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Fiscal impulse update: Uncle Sam goes on a spending spree

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- Previously, we had highlighted the upside risks to our growth outlook pending the outcome of the latest budget debate. The recent passage of a bipartisan budget agreement provides for nearly $300 billion in additional discretionary spending in fiscal years 2018 and 2019. In turn, we have raised our 2018 real GDP growth forecast (Q4/Q4) to 2.9% (from 2.6% previously) and our 2019 forecast rises to 2.5% (from 2.1%).
- Stronger growth should put further downward pressure on the unemployment rate, which we now expect will trough at 3.2% in 2019, about 1.5 percentage points below NAIRU. Lower unemployment and this morning's upside surprise for core inflation have led to a one-tenth increase in our core PCE projections, which now are 2% for year-end 2018 and 2.3% for year-end 2019. Our baseline Fed expectation is unchanged: we continue to expect four rate hikes this year and three next year. But recent developments have tilted the balance of risks to the upside.
- In the following commentary, we walk through the details of the latest spending bill and the implications for the economy and monetary policy. While the near-term outlook appears robust, we continue to see a meaningful slowdown in output growth in 2020 as the fiscal impulse begins to fade and Fed rate increases begins to bite through tighter financial conditions.
- Longer-term fiscal sustainability remains a key risk as our calculations suggest a series of trillion-dollar budget deficits over the next decade. If structural reforms to entitlement spending continue to be ignored, fiscal policy's ability to respond to exogenous shocks in the future may be substantially curtailed.

Uncle Sam goes on a spending spree

The Bipartisan Budget Act of 2018 lifted discretionary spending caps by $296 billion for fiscal years 2018 and 2019. Since this is only spending "authorization", we use the Congressional Budget Office (CBO) scoring of the bill to get a rough estimate of the difference in outlays relative to our previous baseline assumption of government spending. According to the CBO, expected outlays will increase by $40.7 billion in FY2018, $161.5 billion in FY2019, and $57.6 billion in FY2020. The remainder of the increase in budget authorization will be spread over the course of fiscal years 2021, 2022 and 2023. Recall that the federal government fiscal year begins in October, therefore on a calendar-year basis, we expect outlays to rise by $81.8 billion, $135.5 billion and $47.9 billion in 2018, 2019 and 2020, respectively. On the surface, these figures amount to roughly 0.5% - 1.0% of additional real GDP. However, not all spending is equal and these figures need to be appropriately discounted to get the impact of this fiscal largesse on output growth.

Details of the spending increases

We utilize several official sources to explore how recent major legislation have impacted deficit projections. Then, using a range of multipliers, we document the potential impacts that the recent spending splurge could have on output going forward. To be clear, we had already accounted for tax reform in our prior growth forecasts, hence our focus here is on the recent spending provisions.

We begin using the deficits from the CBO's June 2017 update to their economic and budget outlook over the next ten years.[1]The deficits presented in the first line of Figure 1 are their baseline projections which assume no changes to the law going forward and, thus, can be taken as projections of what the deficit would have looked like in the absence of tax and spending reforms.[2]The next panel in Figure 1 details the additional costs to the government budget of recent major legislation. The first line is the budgetary cost of the tax reform bill as estimated by the Joint Committee on Taxation that we discussed in detail in our previous outlook update.[3]

The following lines in the second panel detail the expected cost of the recent budget deal as estimated by the CBO.[4] First, there are minor changes to revenue estimates that largely reflect the extension of various tax breaks for special interests. The next category provides for changes in direct spending, which include additional funds for disaster relief, as well as a further extension of funding for the Children's Health Insurance Program (CHIP) and certain Medicare programs plus funding for the opioid epidemic. Both of these categories include one-off budget "gimmicks" to help offset some of these costs, particularly in the out years, such as sales from the Strategic Petroleum Reserve beginning in 2022 and direct spending cuts slated to begin in 2026.

