The Virginia Tech – U.S. Forest Service February 2018 Housing Commentary: Section II

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Federal Reserve System and Private Indicators

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U.S. Economic Indicators

Economic projections of Federal Reserve Board members and Federal Reserve Bank presidents under their individual assessments of projected appropriate monetary policy, March 2018

Percent

Variable	Median[1]				Central tendency[2]				Range[3]			
	2018	2019	2020	Longer run	2018	2019	2020	Longer run	2018	2019	2020	Longer run
Change in real GDP	2.7	2.4	2.0	1.8	2.6 – 3.0	2.2 – 2.6	1.8 – 2.1	1.8 – 2.0	2.5 – 3.0	2.0 – 2.8	1.5 – 2.3	1.7 – 2.2
December projection	2.5	2.1	2.0	1.8	2.2 – 2.6	1.9 – 2.3	1.7 – 2.0	1.8 – 1.9	2.2 – 2.8	1.7 – 2.4	1.1 – 2.2	1.7 – 2.2
Unemployment rate	3.8	3.6	3.6	4.5	3.6 – 3.8	3.4 – 3.7	3.5 – 3.8	4.3 – 4.7	3.6 – 4.0	3.3 – 4.2	3.3 – 4.4	4.2 – 4.8
December projection	3.9	3.9	4.0	4.6	3.7 – 4.0	3.6 – 4.0	3.6 – 4.2	4.4 – 4.7	3.6 – 4.0	3.5 – 4.2	3.5 – 4.5	4.3 – 5.0
PCE inflation	1.9	2.0	2.1	2.0	1.8 – 2.0	2.0 – 2.2	2.1 – 2.2	2.0	1.8 – 2.1	1.9 – 2.3	2.0 – 2.3	2.0
December projection	1.9	2.0	2.0	2.0	1.7 – 1.9	2.0	2.0 – 2.1	2.0	1.7 – 2.1	1.8 – 2.3	1.9 – 2.2	2.0
Core PCE inflation[4]	1.9	2.1	2.1		1.8 – 2.0	2.0 – 2.2	2.1 – 2.2		1.8 – 2.1	1.9 – 2.3	2.0 – 2.3	
December projection	1.9	2.0	2.0		1.7 – 1.9	2.0	2.0 – 2.1		1.7 – 2.0	1.8 – 2.3	1.9 – 2.3	
Memo: Projected appropriate policy path												
Federal funds rate	2.1	2.9	3.4	2.9	2.1 – 2.4	2.8 – 3.4	3.1 – 3.6	2.8 – 3.0	1.6 – 2.6	1.6 – 3.9	1.6 – 4.9	2.3 – 3.5
December projection	2.1	2.7	3.1	2.8	1.9 – 2.4	2.4 – 3.1	2.6 – 3.1	2.8 – 3.0	1.1 – 2.6	1.4 – 3.6	1.4 – 4.1	2.3 – 3.0

NOTE: Projections of change in real gross domestic product (GDP) and projections for both measures of inflation are percent changes from the fourth quarter of the previous year to the fourth quarter of the year indicated. PCE inflation and core PCE inflation are the percentage rates of change in, respectively, the price index for personal consumption expenditures (PCE) and the price index for PCE excluding food and energy. Projections for the unemployment rate are for the average civilian unemployment rate in the fourth quarter of the year indicated. Each participant's projections are based on his or her assessment of appropriate monetary policy. Longer-run projections represent each participant's assessment of the rate to which each variable would be expected to converge under appropriate monetary policy and in the absence of further shocks to the economy. The projections for the federal funds rate are the value of the midpoint of the projected appropriate target range for the federal funds rate or the projected appropriate target level for the federal funds rate at the end of the specified calendar year or over the longer run. The December projections were made in conjunction with the meeting of the Federal Open Market Committee on December 12–13, 2017. One participant did not submit longer-run projections for the change in real GDP, the unemployment rate, or the federal funds rate in conjunction with the December 12–13, 2017, meeting, and one participant did not submit such projections in conjunction with the March 20–21, 2018, meeting.

1. For each period, the median is the middle projection when the projections are arranged from lowest to highest. When the number of projections is even, the median is the average of the two middle projections.
2. The central tendency excludes the three highest and three lowest projections for each variable in each year.
3. The range for a variable in a given year includes all participants' projections, from lowest to highest, for that variable in that year.
4. Longer-run projections for core PCE inflation are not collected.

Source: https://www.federalreserve.gov/monetarypolicy/files/fomcprojtabl20180321.pdf; 3/21/18

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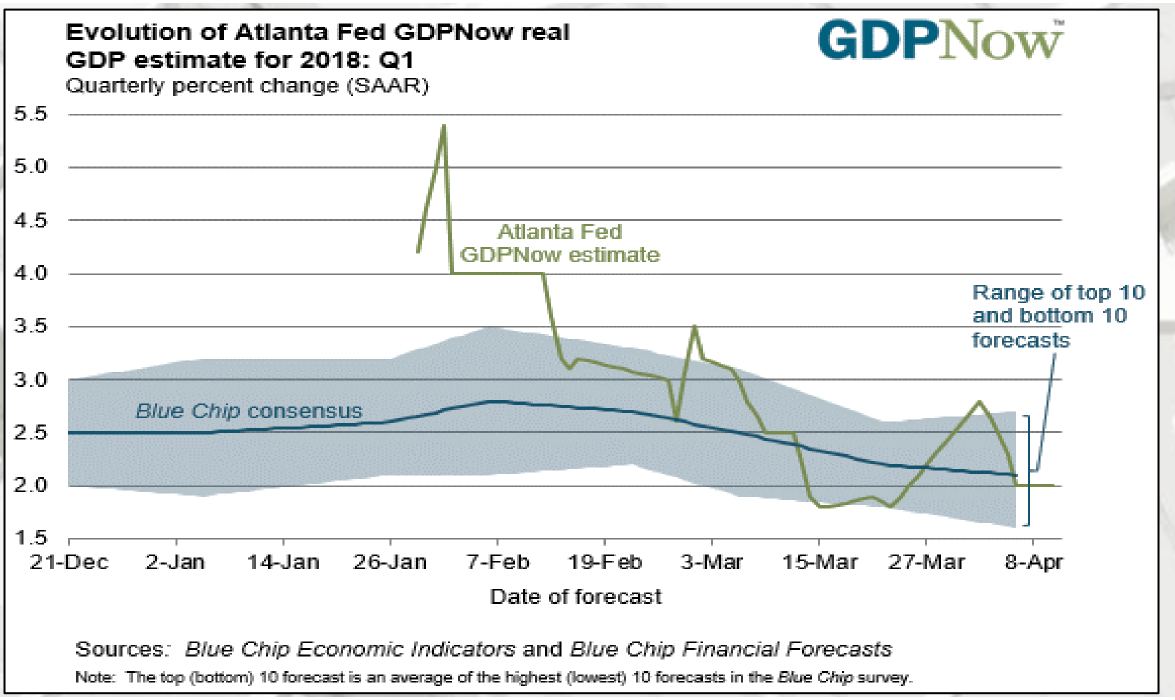
U.S. Economic Indicators



