gap could close more abruptly, through a policy-induced recession which would have a negative impact on both the U.S. and the global economy.
Tightening in financial conditions / asset price volatility	**Low** Against the backdrop of less monetary accommodation and increasingly stretched valuations across asset classes, market expectations of tighter U.S. monetary policy (e.g., due to higher-than-expected inflation in the U.S) could lead to sudden, sharp increases in interest rates and associated tightening of financial conditions. Higher debt service and refinancing risks could stress leveraged firms, households, and vulnerable sovereigns.	**Medium** A 10 percent dollar appreciation is estimated to reduce GDP by around 0.5 percentage points in the first year and 0.5-0.8 percentage points in the second year. The current account deficit would also widen by around 1 percent of GDP. A 10 percent sustained fall in house prices is estimated to reduce private consumption by about 1-1.5 percent.
Weaker-than-expected growth in Europe	**High** In the euro area, weak foreign demand makes businesses delay investment, while faltering confidence reduces private consumption. Adverse financial market reaction to debt sustainability concerns further dampens growth. A disorderly Brexit could cause market disruption with negative spillovers. Disregard for the common fiscal rules and rising sovereign yields for high-debt countries would test the euro area policy framework, with adverse impact on confidence and growth.	**Low** A 1-percentage point decline in growth in advanced and emerging economies could subtract about 0.1 percentage points of U.S. GDP after two years. If disruption feeds into global financial markets or risk aversion the effect would be larger.
Weaker-than-expected growth in China	**Medium** An intensification of trade tensions and/or a housing market downturn prompt a slowdown, which is not fully offset by policy easing. Deleveraging is delayed and financial stresses, including capital outflow and exchange rate pressures, emerge, and raises the probability of a subsequently larger disruptive adjustment.	**Low** A 1-percentage point decline in growth in advanced and emerging economies could subtract about 0.1 percentage points of U.S. GDP after two years. If disruption feeds into global financial markets or risk aversion the effect would be larger.

[1] The Risk Assessment Matrix (RAM) shows events that could materially alter the baseline path (the scenario most likely to materialize in the view of IMF staff). The relative likelihood is the staff's subjective assessment of the risks surrounding the baseline ("low" is meant to indicate a probability below 10 percent, "medium" a probability between 10 and 30 percent, and "high" a probability between 30 and 50 percent). The RAM reflects staff views on the source of risks and overall level of concern as of the time of discussions with the authorities. Non-mutually exclusive risks may interact and materialize jointly. "Short term (ST)" and "medium term (MT)" are meant to indicate that the risk could materialize within 1 year and 3 years, respectively.

Large swings in energy prices	**Medium**	**Low / Medium**
	Risks to prices are broadly balanced, reflecting offsetting—but large and uncertain—supply and demand shocks. Uncertainty surrounding these shocks translates to elevated price volatility, adversely affecting investment in the energy sector.	With the level of U.S. oil investment already cut in half over the past few years, renewed price declines are unlikely to have strong effects on aggregate U.S. growth. However, solvency risks in the oil sector would rise.
Cyber-attacks	**Medium**	**High**
	Cyber-attacks on interconnected financial systems and broader private and public institutions that trigger systemic financial instability or widely disrupt socio-economic activities.	Shock to critical infrastructure causes delay, denial, disruption, breakdown or loss of services, affecting many institutions that rely on the attacked hub. This could also lead to a loss of confidence in the functioning of the financial system.

Appendix III. Public Debt Sustainability Analysis

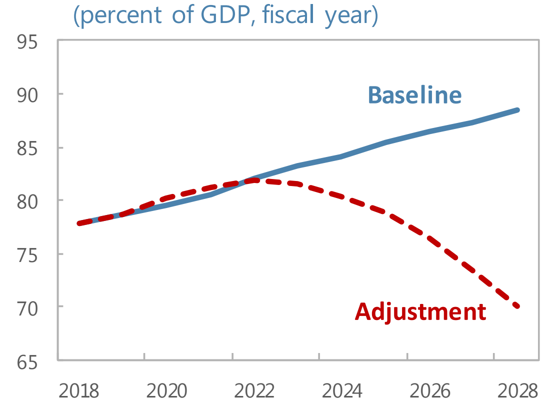
The U.S. budget deficit started rising in 2016, following a decline during 2010-15, and the U.S. public debt-to-GDP ratio is on an unsustainable path. Under the baseline scenario, public debt is projected to rise over the medium term, as age-related spending pressures on entitlement programs assert themselves and interest rates normalize. In addition, tax cuts and discretionary spending increases enacted since late-2017 are adding pressure on U.S. public finances. Gross financing needs are large, albeit manageable given the global reserve currency status of the U.S. dollar. A credible medium-term fiscal adjustment featuring reprioritization of budget programs and revenue-gaining tax reform is needed to put public debt on a downward path.

1. **Background**. Significant fiscal consolidation measures were legislated in 2011–13 to tackle the high public debt ratio, which had doubled at the federal government level since 2007 due to the Great Recession and associated fiscal measures. However, the Bipartisan Budget Acts of 2013, 2015, and 2018 reversed some of the cuts scheduled to take place since FY2014, with only partial offsets from savings generated through mandatory spending cuts in later years. In addition, the Tax Act of 2015 and the Tax Cuts and Jobs Act of 2017, extended several tax cuts while introducing new ones. As a result, sustained fiscal deficits are projected for the medium to long term.

2. **Baseline.** The staff's baseline is based on current laws. Under this baseline, public debt is projected to continue rising as age-related spending pressures on entitlement programs assert themselves and interest rates normalize. Federal debt held by the public is projected to increase from about 76 percent of GDP in 2018 to around 87 percent of GDP in 2028, with general government gross debt rising from about 106 percent of GDP to 111 percent of GDP during this period.

3. **Adjustment scenario**. The 2018 general government primary deficit was 2.6 percent of GDP. In staff's view, gradually raising the primary general government surplus to around 1 percent of GDP (1¾ percent of GDP for the federal government) would put the debt-to-GDP ratio firmly on a downward path over the medium term. The target primary surplus would have to be larger to bring the debt ratio closer to pre-crisis levels by 2030.

Federal Debt Held by the Public
(percent of GDP, fiscal year)



4. **Debt servicing costs.** The fiscal projections benefit from the current favorable interest rate-growth differential. Reflecting accommodative monetary policy and the safe-haven status of the United States, real interest rates have fallen well below GDP growth. Under staff's baseline, the effective interest rate is projected to rise gradually from the current level of 2.8 percent and reach 3.3 percent by 2027 (which is somewhat above its 2008–16 average level). Thus, real interest rates will become a substantial debt-creating flow over the medium-term.

5. **Realism.** Baseline economic assumptions and fiscal projections are generally within the error band observed for all countries. The projected modest fiscal adjustment is realistic—well within the median range of consolidation episodes observed across countries in 1990–2011.

6. **Stress tests.** The public debt dynamics are highly sensitive to growth and interest rate assumptions, primarily reflecting the fact that the U.S. public debt ratio already exceeds 100 percent of GDP. An increase of 200 basis points in the sovereign risk premium would raise the public debt ratio to about 120 percent of GDP by 2027, about 10 percentage points of GDP above the baseline. Similarly, were real GDP growth to be one standard deviation below the baseline, the public debt ratio would increase by about 10 percentage points above the baseline. A scenario involving a 1 percentage point of GDP larger fiscal deficit over the next two years would increase public debt ratio by about 5 percentage points above the baseline by 2027. A combined macro-fiscal shock could raise the public debt ratio to as high as 130 percent of GDP by 2027. An exchange rate shock does not have implications for debt sustainability in the United States given that all debt is denominated in local currency and the reserve currency status of the dollar.

7. **Mitigating factors.** The depth and liquidity of the U.S. Treasury market as well as its safe-haven status represent a mitigating factor for the high external and gross financing requirements.

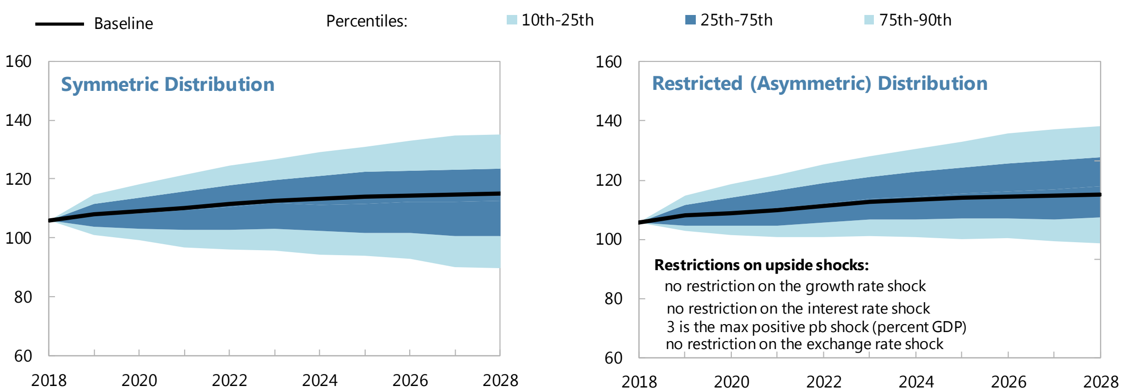
Appendix III. Figure 1. United States: Public DSA–Risk Assessment

Heat Map Baseline (2015-2025)

Debt level 1/	Real GDP Growth Shock	Primary Balance Shock	Real Interest Rate Shock	Exchange Rate Shock	Contingent Liability shock
Gross financing needs 2/	Real GDP Growth Shock	Primary Balance Shock	Real Interest Rate Shock	Exchange Rate Shock	Contingent Liability Shock
Debt profile 3/	Market Perception	External Financing Requirements	Change in the Share of Short-Term Debt	Public Debt Held by Non-Residents	Foreign Currency Debt

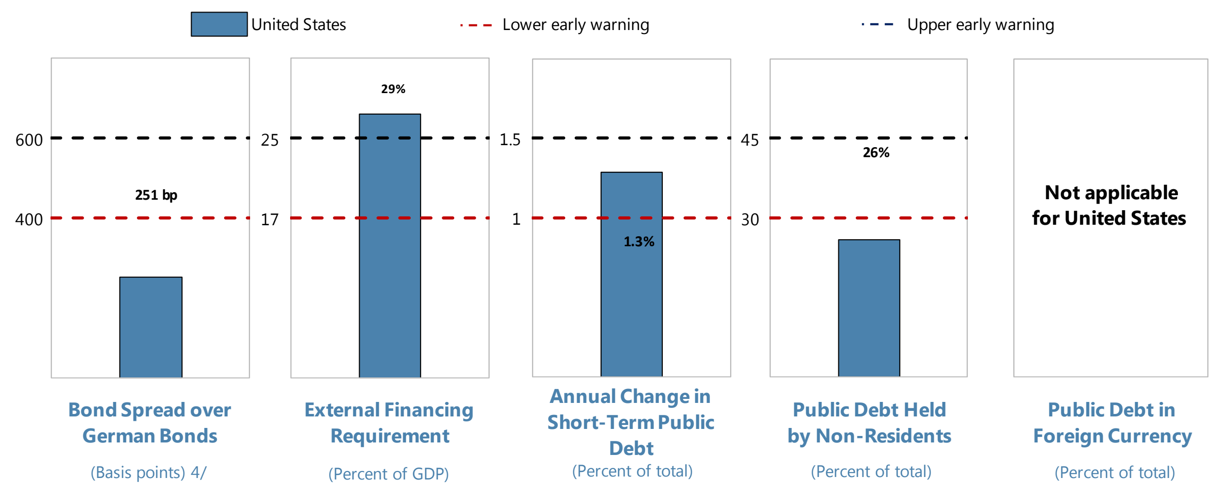
Evolution of Predictive Densities of Gross Nominal Public Debt