The final category illustrates expected outlays from the increases to defense and non-defense spending caps for 2018 and 2019 authorized by the budget deal. As

1 https://www.cbo.gov/publication/52801
2 The numbers presented in the CBO Budget and Economic outlook, as well as other sources, present their projections for fiscal years, which runs from October of the previous calendar year to September of the current calendar year. We present our numbers in calendar year format, assuming that the spending for a given fiscal year is applied evenly over the quarters it applies to.
3 https://www.jct.gov/publications.html?func=startdown&id=5053
4 https://www.cbo.gov/system/files/115th-congress-2017-2018/costestimate/bipartisanbudgetactof2018.pdf.

detailed above, this bill lifted the caps on discretionary spending in fiscal years 2018 and 2019 by $143 billion and $153 billion, respectively, with about 60% of the increase in each year allocated towards defense spending. Once these funds are appropriated by Congress, which will be hammered out in committees over the next several weeks, actual spending can begin. Increased government spending because of the higher caps in 2018 and 2019 is projected to go out as far as 2023, presumably because of delays in actually spending appropriated funds and longer term procurement contracts.

Figure 1: Details of recent budget changes

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
CBO Baseline Deficit as of June 2017 ($, billions)	-661	-594	-710	-801	-916	-1035	-1064	-1118	-1256	-1380	-1496
Major Legislation Since Baseline											
Tax Cuts and Jobs Act	---	-206	-275	-249	-210	-168	-133	-119	-96	-22	25
Bipartisan Budget Act (Revenues)	---	-11	-1	-2	2	-1	-1	0	1	2	2
Bipartisan Budget Act (Spending)	---	-8	-7	-1	2	4	3	-2	3	25	27
Estimated Outlays from Increased Caps	---	-81	-136	-48	-16	-7	-2	0	0	0	0
Total Additions to the Deficit ($, billions)	---	-305	-419	-301	-223	-172	-133	-121	-92	6	54
Total Deficit ($, billions)	-661	-899	-1129	-1102	-1139	-1207	-1197	-1239	-1349	-1374	-1442
CBO Real Potential GDP (2009$, billions)	17093	17376	17682	18001	18333	18677	19031	19392	19757	20127	20503
Deficit Increase from Tax Reform (% of Potential GDP)	---	1.18	1.55	1.38	1.15	0.90	0.70	0.61	0.49	0.11	-0.12
Deficit Increase from Budget Bill Revenue Measures (% of Potential GDP)		0.06	0.01	0.01	-0.01	0.00	0.00	0.00	0.00	-0.01	-0.01
Deficit Increase from Budget Bill Spending Measures (% of Potential GDP)	---	0.51	0.81	0.27	0.08	0.02	0.00	0.01	-0.02	-0.13	-0.13
Total Additions to the Deficit (% of Potential GDP)	---	1.69	2.36	1.66	1.22	0.92	0.70	0.62	0.47	-0.02	-0.25
Total Deficit (% of Potential GDP)	3.86	5.18	6.38	6.12	6.21	6.46	6.29	6.39	6.83	6.83	7.03

Source: CBO, Joint Committee on Taxation, Deutsche Bank

What is the growth impact?

There is significant heterogeneity in the efficacy of various methods of fiscal stimulus—i.e. tax cuts and spending increases can generate varying degrees of additional output depending on how they are implemented, at what point in the business cycle they occur, and how the Fed would be expected to respond. Using commonly cited multipliers for various types of fiscal stimulus as shown in Figure 2, we construct blended multipliers corresponding to their relative weights in the policy line item.[5] Then, given how much the deficit increases with respect to potential GDP, we can estimate by how much the fiscal stimulus would be expected to raise GDP growth for that calendar year.

We highlight three scenarios to illustrate the wide range in potential implications for output: using the midpoints, the low endpoint, and the high endpoint of each range of multiplier estimates. Multipliers on the high end of the ranges imply that the additional deficit spending would create a relatively larger boost to output, perhaps from additional jobs being created to satisfy the increase to aggregate demand that would then create subsequent knock-on rounds of increased consumer spending. On the other hand, multipliers on the low end correspond to an expectation that increased fiscal stimulus would be expected to crowd out other drivers of demand or that a particularly aggressive monetary policy response would counter most of the fiscal stimulus.