Atlanta Fed GDPNow™

Latest forecast: 2.0 percent — April 10, 2018

"The GDPNow model estimate for real GDP growth (seasonally adjusted annual rate) in the first quarter of 2018 is **2.0 percent** on April 10, down from 2.3 percent on April 5. After the employment report from the U.S. Bureau of Labor Statistics on April 6, the nowcast of first-quarter real consumer spending growth fell from 1.3 percent to 1.1 percent and the nowcast of first-quarter real private fixed investment growth fell from 5.3 percent to 4.5 percent. The model's estimate of the dynamic factor for March – normalized to have mean 0 and standard deviation 1 and used to forecast the yet-to-be released monthly GDP source data – declined from 1.43 to 0.25 after the employment report." – Pat Higgins, Economist, Federal Reserve Bank of Atlanta

Source: https://www.frbatlanta.org/economy-matters/regional-economics/data-digests; 3/10/18

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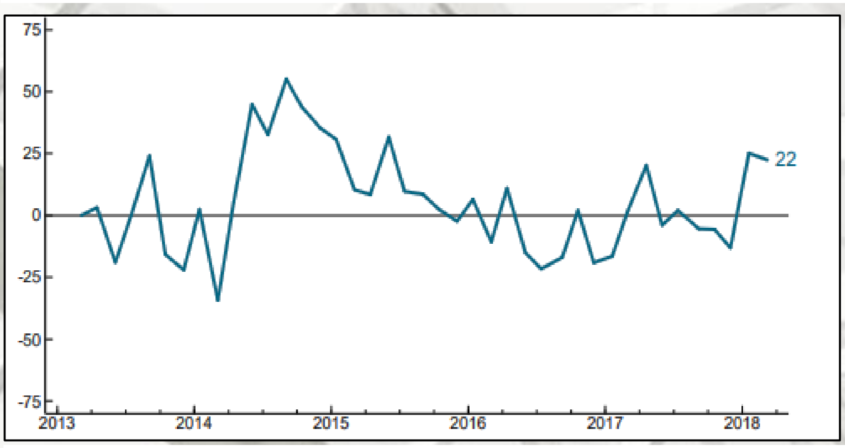
Chicago Fed: Survey of Business Conditions



"The Chicago Fed Survey of Business Conditions (CFSBC) Activity Index edged down to +22 from +25, suggesting that growth in economic activity continued at a moderate pace in January and early February. The CFSBC Manufacturing Activity Index moved down to +38 from +49, and the CFSBC Nonmanufacturing Activity Index remained at +11.

Survey shows steady growth in January and early February

- Respondents' outlooks for the U.S. economy for the next six to 12 months deteriorated some, but remained quite optimistic on balance. Respondents with optimistic outlooks highlighted the federal tax reform, good economic data, and increased demand for their firms' products.
- Respondents with pessimistic outlooks were concerned that rising interest rates could slow short-term growth and that the rising federal deficit could slow long-term growth.
- The pace of current hiring picked up, as did respondents' expectations for the pace of hiring over the next six to 12 months. The hiring index rose to a neutral level, and the hiring expectations index moved into positive territory.
- The pace of current capital spending increased, but respondents' expectations for the pace of capital spending over the next six to 12 months declined some. While the current capital spending index remained negative, the capital spending expectations index stayed positive.
- The wage cost pressures index decreased and moved into negative territory. In contrast, the nonwage cost pressures index increased and continued to be positive." – Laura LaBarbera, Media Relations, Federal Reserve Bank of Chicago

Source: https://www.chicagofed.org/publications/cfsbc/index; 3/7/18

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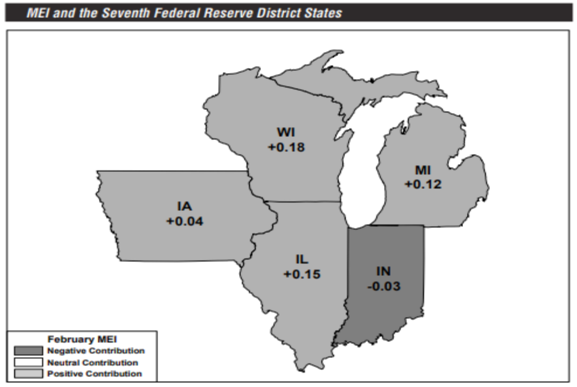
Chicago Fed: Midwest Economy Index



Note: The map's shading summarizes the most recent contribution to growth in Midwest economic activity from each of the five states in the Seventh Federal Reserve District (Illinois, Indiana, Iowa, Michigan, and Wisconsin).

"The Midwest Economy Index (MEI) moved up to +0.44 in February from +0.34 in January. Contributions to the February MEI from three of the four broad sectors of nonfarm business activity and three of the five Seventh Federal Reserve District states increased from January. The relative MEI rose to +0.31 in February from –0.15 in January. Contributions to the February relative MEI from all four sectors and all five states increased from January.

Index Points to a Pickup in Midwest Economic Growth in February

The manufacturing sector's contribution to the MEI increased to +0.47 in February from +0.39 in January. The pace of manufacturing activity increased in Indiana, Iowa, Michigan, and Wisconsin, but decreased in Illinois. Manufacturing's contribution to the relative MEI rose to +0.48 in February from +0.33 in January. The construction and mining sector's contribution to the MEI edged up to +0.01 in February from –0.01 in January. The pace of construction and mining activity was stronger in Indiana, Michigan, and Wisconsin, but weaker in Iowa and unchanged in Illinois. Construction and mining made a contribution of +0.04 to the relative MEI in February, up from –0.03 in January.

The service sector contributed –0.03 to the MEI in February, up slightly from –0.04 in January. The pace of service sector activity was up in Wisconsin, but down in Indiana and unchanged in Illinois, Iowa, and Michigan. The service sector's contribution to the relative MEI rose to –0.23 in February from –0.42 in January. Consumer spending indicators made a contribution of –0.01 to the MEI in February, down slightly from a neutral contribution in January. Consumer spending indicators were, on balance, down in Michigan, but up in Wisconsin and steady in Illinois, Indiana, and Iowa. Consumer spending's contribution to the relative MEI moved up to +0.02 in February from –0.04 in January." – Laura LaBarbera, Media Relations, Federal Reserve Bank of Chicago

Source: https://www.chicagofed.org/publications/cfnai/index; 3/30/18

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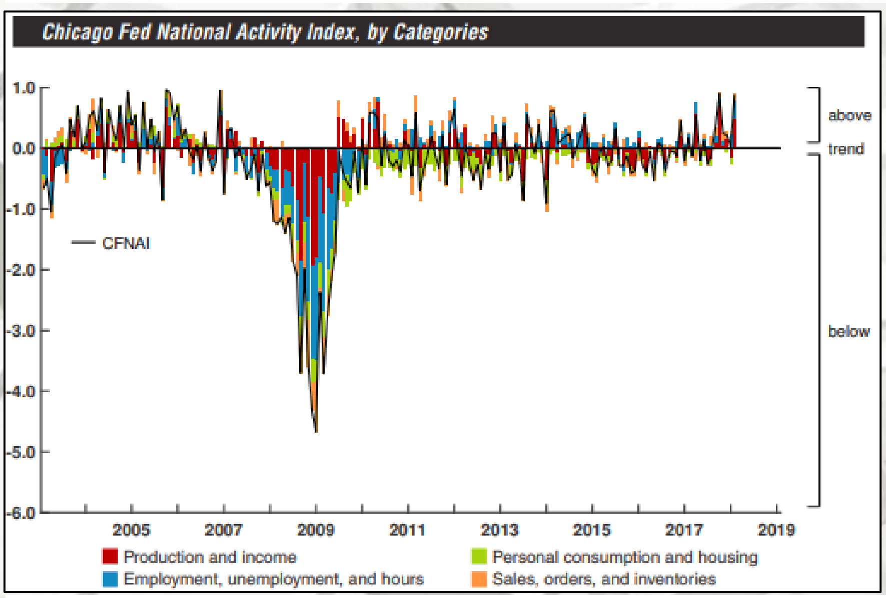
Chicago Fed: National Activity Index



"Led by improvements in production-related indicators, the Chicago Fed National Activity Index (CFNAI) rose to +0.88 in February from +0.02 in January. All four broad categories of indicators that make up the index increased from January, and three of the four categories made positive contributions to the index in February. The index's three-month moving average, CFNAI-MA3, increased to +0.37 in February from +0.16 in January.