(Percent of GDP)



Debt Profile Vulnerabilities

(Indicators vis-à-vis risk assessment benchmarks)



Source: IMF staff

1/ The cell is highlighted in green if debt burden benchmark of 85% is not exceeded under the specific shock or baseline, yellow if exceeded under specific shock but not baseline, red if benchmark is exceeded under baseline, white if stress test is not relevant

2/ The cell is highlighted in green if gross financing needs benchmark of 20% is not exceeded under the specific shock or baseline, yellow if exceeded under specific shock but not baseline, red if benchmark is exceeded under baseline, white if stress test is not relevant

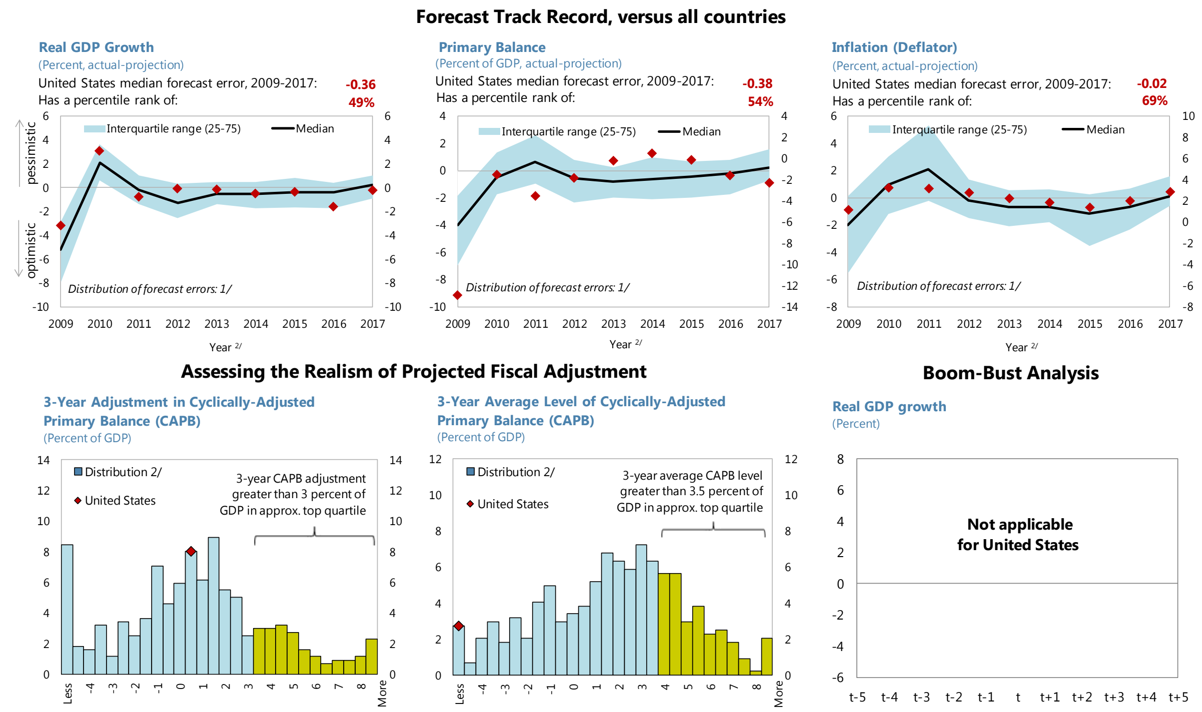
3/ The cell is highlighted in green if country value is less than the lower risk-assessment benchmark, red if country value exceeds the upper risk-assessment benchmark, yellow if country value is between the lower and upper risk-assessment benchmarks. If data are unavailable or indicator is not relevant, cell is white.

Lower and upper risk-assessment benchmarks are:

400 and 600 basis points for bond spreads; 17 and 25 percent of GDP for external financing requirement; 1 and 1.5 percent for change in the share of short-term debt; 30 and 45 percent for the public debt held by non-residents

4/ An average over the last 3 months, 21-Feb-19 through 22-May-19

Appendix III. Figure 2. United States: Public DSA–Realism of Baseline Assumptions



Source : IMF staff

1/ Plotted distribution includes all countries, percentile rank refers to all countries. Projections made in the spring WEO vintage of the preceding year

2/ Data cover annual obervations from 1990 to 2011 for advanced and emerging economies with debt greater than 60 percent of GDP. Percent of sample on vertical axis

Appendix III. Figure 3. United States: Public DSA–Baseline Scenario

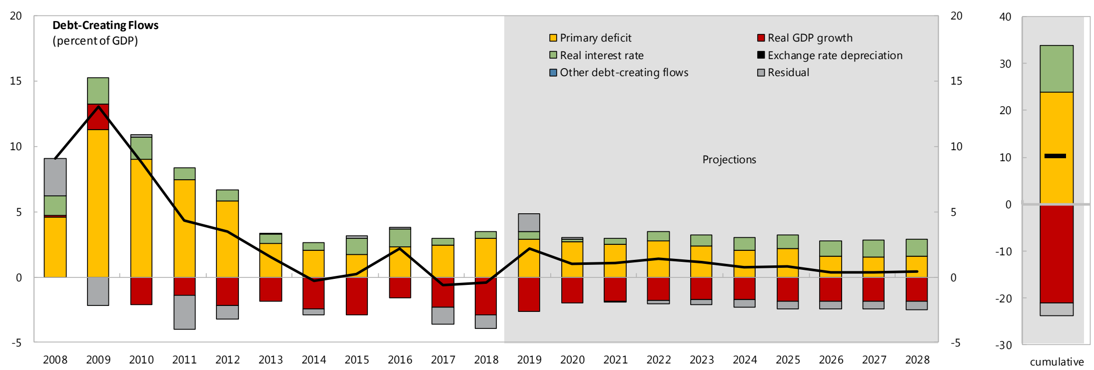
(percent of GDP, unless otherwise indicated)

Debt, Economic and Market Indicators 1/

	Actual			Projections										As of May 22, 2019		
	2008–2016 2/	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Sovereign Spreads		
Nominal gross public debt	97.7	106.2	105.8	107.9	108.9	110.0	111.4	112.6	113.3	114.1	114.5	114.8	115.2	Spread (bp) 3/		247
Public gross financing needs	39.1	36.2	38.1	32.1	32.8	32.9	32.4	33.5	32.7	33.3	32.8	33.3	33.7	CDS (bp)		16
Real GDP growth (percent)	1.4	2.2	2.9	2.6	1.9	1.8	1.7	1.6	1.6	1.7	1.7	1.7	1.7	Ratings	Foreign	Local
Inflation (GDP deflator, percent)	1.5	1.9	2.3	1.6	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	Moody's	Aaa	Aaa
Nominal GDP growth (percent)	2.9	4.2	5.2	4.3	4.0	3.8	3.7	3.6	3.7	3.8	3.8	3.8	3.8	S&Ps	AA+	AA+
Effective interest rate (percent) 4/	3.0	2.5	2.8	2.2	2.3	2.5	2.7	2.9	3.0	3.1	3.1	3.2	3.2	Fitch	AAA	AAA

Contribution to Changes in Public Debt

	Actual			Projections											
	2008–2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Cumulative	Debt-stabilizing primary balance 9/
Change in gross public sector debt	4.7	-0.6	-0.4	2.2	1.0	1.0	1.4	1.2	0.7	0.8	0.4	0.3	0.4	9.4	-0.6
Identified debt-creating flows	5.0	0.7	0.6	0.8	0.9	1.1	1.7	1.5	1.3	1.4	0.9	0.9	1.0	11.6	
Primary deficit	5.2	2.4	3.0	2.9	2.7	2.5	2.7	2.4	2.0	2.1	1.6	1.6	1.6	22.2	
Primary (noninterest) revenue and grants	29.6	30.3	29.1	30.2	30.5	30.6	30.7	31.0	31.2	31.4	32.1	32.3	32.1	312.0	
Primary (noninterest) expenditure	34.8	32.7	32.1	33.0	33.2	33.1	33.4	33.3	33.3	33.6	33.8	33.8	33.7	334.1	
Automatic debt dynamics 5/	-0.2	-1.8	-2.4	-2.1	-1.8	-1.4	-1.1	-0.8	-0.7	-0.8	-0.7	-0.6	-0.6	-10.6	
Interest rate/growth differential 6/	-0.2	-1.8	-2.4	-2.1	-1.8	-1.4	-1.1	-0.8	-0.7	-0.8	-0.7	-0.6	-0.6	-10.6	
Of which: real interest rate	1.2	0.5	0.5	0.6	0.2	0.4	0.7	0.9	1.0	1.1	1.2	1.2	1.3	8.6	
Of which: real GDP growth	-1.4	-2.3	-2.9	-2.7	-2.0	-1.8	-1.8	-1.7	-1.7	-1.9	-1.9	-1.9	-1.9	-19.2	
Exchange rate depreciation 7/	0.0	0.0	0.0	...	...	...	...	...	...	...	...	...	...	...	
Other identified debt-creating flows	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Net privatization proceeds	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Contingent liabilities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Other liabilities (bank recap. and PSI sweetner)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Residual, including asset changes 8/	-0.3	-1.3	-1.0	1.4	0.1	-0.1	-0.3	-0.4	-0.6	-0.6	-0.5	-0.6	-0.6	-2.1	

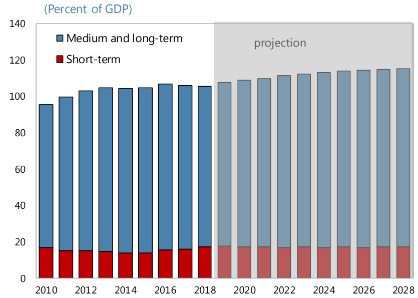


Source: IMF staff
1/ Public sector is defined as general government
2/ Based on available data
3/ Bond Spread over German Bonds
4/ Defined as interest payments divided by debt stock at the end of previous year
5/ Derived as [(r - p(1+g) - g + ae(1+r)]/(1+g+p+gp)) times previous period debt ratio, with r = interest rate; p = growth rate of GDP deflator; g = real GDP growth rate; a = share of foreign-currency denominated debt; and e = nominal exchange rate depreciation
6/ The real interest rate contribution is derived from the denominator in footnote 4 as r - π (1+g) and the real growth contribution as -g
7/ The exchange rate contribution is derived from the numerator in footnote 2/ as ae(1+r).
8/ For projections, this line includes exchange rate changes during the projection period. Also includes ESM capital contribution, arrears clearance, SMP and ANFA income, and the effect of deferred interest
9/ Assumes that key variables (real GDP growth, real interest rate, and other identified debt-creating flows) remain at the level of the last projection year