Figure 2: Assumptions on multipliers for different fiscal stimuli

Type of Fiscal Stimulus	Source	Midpoint	Low Endpoint	High Endpoint
Tax cuts to low-income households	CBO	0.9	0.3	1.5
Tax cuts to high income households	CBO	0.35	0.1	0.6
Corporate tax provisions primarily affecting cash flow	CBO	0.2	0	0.4
Purchases of goods and services by the federal government	CBO	0.5	0.17	0.83

Source: CBO, Deutsche Bank

In 2018, the estimates for the total boost to GDP from the major legislation range a full percentage point from 0.19-1.19 percentage points, with about 60% in the early years coming from the tax plan. The effect on output picks up in 2019 as both spending and tax cuts increase. As the stimulus from the budget bill dies off, the balance of the stimulus shifts more toward the tax reform bill, which, in

5 Multipliers from the CBO are taken from a CBO report commissioned to estimate how stimulus packages such as the American Recovery and Reinvestment Act of 2009 would be expected to affect output and employment. The multiplier for purchases of goods and services by the federal government are assumed to refer to a period of time where output is close to potential and when the Federal Reserve response is typical.

turn, becomes a drag as various provisions in the tax reform bill, particularly on the individual side, are slated to expire.

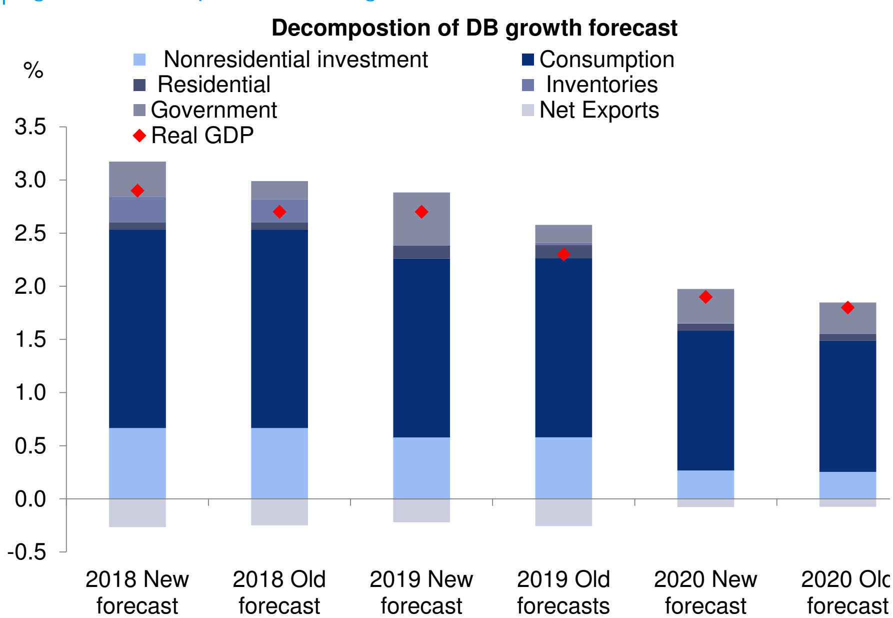
Figure 3: Estimated GDP impact of additional deficit spending