Index Points to a Pickup in Economic Growth in February

The CFNAI Diffusion Index, which is also a three-month moving average, moved up to +0.28 in February from +0.16 in January. Sixty-three of the 85 individual indicators made positive contributions to the CFNAI in February, while 22 made negative contributions. Sixty-one indicators improved from January to February, while 23 indicators deteriorated and one was unchanged. Of the indicators that improved, nine made negative contributions.

Production-related indicators contributed +0.50 to the CFNAI in February, up from –0.15 in January. Total industrial production increased 1.1 percent in February after decreasing 0.3 percent in January. The sales, orders, and inventories category made a contribution of +0.09 to the CFNAI in February, up from +0.03 in January. The Institute for Supply Management's Manufacturing Inventories Index increased to 56.7 in February from 52.3 in the previous month." – Laura LaBarbera, Media Relations, Federal Reserve Bank of Chicago

Source: https://www.chicagofed.org/publications/cfnai/index; 3/26/18

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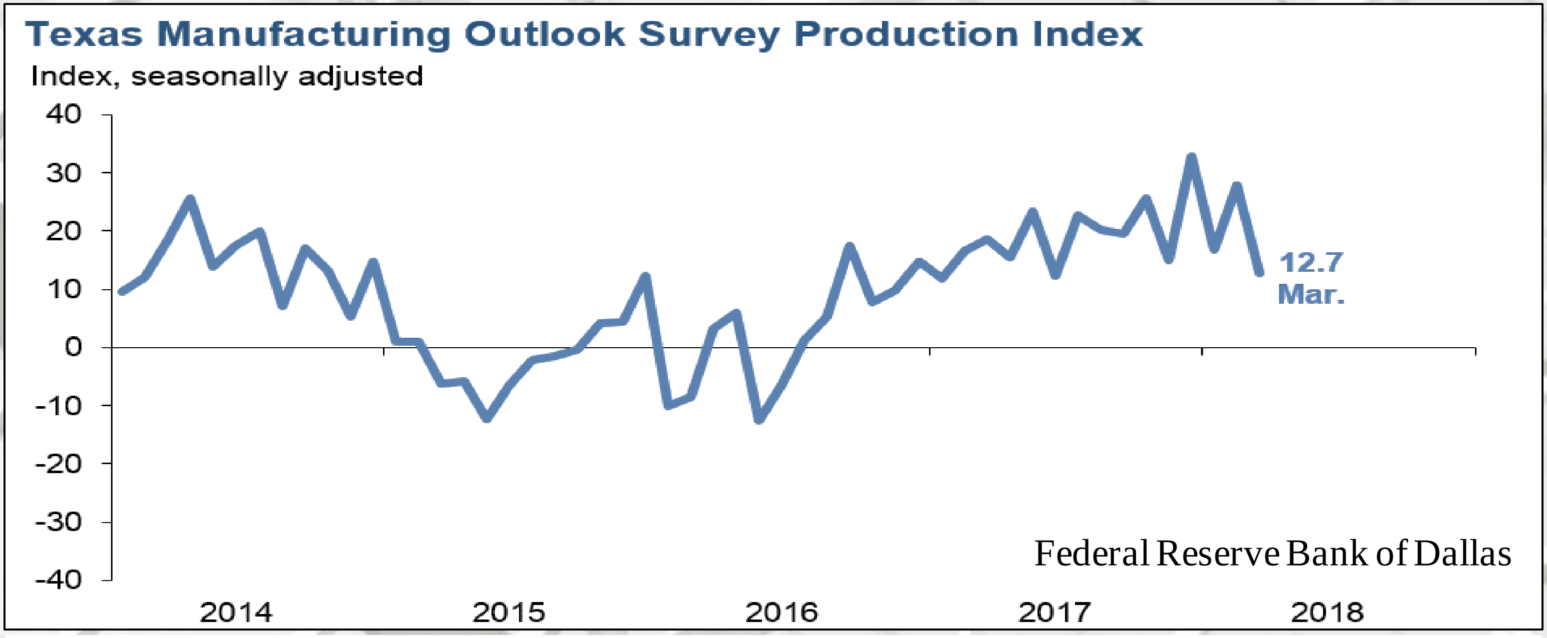
U.S. Economic Indicators



Texas Manufacturing Expansion Continues but at a Slower Pace

"Texas factory activity continued to expand in March, albeit at a markedly slower pace than last month, according to business executives responding to the *Texas Manufacturing Outlook Survey*. The production index, a key measure of state manufacturing conditions, fell 15 points to 12.7, signaling a deceleration in output growth.

The new orders and growth rate of orders indexes fell to 8.3 and 3.8, respectively. The capacity utilization index dropped to 9.6, and the shipments index plunged 23 points to 9.3. Although these indexes are down notably from their February readings, they remain well above their post recession averages.

Perceptions of broader business conditions remained positive on net, but the share of firms reporting an improvement declined from last month. The general business activity index fell 16 points to 21.4, and the company outlook index declined 12 points to 19.6. While both of these March readings represent the lowest this year, they are on par with last year's average indexes and far above their post recession average levels." – Emily Kerr, Business Economist, The Federal Reserve Bank of Dallas

Source: https://www.dallasfed.org/-/media/Documents/research/surveys/tmos/2018/1803/tmos1803.pdf; 3/36/18

