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August 23, 2017

Moderately Above-Trend Growth through 2018

GDP grew 1.9% over 2017 H1, but we expect it to strengthen to 2.9% over 2017 H2, before registering 2.2% over 2018.[1] Accommodative monetary policy, improving household balance sheets, narrowing risk spreads, low energy costs, and some pre-Trump fiscal stimulus all contribute to this moderately above-trend growth. Despite the recent depreciation of the dollar, domestic demand will outpace GDP as the trade deficit continues to widen in lagged response to the sharp appreciation of the dollar during 2014-2016. Labor markets will continue to tighten, with unemployment falling to 4% by the middle of 2018, and to 3.75% by late 2019, pushing core PCE inflation to 2% by then. The tightening of labor markets will convince the FOMC to overlook recent soft readings on inflation (due, in part, to temporary factors) and continue raising the fed funds rate cautiously while beginning the process of unwinding the Fed's balance sheet later this year. Congress left Washington for the August break without passing a healthcare bill, a budget resolution for FY18, or advancing plans for tax cuts/reform and infrastructure spending. In all likelihood the government will operate under a continuing resolution into next year, assuming the debt ceiling is raised and a shutdown of federal government is avoided this fall without incident.

Q2 production rebounds, H1 demand/income were firm.

- Real GDP grew 2.6% in Q2, rebounding from 1.2% in Q1 when a sharp decline in inventory investment sliced 1.4 pps from GDP growth. This recovery was fully expected.
- H1 GDP growth averaged 1.9%, about the same as in recent years. However, real GDI grew 2.6%, suggesting more fundamental strength than the production numbers.
- Measures of final demand were firm over H1. Real final sales grew 2.7%; real final domestic demand grew 2.4%; real private final domestic demand grew 2.9%.

GDP to grow above 2% through 2018, then slow.

- We expect real GDP to grow 2.4% through the end of 2018, about 0.5 ppt above our estimate of "trend."
- Recent gains in household wealth, declines in risk spreads, and rising utilization rates will power consumer spending and business fixed investment.
- Through 2018 we expect business fixed investment to average 5.0% growth, PCE to grow 2.3%, and declining net exports to subtract an average of 0.3 ppt from GDP growth.
- GDP growth, restrained by rising interest rates and capacity constraints, will slow to 1.8% by late 2019.

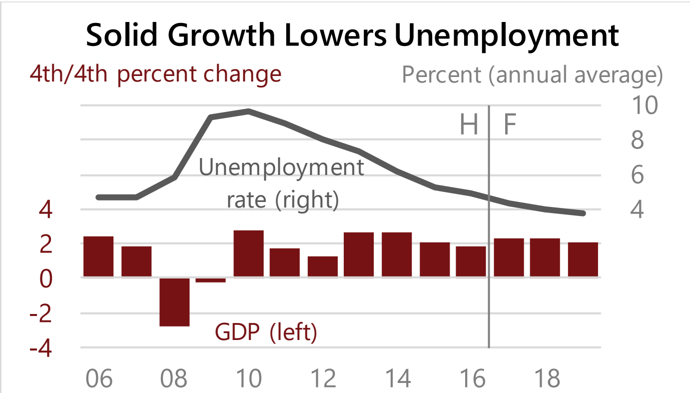
Inflation to reach Fed's 2% target by 2019.

- Core PCE inflation slowed to just 0.9% in Q2, partly due to one-off drops in the price of wireless services and prices of prescription drugs coming off patents. There was, however, some indication of a more fundamental softening.
- Nevertheless, we expect core inflation will drift higher as the unemployment rate falls below 4%, the disinflationary effects of the past rise in the dollar and decline in oil prices wane—or even reverse— and as inflation expectations (based on the Survey of Professional Forecasters), still anchored near 2%, pull inflation higher.

Fed policy: cautious removal of accommodation.

- We expect the FOMC to raise the federal funds rate 3 times this year and begin phasing in a passive run-off of its balance sheet in the fall.
- Policy asymmetry, uncertainty about the neutral fed funds rate and its forward path, and inflation still below target argue for patience in removing accommodation.
- We expect the "terminal" neutral funds of 2¾%-3.0% to be reached in late 2019. The 10-yr note yield ends 2017 at 2.50% and 2018 at 3.09%, close to last month's projections.

The S&P 500 rose 9½% in 2016 and 8.2% in H1; we expect a further rise of only 2.4% through 2019. Popular metrics suggest valuations may be rich. Earnings growth will be modest and rising interest rates are a headwind that will be only partly offset by declines in the equity risk premium.



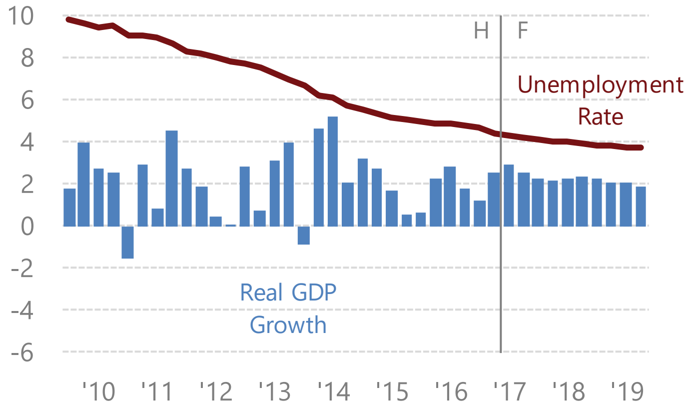
Sources: Macroeconomic Advisers, BLS, BEA.

[1] This forecast was completed and issued on August 7, 2017. Unless otherwise noted, all quarterly growth rates are expressed as compound annual rates, all expenditure components of GDP are chained 2009 dollars, and all annual growth rates are stated as Q4 over Q4.

Please see the important disclaimer on the last page of this report.

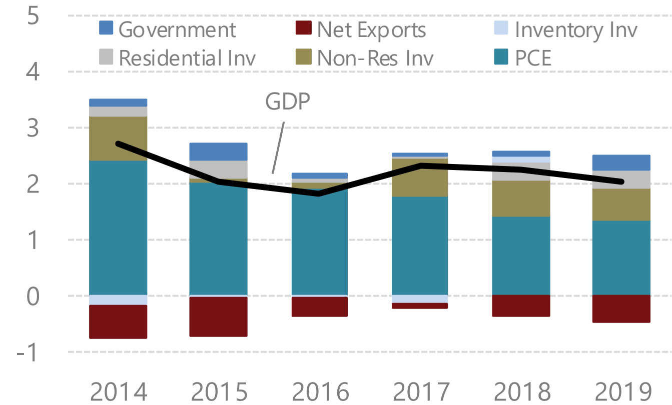
Modestly Above-Trend Growth & Rising Interest Rates

Modestly Above-Trend Growth Through 2019



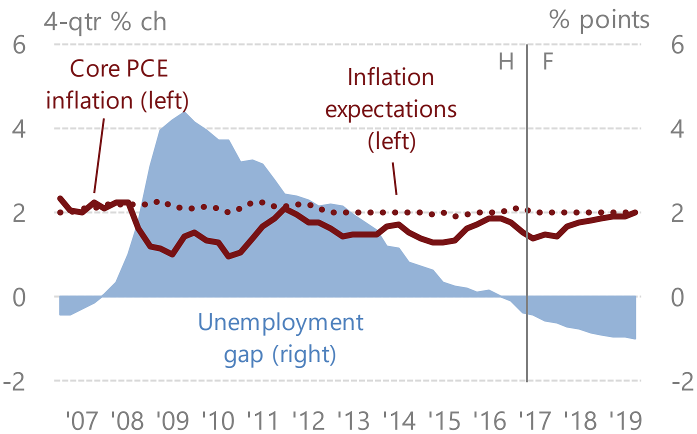
Sources: Macroeconomic Advisers, BEA, BLS

Contributions to GDP Growth



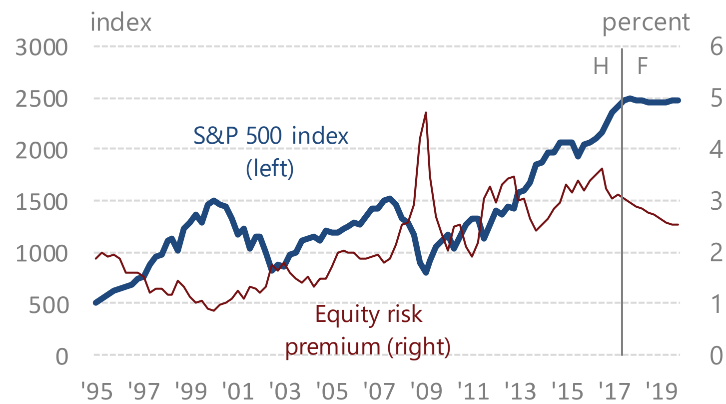
Sources: Macroeconomic Advisers, BEA

Core PCE Inflation Rises to 2%



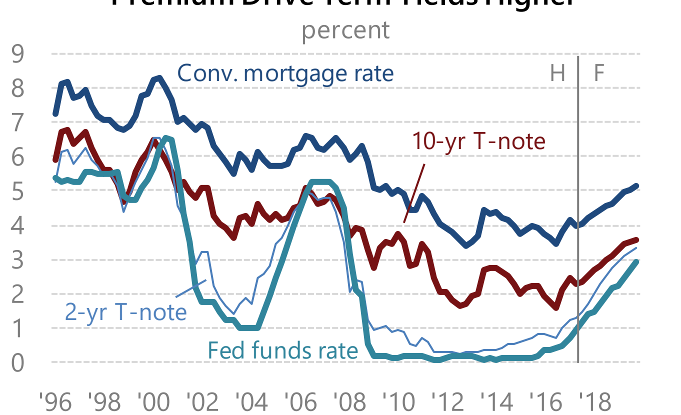
Sources: Macroeconomic Advisers, Philly Fed, BEA, BLS

Declining Risk Premium Helps Stocks Weather Rate Increases



Sources: Macroeconomic Advisers, Standard & Poor's

Rising Expected Fed Funds and Normalizing Term Premium Drive Term Yields Higher



Sources: Macroeconomic Advisers, Federal Reserve

Forecast Overview

	2014	2015	2016	2017	2018	2019
Real GDP*	2.7	2.0	1.8	2.3	2.2	2.0
			2.0	2.3	2.1	1.6
Pvt Final Dom Dem*	4.1	2.9	2.5	2.9	2.8	2.6
			2.5	2.9	2.7	2.5
Unemployment Rate**	5.7	5.0	4.7	4.2	3.9	3.7
			4.7	4.1	4.0	4.0
Core PCE Inflation*	1.5	1.3	1.9	1.5	1.8	2.0
			1.7	1.4	1.8	2.0

* Q4 to Q4 percent change, ** Q4 average

Note: Prior forecast values shown below each line.

Q2, Annual Revisions, Lower $, 3-Handle on Unemployment Rate

- BEA's first estimate of Q2 GDP growth is 2.6%, matching our July forecast.
- BEA released "Annual Revisions" of the National Accounts for 2014-2016. Some quarterly growth rates of GDP were revised notably, up or down, but by 2017 Q1 the cumulative revision to the level of GDP was just +0.2%
- More noteworthy was that PCE was revised up and DPI revised down, so that the saving rate in 2017 Q1 was revised down from 5.2% to 3.8%. Nonresidential investment was also revised up, while residential investment and net exports were revised down. Corporate tax receipts were revised down persistently and significantly.
- Given the projected international differential in interest rates, our equation for the dollar anticipates a further appreciation. However, the broad, nominal dollar has depreciated nearly 6% so far in 2017, perhaps due to uncertainty surrounding the Trump Administration. Reflecting these new uncertainties, but still showing eventual upward pressure on the exchange rate, we revised down the path of the dollar. The lagged response of net exports to the lower dollar path contributed to an upward revision in GDP growth in 2019, from 1.6% to 2.0%
- In this month's forecast unemployment dips below 4% in 2018, to a lower trough (by about 0.25 ppt) than in previous forecasts. Consequently, growth of hourly compensation accelerates to 4% by late 2019.

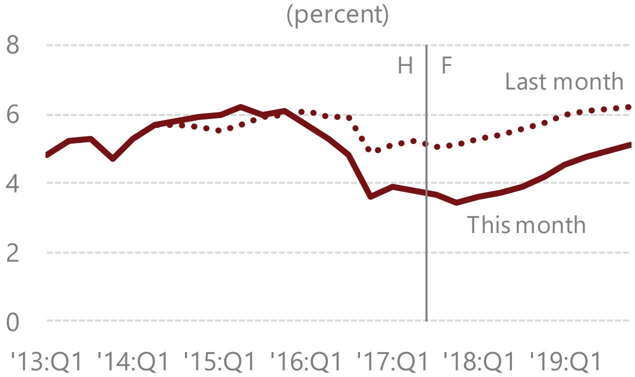
	17-Q2	17-Q3	17-Q4	18-Q1	18-Q2	2015	2016	2017	2018	2019
Gross Domestic Product	2.6	2.9	2.6	2.2	2.1	2.0	1.8	2.3	2.2	2.0
		-0.1	0.3	0.2	-0.1	0.1	-0.2		0.1	0.4
Private final domestic demand	2.7	2.7	3.3	2.9	2.8	2.9	2.5	2.9	2.8	2.6
	-0.1	-0.4	0.6	0.1		0.2			0.1	0.1
Personal cons. expenditures	2.8	2.7	3.0	2.4	2.1	3.0	2.8	2.6	2.1	2.0
	-0.3	-0.2	0.7	0.3	0.2	0.4	-0.3	0.2	0.2	
Nonres. fixed investment	5.2	3.6	5.3	5.3	5.1	0.3	0.7	5.3	5.2	4.6
	2.4	-1.7	-0.3	0.3	0.2	-0.5	0.8	-0.7	0.3	0.8
Residential investment	-6.8	-0.1	1.7	4.3	8.2	10.3	2.5	1.3	7.6	7.4
	-5.2	1.4	1.7	-4.6	-3.2	-2.8	1.4	-1.0	-2.1	0.4
Gov't cons. & gross invest.	0.7	1.0	-0.1	-0.2	0.5	1.6	0.4	0.2	0.5	1.4
	0.1	0.2	-0.3	-0.2	-0.1	-0.6	0.2		-0.1	-0.1
Chng. in private inventories*	0.0	0.5	0.3	0.3	0.0	-0.1	0.0	-0.2	0.1	0.0
	-0.3		-0.1	0.2	-0.1		0.1	-0.2		0.1
Net exports*	0.2	-0.1	-0.5	-0.5	-0.3	-0.7	-0.3	-0.1	-0.4	-0.5
	0.4	0.2	-0.1	-0.1	0.1		-0.1	0.1		0.2

Note: Positive differences from previous forecast shown in teal, negative differences shown in red.

* Contributions to GDP growth in percentage points.

Personal Saving Rate

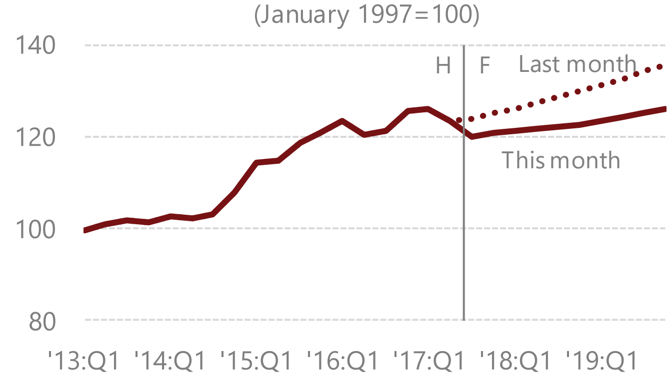
(percent)



Source: Macroeconomic Advisers, BEA

Broad Nominal Trade-Weighted Dollar

(January 1997=100)

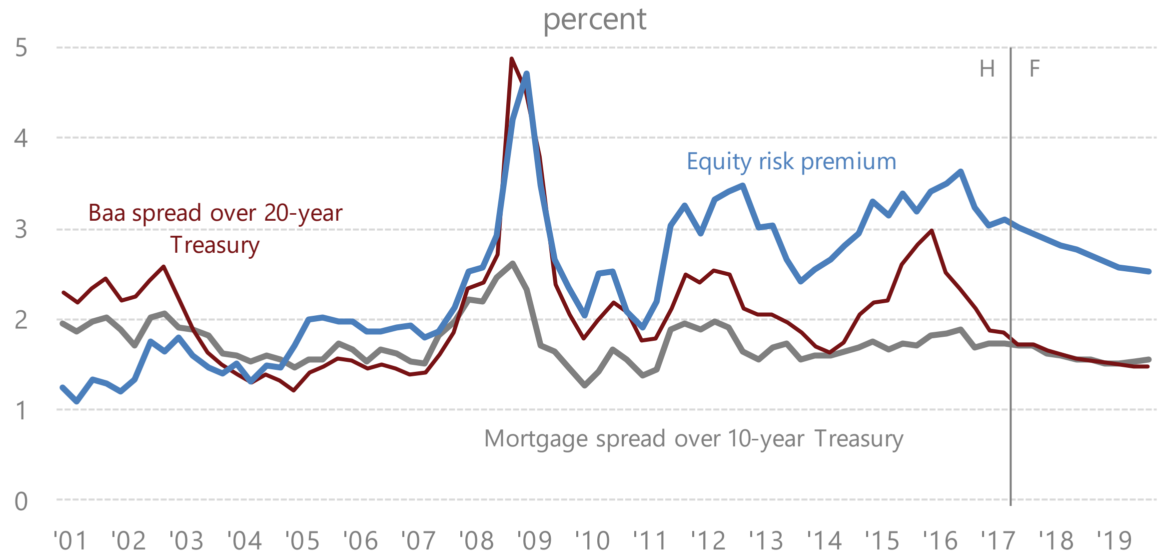


Source: Macroeconomic Advisers, FRB

Gradual Uptick in Potential, Solid Underpinnings for Demand

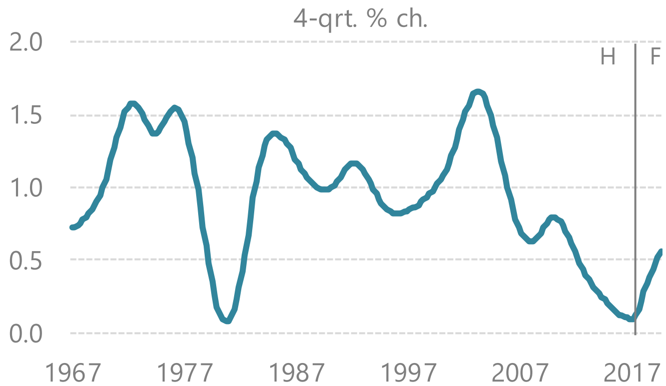
GDP growth near 2% through 2019 is several tenths higher than our estimate of potential growth, which we see rising from the current 1.5% to 1.9% by late 2019. This increase arises from an assumed acceleration in total factor productivity, aided later by a quickening in capital deepening as business fixed investment strengthens while labor availability slows. Offsetting these positive effects on potential growth is a structural decline in labor force participation from population aging. In the near term, several factors will drive aggregate demand: (1) recent gains in wealth, employment, and compensation have established solid underpinnings for PCE; (2) declines in risk premiums will strengthen household balance sheets while lowering the cost of business capital; (3) the recent drop in oil prices will boost DPI but is unlikely to undercut either U.S. energy production or mining investment; (4) a return to a more normal pace of household formation, and further easing in credit terms, will promote a gradual improvement in residential investment; (5) the dollar's retreat from recent highs will trim negative contributions to GDP growth from net exports; (6) the net fiscal position of federal and state & local governments is gradually expansionary through 2019.