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Midpoints Scenario:										
Tax Reform Bill Multiplier = 0.356	0.42	0.55	0.49	0.41	0.32	0.25	0.22	0.17	0.04	-0.04
Budget Bill Revenue Multiplier = 0.2	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Budget Bill Spending Multiplier = 0.5	0.26	0.40	0.14	0.04	0.01	0.00	0.00	-0.01	-0.06	-0.07
	0.69	0.96	0.63	0.45	0.33	0.25	0.22	0.16	-0.03	-0.11
Low Endpoints Scenario:										
Tax Reform Bill Multiplier = 0.084	0.10	0.13	0.12	0.10	0.08	0.06	0.05	0.04	0.01	-0.01
Budget Bill Revenue Multiplier = 0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Budget Bill Spending Multiplier = 0.17	0.09	0.14	0.05	0.01	0.00	0.00	0.00	0.00	-0.02	-0.02
	0.19	0.27	0.16	0.11	0.08	0.06	0.05	0.04	-0.01	-0.03
High Endpoints Scenario:										
Tax Reform Bill Multiplier = 0.628	0.74	0.98	0.87	0.72	0.57	0.44	0.38	0.31	0.07	-0.08
Budget Bill Revenue Multiplier = 0.4	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Budget Bill Spending Multiplier = 0.83	0.42	0.67	0.23	0.06	0.01	0.00	0.01	-0.01	-0.11	-0.11
	1.19	1.65	1.10	0.78	0.58	0.44	0.39	0.29	-0.04	-0.19

Source: Deutsche Bank

With respect to our GDP forecast, which already had incorporated the additional boost to GDP from the tax reform bill, we take a balanced approach and assume that about half of the increase in outlays from the recent budget deal show up in real GDP for the corresponding years. This is consistent with the midpoint of the CBO's range for the government spending multiplier when output is close to potential, which it is, and the Fed responds as expected, which we do. Thus, on average, the aforementioned boost to spending is set to contribute an additional roughly 30 bps to real GDP growth in 2018 and 40 bps in 2019 relative to our previous baseline. The fiscal impulse from the budget bill then begins to fade in 2020, as the additional spending relative to our previous forecast contributes less than a tenth to growth in the remaining years.

Figure 4: Decomposition of DB growth forecast



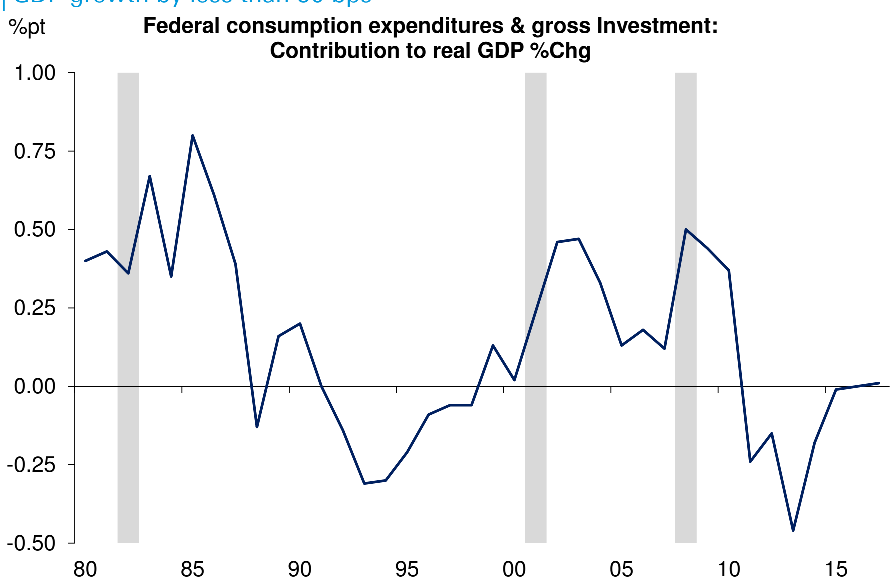
Note: Data are annual. Source: Deutsche Bank

To be sure, there are meaningful risks to this forecast given the range of fiscal multipliers highlighted above, but history tells us that we should err on the side of caution. For example, the American Recovery and Reinvestment Act of 2009 was expected to boost federal government outlays by roughly $200 billion in calendar year 2010, which on a dollar-for-dollar basis was worth over 1.3 percentage points of Q4 2009 real GDP ($14.5 trillion). What ended up happening with the last substantial fiscal stimulus package? Federal government spending contributed less than 40 bps to real GDP growth in 2010 and was actually a drag on growth for the next five consecutive years. Importantly, this was at a time when the macroeconomic backdrop was likely supportive of a higher fiscal multiplier, with significant slack in the labor market and the Fed not tightening to offset any stimulus.