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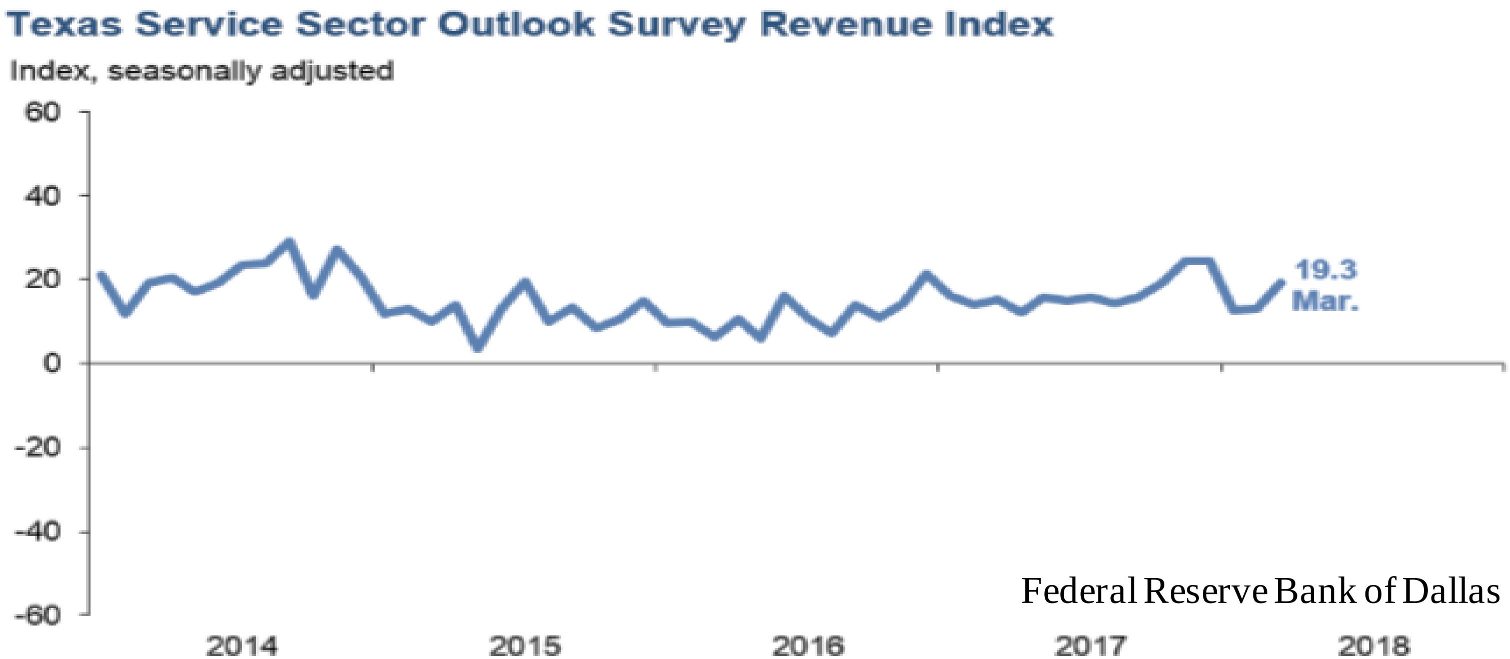

Federal Reserve Bank of Dallas

Texas Service Sector Activity Continues to Increase

"Texas service sector activity picked up in March, according to business executives responding to the *Texas Service Sector Outlook Survey*. The revenue index, a key measure of state service sector conditions, rose from 13.2 in February to 19.3 in March.

Labor market indicators reflected faster employment growth and longer workweeks this month. The employment index edged up three points to 15.1. The hours worked index moved up from 3.8 to 8.0.

Perceptions of broader economic conditions continued to reflect optimism in March. The general business activity index fell four points to 13.5. The company outlook index rose from 12.9 to 16.8, with 25 percent of respondents noting their outlook improved from last month and 8 percent noting it worsened." – Amy Jordan, Assistant Economist, The Federal Reserve Bank of Dallas

Source: https://www.dallasfed.org/-/media/Documents/research/surveys/tssos/2018/1803/tssos1803.pdf; 3/37/18

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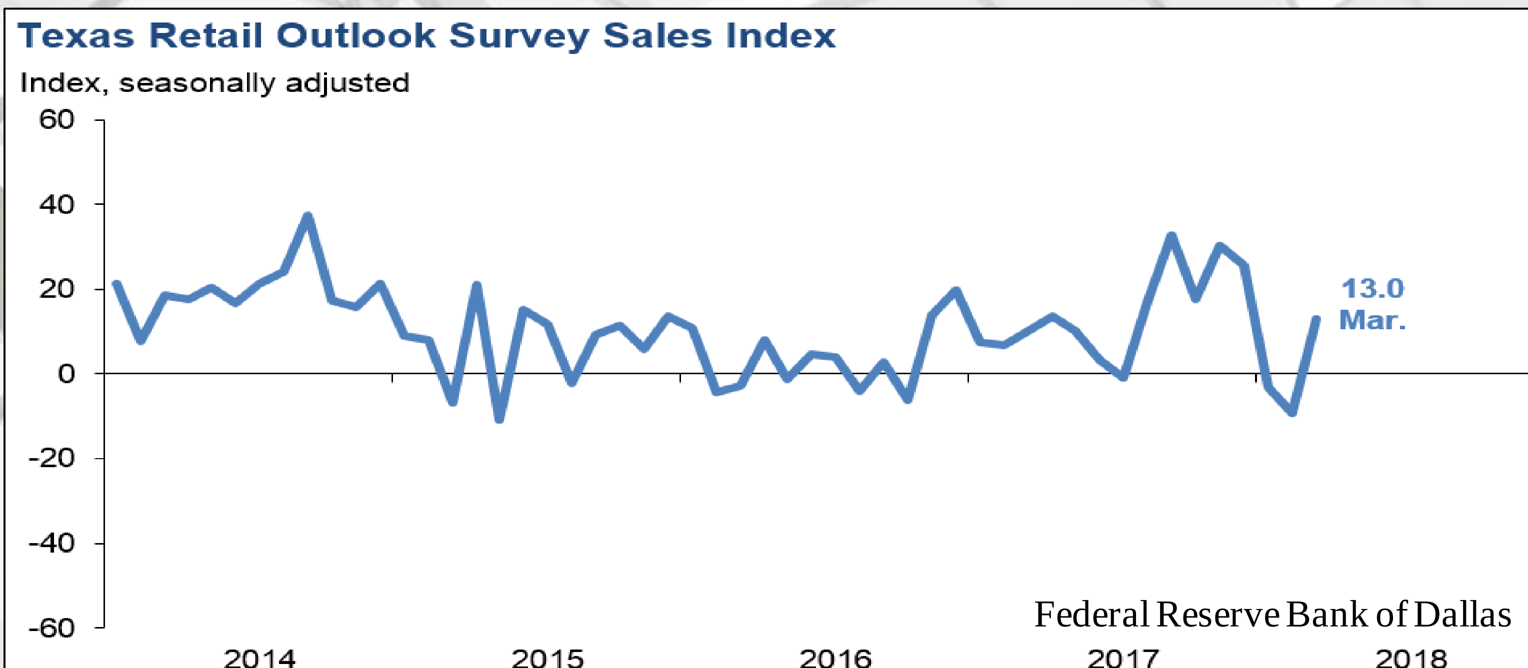

Retail Sales Rebound

"Retail sales improved notably in March, according to business executives responding to the *Texas Retail Outlook Survey*. After two consecutive months of declines, the sales index surged 22 points to 13.0. Inventories increased at a markedly faster pace than last month.

Labor market measures indicated faster retail employment growth and longer workweeks this month. The employment index rose from 12.1 to 16.7. The hours worked index moved up from 5.5 to 10.1.