Improving Economy Expected to Drive Risk Spreads Lower



Sources: Federal Reserve, Macroeconomic Advisers.

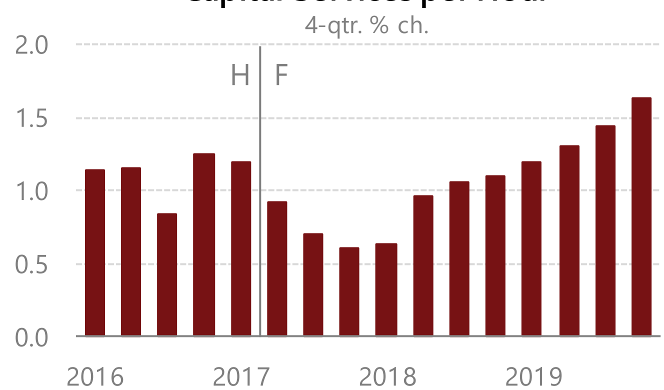
Total Factor Productivity



Sources: Macroeconomic Advisers

Growth of total factor productivity in the nonfarm business sector weakened notably after the great recession for reasons not fully understood. In the forecast, MA *assumes* TFP growth gradually moves part way towards the historical average.

Capital Services per Hour



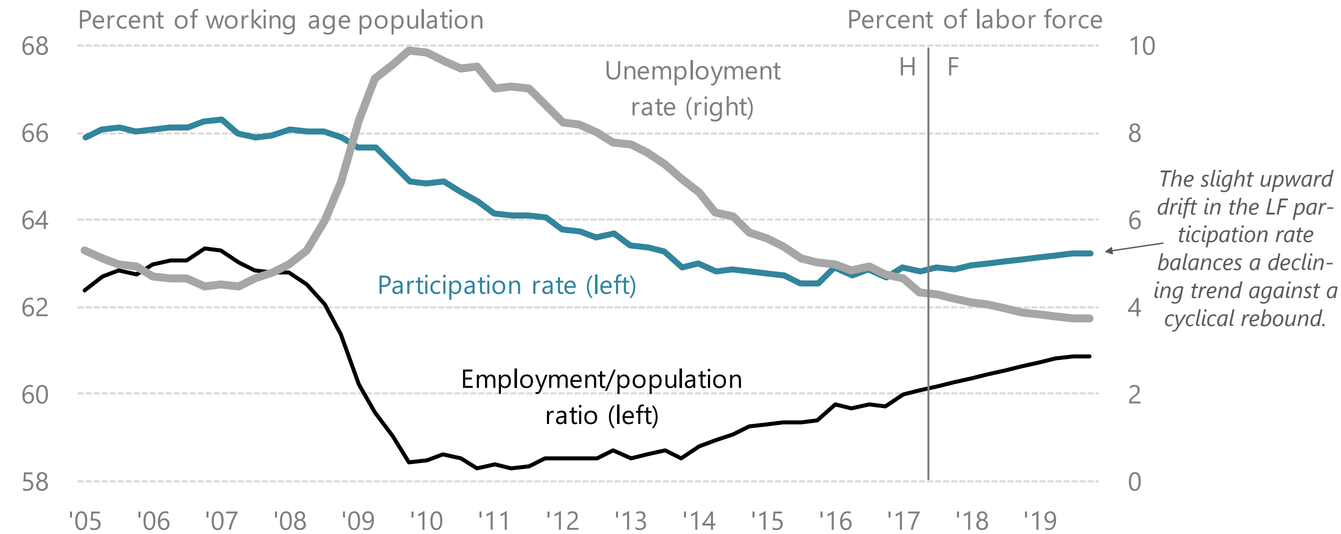
Source: Macroeconomic Advisers.

In the MA forecast, capital spending strengthens as labor inputs become increasing unavailable. Consequently, by 2019 capital deepening accelerates, re-enforcing the positive impact on trend productivity growth of an acceleration in TFP.

Labor Market to Tighten Further, Compensation to Firm

The civilian unemployment rate fell to 4.3% in July, now 0.4 ppt below CBO's estimate of the NAIRU. JOLTS measures of quits and vacancies also suggest employers face increasing difficulty finding suitable workers. In the MA forecast, above-trend GDP growth drives the unemployment rate down further to 4% by mid-2018 despite a cyclical up-tick in labor force participation that arises as the average duration of unemployment—which, at around 25 weeks, is still high by historical standards—continues to decline, encouraging workers to remain in, or re-enter, the workforce. Combined with increases in both inflation and productivity growth, tightening labor markets support a firming trend in the growth of hourly compensation that began soon after the unemployment gap peaked following the Great Recession. MA projects compensation per hour in the private nonfarm business sector to grow 2.8% over 2017, 3.6% over 2018, and 4.0% over 2019. Monthly gains in establishment employment are projected to average around 200,000 through 2018 as the unemployment rate falls and the participation rate rises. By late 2019, however, as GDP growth slows and the participation rate stabilizes, these gains drop quickly towards 100,000.

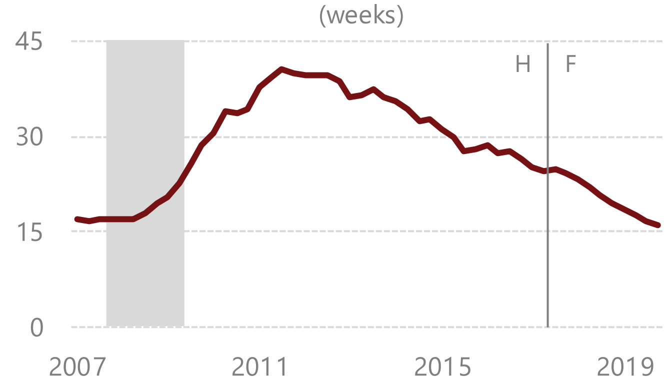
Above-Trend Growth Lifts Employment Ratio



Sources: Macroeconomic Advisers, BLS

Average Duration of Unemployment

(weeks)

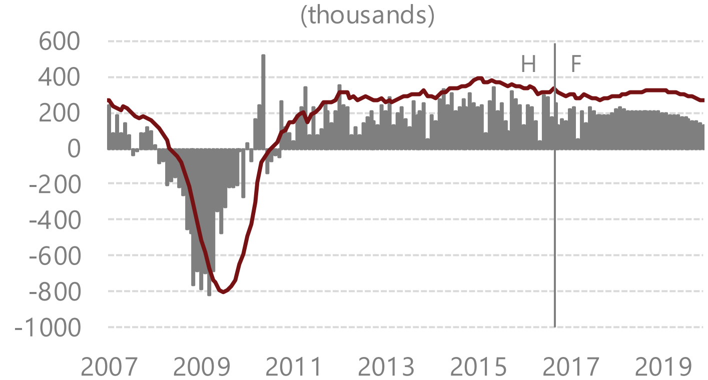


Sources: Macroeconomic Advisers, BLS.

The average duration of unemployment, which rose sharply and persistently after the Great Recession, remains elevated. In our forecast, it gradually declines toward historical norms, encouraging a cyclical rise in the labor force participation rate.

Monthly Employment Gains

(thousands)



Sources: Macroeconomic Advisers, BLS.

Monthly gains in employment will average 204 thousand through 2018 but then slow in 2019 as GDP growth slows and as the available pool of workers shrinks with the tightening of labor markets.

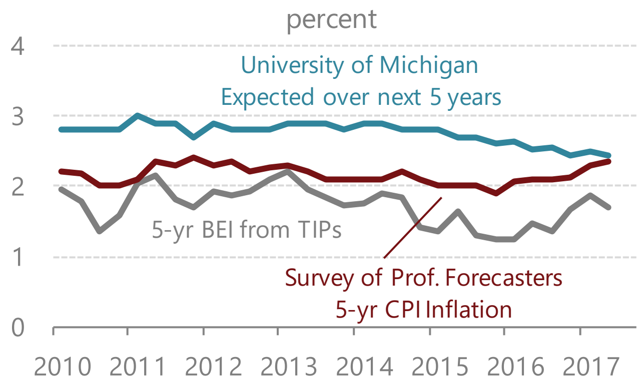
Soft Inflation Data Tempered Slightly by Revisions

Both headline and core inflation measures softened in recent months. Since February, the 12-month change in the PCE price index declined eight-tenths to 1.4% and the 12-month core PCE inflation rate eased four-tenths to 1.5%. Some of the softening can be attributed to factors — including unusually large price declines for cell phone services and some prescription drugs — whose impacts on inflation are likely to be temporary. Still, inflation in other components, such as apparel, rents, and vehicles, has eased as well, suggesting some risk that progress toward the Fed's 2% inflation objective could be slower than policymakers have intended. Revised inflation data tied to the national accounts, including core PCE, were revised recently. Revisions indicate that core inflation on average was typically one- to two-tenths higher over the past couple of years, than previously reported. Looking ahead, we expect core PCE inflation to rise to 2% in 2019.

Core Inflation Eases

Sources: Macroeconomic Advisers, BLS, Survey of Professional Forecasters

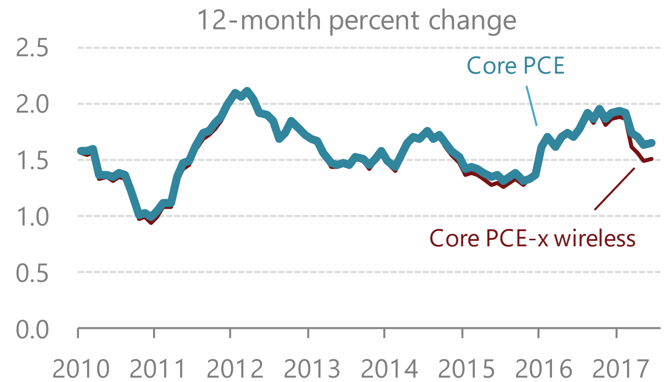
Inflation Expectations Stabilizing?



Sources: Federal Reserve, University of Michigan, Haver Analytics.

Long-run inflation expectations from forecasters remain close to 2%.

Core PCE Inflation

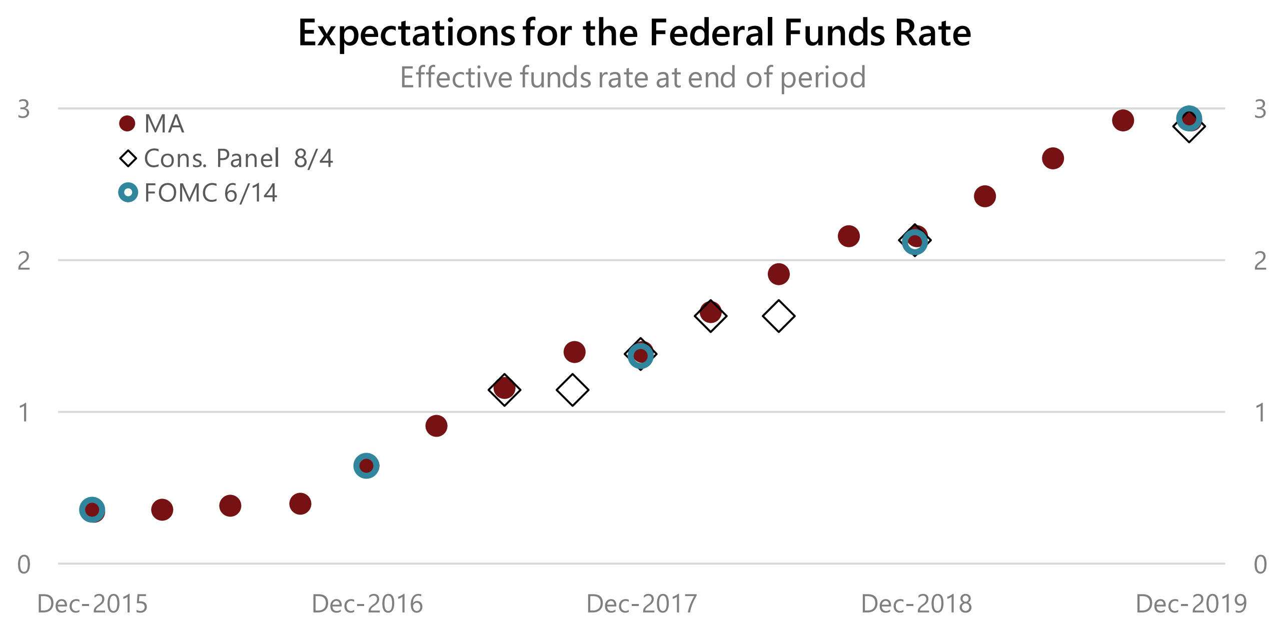


Sources: Bureau of Economic Analysis, MA

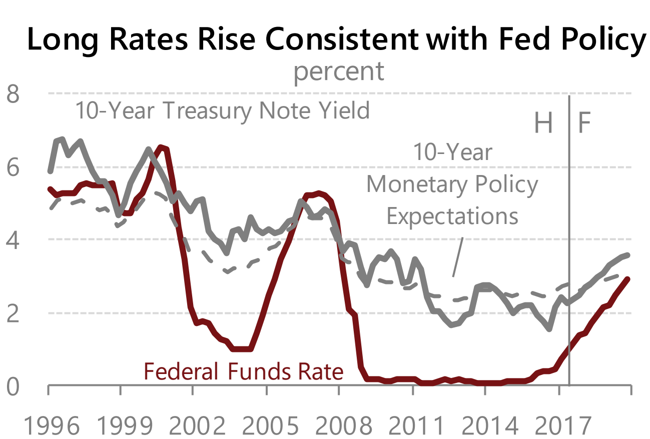
Both core and headline PCE inflation softened in recent months, reflecting softening in several major categories including cellular phone services.

One More 2017 Rate Hike; Balance Sheet Plans

We continue to assume that the FOMC will hike the federal funds rate one more time in 2017 — making it a total of 3 for the year — in response to solid growth, tightening labor markets, and forecasts that anticipate a gradual firming of inflation to the 2% target. A solid growth outlook and strengthening labor markets reinforce expectations that the next rate hike could occur in the very near future, but lingering concerns about the shortfall of inflation relative to the Fed's 2% target could keep the FOMC on the sidelines at the next meeting in September. For now, we are sticking with our assumption that the next rate hike will be in September, but we (and the FOMC) will be watching inflation data closely to better assess the timing of the next few rate increases. The broader outlook for a gradually rising path for the target funds rate over the next few years, rising to about 3% by 2019, remains in place. We expect the FOMC to announce the start of balance-sheet shrinkage at its September meeting.

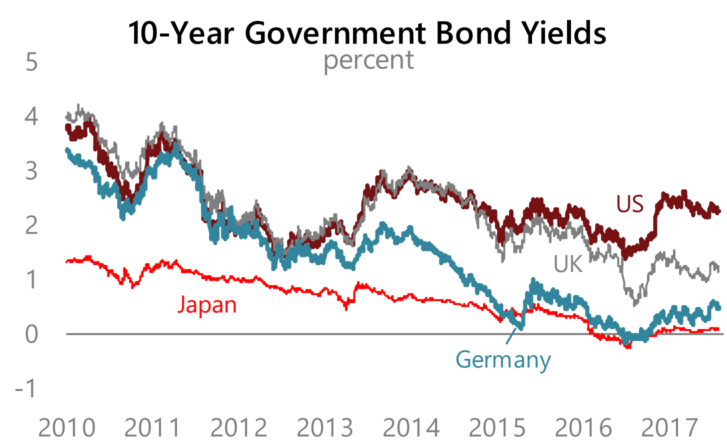


Sources: Federal Reserve Board, Macroeconomic Advisers.



Sources: Federal Reserve Board, Macroeconomic Advisers.

Increases in the federal funds rate push long-term yields higher over the forecast horizon. Fed balance-sheet shrinkage will add to the upward drift in long-term interest rates over the next few years.



Source: Bloomberg, LLP.