In addition, there is some evidence in the literature that the multiplier for defense spending is lower than for other types of government spending. This is because military spending is typically on more capital-intensive goods, and, thus, is a less efficient fiscal stimulus as it produces fewer additional jobs to satisfy the increase in demand relative to government spending on more labor-intensive goods.[6] Given that 60% of the increase to spending caps are earmarked for defense, this would imply a smaller boost to output than in our base case.

Nevertheless, with the economy already operating well above potential growth, we expect fiscal spending to tighten the labor market a bit more than we had previously anticipated, which, importantly, modestly boosts inflation.

Figure 5: The last two significant federal spending increases boosted real GDP growth by less than 50 bps



Source: BEA, Haver Analytics, Deutsche Bank

To dance to the tune, you must pay the piper

Under the CBO's baseline from last June, the US government was slated to spend about $600 billion more than it would have raised in 2018, which would more than double to $1.5 trillion by 2027, the end of the ten-year budget window. The result of both the tax reform bill and the budget deal combined is to drastically increase the government deficit. These two bills together will balloon the federal

6 See Alonso, Cristian. 2017. "Cutting Back on Labor Intensive Goods? Implications for Fiscal Stimulus." mimeo.

budget deficit by about $300 billion in 2018, $420 billion in 2019, and $300 billion in 2020. The result is that beginning in 2019, the projected deficit will be over $1 trillion each year going forward, bringing the expected date of the first trillion dollar deficit up three years relative to the June 2017 baseline. Of course, these estimates assume that Congress adheres to current law, meaning that tax cuts at the individual level expire in 2026 and spending cuts will be eventually implemented in the out years. In practice, this is almost never the case. Thus, if past is prologue, this is likely the best case scenario for the impact of these bills on the government's long-term finances.

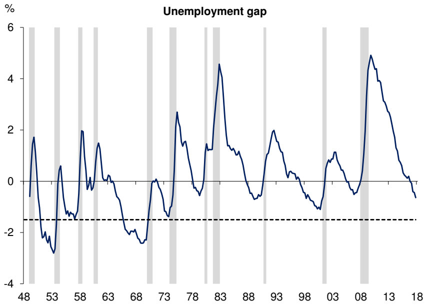
In terms of potential GDP, these additional deficits amount to about 1.7% in 2018, 2.4% in 2019, 1.7% in 2020, and decline towards zero by the end of the budget window. Combining the deficits from the recent major legislation with the baseline, the total deficit as a share of potential GDP jumps from less than 4% in 2017 to over 6% in 2019, and proceeds to top 7% by 2027. Longer-term fiscal sustainability remains a key risk. If structural reforms to entitlement spending continue to be ignored, fiscal policy's ability to respond to exogenous shocks in the future may be substantially curtailed.

Labor market: Further tightening likely ahead

One consequence of our stronger growth profile is that the labor market is expected to tighten even further. We have, for some time, expected a more significant decline in the unemployment rate than was envisioned in both consensus and the Fed's forecasts. Even before the passage of tax cuts and higher government spending, we anticipated that the unemployment rate would trough at around 3.5% this cycle, which, if realized, would be its lowest level since 1969. The logic for this stems from our assumptions that the labor force participation rate resuming a gradual downtrend over time – there is a structural downtrend of about -0.25 percentage points per year due to aging – and productivity growth failing to rise in line with the pickup in aggregate demand. Under these two assumptions, unemployment would continue to fall faster than some other forecasts show.