Retailers' perceptions of broader economic conditions continued to reflect optimism in March. The general business activity index edged down two points to 2.5. The company outlook index rose four points to 6.4, with 19 percent of respondents reporting that their outlook improved from last month and 13 percent noting it worsened." – Amy Jordan, Assistant Economist, The Federal Reserve Bank of Dallas

Source: https://www.dallasfed.org/-/media/Documents/research/surveys/tssos/2018/1803/tssos1803.pdf; 3/37/18

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U.S. Economic Indicators

The Federal Reserve Bank of Kansas City

Tenth District Manufacturing Activity Continued at a Solid Pace

"Tenth District manufacturing activity continued at a solid pace in March, and optimism remained high for future activity. In a special question on the effect of potential steel and aluminum tariffs, most contacts indicated some impact, with varying anticipated degrees of severity. Price indexes were little changed in March after considerable increases the past few months.

The month-over-month composite index was 17 in March, equal to 17 in February and higher than 16 in January (Chart 1). The composite index is an average of the production, new orders, employment, supplier delivery time, and raw materials inventory indexes. Factory activity grew modestly at durable goods plants, particularly for machinery and aircraft, while production of nondurable goods moderated slightly. Month-over-month indexes were mixed. The shipments and new orders indexes decreased moderately, while the production, order backlog, and new orders for exports indexes where basically unchanged. In contrast, the employment index edged up from 23 to 26 and the supplier delivery time index jumped from 16 to 30, both at their highest levels in survey history. The raw materials inventory index increased from 8 to 11, and the finished goods inventory index also rose modestly.

Most year-over-year factory indexes were slightly lower in March. The composite index was basically unchanged at 37, while the production, shipments, new orders, and order backlog indexes decreased moderately. The employment index inched lower from 39 to 37, and the capital expenditures index also fell. The raw materials inventory index increased from 23 to 30, while the finished goods inventory index was generally stable." – Pam Campbell, The Federal Reserve Bank of Kansas City

Source: https://www.kansascityfed.org/~/media/files/publicat/research/indicatorsdata/mfg/2018/2018mar22mfg.pdf; 3/23/18

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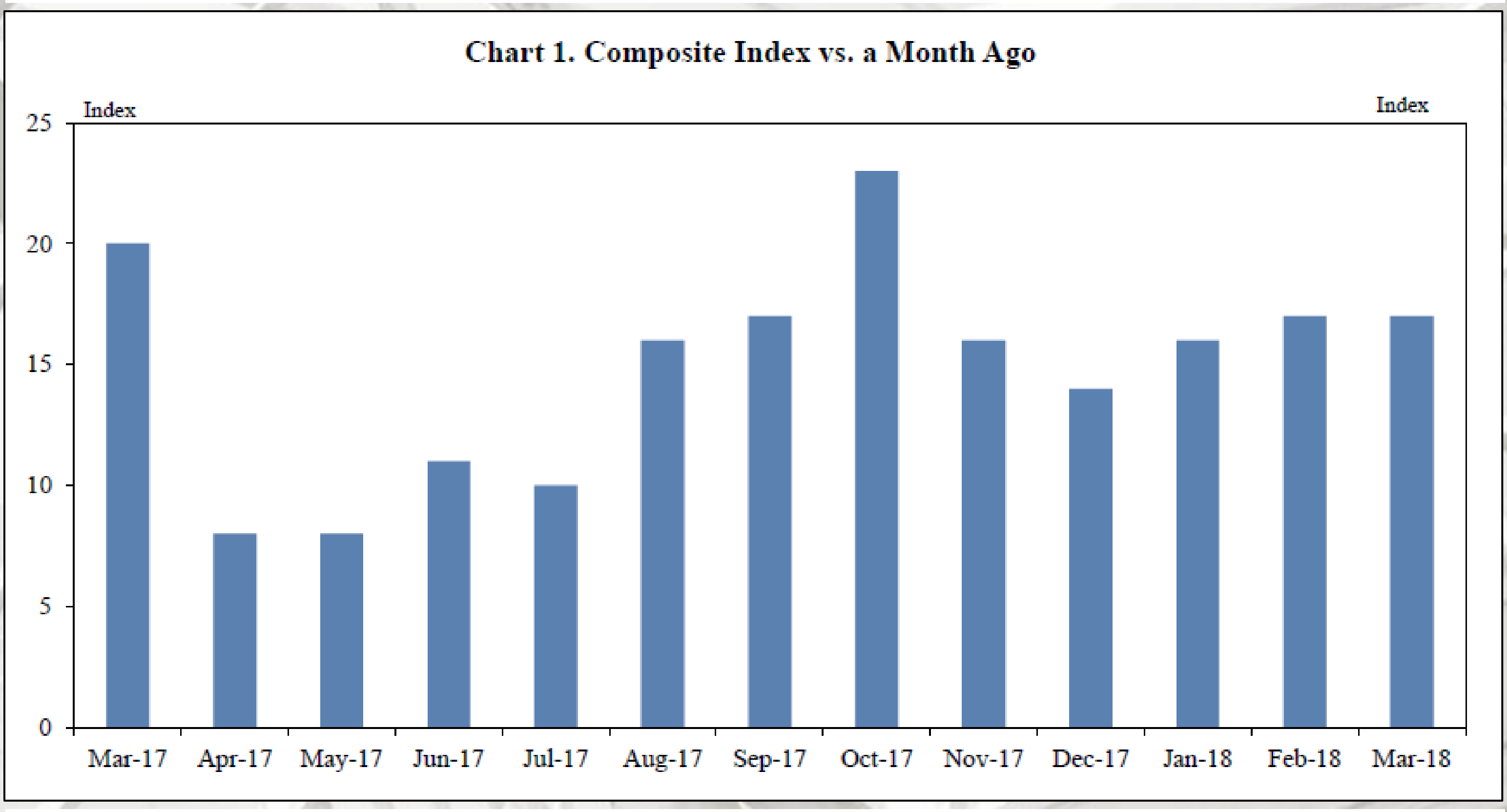

The Federal Reserve Bank of Kansas City

"Factory activity continued to grow steadily in March. Firms continued to report high input and selling prices and many are concerned about higher steel and aluminum tariffs." – Chad Wilkerson, Vice President and Economist, The Federal Reserve Bank of Kansas City

Source: https://www.kansascityfed.org/~/media/files/publicat/research/indicatorsdata/mfg/3018/3018feb33mfg.pdf; 3/33/18

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U.S. Economic Indicators

The Federal Reserve Bank of Kansas City

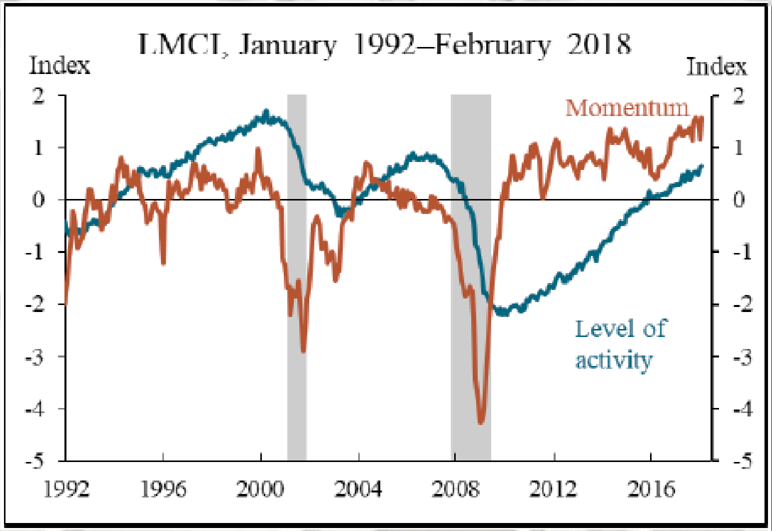
LMCI suggest the level of activity increased modestly and momentum remained high in February