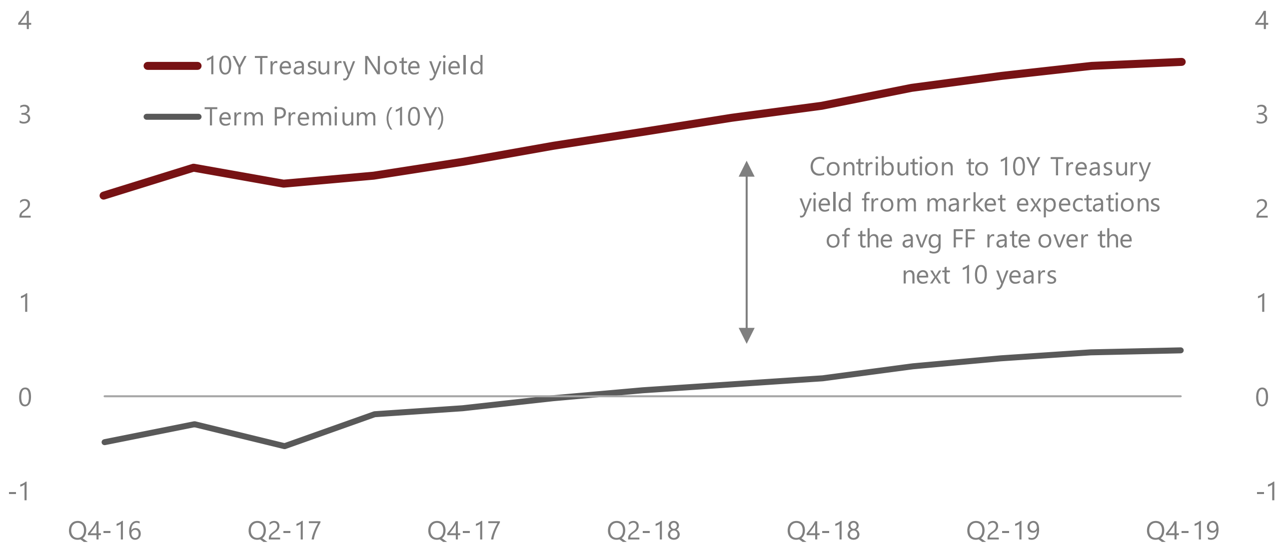
U.S. and U.K. bond yields (10-year) eased on balance in recent months. German yields have trended slightly higher, while Japanese yields have remained slightly above zero.

Term Treasury Yields Remain Low

Term Treasury yields drifted somewhat lower in recent weeks despite encouraging economic data at home, and in some cases, from abroad. The 10-year Treasury Note was yielding about 2.27% as this forecast was being prepared, down from nearly 2.40% in early July. Soft inflation data encouraged investors to delay expectations for the next Fed rate hike contributed to the easing in term yields. Nevertheless, we expect the FOMC to continue with a plan for gradually removing interest-rate accommodation through rate hikes, and to being shrinking its balance sheet later this year. Both developments support our forecast that term yields will drift higher. We expect the 10-year yield to rise to about 3.60% by the end of 2019. As a result, holding period returns on Treasuries will generally be negative.

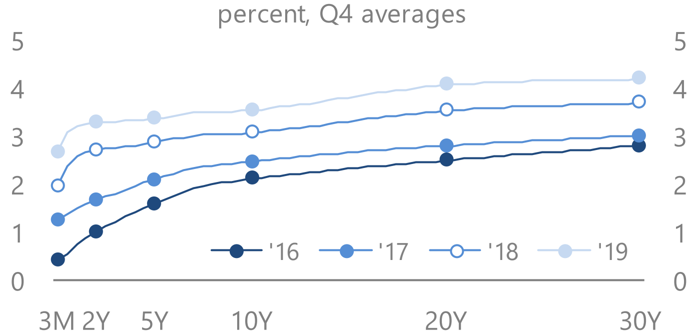
10-Year Treasury Note Yield and the Term Premium

percent



Treasury Yield Curve Rises with Fed Tightening

percent, Q4 averages



Sources: Macroeconomic Advisers.

The yield curve will continue to shift up as the Fed continues to raise the target for the federal funds rate, with shorter-term yields to rise by more than longer-term yields.

Holding Period Returns on Treasuries

1-year holding period return through Q4, percent

	'15	'16	'17	'18	'19
2-year T-Note	0.62	0.91	0.51	0.83	2.28
Rates view	-0.32	-0.29	-0.75	-1.07	-0.62
Rolldown	0.39	0.37	0.25	0.19	0.14
Interest income	0.54	0.83	1.01	1.71	2.76
10-year T-Note	3.57	3.12	-0.53	-1.97	-0.36
Rates view	0.69	0.40	-3.10	-4.82	-3.66
Rolldown	0.60	0.53	0.43	0.35	0.18
Interest income	2.28	2.19	2.14	2.51	3.11
30-year T-Bond	3.81	6.36	-0.94	-8.68	-4.38
Rates view	0.31	2.69	-4.37	-12.15	-8.39
Rolldown	0.53	0.71	0.60	0.42	0.27
Interest income	2.97	2.97	2.83	3.05	3.74

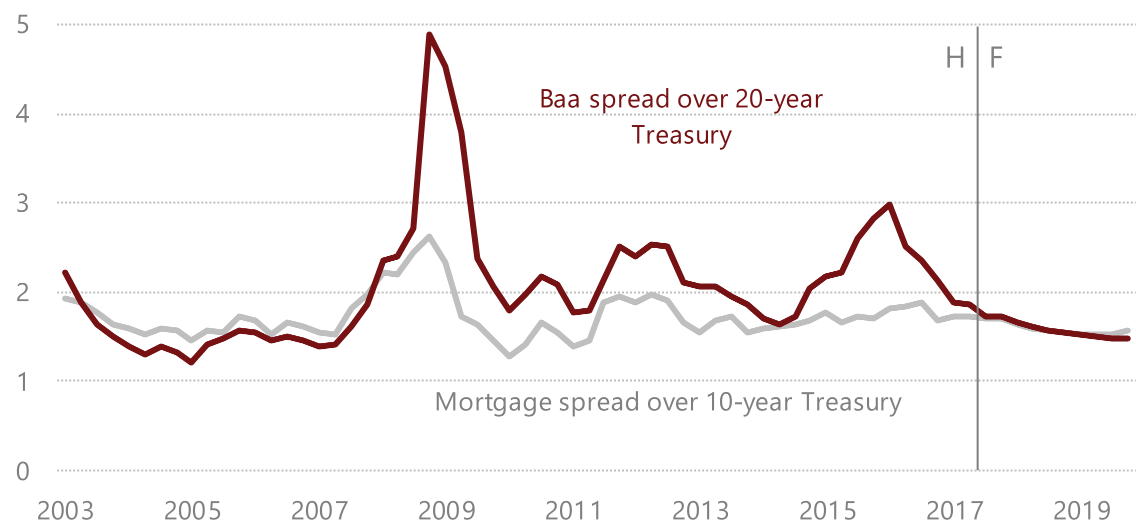
Note: "Interest income" includes return from coupon reinvestment.

Risk Spreads Continue to Narrow as Risk Appetite Improves

Risk spreads widened from mid-2014 into early 2016, with the spread between the Baa corporate bond yield and the 20-year Treasury Bond yield widening from a post-recession low of 160 basis points at the end of April 2014 to as high as 320 basis points in mid-February 2016. Risk spreads have narrowed since. As of August 7, the Baa spread was 172 basis points, down slightly over the inter-forecast period and down nearly 150 basis points from the February 2016 high. Implied volatility (as measured by the VIX) has been historically low in recent months, averaging just 10.2 over the inter-meeting period and closing as low as 9.36 on July 21. Looking ahead, as the expansion continues and foreign economies recover, and as nominal GDP growth improves, the acceleration in cash flows broadly should help drive risk spreads lower. In addition, as downside risks associated with foreign "melt-down" scenarios recede, risk spreads should continue to ease, with the Baa spread narrowing to 147 basis points by 2019 Q4. Mortgage spreads, which are somewhat elevated early in the forecast, are also expected to narrow.

Risk Spreads Narrow over Forecast Horizon

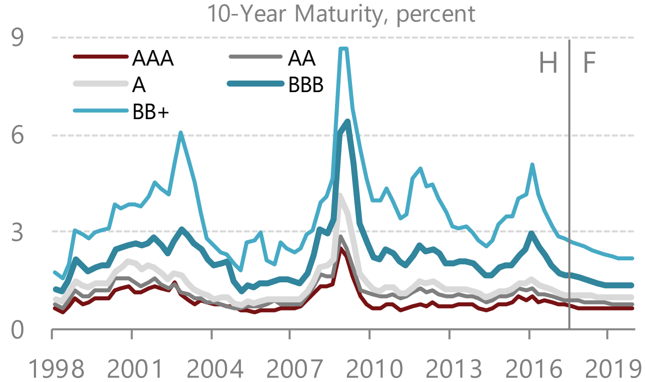
percentage points



Sources: Macroeconomic Advisers, BEA.

Risk Spreads to Narrow Across Ratings

10-Year Maturity, percent



Sources: S&P Global Fixed Income Research, Macroeconomic Advisers.

Spreads on corporate yields, especially those on lower-rated bonds, widened sharply over 2015 and into early 2016, but have narrowed since. These spreads are expected to continue to narrow to long-run averages over the forecast.

CBOE Volatility Index for S&P 500

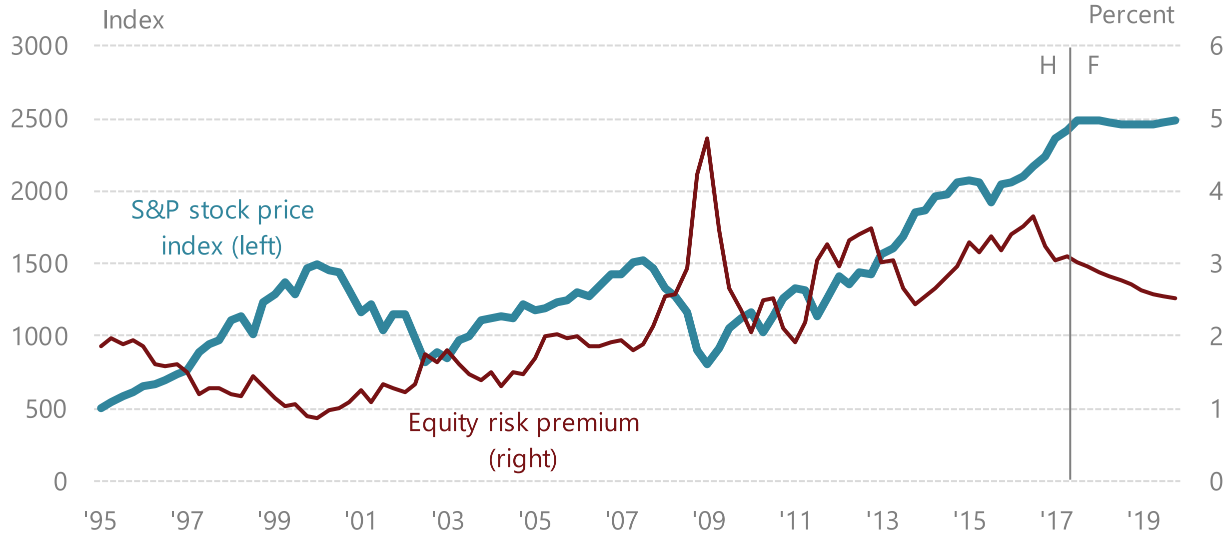
Sources: S&P, Macroeconomic Advisers.

The VIX averaged just 11.5 in 2017 Q2, well below its long-run average. This is down from 11.7 in Q1 and 14.1 in 2016 Q4. We expect the VIX to rise toward its long-run average of 16.2 over the short-term forecast.

Market Remains Elevated: Modest Prospective Returns

The S&P 500 rose 9.5% during 2016 and is projected to increase 11.3% over 2017, although nearly all this year's increase has already occurred. Valuations likely will decline slightly during 2018, and then rise just 0.8% during 2019. Our forecast balances three forces acting on equity values: (1) a rising yield curve; (2) a guarded outlook for earnings; and (3) perceptions of declining risk. The first two forces restrain equity values, while the latter boosts them. Earnings will be constrained as rising interest costs and wage rates erode margins. Traditional indicators are flashing warnings about prospective returns. Shiller's Cyclically Adjusted Price-Earnings ratio is at an elevated level typically followed by a decade of sub-par equity returns. The "Rule of 20" also suggests the S&P is richly priced. Low values of the VIX suggest equity investors are complacent about downside risks, perhaps expecting President Trump to deliver pro-growth policies earlier than is realistic given the Administration's stalled legislative agenda. In our modeling, all else equal, total returns on equity equal the dividend yield plus the growth of nominal GDP, or about 6.4% through the end of 2019. But, with rising rates and pressure on margins, we project total returns of just 3.1%.

Declining Risk Premium Helps Stocks Weather Rate Increases



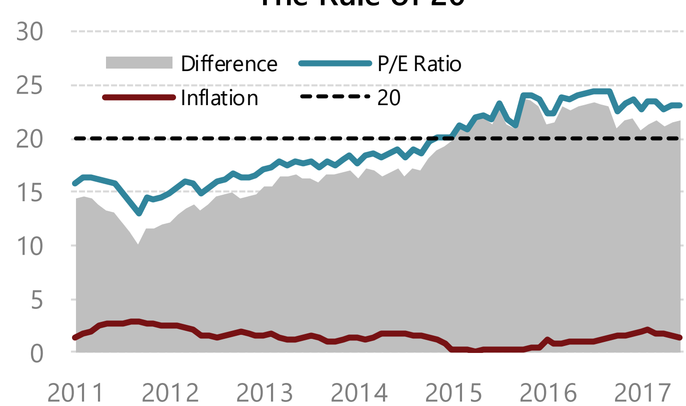
Sources: Macroeconomic Advisers, Standard & Poor's

Cyclically Ajusted Price Earnings Ratio

Sources: Robert Schiller, Macroeconomic Advisers, LLC.

Schiller's Cyclically Adjusted Price-Earnings ratio has reached nearly 30, its highest post-WWII level outside the dot.com boom. In the past, such an elevated level preceded periods of less-than-average total returns on equities.

The Rule of 20



Sources: MA, BEA, S&P.

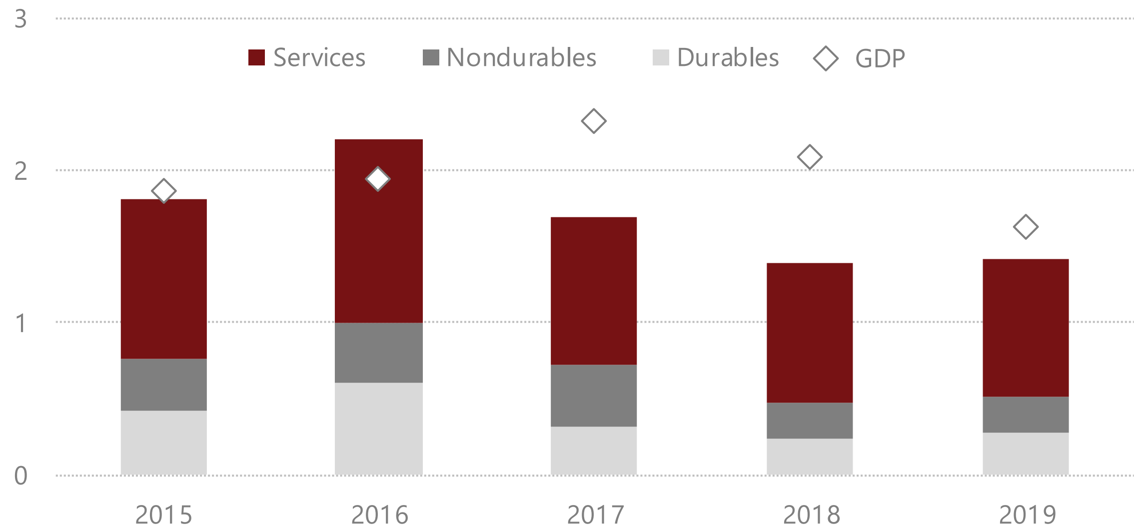
The "Rule of 20" compares the S&P 500 P/E ratio to the trailing inflation rate. Differences in excess of 20 typically preceded periods of less-than-average total returns on equities. Currently the rule suggest equities may perform poorly.

Solid Consumer Spending Drives GDP Forecast

According to BEA's advance estimate, PCE rose at a 2.8% annual rate in the second quarter, up from a 1.9% rate in the first quarter. Underlying the rebound in Q2, spending on durables rose at a 6.3% annualized rate following a soft first quarter while spending on nondurables also picked-up. Though spending on electric and gas utilities rebounded sharply in Q2 as anticipated, growth of overall services PCE eased somewhat in the second quarter. We look for PCE growth of 2.7% in Q3 and 3.0% in Q4, down two-tenths and up seven-tenths from last month's forecast, respectively. PCE growth is expected to moderate thereafter though remain a critical component driving the near-term GDP forecast, rising 2.1% over 2018 (Q4/Q4) and 2.0% over 2019 (Q4/Q4). The projected path for PCE adds 1.5 pps to GDP growth over the forecast horizon, on average. This forecast is supported by solid fundamentals for consumer spending, including continued robust job gains, firming real wage growth, and recent strength in household net worth.

Growth of PCE Drives GDP Growth in the Forecast

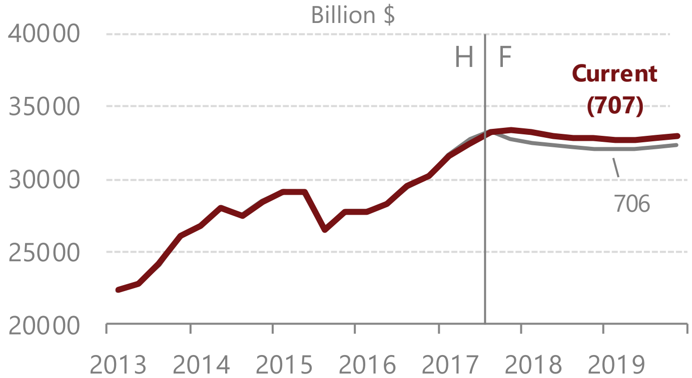
GDP Growth (Q4/Q4) and Contribution from PCE



Sources: Macroeconomic Advisers, BEA.