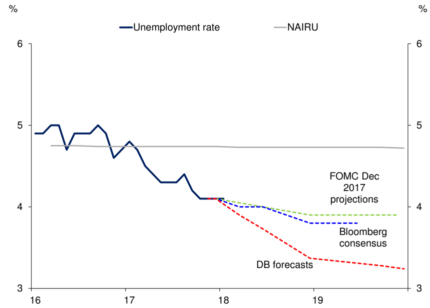
As we have detailed in our recent discussion of the tax plan, the recent expansionary fiscal policy could provide a small boost to the supply side, through inducing more workers to enter the labor market or by sparking greater capex and thus providing a tailwind to productivity. However, this effect is likely to be small. In our revised unemployment rate forecasts we have allowed for a modest uptick in the labor force participation rate in each of the next two years to allow for the possibility that a stronger labor market could bring more workers off the sidelines. But even with this more optimistic assumption, our central view still holds that the supply-side of the economy will not be able to keep pace with stronger aggregate demand, and therefore, the upgrade to our growth forecast results in a further decline in the unemployment rate. We now anticipate that the unemployment rate will average 3.4% in Q4 2018 and 3.2% in Q4 2019. If realized, and assuming an unchanged estimate for NAIRU around 4.6%, the unemployment rate would fall nearly 1.5 percentage points below NAIRU for the first time since the late 1960s. If the Phillips curve has any life left, this unemployment profile could awaken inflation over the next two years.

Figure 6: Unemployment gap could fall to the lowest level since late 1960s



Source: BLS, CBO, Haver Analytics, Deutsche Bank

Figure 7: Unemployment rate expected to fall to 3.2% by end-2019



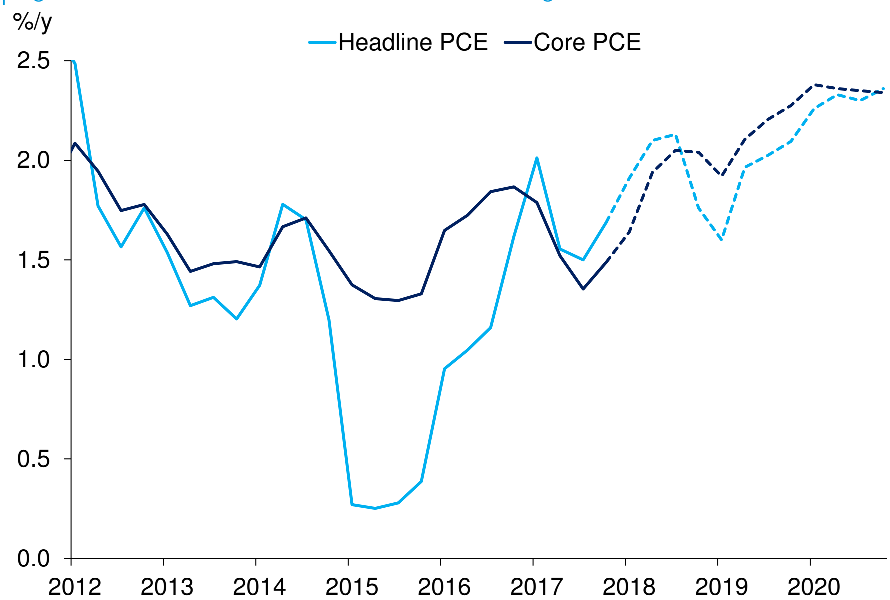
Source: BLS, CBO, Bloomberg Finance LP, Deutsche Bank

Inflation: Core inflation profile revised up modestly

The further decline in the unemployment rate should produce somewhat greater wage and price pressures, although the incremental revision to our growth and unemployment forecasts does not materially change our baseline inflation outlook. The sensitivity of our price inflation forecast to changes in the unemployment rate is pretty low due to the presence of a relatively flat Phillips curve. The slope of the Phillips curve in our quarterly macro model for core PCE inflation is only -0.07, implying that a 1 percentage point decline in the unemployment rate in a given quarter raises annualized core PCE inflation in the following quarter by only about 7 basis points. However, due to the presence of lagged inflation in our model, the long-term cumulative impact of the decline in the unemployment rate is magnified. Taking account of these lagged effects, the peak impact on core PCE inflation from a 1 percentage point decline in the unemployment rate is significantly larger, around 28 basis points. The long-term impact from the further decline in the unemployment rate of 0.2 percentage points thus would add about 6 basis points to our core inflation forecast, all else equal, though this full effect would take some time to materialize.