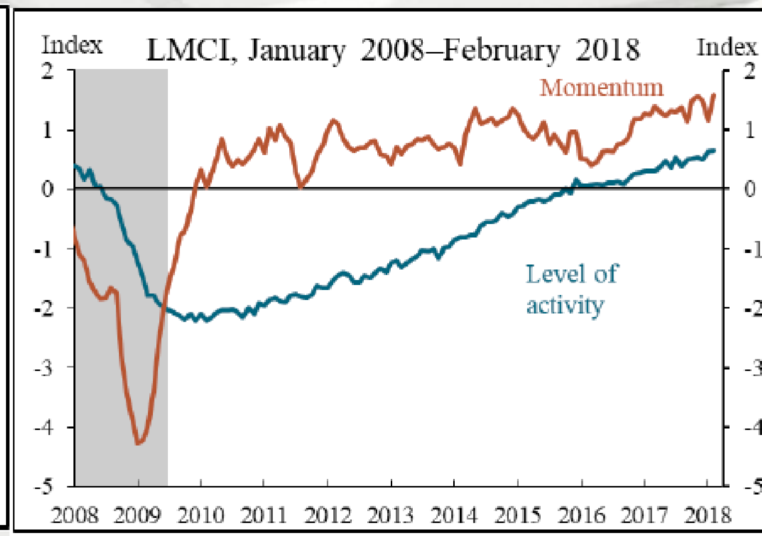
“The Kansas City Fed Labor Market Conditions Indicators (LMCI) suggest the level of activity increased modestly and momentum remained high in February. The level of activity indicator increased modestly in February from 0.63 to 0.66, while the momentum indicator accelerated from 1.16 to 1.58.

The table on the following page shows the five labor market variables that made the largest contributions to the increase in the activity indicator over the last six months and the five variables that made the largest positive contributions to the momentum indicator in February 2018. The activity indicator in-creased 0.27 over the last six months. The largest contribution came from an increase in job flows from unemployment to employment. Twenty-one variables made a positive contribution, one variable made no contribution, and two variables made a negative contribution. The momentum indicator was 1.58 in February, where the largest contributor to momentum was expected job availability (University of Michigan). Sixteen variables made a positive contribution, and eight variables made a negative contribution.” – Bill Medley, Director, Public Affairs, The Federal Reserve Bank of Kansas City

Source: https://www.kansascityfed.org/~/media/files/publicat/research/indicatorsdata/lmci/2018/lmci_031918.pdf; 3/19/18

U.S. Economic Indicators





Largest Contributions to the LMCI	
Contributions to the increase in the *level of activity* indicator over the last six months	**Positive contributions to the *momentum* indicator in February 2018**
Job flows from U to E	Expected job availability (U of Michigan)
Average hourly earnings	Initial claims
Unemployed 27 or more weeks	Manufacturing employment index (ISM)
Percent of firms with positions not able to fill right now (NFIB)	Expected job availability (Conference Board)
Job availability index (Conference Board)	Labor force participation rate
Note: Contributions are ordered from largest to smallest.	

Source: https://www.kansascityfed.org/~/media/files/publicat/research/indicatorsdata/lmci/2018/lmci_031918.pdf; 3/19/18

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U.S. Economic Indicators

Empire State Manufacturing Survey

Growth Picks Up

"Business activity grew robustly in New York State, according to firms responding to the March 2018 *Empire State Manufacturing Survey*. The headline general business conditions index climbed nine points to 22.5. The new orders index rose to 16.8 and the shipments index advanced to 27.0 — readings that pointed to strong growth in orders and shipments. Unfilled orders increased, delivery times lengthened, and inventories edged higher. Labor market indicators showed an increase in employment and hours worked. After reaching a multiyear high last month, the prices paid index moved up further, reflecting ongoing and widespread increases in input prices. The prices received index held steady and suggested moderate selling price increases. Firms remained optimistic about future business conditions, though less so than last month, and capital spending plans remained strong.

Manufacturing firms in New York State reported that business activity continued to expand, and at a faster clip than in February. The general business conditions index rose nine points to 22.5. Thirty-eight percent of respondents reported that conditions had improved over the month, while 15 percent reported that conditions had worsened. The new orders index and the shipments index both showed solid growth, with the first index moving up three points to 16.8 and the second climbing fifteen points to 27.0. The unfilled orders index, positive for a third consecutive month, advanced eight points to 12.7, pointing to an ongoing rise in unfilled orders. The delivery time index rose five points to 16.2, a sign that delivery times continued to lengthen. The inventories index was little changed at 5.6, suggesting that inventory levels edged higher." – Richard Deitz and Jason Bram, The Federal Reserve Bank of New York

Source: https://www.newyorkfed.org/survey/empire/empiresurvey_overview; 3/15/18

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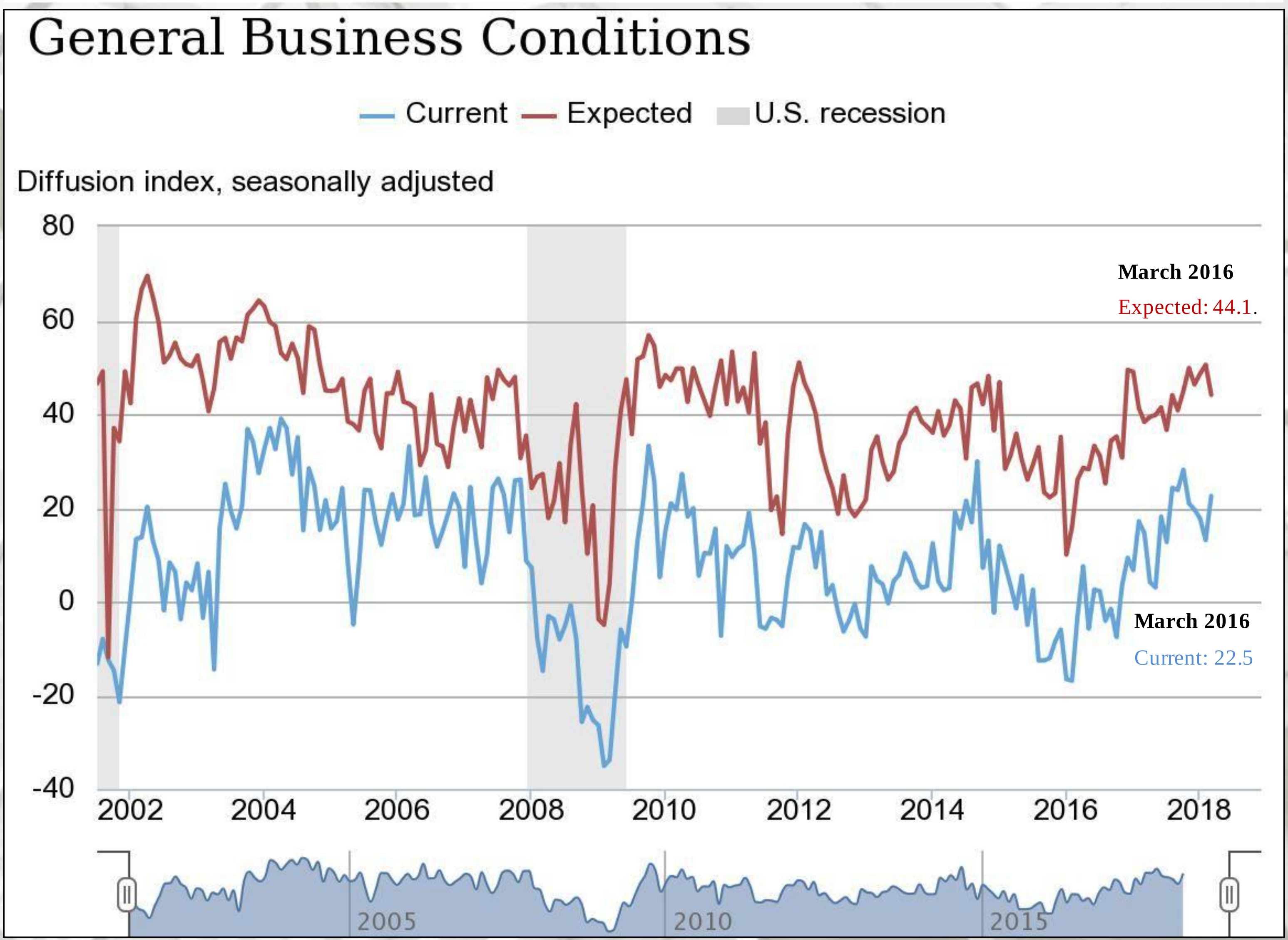