Household Net Worth: Corp. Equity

Billion $

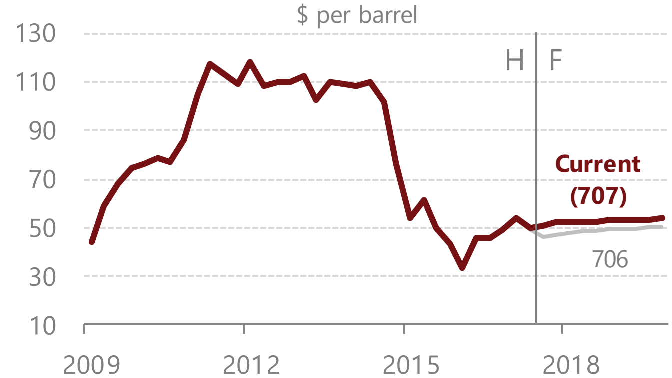


Sources: Federal Reserve, Macroeconomic Advisers.

Higher equities in this month's forecast implies more household net worth from this source, providing more support to consumer spending in this month's forecast.

Price of Brent Crude Oil

$ per barrel



Sources: BEA, Macroeconomic Advisers.

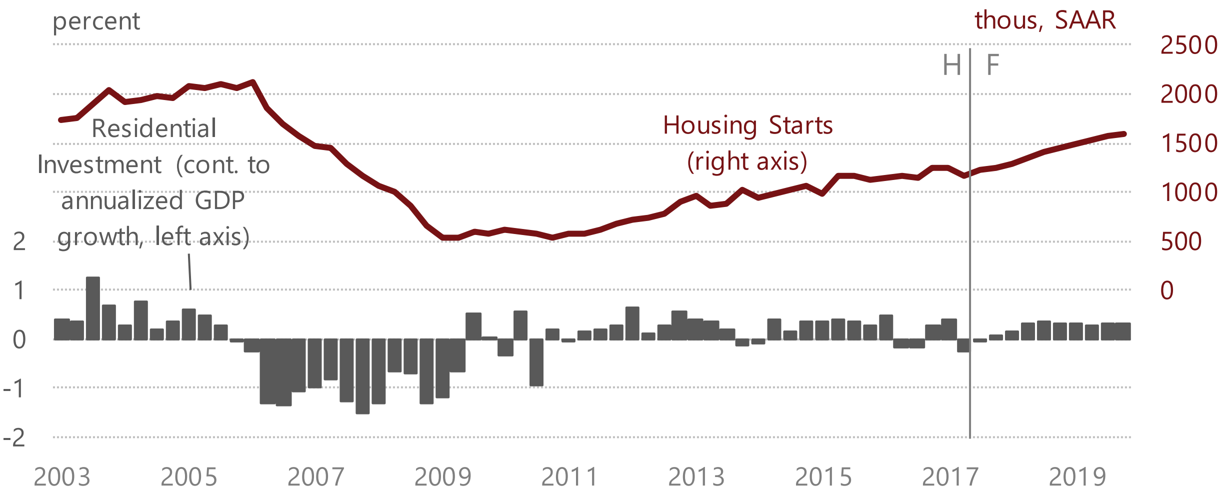
Somewhat tempering the positive implications from higher equities in this month's forecast, oil prices were revised up from last month's forecast, though rise only slightly over the short-term forecast.

Housing Market Continues to Improve; Starts Pick-Up in the Forecast

Housing starts are trending broadly, but unevenly higher. After topping a pace of 1.2 million in December, January, and February this past winter, housing starts fell all the way to 1,122 thousand by May before rebounding in June. This pattern could reflect mild winter weather conditions, which may have boosted winter activity above seasonal norms at the expense of some spring activity. Going forward, we cautiously assume that starts revert to a somewhat lower underlying trend beginning in July. For all of 2017, we forecast total housing starts of 1,218 thousand and we expect starts to rise all the way to 1,550 thousand by 2019. This increase in starts raises residential investment enough to add roughly 0.2 percentage point to GDP growth per year averaged over 2017–2019. Supporting this forecast is a currently healthy housing market, in which house prices are rising robustly and selling times for newly completed single-family homes are at all-time lows. Also supporting a firming trend in starts are favorable builder sentiment, solid underlying demographics, a broadly strengthening economy, and improving lending conditions.

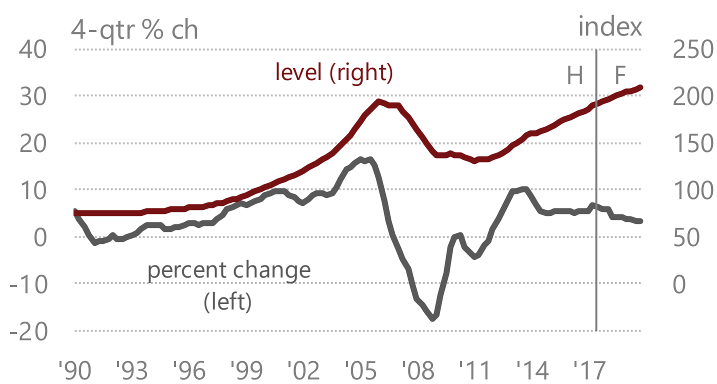
Recovery in Housing Starts Continues Into the Forecast

Residential investment added 0.1% pt to GDP growth over 2016 and is forecast to contribute about 0.2% pt to GDP growth averaged over 2017, 2018, and 2019.



Sources: Macroeconomic Advisers, Census, BEA.

Home Prices Continue Solid Rise

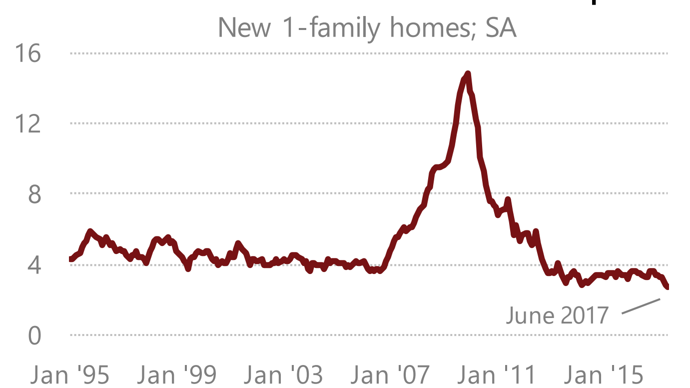


Sources: Core Logic, Macroeconomic Advisers

To the extent that rapidly rising home prices become embedded in borrower and lender expectations, they reduce the ex ante cost of home-ownership and make for favorable lending conditions.

Median Months on Market After Completion

New 1-family homes; SA



Sources: Census Bureau (SA by Haver Analytics)

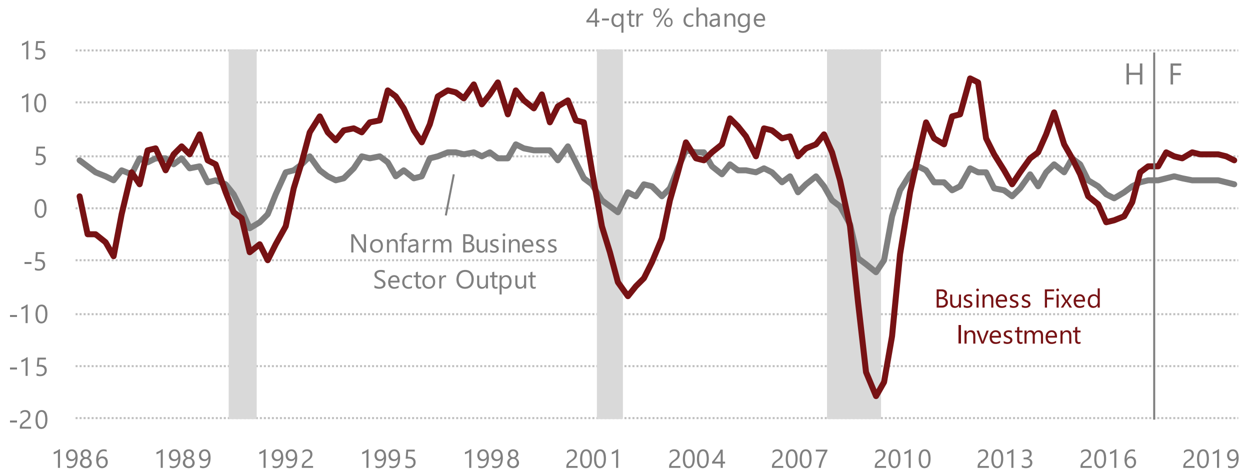
In June, the median number of months a completed new 1-family home was on the market was 2.7 months (SA), an all-time low.

Business Fixed Investment to Slow in Q3, Firm Thereafter

Business fixed investment (BFI) grew at only a 0.5% average annual rate over 2015–2016, but then turned up sharply over the first half of this year. The slow growth in recent years in part reflected declines in mining activity stemming from a sharp decline in oil prices. However, oil prices and mining activity have generally turned up recently. Furthermore, accelerating business output and narrowing risk spreads are giving rise to firming growth of business fixed investment more broadly, despite a recent tightening of lending standard on commercial real estate loans. Following a temporary slowdown in the third quarter to growth of about 3½%, BFI is forecast to pick up. Averaged over 2017–2019, business fixed investment is expected to grow at roughly a 5% average annual rate and contribute roughly ½ percentage point to GDP growth per year. The temporary slowdown in the third quarter reflects a softening of shipments plus net imports of capital goods in June and only modest momentum in construction spending on nonresidential structures through June.

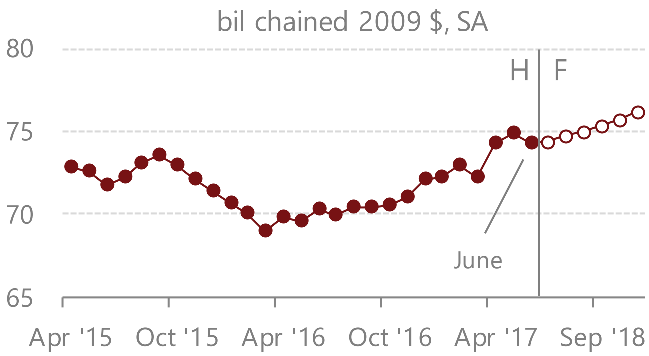
Nonresidential Fixed Investment and Nonfarm Business Output

Over the four quarters of 2016, business fixed investment was little changed. BFI is forecast to accelerate to contribute, on average, ½% point to GDP growth per year over the next three years.



Sources: Macroeconomic Advisers, BEA.

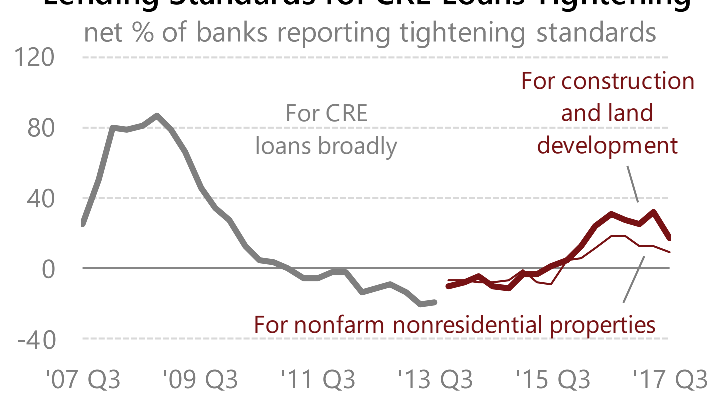
Monthly Equipment ex. Tranportation Proxy*



*Proxy includes shipments and imports, excludes exports.
Sources: Census, BLS, Macroeconomic Advisers.

The monthly indicator series we use to track business fixed investment in equipment declined in June, setting up the third quarter for moderate growth (3%) of equipment spending following 8% growth in the second quarter.

Lending Standards for CRE Loans Tightening



Source: Federal Reserve

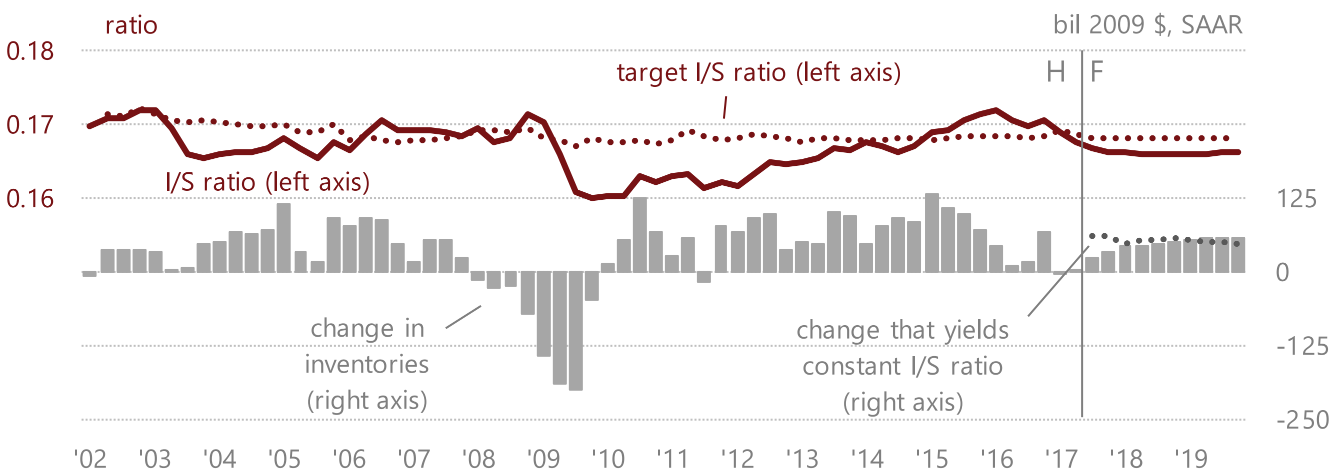
Through much of the recovery, business fixed investment in structures was benefiting from easing bank lending standards on commercial real estate loans. Over the last two years, however, lending standards have tightened.

Inventory Swing to Boost Second-Half 2017 Growth

Over the first half of 2017, inventory investment was essentially zero, and the inventory-to-sales (I/S) ratio fell sharply. By the second quarter, the I/S ratio was somewhat below our estimate of the optimal level. Early in our base forecast, the pace of inventory investment rises, but remains somewhat lower than a pace that would stabilize the I/S ratio. We view this to be a plausible, if not conservative, forecast. It does suggest that a higher near-term projection for inventory investment is more likely than a lower one. Indeed, maintaining a stable I/S ratio over the second half of this year would require about $40 billion more nonfarm inventory investment in the third quarter and about $27 billion more in the fourth quarter than we forecast. But even with this arguably conservative near-term projection for inventory investment, our forecast shows an eight-tenths acceleration of GDP from the first to the second half of this year that is more than accounted for by inventory investment. This contrasts to our forecast from three months ago, which showed virtually no acceleration from the first to the second half and no such swing in inventory investment.

Nonfarm Inventories: I/S Ratio and Inventory Investment

The nonfarm inventory-to-sales ratio was below target in Q2. In our forecast, inventory investment starts off below a level consistent with a flat I/S ratio, so it initially drifts down.



Sources: Macroeconomic Advisers, BEA.

2017 GDP Growth and Contributions

	May 3 Forecast	June 30 Forecast	August 7 Forecast
Full Year (Q4/Q4)	2.3	2.3	2.3
First half	2.2	2.0	1.9
Contributions:			
Final Sales	2.2	2.4	2.6
Inventory Investment	0.0	-0.4	-0.7
Second half	2.3	2.6	2.7
Contributions:			
Final Sales	2.3	2.2	2.3
Inventory Investment	0.0	0.4	0.4

Our 2017 GDP growth forecast has not changed from three months ago. However, some of that growth has shifted into the second half, with a swing in inventory investment (from drag in H1 to boost in H2) now playing a prominent role.

Autos and Light Trucks Days Supply

days supply of inventory at current selling rate, SA

Sources: Macroeconomic Advisers, BEA, Ward's

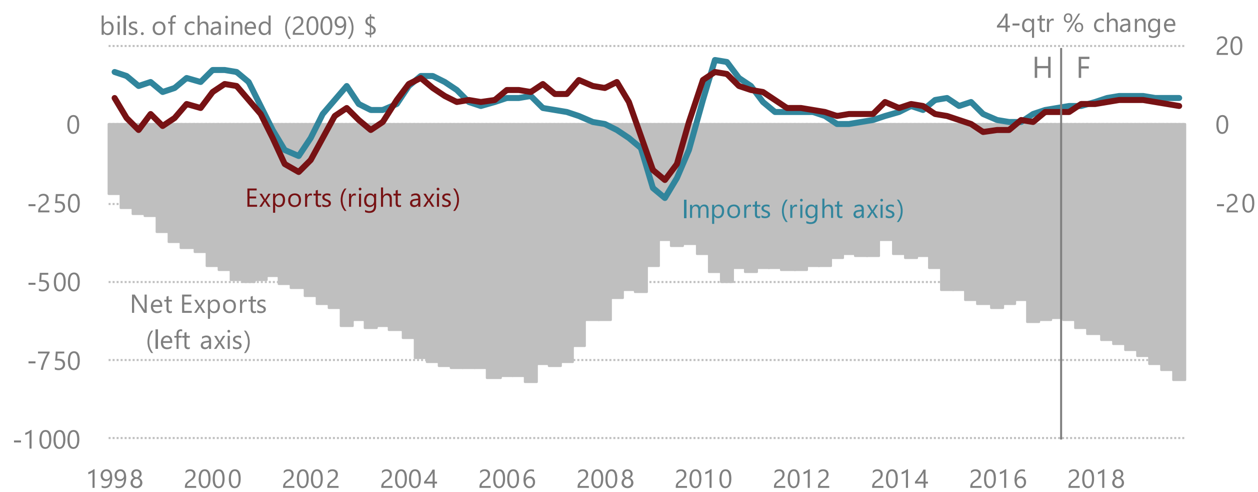
Our Q3 assumptions for assemblies are lined up on early July production schedules, which show a cut in production from Q2. We assume a further decline in Q4. This leaves days supply at a somewhat elevated level.