Our forecast now sees core PCE inflation at 2% at the end of this year and 2.3% by end-2019, up from 1.9% and 2.2% respectively. This revision is due to both the downward revision to our unemployment rate forecast and the stronger-than-expected January CPI print, which we attribute largely to a convergence of several components to supportive leading indicators and models rather than one-offs that will need to be reversed in subsequent months. Moreover, if the non-linearities we have found operative with wage data at the state level begin to kick in, there could be further upside risks to this forecast.

Figure 8: Inflation set to overshoot Fed's 2% target in 2019



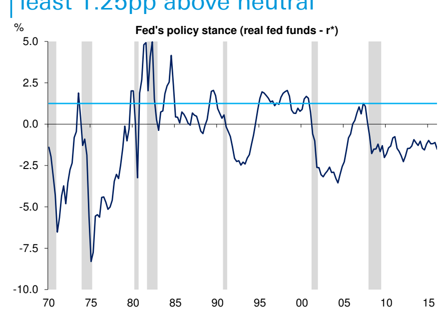
Source: BEA, Haver Analytics, Deutsche Bank

Fed: Central view unchanged, but risks titled towards more hikes

With growth stronger, unemployment lower, and inflation modestly higher, the Fed should raise its expectations for rate hikes over the coming years. By mid-year, and potentially as early as March, this evolving outlook should cause the Fed to upgrade its assessment for rate hikes this year to four, which would bring its expectation in line with our own forecast. At this point, we have left our expectations for the fed funds rate unchanged, motivated by the fact that our baseline inflation outlook has not changed dramatically, and inflation has been the binding constraint for the Fed. However, we now have greater confidence in our more aggressive Fed call and even see the balance of risks around this view shifting to the upside. This reassessment is evident in recent Fedspeak, in which even more dovish FOMC members have begun to acknowledge that the balance of risks could be tilting in favor of the economy overheating.

How much further upside could there be to fed funds expectations? One way to calibrate this risk is to assess how high the fed funds rate has gotten during historical tightening cycles relative to neutral policy. Historically, the Fed has always raised the fed funds rate at least 1.25 percentage points above neutral towards the end of recoveries to ensure that the economy did not overheat. With reasonable estimates for the real neutral fed funds rate (r-star) likely around 0.25-0.75% by end-2019, historical experience would suggest that the Fed could raise the fed funds rate to a range of 3.5% to 4%. Interestingly, this rule of thumb based on historical experience is remarkably similar to optimal control exercises we recently conducted using the Federal Reserve Board's model of the US economy (FRB/US). For now, we consider this outcome to be an upside risk to our baseline expectations, which still foresee four rate hikes in 2018 followed by three more in 2019, putting the terminal fed funds rate just above 3%.

Figure 9: Fed historically tightens at least 1.25pp above neutral



Source: FRB, BEA, Laubach-Williams (2003), Haver Analytics

While our near-term outlook remains robust, we remain concerned about a meaningful slowdown in the years to come as the fiscal impulse fades. If the Fed is forced to tighten more aggressively over the next two years as we anticipate, absent a pickup in potential growth, private sector demand will likely slow in 2020 at the same time that the boost from fiscal spending tapers off. Indeed, our base case remains that real GDP growth will fall from 2.5% in 2019 to 1.5% in 2020. Should inflation rise significantly faster than we are projecting in response to the labor market tightening, the more aggressive Fed (and market) response that would surely follow would push the economy into recession, we think by 2020. Indeed, our baseline forecast foresees an unprecedented soft landing – with the Fed managing to bring the unemployment rate back up to NAIRU without inducing a recession, something it has not achieved before. Finally, some risks lie on the other side as well. A surprisingly strong recovery of business investment and productivity growth could allow the economy to hum along for a good while longer without excessive labor market tightening, surging inflation, or more aggressive Fed policy restraint.

Appendix 1

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