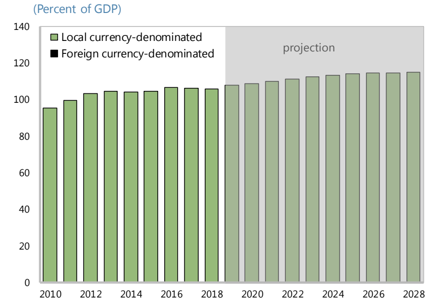
Appendix III. Figure 4. United States: Public DSA–Composition of Public Debt and Alternative Scenarios

Composition of Public Debt

By Maturity
(Percent of GDP)



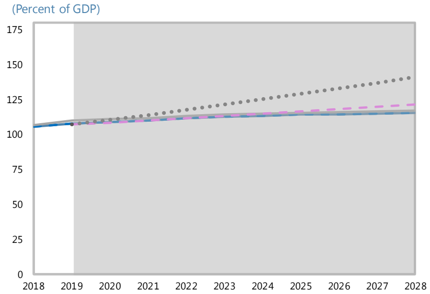
By Currency
(Percent of GDP)



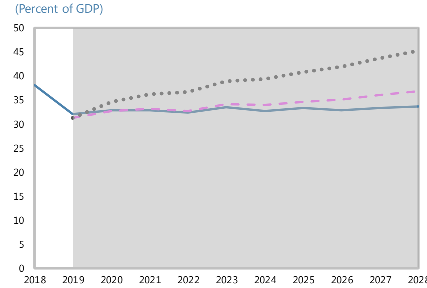
Alternative Scenarios

Baseline   Historical   Constant Primary Balance

Gross Nominal Public Debt
(Percent of GDP)



Public Gross Financing Needs
(Percent of GDP)



Underlying Assumptions
(Percent)

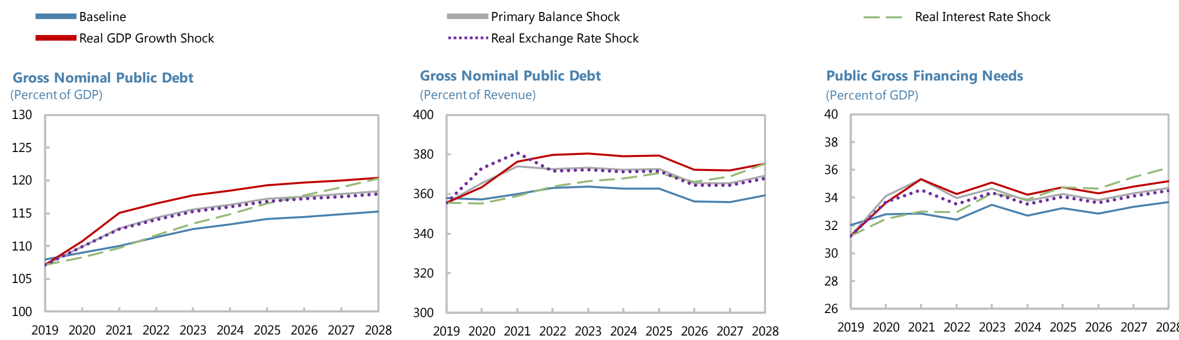
Baseline scenario	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Real GDP growth	2.6	1.9	1.8	1.7	1.6	1.6	1.7	1.7	1.7	1.7
Inflation	1.6	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Primary balance	-2.9	-2.7	-2.5	-2.7	-2.4	-2.0	-2.1	-1.6	-1.6	-1.6
Effective interest rate	2.2	2.3	2.5	2.7	2.9	3.0	3.1	3.1	3.2	3.2
Constant primary balance scenario										
Real GDP growth	2.6	1.9	1.8	1.7	1.6	1.6	1.7	1.7	1.7	1.7
Inflation	1.6	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Primary balance	-2.9	-2.9	-2.9	-2.9	-2.9	-2.9	-2.9	-2.9	-2.9	-2.9
Effective interest rate	2.2	2.4	2.6	2.8	2.9	3.0	3.1	3.2	3.2	3.3

Historical scenario	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Real GDP growth	2.6	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Inflation	1.6	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Primary balance	-2.9	-4.8	-4.8	-4.8	-4.8	-4.8	-4.8	-4.8	-4.8	-4.8
Effective interest rate	2.2	2.4	2.7	3.0	3.2	3.4	3.5	3.6	3.7	3.7

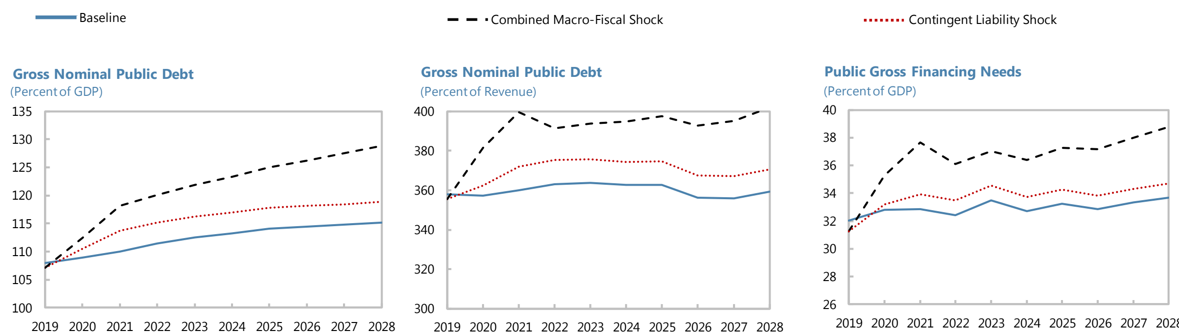
Source: IMF staff

Appendix III. Figure 5. United States: Public DSA–Stress Tests

Macro-Fiscal Stress Tests



Additional Stress Tests



Underlying Assumptions

(Percent)

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Primary Balance Shock										
Real GDP growth	2.6	1.9	1.8	1.7	1.6	1.6	1.7	1.8	1.7	1.7
Inflation	1.6	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Primary balance	-2.9	-4.4	-4.2	-2.7	-2.4	-2.0	-2.1	-1.6	-1.6	-1.6
Effective interest rate	2.2	2.3	2.6	2.9	3.0	3.1	3.1	3.2	3.2	3.3
Real Interest Rate Shock										
Real GDP growth	2.6	1.9	1.8	1.7	1.6	1.6	1.7	1.7	1.7	1.7
Inflation	1.6	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Primary balance	-2.9	-2.7	-2.5	-2.7	-2.4	-2.0	-2.1	-1.6	-1.6	-1.6
Effective interest rate	2.2	2.4	2.9	3.2	3.4	3.7	3.8	3.9	4.0	4.1
Combined Shock										
Real GDP growth	2.6	0.3	0.2	1.7	1.6	1.6	1.7	1.7	1.7	1.7
Inflation	1.6	1.8	1.8	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Primary balance	-2.9	-5.0	-4.8	-2.7	-2.4	-2.0	-2.1	-1.6	-1.6	-1.6
Effective interest rate	2.2	2.4	2.9	3.2	3.5	3.7	3.8	3.9	4.0	4.1

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Real GDP Growth Shock										
Real GDP growth	2.6	0.3	0.2	1.7	1.6	1.6	1.7	1.7	1.7	1.7
Inflation	1.6	1.8	1.8	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Primary balance	-2.9	-3.3	-3.7	-2.7	-2.4	-2.0	-2.1	-1.6	-1.6	-1.6
Effective interest rate	2.2	2.4	2.6	2.8	2.9	3.0	3.1	3.2	3.2	3.3
Real Exchange Rate Shock										
Real GDP growth	2.6	0.9	1.3	1.7	1.6	1.6	1.7	1.7	1.7	1.7
Inflation	1.6	2.4	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Primary balance	-2.9	-3.7	-3.5	-2.7	-2.4	-2.0	-2.1	-1.6	-1.6	-1.6
Effective interest rate	2.2	2.4	2.6	2.8	2.9	3.0	3.1	3.2	3.2	3.3
Contingent Liability Shock										
Real GDP growth	2.6	0.3	0.2	1.7	1.6	1.6	1.7	1.7	1.7	1.7
Inflation	1.6	1.7	1.6	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Primary balance	-2.9	-2.7	-2.5	-2.7	-2.4	-2.0	-2.1	-1.6	-1.6	-1.6
Effective interest rate	2.2	2.5	2.6	2.8	2.9	3.0	3.1	3.2	3.2	3.2

Source: IMF staff

Appendix IV. External Debt Sustainability Analysis

Appendix IV. Figure 1. External Debt Sustainability Framework, 2014–2024

(In percent of GDP, unless otherwise indicated)

	Actual							Projections						
	2014	2015	2016	2017	2018			2019	2020	2021	2022	2023	2024	**Debt-stabilizing non-interest current account 6/**
Baseline: External debt	98.0	94.6	94.6	97.0	93.7			**92.5**	**91.5**	**90.6**	**89.9**	**89.0**	**87.9**	**-1.2**
Change in external debt	0.8	-3.4	0.1	2.3	-3.3			-1.1	-1.1	-0.9	-0.7	-0.9	-1.1	
Identified external debt-creating flows (4+8+9)	-2.9	-0.5	0.6	-2.3	-2.7			0.5	0.8	1.0	1.1	0.9	0.7	
Current account deficit, excluding interest payments	0.6	0.7	0.7	0.3	0.1			0.2	0.5	0.6	0.4	0.3	0.1	
Deficit in balance of goods and services	2.8	2.7	2.7	2.8	3.0			3.2	3.1	3.2	3.1	2.9	2.7	
Exports	13.6	12.4	11.8	12.1	12.3			11.9	11.9	11.8	12.0	12.1	12.2	
Imports	16.4	15.2	14.5	14.9	15.2			15.1	15.0	15.1	15.0	15.0	14.9	
Net non-debt creating capital inflows (negative)	-0.9	1.0	0.7	-0.8	-0.2			0.2	-0.1	-0.2	0.0	0.0	-0.1	
Automatic debt dynamics 1/	-2.6	-2.2	-0.9	-1.8	-2.6			0.1	0.5	0.6	0.7	0.7	0.7	
Contribution from nominal interest rate	1.5	1.5	1.6	2.0	2.2			2.2	2.2	2.1	2.1	2.1	2.1	
Contribution from real GDP growth	-2.3	-2.7	-1.4	-2.0	-2.6			-2.1	-1.7	-1.6	-1.4	-1.4	-1.3	
Contribution from price and exchange rate changes 2/	-1.8	-1.0	-1.0	-1.8	-2.1			...	...	...	...	...	...	
Residual, incl. change in gross foreign assets (2-3) 3/	3.7	-2.9	-0.5	4.6	-0.6			-1.6	-1.9	-1.9	-1.8	-1.8	-1.8	
External debt-to-exports ratio (in percent)	722.6	760.3	799.1	803.7	764.4			775.1	769.9	766.3	752.1	736.8	718.2	
Gross external financing need (in billions of US dollars) 4/	17351.0	17912.7	18137.4	19079.0	19386.1			20213.6	20826.7	21458.8	22071.2	22621.9	23111.7	
in percent of GDP	99.0	98.3	97.0	97.9	94.6	10-Year	10-Year	94.7	93.8	93.1	92.3	91.2	89.8	
Scenario with key variables at their historical averages 5/								**92.5**	**91.4**	**90.4**	**89.3**	**88.3**	**87.3**	**-2.5**
Key Macroeconomic Assumptions Underlying Baseline						Historical Average	Standard Deviation							
Real GDP growth (in percent)	2.5	2.9	1.6	2.2	2.9	1.8	1.6	2.3	1.9	1.8	1.6	1.6	1.6	
GDP deflator in US dollars (change in percent)	1.9	1.1	1.1	1.9	2.3	1.6	0.5	1.8	2.1	2.1	2.1	2.1	2.1	
Nominal external interest rate (in percent)	1.6	1.6	1.7	2.2	2.4	0.9	1.0	2.4	2.4	2.4	2.4	2.4	2.4	
Growth of exports (US dollar terms, in percent)	3.6	-4.6	-2.2	6.1	6.8	3.5	9.0	1.5	3.5	3.4	4.9	4.8	5.0	
Growth of imports (US dollar terms, in percent)	4.0	-3.5	-1.7	6.8	7.4	2.6	11.4	3.3	3.5	4.2	3.5	3.4	3.0	
Current account balance, excluding interest payments	-0.6	-0.7	-0.7	-0.3	-0.1	-1.5	1.2	-0.2	-0.5	-0.6	-0.4	-0.3	-0.1	
Net non-debt creating capital inflows	0.9	-1.0	-0.7	0.8	0.2	0.5	0.9	-0.2	0.1	0.2	0.0	0.0	0.1	