Source: https://www.newyorkfed.org/survey/empire/empiresurvey_overview; 3/15/18

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U.S. Economic Indicators

Empire State Manufacturing Survey

Input Prices Continue to Accelerate

“The index for number of employees held steady at 9.4 and the average workweek index was little changed at 5.9 — readings that together signaled another month of increasing employment levels and hours worked. Input price increases continued to accelerate: the prices paid index edged up to 50.3, setting a new multiyear high. The prices received index held steady at 22.4, a level pointing to ongoing moderate selling price increases.

Firms Remain Optimistic

Looking ahead, firms continued to be optimistic about the six-month outlook, though somewhat less so than last month. The index for future business conditions fell six points to 44.1. Unfilled orders were expected to increase, and inventories were expected to move higher. The index for future prices paid reached its highest level in several years, indicating a widespread expectation that input prices would increase in the months ahead. The capital expenditures index, at 29.4, suggested that firms’ capital spending plans remained strong.” – Richard Deitz and Jason Bram, The Federal Reserve Bank of New York

Source: https://www.newyorkfed.org/survey/empire/empiresurvey_overview; 3/15/18

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U.S. Economic Indicators

Business Leaders Survey (Services)

Expansion Continues

"Activity in the region's service sector expanded modestly, according to firms responding to the Federal Reserve Bank of New York's March 2018 *Business Leaders Survey*. The survey's headline business activity index moved down five points to 11.2, pointing to a somewhat slower pace of growth than in February. The business climate index fell thirteen points to 7.7, signaling that firms, on balance, regarded the business climate as better than normal, though to a lesser extent than last month. The employment index edged up to 17.9, indicating that employment continued to increase at a solid clip. After reaching its highest level in more than a year last month, the wages index was little changed at 43.1, suggesting wages continued to climb. The prices paid index moved down seven points to 49.1, a still-elevated level that indicated widespread input price increases, and the selling price index held near last month's multiyear high. Indexes for the six-month outlook suggested that firms remained optimistic about future conditions, though less so than last month.

Business activity in the region's service sector continued to grow, though at a slower pace than last month. The headline business activity index moved down five points to 11.2. Thirty-eight percent of respondents reported that conditions improved over the month, while 27 percent said that conditions worsened. After reaching a record high in February, the business climate index fell thirteen points to 7.7. While that was lower than last month, it represented the index's fourth consecutive positive reading, and signaled that, on balance, firms viewed the business climate as better than normal." – Jason Bram and Richard Deitz, The Federal Reserve Bank of New York

Source: https://www.newyorkfed.org/medialibrary/media/survey/business_leaders/2018/2018_03blsreport.pdf; 3/16/18

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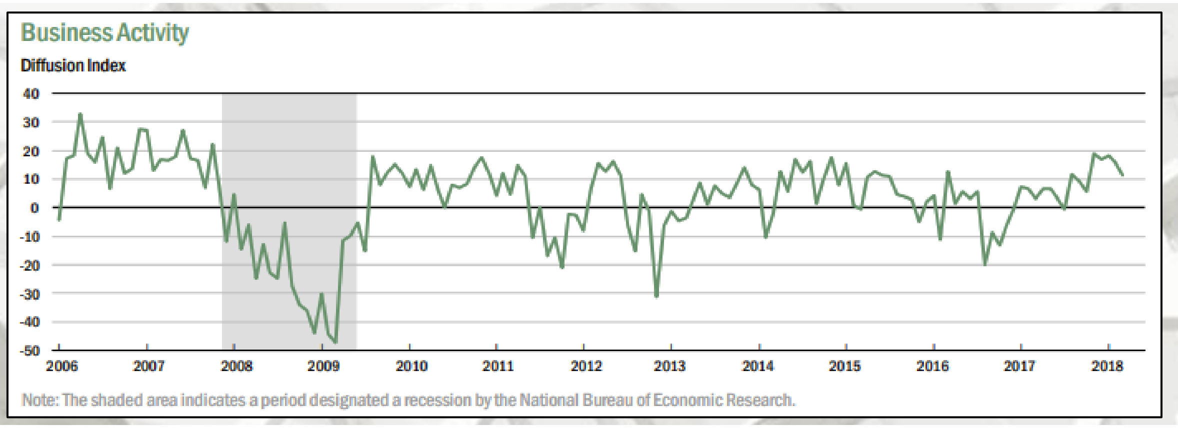

Business Leaders Survey

Selling Prices Increases Continue to Pick Up

"The employment index edged up two points to 17.9, indicating that employment levels continued to increase moderately. The wages index was little changed at 43.1. After reaching a multiyear high last month, the prices paid index fell seven points to 49.1, pointing to ongoing input price increases, though such increases were not quite as widespread as last month. The prices received index inched up to 21.5, again reaching its highest level in more than six years. The capital spending index came in at 17.2, suggesting that capital spending continued to increase.