Lower Dollar Reduces Drag From Net Exports in the Forecast

Growth of both exports and imports are expected to rise in the forecast, with the balance suggesting continued drag on GDP from falling net exports, although less so than in last month's forecast. After subtracting three-tenths from GDP growth last year, net exports are forecast to decline enough to subtract an average of three-tenths per year over the coming three years, one-tenth less drag than in last month's forecast. The improved outlook for net exports reflects a judgmental adjustment to the path of the trade-weighted dollar, which has been declining recently, and which we expect to remain persistently below the level projected in last month's forecast. We still expected that a large and widening gap between domestic and foreign sovereign yields will exert upward pressure on the dollar, but from a lower starting point. And we still expect growth of import-weighted domestic demand (an import driver) to exceed growth of foreign GDP (an export driver). Supporting our forecast of elevated growth of import-weighted domestic demand is robust growth of equipment spending, which we estimate is roughly 40% imports.

Exports, Imports, and Net Exports

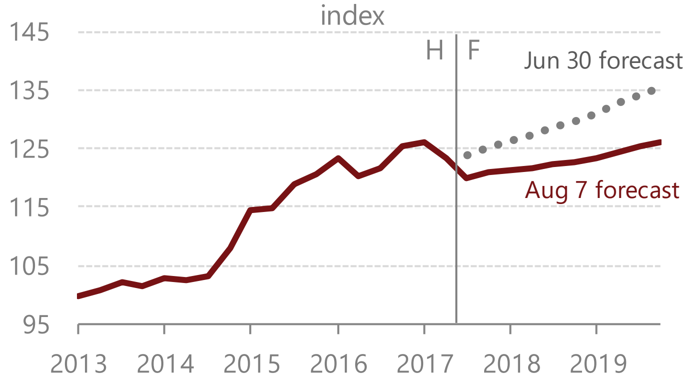
Imports are expected to outpace exports, keeping net exports on a downward track.



Sources: Macroeconomic Advisers and BEA.

Nominal Trade-Weighted Dollar Lower

index

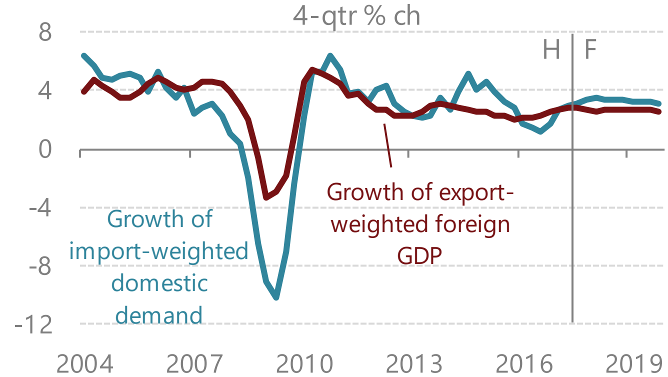


Sources: Macroeconomic Advisers, Federal Reserve

In this month's forecast, the nominal dollar is persistently lower than in last month's forecast, a judgmental update in recognition of the recent weakening, which we view as more signal than noise.

Domestic and Foreign Growth

4-qtr % ch



Sources: Macroeconomic Advisers, Oxford Economics, BEA

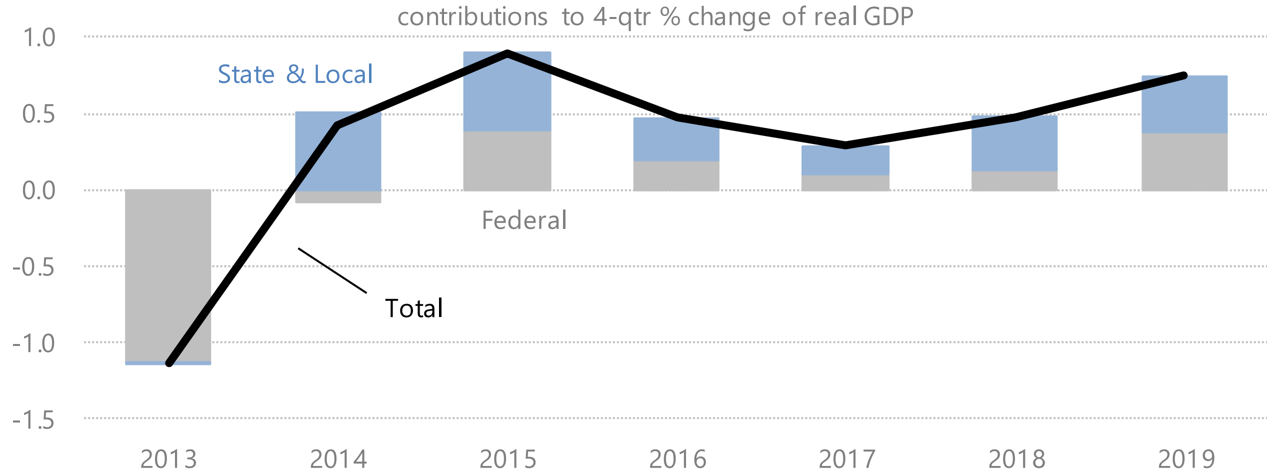
In the forecast, growth of import-weighted domestic demand exceeds growth of export-weighted foreign GDP, implying downward pressure on net exports.

FY18 Budget Not In Sight; Fiscal Speedbumps Loom

The House—but not Senate—Budget Committee adopted a Budget Resolution (BR) for FY18 before summer recess, but that BR assumes passage of a GOP healthcare plan, 2.6% post-policy GDP growth, revenue-neutral tax reform, and politically divisive spending priorities. These issues won't be resolved in a month, so we expect government to be funded beyond September under continuing resolutions. Given these uncertainties, MA continues to assume: (a) discretionary spending adheres to the caps set under the Budget Control Act of 2011; (b) entitlement spending remains on "autopilot"; (c) no changes to current tax law; (d) state & local governments maintain balanced budgets. We also assume that fiscal "speed bumps", including the possibility of a federal shutdown October 1 and exceeding the debt ceiling about the same time, are avoided without incident. Under these assumptions, federal, state, and local fiscal policies contribute 0.6 ppt to GDP growth over 2017–2019. While tax cuts and infrastructure spending would boost growth, fiscal policy uncertainty is rising. Heightened fiscal uncertainty is correlated with widening credit and risk spreads and slower economic growth, posing downside risk to our short-term-term forecast.

Fiscal Stimulus (or Drag): Contributions to Real GDP Growth

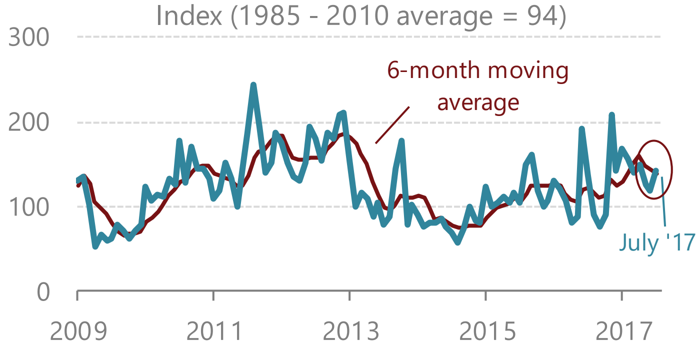
The fiscal positions of federal and state & local governments switched from drag to stimulus, adding one percent to 2015 GDP growth, but less in following years.



Sources: Macroeconomic Advisers

Fiscal Policy Uncertainty

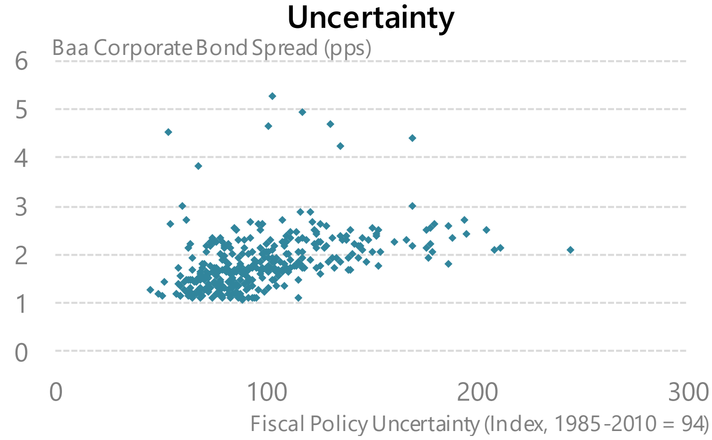
Index (1985 - 2010 average = 94)



Sources: Baker, Bloom & Davis at www.PolicyUncertainty.com; Macroeconomic Advisers, LLC

While volatile, fiscal policy uncertainty is rising unevenly and is likely to push higher—and perhaps spike in late September—if Congress and the Administration cannot agree on funding the government beyond FY17 and / or raising the debt ceiling.

Baa Corporate Bond Spread vs. Fiscal Policy Uncertainty



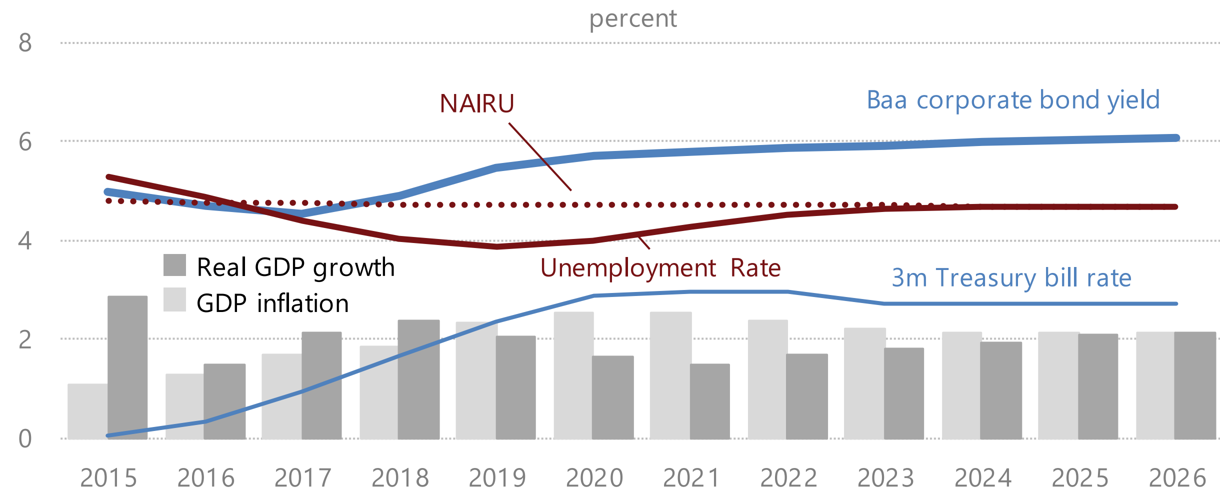
MA's measure of fiscal policy uncertainty is positively correlated with credit spreads in the corporate bond market—one channel, but not the only channel, through which such uncertainty can undermine near-term GDP growth.

2% GDP Growth: TFP Acceleration, Continued Immigration

Following completion of this short-term forecast (STF), we extended the simulation through 2026 to produce an update of our long-term forecast (LTF). The first 3 years of the LTF update (through 2019) are identical to the current STF. Beyond the STF, we set monetary policy to move the economy toward a full-employment growth path consistent with the FOMC's 2% inflation objective. Secular GDP growth is accounted for mainly by growth of the labor force and of productivity. Census projections assume immigration accounts for up to 50% of population growth without regard to legal limits. Population aging persistently depresses the participation rate, while a cyclical rebound and increasing life expectancy temporarily offset that impact. MA estimates that recent total factor productivity (TFP) growth, that part of GDP growth not explained by increases in labor or capital, has been near zero. In the LTF update, we assume TFP growth rises towards its historical average of 1%. President Trump recently voiced support for the Reforming American Immigration for a Strong Economy (or RAISE) Act that would halve legal immigration. MA estimates this would trim 0.2 ppt from annual GDP growth over the coming decade.

The Long-Term Forecast at a Glance

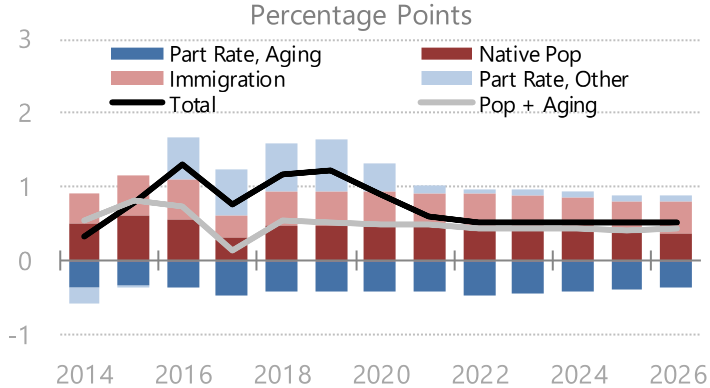
GDP growth and inflation converge to about 2%, and unemployment converges to NAIRU



Sources: Macroeconomic Advisers, BEA, BLS, CBO.

Sources of Labor Force Growth

Percentage Points

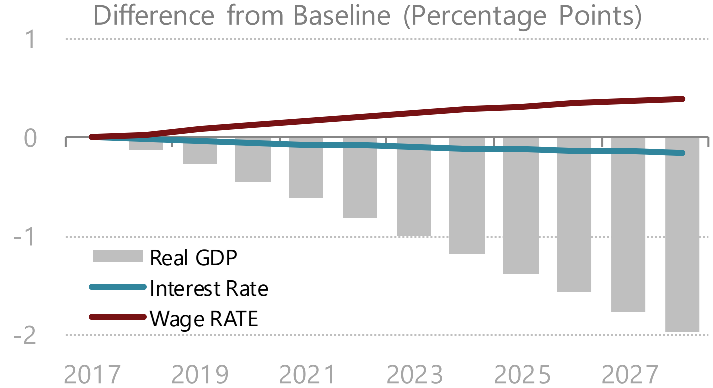


Source: Macroeconomic Advisers, LLC

Through 2019, MA expects a cyclical rebound in the participation rate and rising life expectancy to roughly offset the impact of aging on labor force growth, but immigration limits could bind by then.

Macro Impact of RAISE Act

Difference from Baseline (Percentage Points)

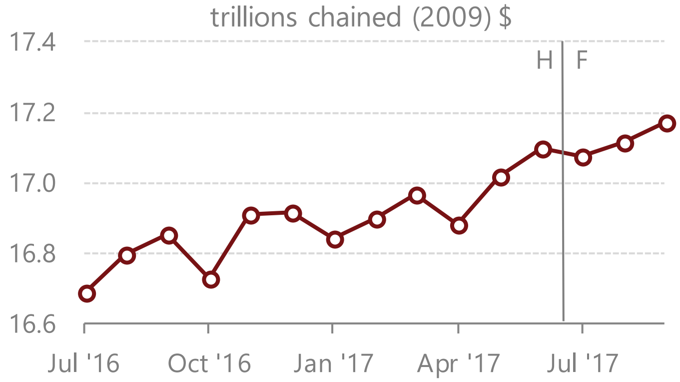


Source: Macroeconomic Advisers, LLC; Bureau of the Census

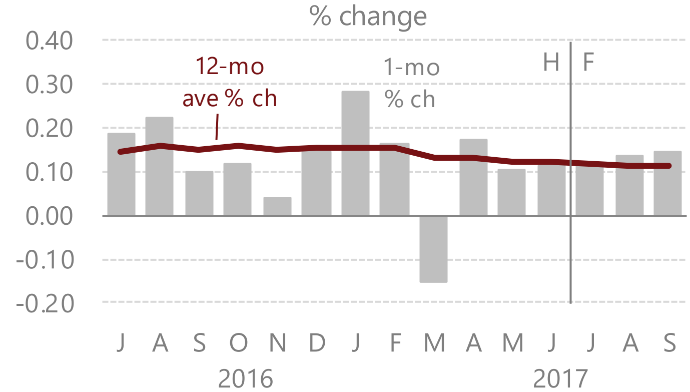
President Trump supports legislation that would slash legal immigration roughly in half. MA estimates this would lower GDP by 2% over 10 years, reduce interest rates 15 bps, and slightly raise real wages and per-capita GDP.

Momentum in Monthly GDP Strong; Trend in Core PCE Inflation Soft

Making use of all monthly source data available when we completed our base forecast, **monthly GDP** is estimated to have risen 0.5% in June following a 0.8% increase in May, leaving it 2.3% above the second-quarter average at an annual rate. Implicit in our base forecast of 2.9% annualized GDP growth in the third quarter is a slight, 0.1% decline in July followed by trend-like growth in August and September. Accounting for much of the strength over May and June were increases in nonfarm inventory investment; the decline in monthly GDP in July is roughly accounted for by a stepdown in inventory investment then. The **core PCE price index** rose moderately from April through June following a one-off decline in March implying a 12-month increase of 1.5% in June. Going forward, we forecast continued moderate monthly increases and 12-month gains between 1.4% and 1.5%. **Payroll gains** have been solid in recent months, with increases averaging 195 thousand per month over the last three months. Going forward, we assume increases at or above 180 thousand per month over the next several months, which will be sufficient to keep the unemployment rate on a downward drift.