1/ Derived as [r - g - r(1+g) + ea(1+r)]/(1+g+r+gr) times previous period debt stock, with r = nominal effective interest rate on external debt; r = change in domestic GDP deflator in US dollar terms, g = real GDP growth rate, e = nominal appreciation (increase in dollar value of domestic currency), and a = share of domestic-currency denominated debt in total external debt.

2/ The contribution from price and exchange rate changes is defined as [-r(1+g) + ea(1+r)]/(1+g+r+gr) times previous period debt stock. r increases with an appreciating domestic currency (e > 0) and rising inflation (based on GDP deflator).

3/ For projection, line includes the impact of price and exchange rate changes.

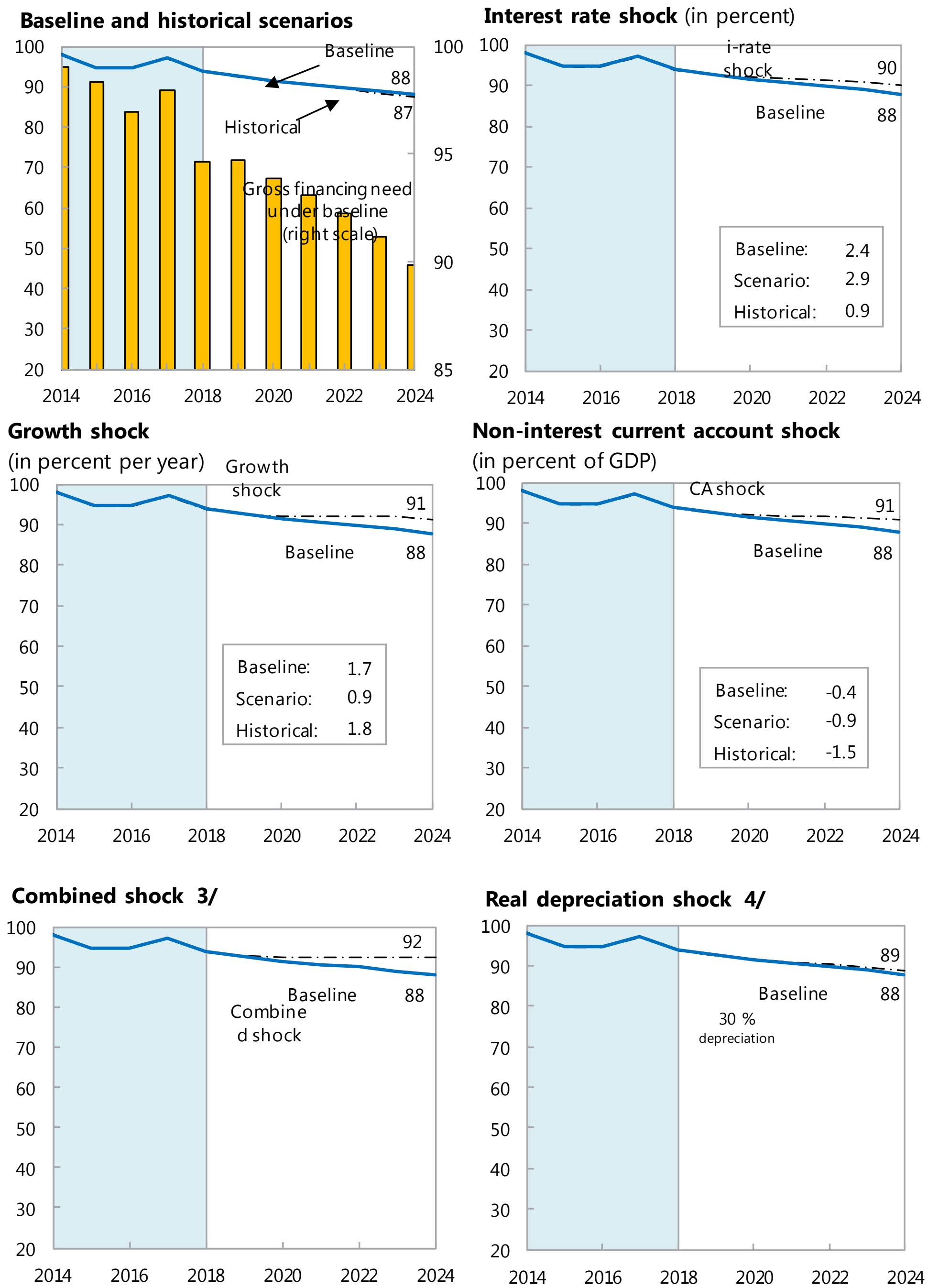
4/ Defined as current account deficit, plus amortization on medium- and long-term debt, plus short-term debt at end of previous period.

5/ The key variables include real GDP growth; nominal interest rate; dollar deflator growth; and both non-interest current account and non-debt inflows in percent of GDP.

6/ Long-run, constant balance that stabilizes the debt ratio assuming that key variables (real GDP growth, nominal interest rate, dollar deflator growth, and non-debt inflows in percent of GDP) remain at their levels of the last projection year.

Appendix IV. Figure 2. External Debt Sustainability: Bound Tests 1/ 2/

(External debt in percent of GDP)



Sources: International Monetary Fund, Country desk data, and staff estimates.
1/ Shaded areas represent actual data. Individual shocks are permanent one-half standard deviation shocks. Figures in the boxes represent average projections for the respective variables in the baseline and scenario being presented. Ten-year historical average for the variable is also shown.
2/ For historical scenarios, the historical averages are calculated over the ten-year period, and the information is used to project debt dynamics five years ahead.
3/ Permanent 1/4 standard deviation shocks applied to real interest rate, growth rate, and current account balance.
4/ One-time real depreciation of 30 percent occurs in 2020.

#	FSAP Recommendation	Developments
	Macroprudential framework and policy	
1	Provide an explicit financial stability mandate to all FSOC member agencies	Several agencies continue to have no explicit legal mandate to support financial stability. As discussed in the 2015 FSAP, this can complicate their input to the Financial Stability Oversight Council (FSOC), and potentially undermines the response to the committee's recommendations and macroprudential coordination. While not all FSOC agencies within their existing authorities have an explicit legal mandate to support financial stability, they all continue to make progress toward financial reforms. Some FSOC agencies, however (including the U.S. federal banking agencies), have, as their responsibilities, key roles in maintaining financial stability. FSOC recently issued proposed interpretive guidance under which, if the guidance is adopted, the Council would prioritize its efforts to identify, assess, and address potential risks and threats to U.S. financial stability through a process that emphasizes an activities-based approach. This approach reflects two priorities: (1) identifying and addressing, in consultation with relevant financial regulatory agencies, potential risks and emerging threats on a system-wide basis, thereby reducing the potential for competitive distortions among companies and in markets that could arise from entity-specific regulation and supervision; and (2) allowing relevant financial regulatory agencies, which generally possess greater information and expertise with respect to company, product, and market risks, to address potential risks, rather than subjecting the companies to new regulatory authorities.
2	Include in FSOC Annual Report specific follow-up actions for each material threat identified	The FSOC's Annual Reports discuss in a detailed manner each material threat identified, provide updates on regulations and other measures proposed or implemented in response to each threat, and outlines the research agenda and policy recommendations, if needed. However, specific timelines and responsible agencies are not identified.

#	FSAP Recommendation	Developments
3	Publish the current U.S. macroprudential toolkit and prioritize further development	The FSAP recommended that the FSOC should identify when macroprudential tools are needed, and promote the implementation of effective system-wide and time-varying macroprudential tools. The macroprudential toolkit remains to be centrally published, and a prioritization to be made. The FSAP recommended further development and implementation of time-varying macroprudential tools, like the countercyclical capital buffer (CCyB): Necessary final steps on application triggers required to implement the CCyB should be completed; the scope to alter risk-weights on particular types of lending needs to be assessed; macroprudential tools could be used in the real estate sector (e.g., by varying maximum loan-to-value and debt-to-income ratios). The OCC, FDIC, and Federal Reserve (FRB), have the authority under their respective regulations to determine whether or not to activate the CCyB (and to determine the appropriate level) for the banking organizations subject to the respective jurisdictions. Staff from the three agencies meet on a regular basis to discuss their views on CCyB implementation and have generally agreed to coordinate as appropriate. In September 2016, the FRB approved a final policy statement detailing the framework for setting the CCyB. The policy statement provides background on the range of financial-system vulnerabilities and other factors the FRB may take into account as it evaluates settings for the buffer, including but not limited to, leverage in the nonfinancial and financial sectors, maturity and liquidity transformation in the financial sector, and asset valuation pressures. Due to the constantly evolving nature of economic and financial risks, the FRB is likely to adapt the range of indicators and models over time. The FRB has re-assessed the level of the CCyB annually since adopting the policy statement and has begun issuing a semiannual report on financial stability conditions. Most recently, in March 2019, the FRB affirmed the amount of the CCyB at 0 percent. The NAIC Financial Stability (EX) Task Force is working to enhance the macroprudential toolkit of state insurance regulators. The Macro Prudential Initiative (MPI) addresses four focus areas: developing a liquidity stress testing framework for material life insurance groups, including enhancing disclosures to better assess products with higher liquidity risk potential; capital stress testing to be addressed as part of the NAIC group capital calculation; reviewing existing recovery and resolution processes and disclosures to identify any enhancement needs; and determining if there are material gaps in existing counterparty exposure disclosures.