Sources: Macroeconomic Advisers



Sources: Macroeconomic Advisers, BEA

Jump-Off Assumptions for Key Monthly Indicators*

	May '17	Jun '17	Jul '17	Aug '17	Sep '17	Oct '17
Monthly GDP	0.8	0.5	-0.1	0.2	0.3	0.2
Real PCE	0.2	0.0	0.3	0.3	0.3	0.2
Retail Sales & Food Services	-0.1	-0.2	0.4	0.6	0.5	0.2
Light Vehicle Sales (mil, SAAR)	16.7	16.6	16.7	16.8	16.8	16.8
Construction Spending	0.3	-1.3	0.5	0.3	0.3	0.4
Orders for core capital goods	0.8	0.0	0.4	0.5	0.5	0.5
Housing starts (thous, SAAR)	1122	1215	1224	1223	1229	1237
Trade deficit (bil $)	46.4	43.5	45.0	46.9	47.7	48.6
Business inventories	0.3	0.4	0.1	0.2	0.3	0.3
Vehicle Assemblies (mil, SAAR)	11.4	11.5	11.0	11.1	11.6	11.2
Nonfarm payroll emp. (ch, thous)	145	231	209	180	180	185
Unemployment rate (%)	4.3	4.4	4.3	4.3	4.3	4.2
PCE price index	0.0	0.0	0.1	0.3	0.2	0.1
PCE price index: gasoline	-6.0	-2.7	-1.0	6.6	3.7	-1.1
Core PCE price index	0.10	0.11	0.12	0.14	0.14	0.13

*Gray text is historical, maroon text is assumption. All data are in 1-month % change unless otherwise indicated.

Risks to the Outlook

Every economic forecast is conditional on events subject to considerable uncertainty. Here we identify several risk factors, both domestic and global, that, depending on how they evolve, could have a significant impact on our forecasts of both economic growth and financial returns.

Domestic Risk Factors

Fiscal policy: Fiscal policy risks are two-sided. On the one hand, if, under **President Trump**, Republicans drop past insistence that tax cuts and new infrastructure spending be paid for over the 10-year budget scoring window, fiscal stimulus could raise GDP growth, perhaps as early as late 2017 and then into 2018 and 2019. On the other hand, if tax cuts are enacted but paid for by offsetting spending cuts, the net effect could be to slow GDP growth over the horizon of the short-term forecast.

Immigration and Trade Policy: Trump's policies on immigration and trade, by shrinking the labor force, undermining global trade flows, and heightening uncertainty, might lead to slower GDP growth and higher unemployment.

Equity markets appear rich to some: With the S&P 500 price earnings multiple around 24, some argue that equities are overvalued. We view equities as a bit rich, especially if markets have priced in fiscal stimulus that will not be forthcoming. This leaves little if any upside from here. In a rising rate environment, even one with relatively shallow increases, **equities starting at this PE level could correct sharply** in response to either faster-than-anticipated increases in rates, bad news on growth, or both.

Surge in oil prices: Declines in U.S. oil production resulting from the recent decline in exploration and drilling, combined with supply disruptions in other oil-producing nations, could lead to a quick evaporation of the current glut in oil markets as global growth strengthens. In that case, oil production may not recover quickly enough to prevent **a rebound in oil prices to a range of $70 – $80 in 2018**.

Strong recovery in home prices: Home prices have risen at a solid pace the last several years. The "rise" draws potential buyers into the market, but the "level" of prices may become problematic, especially with still tight lending standards. If lending standards fail to loosen, it may be **hard to sustain the recent pace of home price appreciation and rising starts**.

Higher dollar: Net capital inflows reacting to actual and prospective widening interest differentials and "rest of world" uncertainties have pushed the dollar higher since mid-2014. If the ECB continues easing while the Fed continues tightening, **a further rise in the dollar** would imply both additional drag from net exports and further restraint on inflation. This would complicate Fed policy and communication.

Global Risk Factors

China: Risk of a **sharp slowing in China**, with global financial and real spillovers, has loomed large and the slowing in growth to date has already impacted global commodity markets to such an extent that it has had a material adverse effect in resource-rich emerging economies. As China continues to struggle to transform its economy by reducing investment's share and raising consumption's share, coordinating the slowing in one sector with the speed-up in the other will be difficult to time precisely. In addition, the troubling number of non-performing loans as well as increasing leverage pose risks to the Chinese economy.

Japan: The **risk of a recession is still present although seems to have lessened** thanks to a weaker Yen and efforts by the government to boost consumption. Consumer spending accounts for 60% of total GDP but has been weak, restrained by the absence of significant wage increases, despite record earnings for large companies in recent years. Furthermore, the absence of structural reforms keeps growth of potential GDP very low, while growth of aggregate demand is still dependent on government stimulus in the form of public investment and subsidies to low-income families. A rising output gap for the third straight quarter, a tightening labor market in addition to potential investments related to the 2020 Olympic Games, might temporarily boost growth, but they are unlikely to solve the chronic structural issues. On the other hand, Japan's expansion during the last couple of years has been heavily dependent on overseas demand which could be impacted by protectionist policies by the Trump administration since the U.S. economy is Japan's second largest export market.

Risks to the Outlook

Global Risk Factors, continued ...

UK: Approaching the official start of the Brexit negotiations, the outcome of the UK elections generated more uncertainty as to how the negotiations will progress. The loss of a majority in Parliament by the current government signifies less popular support towards a hard Brexit. Moreover, adding cabinet officials urging a softer Brexit might lead to a smoother Brexit than previously anticipated. Nevertheless, the UK government is in a tough position and it is uncertain whether it will concede to a softer Brexit or maintain its original harder stance. Thus, there is still **elevated uncertainty concerning the path that the negotiations will take**, heightening concerns over the economy's outlook. Nevertheless, the global economy should be prepared for a long and potentially bumpy road towards the resolution and the official implementation of Brexit. The depreciation of the Pound in historical context since the referendum in mid-2016 can also have some limited spillover effects to its major trading partners.

Eurozone: **Problems remain in the Eurozone periphery but they are less concerning than last year**. The Spanish and Portuguese economies are showing signs of strength while their governments focus on bringing and maintaining their sovereign debt and deficit levels in line with the European Commission's regulations. Furthermore, the outcome of the French election puts to rest fears of isolationism and break-up of Eurozone, for the time being. Finally, Greece is moving towards completing the 3rd review of the recent austerity package during the Fall in order to receive the necessary financial assistance to continue service debt payments.

Recent projections about Italy's sovereign debt put it above levels acceptable by the European Commission. If Italy cannot find the political support to enact the necessary policies to lower its sovereign debt, a fine or a more violent adjustment requested by the Commission will put more pressure on the 3rd largest economy of the Eurozone. Italy is already dealing with political uncertainty, possibly until the next elections in late 2017 or 2018, and a struggling banking sector saddled with $360 billion in Non-Performing Loans (NPLs) which led to the government nationalizing Monte dei Paschi, the country's fourth largest lender.

The European banking sector, more generally, is under some stress as negative interest-rate policies, uncertainty in financial markets and stricter regulation have led to a decline in earnings. Mario Draghi has warned that Europe is "overbanked." In the coming months, European banks are projected to dramatically cut their personnel and adjust wages downwards. The fines levied on Deutsche Bank are one more hit to a sector that will continue to struggle to recover.

Middle East: **There remains some risk of a widening conflict in the Middle East** that intensifies the refugee crisis, spawns additional terror attacks, results in financial disruptions and causes household and business spending to turn more cautionary. The region remains a powder keg as a result of deep-rooted sectarian hostility that has spilled into open conflict repeatedly in recent years. The recent use of chemical weapons in Syria, the military strike launched by the U.S. and the latter's intention to arm Syrian Kurds despite Turkey's objection only heightens tension already present in the region. Russia's potential deployment of forces only elevates uncertainty.

Turkey: Instability in the aftermath of the failed coup led both Standard & Poor's and Moody's to downgrade Turkey's outlook to negative. Despite a temporary upgrade late last year by the former, **Fitch and Standard & Poor's recently downgraded Turkey's sovereign debt and outlook to "junk" and "negative",** respectively. This came as no surprise to markets due to rising security concerns domestically which have damped consumer confidence. In addition, Erdogan's power accumulation that culminated in the constitutional referendum in April, rising inflation, which has been keeping the Lira near historically low levels against the U.S. dollar, and the inability of the central bank to hike interest rates due to pressures by the Erdogan administration is inhibiting significant foreign investments.

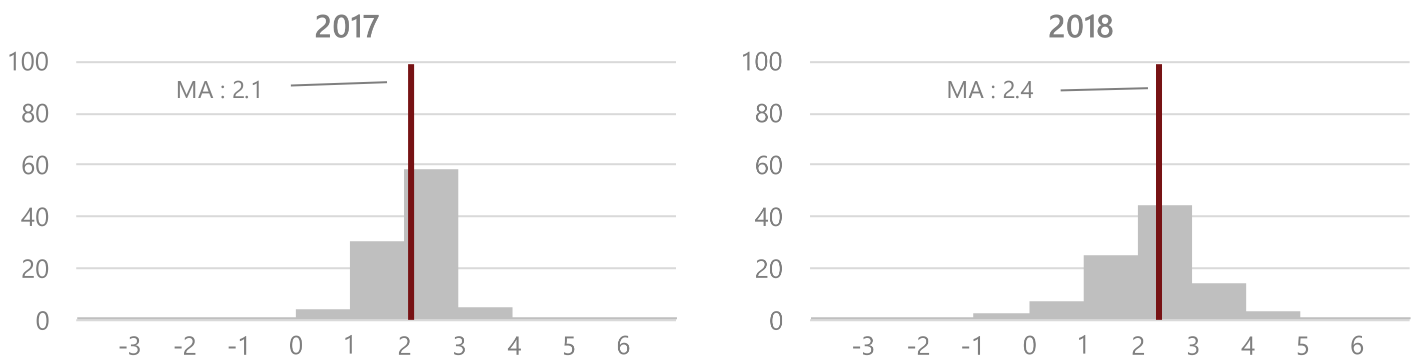
North Korea: The end to the U.S.'s policy of strategic "patience" in response to continued development of North Korea's long-range missile and nuclear weapons programs opens the door to a range of policy options. That **raises risks of additional sanctions and even the outbreak of war.**

Risks to the Outlook

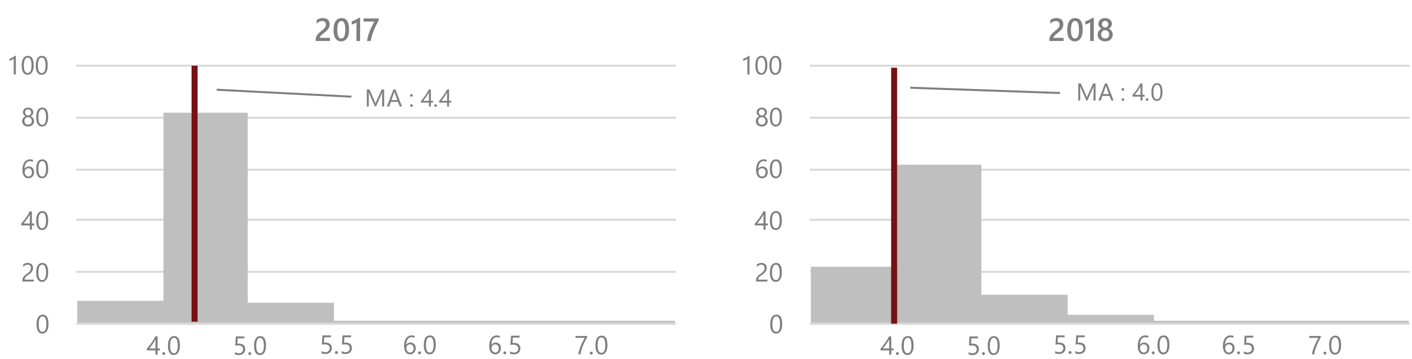
Another way to view the risks to the outlook is to consider the subjective probability distributions for key variables provided by professional forecasters. Our fellow participants in the Philadelphia Fed's Survey of Professional Forecasters (SPF) provide these probability distributions, and we aggregate them. Below we show some of the key aggregated distributions from the August 11 SPF, indicating where our "modal" forecast lies.

The GDP growth distribution for 2018 exhibits a skew to the downside. However, the cumulative probability assigned to a 2018 average unemployment rate below 4% is higher than that assigned to an average above 5%. This could suggest the SPF places a material probability on a projection of sluggish productivity growth.

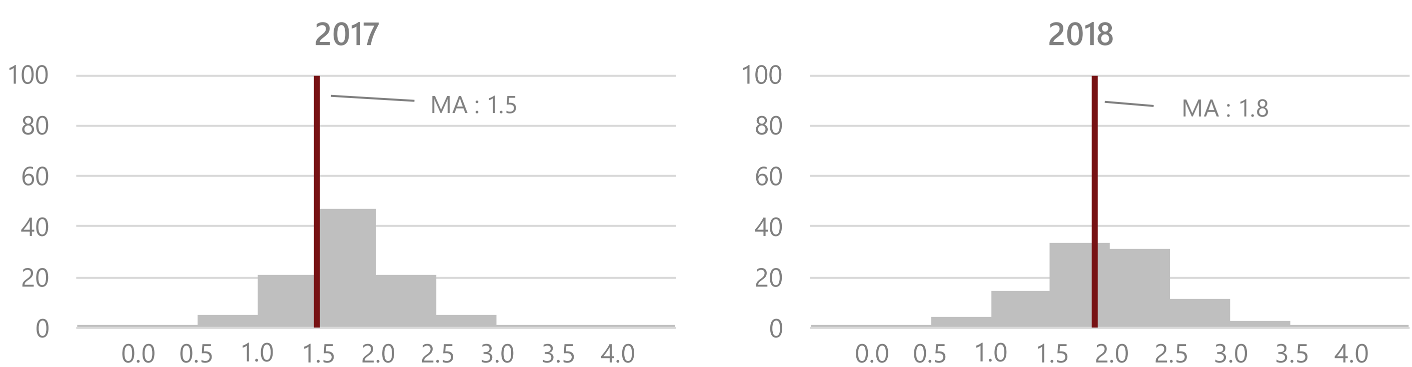
Probability Distributions for Real GDP Growth (year-over-year)



Probability Distributions for the Unemployment Rate (annual average)



Probability Distributions for Core PCE Inflation ($4^{th}/4^{th}$)



Sources: Federal Reserve, Macroeconomic Advisers, LLC.

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MA Base Forecast (July 2017): 2017.3 - 2019.4
Major Economic Indicators

													Q4/Q4 % change or annual avg.			
	2017.1	2017.2	2017.3	2017.4	2018.1	2018.2	2018.3	2018.4	2019.1	2019.2	2019.3	2019.4	2016	2017	2018	2019
Key Indicators of Real Activity																
Real gross domestic product*	1.2	2.6	2.9	2.6	2.2	2.1	2.3	2.3	2.2	2.1	2.0	1.8	1.8	2.3	2.2	2.0
Contributions to growth:																
Final sales	2.7	2.6	2.4	2.3	2.0	2.1	2.2	2.2	2.2	2.0	2.1	1.9	1.9	2.5	2.1	2.0
To domestic purchasers	2.4	2.4	2.5	2.8	2.5	2.5	2.5	2.5	2.6	2.5	2.5	2.4	2.2	2.5	2.5	2.5
Net exp. of goods & services	0.2	0.2	-0.1	-0.5	-0.5	-0.3	-0.3	-0.3	-0.4	-0.4	-0.4	-0.6	-0.3	-0.1	-0.4	-0.5
Change in private inventories	-1.4	0.0	0.5	0.3	0.3	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	-0.2	0.1	0.0
Major components of real GDP:																
Personal consumption expend.*	1.9	2.8	2.7	3.0	2.4	2.1	1.9	1.9	1.9	1.9	2.0	2.0	2.8	2.6	2.1	2.0
Nonres. fixed investment*	7.2	5.2	3.6	5.3	5.3	5.1	5.2	5.2	5.1	4.8	4.6	4.1	0.7	5.3	5.2	4.6
Residential investment*	11.1	-6.8	-0.1	1.7	4.3	8.2	9.6	8.3	7.8	7.1	7.3	7.6	2.5	1.3	7.6	7.4
Change in private inventories**	1.2	-0.3	22.8	34.0	46.3	46.5	51.2	55.7	59.1	60.6	60.0	58.7	33.4	14.4	49.9	59.6
Exports of goods & services*	7.3	4.1	5.3	4.9	5.9	6.7	6.8	6.1	5.4	4.9	4.8	4.2	0.6	5.4	6.4	4.8
Imports of goods & services*	4.3	2.1	4.8	7.4	8.1	7.6	7.1	6.7	7.0	6.8	6.9	7.2	2.7	4.6	7.4	6.9
Gov't consump. & gross invest.*	-0.6	0.7	1.0	-0.1	-0.2	0.5	0.5	1.2	1.6	1.4	1.5	1.2	0.4	0.2	0.5	1.4
Pvt. housing starts (thous. units)	1238	1164	1225	1246	1283	1348	1405	1457	1500	1534	1570	1597	1177	1218	1373	1550
Light vehicle sales (mil. units)	17.1	16.8	16.8	16.8	16.9	16.9	16.9	16.8	16.8	16.8	16.8	16.8	17.5	16.9	16.9	16.8
Industrial production, total*	1.4	4.7	2.6	3.3	2.1	2.0	2.4	2.5	2.3	2.1	2.0	1.8	-0.1	3.0	2.2	2.0
Industrial production, mfg*	2.1	1.4	0.3	1.7	2.4	2.3	2.7	2.8	2.6	2.4	2.2	1.9	0.3	1.4	2.5	2.3
Capacity utilization (mfg, %)	75.3	75.5	75.4	75.6	75.7	75.8	75.9	76.0	76.1	76.1	76.1	76.0	75.1	75.4	75.8	76.1
Nonfarm payroll employ. (mil.)	145.7	146.2	146.8	147.4	148.0	148.6	149.3	149.9	150.5	151.0	151.5	152.0	144.3	146.5	148.9	151.3
Average monthly chg. (thous.)	166	194	190	191	220	209	211	206	195	181	165	137	187	185	211	170
Private nonfarm hours*	1.7	2.9	1.9	1.7	1.8	1.7	1.7	1.7	1.6	1.4	1.3	1.0	1.2	2.0	1.7	1.3
Civilian unemployment rate (%)	4.7	4.4	4.3	4.2	4.1	4.0	4.0	3.9	3.8	3.8	3.8	3.7	4.9	4.4	4.0	3.8
Prices, Productivity, & Costs																
GDP chain-type price index*	2.0	1.0	1.4	1.7	2.0	2.0	2.1	2.2	2.5	2.4	2.4	2.5	1.5	1.5	2.1	2.4
CPI, all items (all urban)*	3.1	-0.3	1.9	2.8	2.2	1.9	1.9	1.9	1.9	1.9	2.0	2.1	1.8	1.9	2.0	2.0
CPI excl food & energy (all urb)*	2.5	0.6	1.9	2.3	1.9	2.1	2.1	2.1	2.1	2.2	2.2	2.3	2.2	1.8	2.1	2.2
PCE price index*	2.2	0.3	1.4	2.0	1.8	1.8	1.8	1.8	1.8	1.8	1.9	2.0	1.6	1.5	1.8	1.9
PCE price excl food & energy*	1.8	0.9	1.5	1.7	1.7	1.8	1.9	1.9	1.9	1.9	2.0	2.1	1.9	1.5	1.8	2.0
PPI (finished goods)*	6.3	0.4	3.4	3.1	2.1	1.8	1.5	1.4	1.3	1.3	1.4	1.5	1.0	3.3	1.7	1.4
Compensation per hour*	4.8	1.7	2.3	2.3	3.4	3.6	3.7	3.8	4.1	3.9	4.0	4.1	-0.3	2.8	3.6	4.0
Output per hour*	0.1	0.5	1.5	1.3	0.7	0.7	1.0	1.0	1.0	1.0	1.1	1.1	0.8	0.8	0.9	1.0
Unit labor cost*	4.7	1.3	0.8	1.0	2.7	2.8	2.7	2.8	3.0	3.0	2.9	3.0	-1.1	1.9	2.7	3.0
CoreLogic house price index***	1.3	2.4	1.1	1.0	1.0	1.0	1.0	0.9	0.8	0.8	0.8	0.8	5.3	5.9	4.0	3.2
Price of WTI crude oil ($/barrel)	51.83	48.26	48.46	49.73	49.96	50.01	49.94	49.92	49.91	49.98	50.11	50.30	43.22	49.57	49.96	50.07
Price of Brent crude oil ($/barrel)	53.68	49.67	50.73	52.17	52.41	52.46	52.60	52.87	52.99	53.20	53.41	53.61	43.55	51.56	52.58	53.30
Selected Financial Variables																
Federal funds rate	0.70	0.95	1.19	1.41	1.44	1.72	1.93	2.17	2.21	2.48	2.70	2.93	0.40	1.06	1.82	2.58
Yield on 10-Yr Treasury Notes (%)	2.44	2.26	2.35	2.50	2.67	2.83	2.97	3.09	3.28	3.42	3.51	3.57	1.84	2.39	2.89	3.44
Baa corporate bond yield	4.66	4.50	4.42	4.55	4.70	4.84	4.98	5.11	5.27	5.40	5.49	5.56	4.72	4.53	4.91	5.43
Broad trade-weighted US$	126.2	123.5	120.0	121.0	121.4	121.7	122.2	122.8	123.5	124.4	125.3	126.3	122.7	122.7	122.0	124.9
S&P 500 stock price index***	5.5	2.6	2.4	0.3	-0.3	-0.5	-0.3	-0.1	-0.2	0.1	0.3	0.5	9.5	11.3	-1.2	0.8
Incomes & Related Measures																
Corporate profits w/ IVA & CCAdj*	-8.3	7.3	7.7	1.4	0.3	0.2	1.3	1.7	0.8	0.8	1.5	1.4	8.7	1.8	0.9	1.1
Real disposable personal income*	2.8	3.2	1.7	2.1	3.0	2.7	2.9	3.0	3.7	2.9	2.9	2.7	0.2	2.5	2.9	3.0
Personal saving rate (%)	3.9	3.8	3.6	3.4	3.6	3.7	3.9	4.2	4.6	4.8	4.9	5.1	4.8	3.7	3.8	4.8
Fed. surplus (unified, FY, bil. $)	-1268.1	15.1	-409.8	-691.8	-694.3	151.0	-690.3	-697.8	-718.8	-31.7	-731.1	-740.1	-585.6	-625.5	-481.4	-544.9