#	FSAP Recommendation	Developments
4	Expedite heightened prudential standards for designated non-bank systemically important financial institutions (SIFIs)	In 2015, the FRB adopted a comprehensive set of enhanced prudential standards (EPS) for General Electric Capital Corporation, Inc. (GECC), which was designated by the FSOC in July 2013 for Federal Reserve supervision. The EPS included capital and liquidity requirements, capital planning and stress testing requirements, risk management requirements, and restrictions on intercompany transactions between GECC and its parent. The FSOC rescinded the designations of GECC in June 2016; AIG in September 2017; and Prudential Financial, Inc. in October 2018. In March 2016, a federal district court rescinded FSOC's designation of MetLife, Inc. As a result, there are currently no companies designated by the FSOC for Federal Reserve supervision and enhanced prudential standards. On June 3, 2016, the FRB approved an advance notice of proposed rulemaking (ANPR) inviting comment on conceptual frameworks for capital standards that could apply to systemically important insurance companies and to insurance companies that own a bank or thrift. The standards would differ for each population of insurance firms supervised by the FRB. In parallel, the FRB approved a notice of proposed rulemaking to apply EPS for the systemically important insurance companies as designated by the FSOC. In line with the Dodd-Frank Act (DFA), these proposed standards would apply consistent liquidity, corporate governance, and risk management standards to the firms and require the firms to employ both a chief risk officer and chief actuary.
5	Improve data collection, and address impediments to inter-agency data sharing	The Office of Financial Research (OFR) *Interagency Data Inventory* (IDI), which catalogues the data that FSOC member agencies purchase or collect from the industry or derive from other data, had its annual update in March 2017. FSOC member agencies use the inventory for identifying data gaps and for improving research and analysis but, due to specific restrictions to data sharing, the listing of data in the inventory does not necessarily signify that all FSOC member agencies have access to all data sets. In support of FSOC, OFR facilitated a review of data sharing agreements to identify areas for standardization (see OFR 2016 Financial Stability Report). OFR, along with the FRB, Federal Reserve, Bank of New York (FRBNY), and the Securities and Exchange Commission (SEC) have completed pilot data collections about bilateral repurchase agreements (repos) and securities lending activity. The OFR has made the summary of findings publicly available on its website.[1] Steady progress in data collection and sharing is being made, including areas previously identified as those where

[1] For the summary of the bilateral repo data collection, see https://www.financialresearch.gov/data/repo-data-project/, for the summary of the securities lending data collection, see https://www.financialresearch.gov/data/securities-lending-data-collection-project/.

#	FSAP Recommendation	Developments
		more work needs to be done: (i) The collection of data on securities lending, and bilateral repos is still at an early stage; and (ii) outstanding obstacles to interagency data sharing should be reduced, as recommended in the FSAP. Section 21(c)(7) of the Commodity Exchange Act directs swap data repositories to make swap data available to certain enumerated domestic authorities and any other entity the Commodity Futures Trading Commission (CFTC) determines to be appropriate, which may include certain types of foreign authorities. In 2011, the CFTC adopted rules implementing these statutory swap data access provisions by establishing processes by which various categories of entities could gain access to swap data held by swap data repositories. In June 2018, the CFTC amended the 2011 access requirements such that certain authorities may obtain swap data access more efficiently. The amendments removed statutorily-mandated requirements that foreign and domestic regulators indemnify swap data repositories for any expenses arising from litigation relating to the information provided by the repositories. The amendments also set forth a process for the CFTC to deem other domestic and foreign regulators appropriate to receive access to swap data held by the repositories. In August 2016, the SEC adopted rules to provide authorities with conditional access to security-based swap data held by SEC-registered security-based swap data repositories. Authorities must agree to keep confidential the data they receive from the repository, and the rules adopted require a memorandum of understanding or other arrangement between the SEC and the data recipient addressing the confidentiality of the information made available.

#	FSAP Recommendation	Developments
	Regulation and supervision	
6	Give primacy to safety and soundness in the supervisory objectives of Federal Banking Agencies	The federal banking agencies' mandates are established by statute and have not been redefined since enactment of the DFA. Safety and soundness has not been given primacy in the supervisory objectives of the federal banking agencies to the exclusion of other objectives, such as consumer compliance and financial stability. However, safety and soundness has long been one of the core supervisory objectives of the federal banking agencies. The federal banking agencies are required to consider the safety and soundness of supervised institutions and the banking system as a whole in a variety of supervisory contexts, including reviewing and approving applications; the frequency of examining supervised institutions; ordering institutions to cease and desist; imposing civil money penalties; promulgating regulations; and restricting the payment of dividends, extensions of credit to related parties, employee compensation, and operations of subsidiaries. The multi-agency statutory framework requires coordination to avoid duplication of supervision that can potentially result in uncertainty for institutions when rules or guidance appear contradictory. The Federal Financial Institutions Examination Council (FFIEC) is a forum the agencies use to promote consistent approaches to bank supervision, which they also try to achieve through regular informal communication. Banks are examined for safety and soundness under the Uniform Financial Institutions Rating System. The Federal Reserve examines bank holding companies and savings and loan holding companies for safety and soundness under its new large financial institution rating system finalized in 2018, and under its RFI/C(D) rating system now used to rate smaller holding companies.
7	Strengthen the banking supervisory framework and limit structures for related party lending and concentration risk; and update guidance for operational and interest rate risk	*Concentration risk:* The FRB issued a final rule in November 2014, Regulation XX, to implement Section 622 of the DFA and establish a financial sector concentration limit. Regulation XX prohibits a financial company from merging or consolidating with, or acquiring control of, another company if the resulting company's liabilities would exceed 10 percent of the aggregate consolidated liabilities of all financial companies. In August 2018, the FRB adopted a final rule to address *single-counterparty credit risk*. The rule applies single-counterparty credit limits to bank holding companies (BHCs) and foreign banking organizations with total consolidated assets of $250 billion or more, including any U.S. intermediate holding company (U.S. IHCs) of a foreign banking organization with $50 billion or more in total consolidated assets, and any BHC identified as a global systemically important BHC under the Federal Reserve's capital rules. Under the final rule: (i) GSIBs are restricted to a credit exposure of no more than 15 percent of the firm's tier 1 capital to another systemically important financial firm, and up to 25 percent of the firm's tier 1 capital to any other counterparty; (ii) non-GSIB

#	FSAP Recommendation	Developments
		BHCs with $250 billion or more in total consolidated assets are restricted to a credit exposure of no more than 25 percent of the firm's tier 1 capital to another counterparty; (iii) U.S. IHCs that have total consolidated assets of at least $50 billion but less than $250 billion are restricted to a credit exposure to a counterparty which cannot exceed 25 percent of the IHC's total regulatory capital plus the balance of its allowance for loan and lease losses; (iv) U.S. IHCs that have total consolidated assets of $250 billion or more but are not major U.S. IHCs are restricted to a credit exposure to a counterparty which cannot exceed 25 percent of the IHC's tier 1 capital; (v) U.S. IHCs that have total consolidated assets of $500 billion or more are restricted to a credit exposure to a major counterparty which cannot exceed 15 percent of the IHC's tier 1 capital, and up to 25 percent of the firm's tier 1 capital to any other counterparty. However, comparable supervisory guidance on *other risk concentrations* has not been yet issued. The separate and additional limits for money market investments and security holdings available to banks (but not federal savings associations) continue to leave open the possibility of excessive risk concentrations. In late 2015, the agencies issued guidance on commercial real estate lending, which includes, among other things, a discussion of the importance of managing concentration risk. *Guidance on operational risk and interest rate risk*: The agencies participated in the development of the Standardized Approach under the Basel III reforms and are considering revising the U.S. capital rules to move away from the Advanced Measurement Approach (AMA). The agencies have also issued a number of new pieces of guidance related to operational risk. The approach to interest rate risk in the banking book does not include specific capital charges or limits being set under Pillar 2. Consistent with the IRR standard issued by Basel in April 2016, U.S. guidance with respect to IRR requires proper oversight of models and analysis of risk under a variety of scenarios. Data is collected at the regulatory level during examinations. *Limit structures for related party lending*: section 22(h) of the Federal Reserve Act and the existing regulatory framework places limits and requirements on banks engaging in related party lending (e.g., Regulation O and W). This framework remains the same.

#	FSAP Recommendation	Developments
8	Set up an independent insurance regulatory body with nationwide responsibilities and authority	The supervisory and regulatory architecture for insurance firms has not changed.
9	Implement principle-based valuation standard for life insurers consistently across the states	All states have adopted the Valuation Manual and life principle-based reserving (PBR). Life PBR is optional during a 3-year transition period, and becomes mandatory in 2020. A total of 37 companies have now implemented PBR, and must file a PBR Actuarial Report annually providing details on their PBR reserves, including asset and liability assumptions and valuation methodology. To help ensure consistency in application, the Valuation Analysis Working Group (VAWG) was formed to support states in their review of PBR and uniformly address questions and issues that arise. The VAWG reviewed all of the 2017 reports, documented the results in a paper distributed to companies and regulators, and recommended clarifying amendments to the Valuation Manual where necessary to ensure consistent interpretation. These amendments have been drafted and are going through the NAIC exposure and adoption process for the 2020 Valuation Manual.
10	Develop and implement group supervision and group-level capital requirements for insurance companies	In April 2016, the FRB approved proposed consolidated financial reporting requirements for systemically important insurance companies designated by the FSOC. In June 2016, the FRB approved an advance notice of proposed rulemaking (ANPR) inviting comment on conceptual frameworks for capital standards that could apply to systemically important insurance companies and to insurance companies that own a bank or thrift. The standards would differ for each category of insurance firms supervised by the Board. Also in June 2016, the FRB approved a notice of proposed rulemaking to apply enhanced prudential standards for insurance companies designated by the FSOC. As required under the DFA, these proposed standards would apply consistent liquidity, corporate governance, and risk management standards to the firms and require the firms to employ both a chief risk officer and chief actuary. State insurance regulators are working through the NAIC to develop a group capital calculation, which would be an additional analysis tool for regulators, but not a quantitative capital requirement. The proposed group capital calculation is currently being tested by over 30 insurance groups and 15 lead states, which is expected to be completed by early October.

#	FSAP Recommendation	Developments
		Regarding group supervision, as of June 2017, all 50 states, the District of Columbia and Puerto Rico, have adopted the updated NAIC model holding company act enhancing state insurance regulators' group supervisory authorities and the NAIC Own Risk and Solvency Assessment (ORSA) model Act. Additional updates to the NAIC model holding company act relating to powers of a group-wide supervisor (GWS) of an IAIG have been adopted in 29 states and will be required to be adopted in all accredited U.S. states and jurisdictions by January 1, 2020**.** Finally, 27 states have adopted the NAIC corporate governance model act, which will also be required to be adopted in all accredited U.S. states and jurisdictions by January 1, 2020.
11	Provide needed resources to the Securities and Exchange Commission (SEC) and Commodity Futures Trading Commission (CFTC) and enhance their funding stability	Information on SEC/CFTC funding for Fiscal Year 2019, is available at https://www.congress.gov/bill/116th-congress/house-joint-resolution/31/text.
	Increase examination coverage of asset managers	The FSAP recommended that the SEC needs to be better equipped in order to be able to significantly increase the number of asset manager examinations from the current coverage of around 10 percent of investment advisers per year. The SEC has continued to work to increase examination coverage of registered investment advisers. For example, the SEC's examination program in fiscal year 2016 transitioned some resources from other parts of the program to IA/IC with a goal of increasing the size of the IA/IC program. SEC staff examined 11% of investment advisers in fiscal year 2016 and 15% of investment advisers in fiscal year 2017. In fiscal year 2018, SEC staff examined 17% of investment advisers while the number of registered investment advisers increased by approximately 5% from the previous fiscal year.
12	Introduce explicit requirements on risk management and internal controls for asset managers and commodity pool operators	The FSOC has continued to monitor potential risks to financial stability stemming from the asset management industry. As noted in its 2017 and 2018 Annual Reports, FSOC has continued to monitor the asset management space and has recommended that the SEC continue to monitor it as well (see further below). The SEC also adopted rules in October 2016 requiring open-end funds to have liquidity risk management programs with certain required elements. Certain aspects of the SEC's liquidity risk management rule were revised in 2018. (See further below)

#	FSAP Recommendation	Developments
13	Complete the assessment of equity market structure and address regulatory gaps	Since the FSAP, the SEC has issued several actions related to equity market structure that are related to the issues raised in the FSAP recommendations. Specifically, the SEC has adopted amendments to existing regulation to enhance operational transparency and regulatory oversight of ATSs. *See* https://www.sec.gov/rules/final/2018/34-83663.pdf. In addition, the SEC approved the consolidated audit trail, which would enable regulators to efficiently track all trading activity in the U.S. equity and options markets. *See* https://www.sec.gov/rules/sro/nms/2016/34-79318.pdf. In addition, SEC staff continually evaluates equity market structure. For example, SEC staff recently announced a series of roundtables devoted to specific equity market structure topics. The first roundtable was held on April 23, 2018 and considered market structure issues for thinly-traded securities. More recently, in October 2018, the SEC staff held a Roundtable on Market Data and Market Access to examine the infrastructure for distributing market data, including pre-trade and post-trade information, to U.S. investors (https://www.sec.gov/spotlight/equity-market-structure-roundtables). Finally, SEC staff analysis of market structure topics is published on the SEC website at http://www.sec.gov/marketstructure/.
	Stress testing	
14	Conduct liquidity stress testing for banks and nonbanks on a regular basis; run regular network analyses; and link liquidity, solvency, and network analyses	While the Comprehensive Capital Analysis and Review (CCAR) and DFA stress tests continue to take the form of supervisory solvency stress tests in which second-round effects are not explicitly incorporated, they are implicitly captured in a few ways. First, the macro scenarios are based on very severe recessions coupled with significant declines in asset prices. In the past, such recessions have been associated with very weak banking sectors, so the macro dynamics should reflect the amplification effects from the banking system. Second, the global market shock is based on the movements of asset prices in the second half of 2008, a period that saw the default of a SIFI and the distress of several systemically important institutions. Thus, market conditions should reflect the "second round" effects of the failure of a major financial company. Third, in implementing the default of the largest counterparty element, participating banks are instructed to compute outcomes if the counterparty whose default would cause the largest losses (under the market conditions described in the market shock) was to default. While this does not capture additional second-round effects beyond those described above, it does guarantee that the first-round effects are as large as possible.

#	FSAP Recommendation	Developments
		Federal banking agencies finalized a rule implementing the *Liquidity Coverage Ratio* (LCR) in 2014 and proposed a *Net Stable Funding Ratio* (NSFR) in 2016. Per definition, the LCR is a short-term liquidity stress test, and banks are expected to pass the underlying stress scenario on a continuous basis. The proposed NSFR would establish a quantitative metric that measures the stability of a firm's funding profile over a one year timeframe. However, stress testing exercises, like the DFA stress tests or the CCAR, focus on credit and market risk, not on funding and market liquidity risk. Authorities do not conduct, on a regular basis, liquidity stress tests on nonbanks. However, the SEC requires money market mutual funds (MMMFs) to conduct regular stress tests, including on their liquidity. In addition, certain of the largest broker-dealers are providing additional information regarding their liquidity risk so SEC staff can better monitor the firm's management of that risk. The SEC also adopted rules in October 2016 requiring open-end funds to have liquidity risk management programs with certain required elements (see further below). While most large U.S. life insurers perform their own internal liquidity stress testing work, a consistent regulatory liquidity stress test is currently under development by the NAIC. This requirement will exist for any insurance group or legal entity with U.S. results that trigger any of six thresholds (fixed and indexed annuities, funding agreements and GICs, derivatives, securities lending, repurchase agreements, and borrowed money). Once a group triggers the liquidity stress testing requirement, the liquidity stress test itself will be based upon internal company cash flows, will utilize consistent stress tests and "what if" modifications (currently being established), and be applied at the legal entity level (including the holding company) with results reported individually and as a group. The target date for the proposed liquidity stress testing design is August 2019. *Network analysis, and integration with liquidity and solvency stress tests.* The DFA stress tests and the CCAR do not integrate different risk classes beyond credit and market risk. The tests look at banks individually, with contagion and spillover risks entering implicitly though the macro dynamics in the current scenarios rather than explicitly being assessed in the tests. Publicly available information suggests there is no supervisory requirement to integrate in a single framework different risk factors. OFR has conducted research on network models within the context of stress testing and contagion.

#	FSAP Recommendation	Developments
		In March 2010, the U.S. federal banking agencies issued guidance titled "The Interagency Policy Statement on Funding and Liquidity Risk Management" (75 FR 13656 (March 22, 2010)) ("Liquidity Risk Policy Statement"). The Liquidity Risk Policy Statement incorporates elements of the Basel Committee on Banking Supervision's (BCBS) Principles for Sound Liquidity Risk Management and Supervision ("Basel Liquidity Principles") and is supplemented by other liquidity risk management principles previously issued by the U.S. federal banking agencies. The Liquidity Risk Policy Statement discusses examples for fundamental liquidity risk management practices that the U.S. federal banking agencies generally consider to be consistent with safety and soundness standards and other applicable laws and regulations, including a comprehensive management process for identifying, measuring, monitoring, and controlling liquidity risk. It also emphasizes the central role of corporate governance, cash-flow projections, stress testing, ample liquidity resources, and formal contingency funding plans as tools for effectively measuring and managing liquidity risk. In addition, in 2014, the Federal Reserve adopted Regulation YY (12 CFR part 252) to implement the enhanced prudential standards established under section 165 of the Dodd-Frank Wall Street Reform and Consumer Protection Act ("Dodd-Frank Act") (12 U.S.C. § 5365) for BHCs , including foreign-based BHCs, with total consolidated assets of $50 billion or more (covered companies). These enhanced prudential standards included requirements related to liquidity risk management and liquidity sufficiency. The Regulation YY liquidity requirements, which came into effect in 2015 for the relevant domestic BHCs and 2016 for the relevant foreign banking organizations, provide a regulatory framework for large banking institutions to establish and maintain robust liquidity risk management practices, perform internal stress tests for determining the adequacy of liquidity resources, and maintain a buffer of highly liquid assets to cover cash flow needs over a 30-day stress period, or the first 14 days of a 30-day stress period in the case of the collective U.S. branches and agencies of a foreign banking organization operating in the United States. As a result of statutory changes, the Board has proposed to change the threshold for Regulation YY to apply to bank holding companies with total assets of $100 billion or more (in addition, in the case of foreign banking organizations, the Board has proposed to raise the threshold to $100 billion or more in combined U.S. assets). A component of Regulation YY's liquidity stress testing requirement is evaluated annually. For example, in one year supervisors may review foreign banking organizations' compliance with the requirement that they conduct stress testing with respect to their U.S. branches and agencies, and in the following year supervisors may examine compliance by bank holding companies. In addition, the Federal Reserve conducts an annual review of the liquidity stress testing practices, liquidity position, and liquidity risk management practices of systemically important banking organizations. Under this program, supervisors assess the adequacy of firms' liquidity positions relative to their unique risks and test the reliability of these

#	FSAP Recommendation	Developments
		firms' approaches to managing liquidity risk. The review provides a regular opportunity for supervisors to respond to evolving liquidity risks and firm practices over time. The supervisory review evaluates firms' liquidity positions both through a range of supervisory liquidity metrics and through analysis of firms' internal stress tests. The assessment includes an examination of the stress tests that each firm uses to make funding decisions and to determine its liquidity needs and an assessment of a range of liquidity risk management practices.
15	Develop and perform regular insurance stress tests on a consolidated group-level basis	State insurance regulators assess the stress tests performed by insurance companies on a consolidated group-level basis through the Own Risk and Solvency Assessment (ORSA) under the Risk Management and Own Risk Assessment Model Act, which has been adopted by all states. Furthermore, the aforementioned group capital calculation contemplates determining if stress testing should be included in the filing of that calculation.
16	Develop and perform regular liquidity stress tests for the asset management industry	The FSOC continues to monitor potential risks to financial stability stemming from the asset management industry. In addition, the SEC issued three proposals in 2015. The SEC proposals addressed enhanced data reporting for registered investment companies and for investment advisers regarding their separately managed account business; a strengthening of open-end funds' liquidity risk management and disclosure; and limits to leverage obtained through derivatives transactions by registered investment companies. In its 2017 Annual Report, the FSOC noted the implementation of the SEC rules and recommended that the SEC monitor their implementation to evaluate whether the chosen regulatory approach addressed potential risks effectively and efficiently. In its 2018 Annual Report, the FSOC recommended that the SEC continue to monitor the implementation of its liquidity risk management and data reporting rules and that it evaluate the extent to which they addressed potential risks in the asset management industry. FSOC also supported efforts to improve metrics and analytical tools used to evaluate asset management risks, as well as continued collaboration among regulators and industry on reporting standards. The SEC requires MMMFs to conduct regular stress tests, including on their liquidity. Specifically, MMMFs are required to periodically test their ability to maintain weekly liquid assets of at least 10% and to minimize principal volatility in response to specified hypothetical events. These events include: (i) increases in the level of

#	FSAP Recommendation	Developments
		short-term interest rates; (ii) the downgrade or default of particular portfolio security positions, each representing various exposures in a fund's portfolio; and (iii) the widening of spreads in various sectors to which the fund's portfolio is exposed, each in combination with various increases in shareholder redemptions. The SEC also requires that an open-end fund assess, manage, and periodically review (with such review occurring no less frequently than annually) its liquidity risk, based on the following factors as applicable: (1) investment strategy and liquidity of portfolio investments during both normal and reasonably foreseeable stressed conditions (including whether the investment strategy is appropriate for an open-end fund, the extent to which the strategy involves a relatively concentrated portfolio or large positions in particular issuers, and the use of borrowings for investment purposes and derivatives); (2) short-term and long-term cash flow projections during both normal and reasonably foreseeable stressed conditions; and (3) holdings of cash and cash equivalents, as well as borrowing arrangements and other funding sources. In addition to these factors, an ETF also must consider, as applicable: (1) the relationship between the ETF's portfolio liquidity and the way in which, and the prices and spreads at which, ETF shares trade, including the efficiency of the arbitrage function and the level of active participation by market participants (including authorized participants); and (2) the effect of the composition of baskets on the overall liquidity of the ETF's portfolio. A fund may incorporate other considerations, in addition to the above factors, in evaluating its liquidity risk. In addition, this requirement is principles-based, and thus each fund may develop and adopt procedures to review the fund's liquidity risk tailored as appropriate to reflect the fund's particular facts and circumstances. In 2016, the SEC further promulgated rules adopting Form N-PORT, which requires quarterly reporting to the SEC of a registered investment company's complete portfolio holdings and additional information intended to facilitate risk analysis and other SEC oversight. Among other things, Form N-PORT requires disclosure of flow information (including the total net asset value of shares sold, redeemed or repurchased).