* Percent change at annual rate
** Billions of chained (2009) dollars
*** Quarterly percent change not annualized

MA Base Forecast (July 2017): 2017.3 - 2019.4
Interest Rates

													Annual Average			
	2017.1	2017.2	2017.3	2017.4	2018.1	2018.2	2018.3	2018.4	2019.1	2019.2	2019.3	2019.4	2016	2017	2018	2019
Nominal Interest Rates (percent)																
Federal funds rate	0.70	0.95	1.19	1.41	1.44	1.72	1.93	2.17	2.21	2.48	2.70	2.93	0.40	1.06	1.82	2.58
Prime lending rate	3.79	4.04	4.28	4.50	4.53	4.80	5.01	5.25	5.28	5.55	5.77	6.00	3.51	4.15	4.90	5.65
3-month T-bill yield	0.60	0.90	1.00	1.27	1.31	1.56	1.76	1.98	2.01	2.27	2.47	2.69	0.32	0.94	1.65	2.36
6-month T-bill yield	0.72	1.03	1.15	1.38	1.56	1.88	2.15	2.40	2.50	2.74	2.92	3.11	0.46	1.07	2.00	2.82
1-year T-bill yield	0.89	1.12	1.25	1.51	1.78	2.09	2.36	2.60	2.73	2.92	3.08	3.23	0.61	1.19	2.21	2.99
2-year T-note yield	1.24	1.29	1.43	1.70	1.99	2.26	2.52	2.74	2.91	3.08	3.22	3.32	0.84	1.42	2.38	3.13
3-year T-note yield	1.51	1.47	1.59	1.81	2.09	2.34	2.58	2.77	2.96	3.12	3.24	3.33	1.01	1.60	2.44	3.16
5-year T-note yield	1.94	1.81	1.92	2.12	2.35	2.55	2.74	2.90	3.09	3.23	3.33	3.39	1.34	1.95	2.64	3.26
7-year T-note yield	2.25	2.07	2.17	2.34	2.55	2.72	2.89	3.03	3.22	3.36	3.45	3.51	1.64	2.21	2.80	3.38
10-year T-note yield	2.44	2.26	2.35	2.50	2.67	2.83	2.97	3.09	3.28	3.42	3.51	3.57	1.84	2.39	2.89	3.44
20-year T-bond yield	2.78	2.64	2.69	2.82	3.04	3.23	3.40	3.55	3.76	3.91	4.02	4.09	2.22	2.73	3.31	3.94
30-year T-bond yield	3.04	2.90	2.92	3.04	3.24	3.42	3.58	3.72	3.91	4.05	4.15	4.21	2.60	2.98	3.49	4.08
Moody's Baa corporate bond yield	4.66	4.50	4.42	4.55	4.70	4.84	4.98	5.11	5.27	5.40	5.49	5.56	4.72	4.53	4.91	5.43
Conventional 30-year mortgage rate	4.17	3.99	4.05	4.20	4.30	4.42	4.53	4.64	4.80	4.94	5.04	5.13	3.65	4.10	4.47	4.98
Libor and Swap Rates (percent)																
Overnight Libor rate	0.73	0.97	1.22	1.46	1.50	1.78	2.00	2.24	2.27	2.55	2.76	3.00	0.41	1.10	1.88	2.64
1-month Libor rate	0.83	1.06	1.30	1.52	1.56	1.83	2.05	2.29	2.33	2.60	2.82	3.05	0.50	1.18	1.93	2.70
3-month Libor rate	1.07	1.20	1.36	1.63	1.67	1.92	2.11	2.34	2.37	2.62	2.83	3.05	0.74	1.32	2.01	2.72
6-month Libor rate	1.37	1.42	1.59	1.82	1.99	2.30	2.56	2.82	2.91	3.14	3.33	3.51	1.06	1.55	2.42	3.22
1-year Libor rate	1.75	1.75	1.91	2.15	2.39	2.69	2.94	3.17	3.30	3.49	3.64	3.79	1.37	1.89	2.80	3.56
2-year Libor swap rate	1.56	1.55	1.73	2.04	2.34	2.62	2.88	3.09	3.27	3.44	3.57	3.68	1.00	1.72	2.73	3.49
3-year Libor swap rate	1.76	1.69	1.88	2.15	2.44	2.69	2.93	3.13	3.32	3.48	3.60	3.69	1.12	1.87	2.80	3.52
5-year Libor swap rate	2.03	1.89	2.12	2.40	2.66	2.87	3.07	3.23	3.42	3.56	3.66	3.73	1.32	2.11	2.96	3.59
7-year Libor swap rate	2.21	2.05	2.25	2.50	2.74	2.94	3.12	3.28	3.48	3.63	3.74	3.80	1.50	2.25	3.02	3.66
10-year Libor swap rate	2.38	2.21	2.40	2.62	2.83	3.01	3.18	3.32	3.53	3.68	3.78	3.85	1.70	2.40	3.09	3.71
30-year Libor swap rate	2.63	2.48	2.65	2.86	3.11	3.32	3.51	3.67	3.89	4.04	4.15	4.22	2.10	2.66	3.40	4.08
Real Interest Rates (percent)																
S&P 500 dividend-price ratio	1.96	1.95	1.94	1.94	1.98	2.01	2.03	2.06	2.08	2.10	2.11	2.12	2.09	1.95	2.02	2.10
Real federal funds rate	-1.40	-1.14	-0.81	-0.59	-0.56	-0.28	-0.07	0.17	0.21	0.48	0.70	0.93	-1.60	-0.99	-0.18	0.58
Real Moody's Baa corporate bond yield	2.56	2.41	2.42	2.55	2.70	2.84	2.98	3.11	3.27	3.40	3.49	3.56	2.72	2.48	2.91	3.43
Nominal Interest Rate Spreads (percent)																
10-yr T-note less federal funds	1.73	1.30	1.14	1.06	1.20	1.07	0.99	0.87	1.02	0.87	0.74	0.55	1.44	1.31	1.03	0.79
10-yr T-note less 2-yr T-note	1.20	0.97	0.92	0.80	0.69	0.56	0.45	0.36	0.37	0.34	0.29	0.24	1.01	0.97	0.51	0.31
Moody's Baa corp bond less 10-yr T-note	1.88	1.86	1.73	1.73	1.66	1.61	1.57	1.55	1.51	1.50	1.47	1.47	2.49	1.80	1.60	1.49
Mortgage less 10-yr T-note	1.73	1.72	1.70	1.70	1.63	1.59	1.56	1.55	1.52	1.52	1.53	1.56	1.81	1.71	1.58	1.53
Libor and Swap Spreads (percent)																
Overnight Libor less federal funds	0.03	0.02	0.04	0.05	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.07	0.02	0.04	0.06	0.07
1-month Libor less federal funds	0.13	0.11	0.11	0.11	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.10	0.11	0.12	0.12
3-month Libor less 3-month T-bill	0.47	0.30	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.37	0.42	0.37	0.36	0.36
6-month Libor less 6-month T-bill	0.65	0.39	0.44	0.44	0.43	0.42	0.42	0.41	0.41	0.41	0.40	0.41	0.59	0.48	0.42	0.41
1-yr Libor less 1-yr T-bill	0.86	0.63	0.66	0.64	0.61	0.60	0.58	0.58	0.57	0.56	0.56	0.56	0.76	0.70	0.59	0.56
2-yr Libor swap less 2-yr T-note	0.32	0.26	0.30	0.34	0.35	0.35	0.35	0.35	0.36	0.36	0.36	0.36	0.17	0.31	0.35	0.36
3-yr Libor swap less 3-yr T-note	0.25	0.22	0.29	0.34	0.35	0.35	0.35	0.35	0.36	0.36	0.36	0.36	0.11	0.27	0.35	0.36
5-yr Libor swap less 5-yr T-note	0.09	0.08	0.20	0.28	0.31	0.32	0.33	0.33	0.33	0.33	0.34	0.34	-0.02	0.16	0.32	0.34
7-yr Libor swap less 7-yr T-note	-0.04	-0.03	0.08	0.16	0.19	0.22	0.23	0.25	0.27	0.28	0.29	0.30	-0.14	0.04	0.22	0.28
10-yr Libor swap less 10-yr T-note	-0.06	-0.05	0.05	0.12	0.16	0.19	0.21	0.23	0.25	0.26	0.27	0.28	-0.14	0.01	0.20	0.26
30-yr Libor swap less 30-yr T-bond	-0.41	-0.42	-0.27	-0.18	-0.13	-0.10	-0.07	-0.05	-0.02	-0.01	0.00	0.01	-0.49	-0.32	-0.09	-0.01

MA Base Forecast (July 2017): 2017.3 - 2019.4
S&P Corporate Bond Yields and Spreads
[Percent]

	2017.1	2017.2	2017.3	2017.4	2018.1	2018.2	2018.3	2018.4	2019.1	2019.2	2019.3	2019.4	2016	2017	2018	2019
AAA Corporate Bond Yields																
5-year	2.45	2.28	2.38	2.57	2.80	2.99	3.18	3.33	3.53	3.68	3.78	3.86	1.90	2.42	3.08	3.71
10-year	3.21	2.99	3.04	3.16	3.32	3.46	3.59	3.70	3.89	4.03	4.12	4.19	2.72	3.10	3.52	4.06
15-year	3.52	3.30	3.37	3.51	3.70	3.86	4.01	4.15	4.35	4.50	4.59	4.65	3.10	3.43	3.93	4.52
20-year	3.78	3.57	3.55	3.67	3.89	4.06	4.22	4.37	4.57	4.72	4.82	4.88	3.42	3.64	4.13	4.75
25-year	4.02	3.82	3.79	3.89	4.10	4.26	4.42	4.56	4.75	4.90	5.00	5.06	3.71	3.88	4.33	4.93
AA Corporate Bond Yields																
5-year	2.62	2.42	2.50	2.70	2.93	3.11	3.29	3.44	3.63	3.78	3.87	3.95	2.12	2.56	3.19	3.81
10-year	3.36	3.14	3.20	3.36	3.52	3.65	3.77	3.88	4.06	4.20	4.28	4.34	2.95	3.26	3.70	4.22
15-year	3.65	3.45	3.53	3.66	3.85	4.01	4.16	4.30	4.50	4.65	4.75	4.81	3.33	3.57	4.08	4.68
20-year	3.91	3.72	3.74	3.87	4.09	4.26	4.43	4.57	4.77	4.92	5.02	5.08	3.65	3.81	4.34	4.95
25-year	4.13	3.97	3.99	4.12	4.32	4.49	4.65	4.79	4.98	5.13	5.22	5.29	3.95	4.05	4.56	5.15
A Corporate Bond Yields																
5-year	2.79	2.60	2.68	2.85	3.09	3.27	3.44	3.59	3.77	3.92	4.02	4.09	2.35	2.73	3.35	3.95
10-year	3.55	3.32	3.40	3.54	3.71	3.83	3.95	4.06	4.24	4.38	4.46	4.52	3.18	3.45	3.89	4.40
15-year	3.85	3.64	3.71	3.84	4.03	4.18	4.34	4.48	4.67	4.83	4.93	5.00	3.56	3.76	4.26	4.86
20-year	4.11	3.92	3.95	4.06	4.28	4.45	4.62	4.76	4.96	5.12	5.21	5.28	3.89	4.01	4.53	5.14
25-year	4.34	4.16	4.19	4.30	4.51	4.68	4.84	4.98	5.18	5.33	5.43	5.50	4.18	4.25	4.75	5.36
BBB Corporate Bond Yields																
5-year	3.31	3.06	3.17	3.32	3.54	3.70	3.86	3.99	4.16	4.30	4.41	4.49	3.25	3.21	3.77	4.34
10-year	4.18	3.92	4.00	4.06	4.19	4.28	4.37	4.46	4.61	4.75	4.84	4.92	4.27	4.04	4.33	4.78
15-year	4.56	4.32	4.37	4.47	4.64	4.75	4.86	4.97	5.13	5.27	5.37	5.44	4.77	4.43	4.80	5.30
20-year	4.87	4.65	4.65	4.69	4.85	4.97	5.09	5.21	5.38	5.53	5.63	5.71	5.17	4.72	5.03	5.56
BB+ Corporate Bond Yields																
5-year	4.21	3.94	3.98	4.17	4.36	4.50	4.64	4.76	4.88	5.00	5.09	5.17	4.73	4.07	4.57	5.04
10-year	5.30	5.05	5.04	5.12	5.20	5.26	5.32	5.40	5.51	5.62	5.69	5.76	5.85	5.13	5.30	5.65
15-year	5.80	5.60	5.58	5.64	5.73	5.79	5.86	5.95	6.07	6.19	6.26	6.33	6.40	5.65	5.83	6.21
AAA Corporate Bond Spreads																
5-yr less 5-yr T-note	0.51	0.47	0.46	0.45	0.45	0.44	0.44	0.44	0.44	0.45	0.45	0.46	0.56	0.47	0.44	0.45
10-yr less 10-year T-note	0.77	0.73	0.69	0.66	0.65	0.63	0.62	0.61	0.61	0.61	0.61	0.62	0.88	0.71	0.63	0.61
15-yr less 15-yr T-note	0.88	0.83	0.83	0.83	0.83	0.82	0.82	0.83	0.83	0.83	0.82	0.82	1.05	0.84	0.82	0.82
20-yr less 20-yr T-bond	1.00	0.93	0.86	0.85	0.85	0.83	0.82	0.82	0.81	0.81	0.80	0.80	1.19	0.91	0.83	0.81
25-yr less 25-yr T-bond	1.10	1.04	0.98	0.96	0.95	0.92	0.91	0.90	0.90	0.90	0.89	0.89	1.30	1.02	0.92	0.90
AA Corporate Bond Spreads																
5-yr less 5-yr T-Note	0.67	0.61	0.58	0.58	0.58	0.56	0.55	0.54	0.54	0.55	0.55	0.55	0.78	0.61	0.56	0.55
10-yr less 10-yr T-note	0.92	0.88	0.85	0.86	0.84	0.82	0.80	0.79	0.78	0.78	0.77	0.77	1.11	0.88	0.81	0.78
15-yr less 15-yr T-note	1.01	0.98	0.98	0.98	0.98	0.97	0.97	0.98	0.98	0.98	0.98	0.98	1.28	0.99	0.97	0.98
20-yr less 20-yr T-bond	1.13	1.08	1.05	1.05	1.05	1.03	1.02	1.02	1.02	1.01	1.00	0.99	1.43	1.08	1.03	1.01
25-yr less 25-yr T-bond	1.22	1.19	1.18	1.18	1.17	1.15	1.14	1.13	1.13	1.13	1.11	1.11	1.54	1.19	1.15	1.12
A Corporate Bond Spreads																
5-yr less 5-yr T-note	0.85	0.79	0.76	0.73	0.74	0.72	0.70	0.69	0.69	0.69	0.69	0.70	1.01	0.78	0.71	0.69
10-yr less 10-yr T-note	1.10	1.06	1.05	1.04	1.03	1.00	0.98	0.97	0.96	0.96	0.95	0.95	1.34	1.06	1.00	0.95
15-yr less 15-yr T-note	1.21	1.17	1.17	1.16	1.16	1.15	1.14	1.15	1.15	1.16	1.16	1.17	1.51	1.18	1.15	1.16
20-yr less 20-yr T-bond	1.33	1.28	1.26	1.24	1.24	1.22	1.21	1.21	1.21	1.21	1.20	1.20	1.66	1.28	1.22	1.20
25-yr less 25-yr T-bond	1.42	1.38	1.38	1.37	1.36	1.34	1.34	1.33	1.33	1.33	1.32	1.32	1.77	1.39	1.34	1.33
BBB Corporate Bond Spreads																
5-yr less 5-yr T-note	1.36	1.25	1.25	1.20	1.18	1.15	1.12	1.10	1.07	1.07	1.08	1.10	1.91	1.27	1.14	1.08
10-yr less 10-yr T-note	1.74	1.65	1.65	1.56	1.52	1.45	1.40	1.37	1.33	1.33	1.33	1.35	2.43	1.65	1.44	1.33
15-yr less 15-yr T-note	1.92	1.84	1.83	1.79	1.77	1.71	1.67	1.64	1.61	1.61	1.60	1.61	2.71	1.85	1.70	1.61
20-yr less 20-yr T-bond	2.09	2.01	1.96	1.87	1.81	1.74	1.69	1.66	1.62	1.62	1.61	1.62	2.94	1.98	1.73	1.62
BB+ Corporate Bond Spreads																
5-yr less 5-yr T-note	2.26	2.13	2.06	2.05	2.01	1.95	1.89	1.86	1.80	1.77	1.76	1.78	3.39	2.13	1.93	1.78
10-yr less 10-yr T-note	2.86	2.79	2.69	2.62	2.53	2.43	2.35	2.31	2.23	2.20	2.18	2.20	4.01	2.74	2.41	2.20
15-yr less 15-yr T-note	3.16	3.13	3.03	2.96	2.86	2.76	2.67	2.62	2.55	2.52	2.50	2.50	4.35	3.07	2.73	2.52