#	FSAP Recommendation	Developments
	Market-based finance and systemic liquidity	
17	Change redemption structures for mutual funds (MF) to lessen incentives to run; move all money market mutual funds (MMMFs) to variable net asset value (NAV) approaches	In September 2015, SEC proposed a rule for MFs and ETFs designed to enhance liquidity risk management, provide new disclosures regarding fund liquidity, and allow MFs to adopt swing pricing to pass on transaction costs to entering and exiting investors. The proposal has since been adopted and implemented. The SEC has adopted rules requiring that open-end funds have liquidity risk management programs, as well as rules requiring enhanced data reporting for registered investment companies, As a result of the reporting requirements, such as Form N-LIQUID as discussed herein, SEC staff has a greater ability to gather and analyze operational information directly from participants in the asset management industry, to gain insight into developing market risks, understand the effects of macroeconomic developments, and identify particular funds or advisers that may require additional monitoring, all of which assist in understanding whether a fund or funds may be susceptible to runs. In addition, the SEC also adopted rules permitting open-end funds under certain circumstances to use swing pricing to pass on transaction costs to the shareholders associated with purchases and redemptions and to help funds manage liquidity risk. *MMMFs and variable NAV:* Rules issued by the SEC that have been fully implemented require floating NAVs for institutional prime MMMFs. Retail and government MMMFs are permitted to continue using an amortized cost method of pricing where constant NAVs are applied. For the latter group of MMMFs, the rules provide new tools—liquidity fees and redemption gates—to address potential runs. In its 2018 annual report, FSOC recommended that the SEC continue to monitor the impact of its reforms in light of the approximately $1 trillion shift from prime MMMFs to government MMMFs since the adoption of the reforms. As previously noted, MMMFs are required to file Form N-MFP monthly, which includes information regarding, among other things, their service providers, maturity, liquidity, and assets and liabilities, and the full holdings of the MMMF's portfolio securities. SEC staff monitor the information provided in these forms to, among other things, monitor changes and trends, such as trends in exposures, asset composition, and trading activity; and to

#	FSAP Recommendation	Developments
		identify "outliers" based on, for example, investment exposures, and liquidity, all of which can help to identify MMMFs that may be susceptible to runs. MMMFs must also file, upon the occurrence of certain specified events (such as the default or event of insolvency of a portfolio security issuer), Form N-CR with the SEC.
18	Complete triparty repo (TPR) reforms and measures to reduce run-risk, including the possible use of central clearing platforms	The underlying infrastructure of the TPR market, a key stress point in the global financial crisis, has been improved. The amount of intra-day credit extended to collateral providers has been reduced by over 95 percent as a result of changes in practice and process made to adhere to the reform roadmap. Also, clearing banks are now limited to funding a maximum of 10 percent of a dealer's notional tri-party book through pre-committed lines and incur a capital charge from the credit extension. Risk of fire-sales of collateral by a dealer losing access to repo or by a dealer's creditors: The risk of collateral fire-sales has been reduced, but not eliminated, through post-crisis capital and liquidity regulations. Intraday counterparty risk exposure in the tri-party repurchase (repo) market contracted significantly in recent years, but the potential for fire sales of collateral by creditors of a defaulted broker-dealer remains a significant risk. Additionally, data gaps continue to limit regulators' ability to monitor the aggregate repo market and identify interdependencies among firms and market participants.
19	Enhance disclosures and regulatory reporting of securities lending	In early 2016, the OFR, FRB, and SEC completed a *joint securities lending data collection pilot*. The purpose of the pilot data collection was to collect information directly from seven securities lending agents that participated in the pilot project voluntarily. In April 2016, the FSOC expressed its view that without comprehensive information on securities lending activities across the financial system, regulators cannot fully assess potential financial stability risk, and encouraged efforts to propose and adopt a rule for a permanent collection of data on securities lending Relevant agencies continue to consult on these issues. In October 2016, the SEC adopted new reporting requirements for registered investment companies, which include information on their securities lending activities. Registered investment companies were required to comply with requirements to provide annual information regarding securities lending beginning on June 1, 2018.

#	FSAP Recommendation	Developments
20	Strengthen broker-dealer regulation, in particular liquidity and leverage regulations	The U.S. authorities are tackling financial leverage through regulating financial products as well as the types of market participants (of which some are not subject to direct regulation): Broker-dealer requirements, like margin rules for securities transactions, central clearing of derivatives (fostering product standardization and increasing liquidity), as well as newly introduced margin requirements for uncleared swaps constitute important examples of regulatory and supervisory efforts. In addition, certain of the largest broker-dealers are providing additional information regarding their liquidity risk so SEC staff can better monitor the firm's management of that risk. To reduce the financial stability risk potential of derivatives, U.S. bank swap dealers are now required to collect and post margin on (almost) all swaps that cannot be centrally cleared. The use of uncleared derivatives is thereby made less attractive, and the requirements will encourage the use of standard derivatives that go through central clearinghouses. This measure also helps ensure that a default of a major over-the-counter (OTC) derivatives market participant would not bring down the system. In October 2015, the FRB, Federal Deposit Insurance Corporation (FDIC), Office of the Comptroller of the Currency (OCC), Farm Credit Administration (FCA), and Federal Housing Finance Agency (FHFA) issued a final rule to establish capital and margin requirements for swap dealers, major swap participants, security-based swap dealers, and major security-based swap participants regulated by one of the aforementioned agencies. The final rule phased in the variation margin requirements between September 1, 2016 and March 1, 2017. The initial margin requirements began on September 1, 2016 and phase in over four years. In January 2016, the CFTC issued its final rule on margin requirements for uncleared swaps. The CFTC final rule on cross-border application of margin requirements was published in May 2016. Implementation of the CFTC's final regulations on margin requirements for swap entities not regulated for this purpose by a U.S. prudential regulator was initiated for initial margin on a phase-in basis starting on September 1, 2016 and was effective for variation margin as of March 1, 2017. The CFTC amended its rules in November 2018 to harmonize with the requirements for swap entities regulated by the U.S. prudential regulators. In addition, the CFTC issued comparability determinations for margin requirements for uncleared swaps for Japan (September 2016, updated March 2019), the European Union (October 2017), and Australia (March 2019).

#	FSAP Recommendation	Developments
21	Improve data availability across bilateral repo/triparty repo and securities lending markets	Data on the triparty and GCF repo markets are published regularly. In February 2019, OFR adopted rules requiring daily reporting by covered central counterparties of centrally cleared repo transactions, comprising approximately one-quarter of all U.S. repo market transactions. In October 2016, SEC adopted new reporting requirements for registered investment companies, which include information about their securities lending activities. Registered investment companies were required to comply with requirements to provide annual information regarding securities lending beginning on June 1, 2018. Pursuant to the FRB's supervisory authority, the FRBNY collects trade-by-trade data on tri-party repo transactions on a daily basis from the Bank of New York Mellon. In February 2019, the OFR published a final rule that will require the Fixed Income Clearing Corporation (FICC) to report data on FICC-cleared repo transactions beginning in October 2019. The FRB will act as OFR's collection agent, with required data to be submitted directly to the FRBNY. (Currently, the FRBNY relies on a voluntary agreement with an FICC affiliate to obtain data regarding bilateral repos and General Collateral Financing Repo transactions that are cleared by FICC).
	Liquidity backstops, crisis preparedness, and resolution	
22	Revamp the Primary Credit Facility as a monetary instrument	In 2016, the Federal Reserve considered the role of the Primary Credit Facility as part of an evaluation of its long-run operating framework. In particular, at the FOMC's November 2016 meeting Federal Reserve staff discussed considerations regarding potential choices of operating regimes and the issue of stigma associated with borrowing from the discount window. No changes to the Primary Credit Facility were made at that time. Subsequently, staff of the Federal Reserve System has continued to study the role of Primary Credit. This work has included an October 2017 conference on the stigma associated with use of the discount window.
23	Enable the Fed to lend to solvent non-banks that are designated as systemically important	In November 2015, the Federal Reserve approved a *final rule specifying its procedures for emergency lending* under Section 13(3) of the Federal Reserve Act. Since the passage of the DFA in 2010, the FRB's emergency lending activity has been limited to programs and facilities with "broad-based eligibility" that have been established with the approval of the Secretary of the Treasury. The rule provides greater clarity regarding the FRB's implementation of limitations to emergency lending, and other statutory requirements. The final rule defines "broad-based" to mean "a program or facility that is not designed for the purpose of aiding any

#	FSAP Recommendation	Developments
		number of failing firms and in which at least five entities would be eligible to participate." These additional limitations are consistent with and provide further support to the revisions made by the DFA that a program should not be for the purpose of aiding specific companies to avoid bankruptcy or resolution. Solvent non-banks that have been designated as systemically important by the FSOC would be able to participate in these programs to the extent they satisfy the applicable facility eligibility requirements.
24	Assign formal crisis preparedness and management coordinating role to FSOC	FSOC has been used as a forum for regulators to discuss certain fast-emerging topics including Brexit, Hurricane Sandy, and the bankruptcy of MF Global. Crisis preparedness and management has not been formally assigned to the FSOC, and the statutory purpose of the FSOC has not otherwise changed since the last FSAP.
25	Extend the Orderly Liquidation Authority powers to cover systemically-important insurance companies and U.S. branches of foreign-owned banks	Systemically important U.S. insurance holding companies can be resolved using Orderly Liquidation Authority (OLA) powers. The resolution of individual legal entity insurance company subsidiaries, however, falls to the State-based resolution regime, under which States have tools available to address insurance company insolvencies and/or liquidations. The State-based resolution regimes related to the resolution of insurance company subsidiaries, which have tools available to address failed insurance companies through liquidation or runoff, have been successfully used in the past, but have not been tested on insurance company subsidiaries of a systemically important holding company. To the extent a foreign bank has branches in the United States, a Single Point of Entry resolution strategy generally would not affect such branches.
26	Adopt powers to support foreign resolution measures; extend preference to overseas depositors	To the extent insured depository institutions enter resolution under the FDI Act, the depositor preference rules applicable to insured depository institutions can complicate effective coordination by potentially increasing the likelihood of ring-fencing of foreign branches by host authorities. However, host authorities could take mitigating action by requiring branches in their jurisdiction to amend deposit agreements to include statutorily required language that would extend preference to depositors of such branches.

#	FSAP Recommendation	Developments
27	Finalize recovery and resolution plans for SIFIs, agree cooperation agreements with overseas authorities	Important steps have been made toward implementing effective recovery and resolution frameworks. The U.S. supervisory authorities place responsibility for the recovery planning process on the firm's senior management. The board of directors of the firm is responsible for oversight of the firm's recovery planning process. Recovery plans are updated at least annually. On December 27, 2018, the OCC revised its enforceable guidelines regarding standards for recovery planning by increasing the average total consolidated assets threshold for applying the guidelines to banks from $50 billion to $250 billion in average total consolidated assets, and decreasing from 18 months to 12 months the applicable compliance period. The guidelines otherwise remain unchanged and continue to provide that a covered bank should develop and maintain a recovery plan that identifies triggers, which are quantitative or qualitative indicators of the risk or existence of severe stress, and the breach of a trigger should always be escalated to senior management, the board of directors (board), or an appropriate committee of the board, as appropriate, for purposes of initiating a response. To identify triggers that appropriately reflect the particular vulnerabilities of a covered bank, the bank should design severe stress scenarios that would threaten its critical operations or cause the covered bank to fail if one or more recovery options were not implemented in a timely manner. The plan should identify a wide range of credible options that a covered bank could undertake in response to severe stress to restore its financial strength and viability. A recovery plan should include an assessment and description of how each credible option would affect the covered ban and address escalation procedures, management reports, and communication procedures. To prepare for the implementation of its resolution authority under Title II of the DFA, the FDIC has developed resolution plans for G-SIFIs and has included in each plan a resolution strategy and an operational plan that meet the standards set out in the applicable *Key Attributes* and relevant annexes thereto. Furthermore, the establishment of living wills is an essential requirement in the DFA, under which SIFIs and certain other firms are asked to design, and submit for review to the FRB and the FDIC, concise plans explaining their orderly resolution under bankruptcy. Since 2012, the FRB and the FDIC have reviewed several iterations of plans from U.S. BHCs and foreign banking organizations and have issued substantial feedback. In December 2017, the FRB and the FDIC jointly issued feedback to the eight largest and most complex domestic BHCs concerning their most recent plans. The agencies noted that the U.S. G-SIBs have made substantial progress across numerous areas, and identified four areas in which more work will need to be done by all eight U.S. G-SIBs to continue to improve their resolvability: intra-group liquidity; internal loss-absorbing capacity;

		derivatives; and payment, clearing, and settlement activity. In December 2018, the FDIC and the FRB issued final resolution plan guidance, after a notice and comment period, to the US. G-SIBs. In addition, in December 2018, the FDIC and the FRB jointly issued feedback to the largest four foreign banking organizations with operations in the U.S. on their resolution plans. The FDIC and the FRB also have continued to review resolution plans submitted by other firms subject to the requirement and to provide feedback. The next submissions from the U.S. G-SIBs are expected in July 2019. Plans from other firms presently are due in December 2019 and July 2020. Firm-specific cooperation agreements that meet the standards set out in the relevant *Key Attributes* and relevant annexes thereto have been executed for all U.S. G-SIBs and for one U.S. G-SII. In December 2016, the FRB approved a final rule that imposes total loss absorbing capacity (TLAC) and long-term debt requirements on the eight U.S. GSIBs and on the U.S. IHCs of foreign GSIBs. The final rule is consistent with the Financial Stability Board (FSB) TLAC standard, but is stricter in a few respects. The final rule also imposes clean holding company requirements on GSIBs. In April 2019, the U.S. banking agencies jointly proposed restrictions on investments in TLAC instruments; this proposal is consistent with the BCBS's TLAC Holdings standard. State insurance regulators through their work at the NAIC are reviewing the value of aspects of resolution planning for large insurance groups under its Macro Prudential Initiative (MPI). The goal of MPI is to consider some new or improved tools to 1) better monitor and respond to the impact of external financial and economic risks on the firms state insurance regulators supervise, including financial, reputational, litigation or regulatory risks for the firm; and 2) better monitor and respond to risks emanating from or amplified by insurers that might be transmitted externally, and which may result in significant impacts to the stability of broader financial markets. Moreover, State insurance regulators are authorized, under revisions to the NAIC model holding company act, to have the power to act as a group-wide supervisor (GWS) for identified IAIGs, and these powers enable the GWS to be able to order mitigation of material risks to the insurance operations of the group which could if necessary include the power to require the development of resolution and/or recovery plans. The revisions to the NAIC model holding company act that provide for the powers to act as a GWS of an IAIG have been adopted in 29 states and will be required to be adopted in all accredited U.S. states and jurisdictions by January 1, 2020.

#	FSAP Recommendation	Developments
	Financial market infrastructures (FMIs)	
28	Identify and manage system-wide risks related to interdependencies among FMIs, banks, and markets	U.S. authorities continue efforts to increase the resilience and recoverability of FMIs, with particular emphasis on central counterparties (CCPs). U.S. authorities advanced domestic efforts and continued to participate in, and contribute to, numerous international work streams. Domestically, U.S. authorities have undertaken several important efforts, including the following: • U.S. authorities have adopted risk management standards for systemically important FMIs, including expectations for recovery and orderly wind-down planning. Authorities are examining the viability and comprehensiveness of these FMIs' recovery and orderly wind-down plans. • The authorities also are actively engaging in resolution planning for systemic CCPs. The FDIC and the CFTC co-host crisis management group (CMGs) meetings for two U.S. CPs- that are considered systemically important in more than one jurisdiction, the Chicago Mercantile Exchange and Ice Clear Credit, LLC. The next CMG meetings are scheduled for June 2019. • In September 2016, the CFTC issued final cybersecurity testing rules for FMIs and markets. • In May 2018, FRB welcomed the release of the CPMI's strategy for *reducing the risk of wholesale payments fraud related to endpoint security* and reaffirmed its commitment to work collaboratively with domestic and international stakeholders to promote the safety and resiliency of the wholesale payments ecosystem worldwide. FRB staff, in close collaboration with the Federal Reserve Banks, has been engaged in efforts domestically to advance the strategy in the U.S. and actively monitor progress. International efforts include the following: • The U.S. authorities participated in the Study Group on Central Clearing Independencies (SGCCI), which was established by the FSB, the International Organization of Securities Commissions (IOSCO), and the BCBS to identify, quantify and analyze interdependencies between CCPs and major clearing members, and financial service providers. Results from the SGCCI's analysis were published in July 2017 and August of 2018.

#	FSAP Recommendation	Developments
		• The U.S. authorities participated in, and the CFTC co-chaired, the Derivatives Assessment Team, established by the FSB, BCBS, the Committee on Payments and Market Infrastructures (CPMI) and IOSCO, that published a report on Incentives to centrally clear OTC derivatives. • The U.S. authorities, as members of CPMI-IOSCO, participate in the drafting of reports, at both the consultation and final stage, for the CPMI-IOSCO's Framework for Supervisory Stress Testing of CCPs, CPMI-IOSCO's Resilience of Central Counterparties (CCPs): Further Guidance on the PFMI, and Recovery of FMIs. The final versions were published in July 2017 (Resilience of CCPs and Recovery of FMIs) and April 2018 (the Framework for Supervisory Stress Testing for CCPs). The CFTC co-chairs the CPMI-IOSCO Policy Standing Group. U.S. authorities also contributed to CPMI-IOSCO's report on "Guidance on cyber resilience for financial market infrastructures" published in June 2016. • U.S. authorities are participating in the FSB work streams on resolution of CCPs and the continuity of access to FMIs for members in resolution. The FDIC co-chairs the FSB work stream on CCP resolution, which published in July 2017 "Guidance on Central Counterparty Resolution and Resolution Planning," and in November 2018 issued a discussion paper for consultation "Financial resources to support CCP resolution and the treatment of CCP equity in resolution."
	Offer Fed accounts to designated Financial Market Infrastructures (FMUs) to reduce dependencies on commercial bank services	By December 2017, requests from designated FMIs have been authorized by the Federal Reserve Banks of Chicago and New York. The following five U.S. FMIs have been designated as systemically important utilities and are authorized to open accounts at the central bank: ICE Clear Credit, CME Inc., the Options Clearing Corporation, the National Securities Clearing Corporation, and the Fixed Income Clearing Corporation. The measure has been possible because these (non-bank) FMIs have been designated as systemically important financial market utilities and are therefore eligible for Federal Reserve accounts and services pursuant to section 806 of the Dodd-Frank Act.

#	FSAP Recommendation	Developments
	Housing finance	
29	Reinvigorate the momentum for comprehensive housing market reform	Housing finance and the U.S. housing market have not been reformed comprehensively. Since the last FSAP, no legislative or executive action has been taken to reduce substantially the footprint of Fannie Mae and Freddie Mac ("Enterprises"). As conservator, however, the (FHFA has required market-based credit risk transfers from the Enterprises to the private sector at an increasing level since 2013. Indeed, between their initiation in 2013 and June 2018, the Enterprises have transferred a portion of credit risk on approximately $2.5 trillion of unpaid principal balance (UPB) with a combined Risk in Force (RIF) of about $81 billion. The Enterprises have also jointly developed a common securitization platform. FHFA issued a final rule on the uniform mortgage-backed security in February 2019 to align Enterprise policies and practices that affect cash flows of To-Be-Announced (TBA) eligible mortgage-backed securities. These requirements apply to both the Enterprises' current offerings and to the new Uniform Mortgage-Backed Security (UMBS), which the Enterprises plan to begin issuing in June 2019. These Enterprise reforms have been accomplished administratively and have not reformed the entire housing finance system, which would require legislative action. Since 2015, the FHFA has directed the Enterprises to fund the Housing Trust Fund and Capital Magnet Funds (as required by the 2008 Housing and Economic Recovery Act) by transferring a portion of total new acquisitions to these funds, which are administered by the Department of Housing and Urban Development (HUD) and Treasury Department, respectively. FHFA has the discretion to suspend the Enterprise allocations to the affordable housing funds, including the Housing Trust Fund, if the allocations are contributing to the Enterprise's financial instability. The Senior Preferred Stock Purchase Agreements (PSPAs) between the Treasury and each Enterprise continue to provide financial strength for the Enterprises. They ensure the ability of the Enterprises to meet their financial obligations and are structured so that they will have minimal net worth as all profits above the capital reserve amount are transferred to Treasury each quarter. The capital reserve amount had been declining by $600 million per year and was scheduled to decline to zero by January 2018. However, on December 21, 2017, FHFA and the Department of the Treasury agreed to reinstate a $3 billion capital reserve amount for each Enterprise to prevent draws on the PSPA due to fluctuations in the Enterprises' income due to the normal course of