MA Base Forecast (July 2017): 2017.3 - 2019.4

Real Gross Domestic Product

[Percent change at annual rate]

	2017.1	2017.2	2017.3	2017.4	2018.1	2018.2	2018.3	2018.4	2019.1	2019.2	2019.3	2019.4	Q4 / Q4 % change 2016	2017	2018	2019
Gross domestic product	1.2	2.6	2.9	2.6	2.2	2.1	2.3	2.3	2.2	2.1	2.0	1.8	1.8	2.3	2.2	2.0
Personal consumption expend.	1.9	2.8	2.7	3.0	2.4	2.1	1.9	1.9	1.9	1.9	2.0	2.0	2.8	2.6	2.1	2.0
Durable goods	-0.1	6.3	4.9	6.4	4.1	3.2	3.0	3.0	3.3	3.4	3.6	3.5	7.0	4.3	3.3	3.5
Motor vehicles and parts	-9.6	-1.7	4.2	3.5	2.4	0.8	0.4	0.4	0.8	1.1	1.6	1.7	7.8	-1.1	1.0	1.3
Other durable goods	5.2	10.6	5.3	7.8	5.0	4.3	4.3	4.3	4.6	4.6	4.5	4.4	6.5	7.2	4.5	4.5
Nondurable goods	1.1	3.8	2.2	2.4	1.8	1.7	1.5	1.4	1.5	1.5	1.5	1.6	2.5	2.4	1.6	1.5
Food	1.2	0.6	1.8	2.4	1.5	1.3	1.2	1.2	1.3	1.3	1.4	1.4	3.9	1.5	1.3	1.3
Gasoline	-5.9	5.7	-1.2	0.0	-0.7	-0.4	-0.5	-0.6	-0.5	-0.5	-0.6	-0.6	-1.0	-0.4	-0.5	-0.5
Other nondurable goods	2.5	5.5	3.0	2.8	2.5	2.2	2.0	2.0	2.0	2.0	2.0	2.0	2.2	3.4	2.2	2.0
Services	2.5	1.9	2.5	2.7	2.3	2.1	1.9	1.8	1.8	1.8	1.9	1.9	2.3	2.4	2.0	1.9
Housing services	-0.4	2.8	1.4	1.3	2.1	1.9	1.7	1.6	1.7	1.7	1.7	1.8	1.4	1.3	1.8	1.7
Medical services	2.1	3.0	3.4	3.5	3.2	3.0	2.8	2.7	2.7	2.7	2.8	2.8	4.1	3.0	2.9	2.7
Other services	4.4	0.9	2.6	3.1	1.9	1.7	1.5	1.4	1.5	1.5	1.5	1.5	1.9	2.7	1.7	1.5
Gross private dom. investment	-1.2	2.0	6.1	6.1	6.8	5.7	6.8	6.5	6.1	5.4	5.1	4.7	0.9	3.2	6.5	5.3
Fixed investment	8.1	2.2	2.7	4.5	5.1	5.8	6.3	5.9	5.7	5.3	5.3	5.0	1.1	4.4	5.8	5.3
Nonresidential	7.2	5.2	3.6	5.3	5.3	5.1	5.2	5.2	5.1	4.8	4.6	4.1	0.7	5.3	5.2	4.6
Structures	14.8	4.9	3.3	6.4	6.8	6.7	6.7	6.5	6.3	6.0	5.7	5.2	3.5	7.3	6.7	5.8
Equipment	4.4	8.2	2.9	5.1	6.9	6.3	6.4	6.3	6.2	5.7	5.5	5.0	-3.7	5.1	6.5	5.6
Computers	3.5	52.4	-6.9	13.1	3.5	2.8	3.3	3.4	3.4	2.7	2.7	2.1	-1.4	13.5	3.2	2.7
Other equipment	4.5	5.3	3.7	4.5	7.2	6.6	6.7	6.5	6.4	6.0	5.7	5.2	-3.9	4.5	6.7	5.8
Intellectual Property Products	5.7	1.4	4.9	4.9	2.2	2.2	2.6	2.7	2.6	2.5	2.5	2.1	5.2	4.2	2.4	2.4
Residential	11.1	-6.8	-0.1	1.7	4.3	8.2	9.6	8.3	7.8	7.1	7.3	7.6	2.5	1.3	7.6	7.4
Single family	10.6	3.8	-0.2	1.1	9.6	21.2	27.6	26.8	23.5	19.1	15.9	14.0	1.4	3.7	21.1	18.1
Multifamily	11.8	-3.0	-7.9	-2.4	14.6	10.2	9.9	4.0	1.4	-0.2	-0.3	0.0	5.0	-0.7	9.6	0.2
Other residential	11.3	-13.4	1.2	2.8	-0.4	0.1	-1.5	-3.0	-2.2	-1.0	1.5	3.4	2.8	0.1	-1.2	0.4
Change in private inventories*	1.2	-0.3	22.8	34.0	46.3	46.5	51.2	55.7	59.1	60.6	60.0	58.7	33.4	14.4	49.9	59.6
Farm*	2.7	-2.1	-0.1	1.2	3.7	4.5	4.5	4.3	4.0	3.6	3.3	3.0	-0.5	0.4	4.3	3.5
Nonfarm*	-1.8	1.9	23.2	33.1	42.8	42.2	46.8	51.7	55.4	57.3	57.1	56.2	34.5	14.1	45.9	56.5
Motor vehicles and parts*	29.1	9.4	10.4	8.5	-0.7	-9.4	-6.7	-4.8	-2.9	-1.6	-0.5	0.4	8.8	14.4	-5.4	-1.2
Other*	-30.7	-7.0	13.1	24.8	43.4	51.2	53.2	56.2	58.1	58.7	57.5	55.7	25.7	0.1	51.0	57.5
Net exports of goods & services*	-622.2	-614.9	-620.1	-644.5	-668.8	-685.8	-699.9	-714.9	-735.9	-758.9	-783.7	-814.7	-586.3	-625.4	-692.3	-773.3
Exports	7.3	4.1	5.3	4.9	5.9	6.7	6.8	6.1	5.4	4.9	4.8	4.2	0.6	5.4	6.4	4.8
Goods	10.8	2.8	5.2	4.7	5.0	6.0	5.9	5.4	4.7	4.3	4.6	4.1	1.8	5.8	5.6	4.4
Agricultural	6.9	19.1	2.5	2.7	-10.5	-9.4	-8.8	-8.4	-8.1	-8.0	-3.1	-1.0	11.0	7.6	-9.3	-5.1
Nonagricultural	11.2	1.2	5.5	4.9	6.8	7.7	7.5	6.8	6.0	5.5	5.3	4.6	0.9	5.6	7.2	5.4
Services	1.0	6.5	5.4	5.4	7.7	8.1	8.3	7.4	6.7	5.9	5.3	4.5	-1.8	4.5	7.9	5.6
Imports	4.3	2.1	4.8	7.4	8.1	7.6	7.1	6.7	7.0	6.8	6.9	7.2	2.7	4.6	7.4	6.9
Goods	4.7	2.0	5.1	8.1	9.5	8.7	8.2	7.6	7.9	7.6	7.7	8.1	2.5	5.0	8.5	7.8
Petroleum and products	14.8	-16.0	-11.0	0.0	2.6	-2.3	-5.3	-3.1	-1.8	-1.3	-0.8	-0.8	6.6	-3.7	-2.1	-1.2
Nonpetroleum	3.8	3.9	6.6	8.8	10.1	9.7	9.4	8.5	8.7	8.3	8.4	8.8	2.2	5.8	9.4	8.5
Services	2.5	2.4	3.7	4.4	2.3	2.4	2.4	2.6	2.8	2.9	3.0	3.0	3.5	3.2	2.4	2.9
Gov't cons. expend. & gross inv.	-0.6	0.7	1.0	-0.1	-0.2	0.5	0.5	1.2	1.6	1.4	1.5	1.2	0.4	0.2	0.5	1.4
Federal	-2.4	2.3	1.3	-2.3	-3.2	-1.7	-1.7	0.3	1.1	0.6	1.0	0.1	-0.3	-0.3	-1.6	0.7
National defense	-3.3	5.2	1.4	-2.2	-3.5	-2.0	-2.0	0.5	1.0	0.3	0.3	-0.8	-1.4	0.2	-1.8	0.2
Nondefense	-1.2	-1.9	1.1	-2.5	-2.7	-1.3	-1.2	-0.1	1.2	1.0	2.0	1.5	1.2	-1.1	-1.3	1.4
State & local	0.5	-0.2	0.9	1.2	1.6	1.8	1.8	1.8	1.9	1.8	1.8	1.8	0.8	0.6	1.7	1.8
Addenda:																
Final sales of domestic product	2.7	2.6	2.4	2.3	2.0	2.2	2.2	2.2	2.2	2.0	2.1	1.9	1.9	2.5	2.1	2.0
Final sales to dom. purchasers	2.4	2.4	2.4	2.7	2.4	2.4	2.4	2.4	2.5	2.4	2.4	2.4	2.1	2.5	2.4	2.4
Final sales to priv. dom. purchasers	3.1	2.7	2.7	3.3	2.9	2.8	2.8	2.6	2.7	2.6	2.6	2.6	2.5	2.9	2.8	2.6

* Billions of chained (2009) dollars

MA Base Forecast (July 2017): 2017.3 - 2019.4

Real Gross Domestic Product

Contributions to quarterly GDP growth

													Contribution to Q4/Q4 growth			
	2017.1	2017.2	2017.3	2017.4	2018.1	2018.2	2018.3	2018.4	2019.1	2019.2	2019.3	2019.4	2016	2017	2018	2019
Gross domestic product	1.2	2.6	2.9	2.6	2.2	2.1	2.3	2.3	2.2	2.1	2.0	1.8	1.8	2.3	2.2	2.0
Personal consumption expend.	1.3	1.9	1.8	2.1	1.7	1.5	1.3	1.3	1.3	1.3	1.4	1.4	2.0	1.9	1.5	1.4
Durable goods	0.0	0.5	0.4	0.5	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.5	0.3	0.3	0.3
Motor vehicles and parts	-0.3	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0
Other durable goods	0.3	0.5	0.3	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.2	0.2
Nondurable goods	0.2	0.6	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.4	0.2	0.2
Food	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1
Gasoline	-0.1	0.1	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 nondurable goods	0.2	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2
Services	1.2	0.9	1.2	1.3	1.1	1.0	0.9	0.8	0.9	0.9	0.9	0.9	1.1	1.2	1.0	0.9
Housing services	0.0	0.4	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Health care services	0.2	0.3	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.5	0.4	0.4	0.3
Other services	1.0	0.2	0.6	0.7	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.6	0.4	0.4
Gross private dom. investment	-0.2	0.3	1.0	1.0	1.1	0.9	1.1	1.1	1.0	0.9	0.9	0.8	0.2	0.6	1.1	1.0
Fixed investment	1.3	0.4	0.4	0.7	0.8	0.9	1.0	1.0	1.0	0.9	0.9	0.8	0.2	0.7	1.0	0.9
Nonresidential	0.9	0.6	0.5	0.7	0.7	0.6	0.7	0.7	0.6	0.6	0.6	0.5	0.1	0.7	0.7	0.6
Structures	0.4	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2
Equipment	0.2	0.4	0.2	0.3	0.4	0.3	0.4	0.4	0.3	0.3	0.3	0.3	-0.2	0.3	0.4	0.3
Computers	0.0	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Other equipment	0.2	0.3	0.2	0.2	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	-0.2	0.2	0.4	0.3
Intellectual Property Products	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1
Residential	0.4	-0.3	0.0	0.1	0.2	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.1	0.1	0.3	0.3
Single family	0.1	0.1	0.0	0.0	0.1	0.3	0.4	0.4	0.4	0.3	0.3	0.2	0.0	0.1	0.3	0.3
Multifamily	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	0.0	0.0
Other residential	0.2	-0.3	0.0	0.1	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0
Change in private inventories	-1.4	0.0	0.5	0.3	0.3	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	-0.2	0.1	0.0
Farm	0.1	-0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Nonfarm	-1.6	0.1	0.5	0.2	0.2	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	-0.2	0.1	0.0
Motor vehicles and parts	0.7	-0.4	0.0	0.0	-0.2	-0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.0
Other	-2.2	0.5	0.5	0.3	0.4	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	-0.3	0.2	0.0
Net exports of goods & services	0.2	0.2	-0.1	-0.5	-0.5	-0.3	-0.3	-0.3	-0.4	-0.4	-0.4	-0.6	-0.3	-0.1	-0.4	-0.5
Exports	0.8	0.5	0.6	0.6	0.7	0.8	0.8	0.7	0.7	0.6	0.6	0.5	0.1	0.7	0.8	0.6
Goods	0.8	0.2	0.4	0.4	0.4	0.5	0.5	0.4	0.4	0.3	0.4	0.3	0.2	0.5	0.5	0.4
Agricultural	0.1	0.1	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0.0	0.0	0.1	0.1	-0.1	0.0
Nonagricultural	0.8	0.1	0.4	0.3	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.3	0.1	0.4	0.5	0.4
Services	0.0	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	-0.1	0.2	0.3	0.3
Imports	-0.6	-0.3	-0.7	-1.1	-1.2	-1.1	-1.1	-1.0	-1.1	-1.0	-1.0	-1.1	-0.4	-0.7	-1.2	-1.1
Goods	-0.6	-0.2	-0.6	-1.0	-1.1	-1.1	-1.0	-1.0	-1.0	-0.9	-1.0	-1.0	-0.3	-0.6	-1.1	-1.0
Petroleum and products	-0.1	0.2	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0
Nonpetroleum	-0.4	-0.4	-0.7	-1.0	-1.1	-1.1	-1.1	-1.0	-1.0	-1.0	-1.0	-1.0	-0.3	-0.7	-1.1	-1.0
Services	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
Gov't cons. exp. & gross inv.	-0.1	0.1	0.2	0.0	0.0	0.1	0.1	0.2	0.3	0.2	0.3	0.2	0.1	0.0	0.1	0.2
Federal	-0.2	0.1	0.1	-0.2	-0.2	-0.1	-0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.0	-0.1	0.0
National defense	-0.1	0.2	0.1	-0.1	-0.1	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	-0.1	0.0
Nondefense	0.0	-0.1	0.0	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
State & local	0.1	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.2
Addenda:																
Final sales of domestic product	2.7	2.6	2.4	2.3	2.0	2.1	2.2	2.2	2.2	2.0	2.1	1.9	1.9	2.5	2.1	2.0
Final sales to dom. purchasers	2.4	2.4	2.5	2.8	2.5	2.5	2.5	2.5	2.6	2.5	2.5	2.4	2.2	2.5	2.5	2.5
Final sales to priv. dom. purchasers	2.6	2.3	2.3	2.8	2.5	2.4	2.4	2.3	2.3	2.2	2.2	2.2	2.2	2.6	2.5	2.3

Components may not sum due to rounding