Firms Remain Optimistic

Businesses remained optimistic about the six-month outlook, though less so than last month. The index for future business activity slipped six points to 43.8, and the index for future business climate fell ten points to 28.6. The index for future employment suggested that respondents expected employment to increase in the months ahead. The index for planned capital spending declined five points to 25.0." – Jason Bram and Richard Deitz, The Federal Reserve Bank of New York

Source: https://www.newyorkfed.org/medialibrary/media/survey/business_leaders/2018/2018_03blsreport.pdf; 3/16/18

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U.S. Economic Indicators

Model Forecast

	2018		2019		2020		2021	
	Mar	Nov	Mar	Nov	Mar	Nov	Mar	Nov
GDP growth (Q4/Q4)	2.1	1.8	1.9	2.1	2.1	2.2	2.1	2.2
Core PCE inflation (Q4/Q4)	1.8	1.3	1.5	1.4	1.6	1.5	1.7	1.7
Real natural rate of interest (Q4)	1.0	0.8	1.2	1.1	1.4	1.2	1.4	1.4

The New York Fed DSGE Model Forecast – March 2018

"… The March model forecast for 2018–21 is summarized in the table below, alongside the November 2017 forecast for the same period, and in the charts that follow. The model uses quarterly macroeconomic data released through the fourth quarter of 2017 and available financial data and staff forecasts through February 21, 2018." – Michael Cai, Marco Del Negro, Abhi Gupta, and Pearl Li, The Federal Reserve Bank of New York

Source: http://libertystreeteconomics.newyorkfed.org/2018/03/the-new-york-fed-dsge-model-forecast-march-2018.html; 3/9/18

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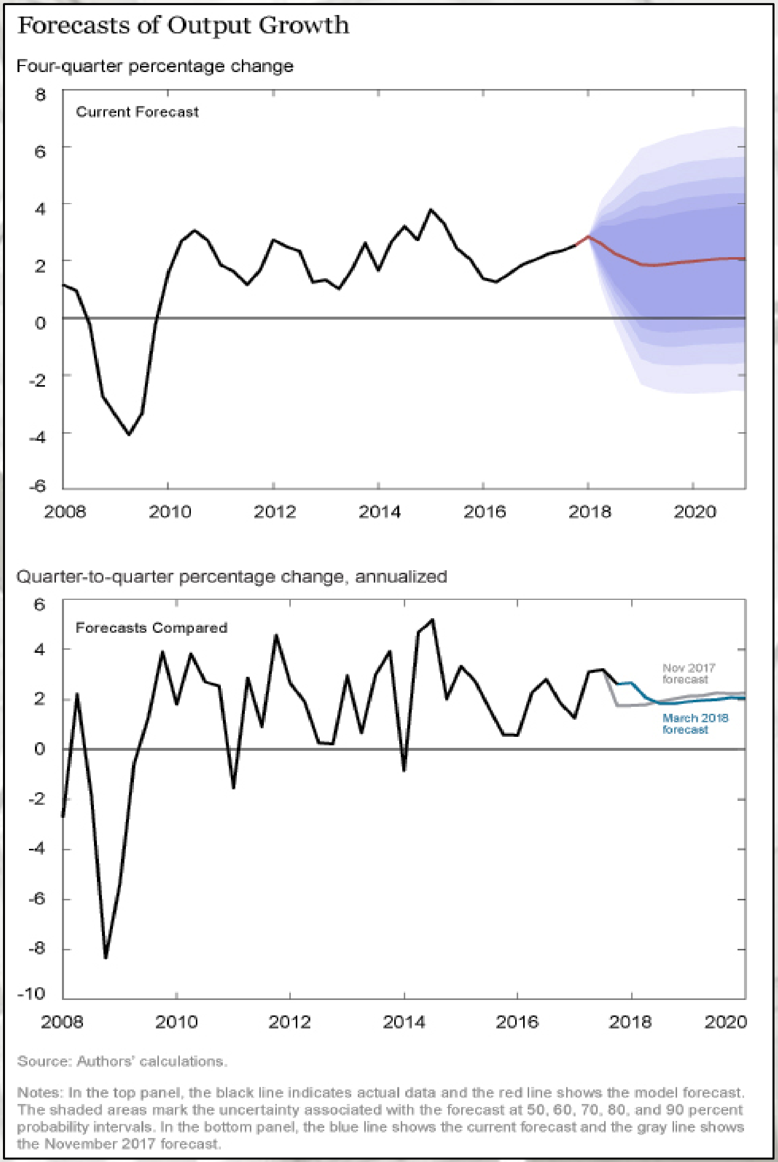

Source: http://libertystreeteconomics.newyorkfed.org/2018/03/the-new-york-fed-dsge-model-forecast-march-2018.html; 3/9/18

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U.S. Economic Indicators

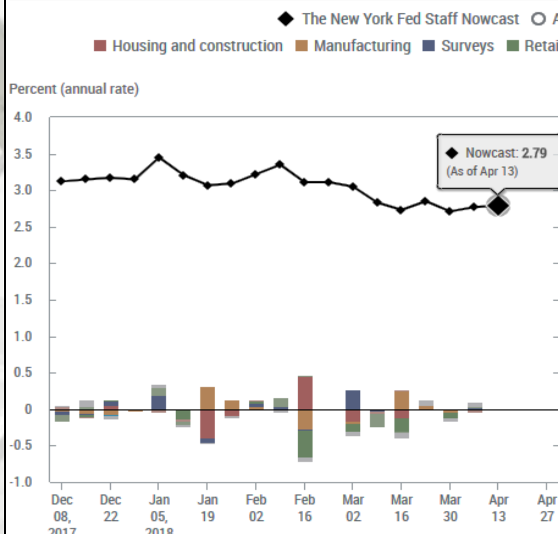
The Federal Reserve Bank of New York Nowcast

Apr 13, 2018: New York Fed Staff Nowcast

- The New York Fed Staff Nowcast stands at 2.8% for 2018:Q1 and 2.9% for 2018:Q2.
- This week's data releases left the nowcast for both quarters broadly unchanged.

2018:Q2 | **2018:Q1** | 2017:Q4 | 2017:Q3

Last Release 11:15am EST Apr 13, 2018



Expand

Data Flow (Apr 13, 2018)

Model Update	Release Date	Data Series	Actual	Impact	Nowcast GDP Growth
Apr 13					2.79
	10:00AM Apr 13	JOLTS: Total job openings	-176.00	0.00	
	8:30AM Apr 12	Export price index	0.32	-0.00	
	8:30AM Apr 12	Import price index	0.00	-0.00	
	8:30AM Apr 11	CPI-U: All items less food and energy	0.18	0.00	
	8:30AM Apr 11	CPI-U: All items	-0.06	-0.01	
	8:30AM Apr 10	PPI: Final demand	0.26	0.00	
		Data revisions		0.02	
Apr 06					2.77

Source: Authors' calculations, based on data accessed through Haver Analytics.

Notes: We start reporting the Nowcast for a reference quarter about one month before the quarter begins; we stop updating it about one month after the quarter closes. Colored bars reflect the impact of each broad category of data on the Nowcast; the impact of specific data releases is shown in the accompanying table.

April 13, 2018: Highlights

- "The New York Fed Staff Nowcast stands at 2.8% for 2018:Q1 and 2.9% for 2018:Q2.
- This week's data releases left the nowcast for both quarters broadly unchanged." – The Federal Reserve Bank of New York

Source: https://www.newyorkfed.org/research/policy/nowcast; 4/13/18

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U.S. Economic Indicators

March 2018 Manufacturing Business Outlook Survey

Current Indicators Suggest Continued Growth

Results from the March Manufacturing Business Outlook Survey suggest continued growth for the region’s manufacturing sector. Although the survey’s index for general activity moderated, the indexes for new orders and shipments improved. The survey’s future indexes, measuring expectations for the next six months, reflected continued optimism.

Summary

“Responses to the March *Manufacturing Business Outlook Survey* suggest continued growth for the region’s manufacturing sector. The indexes for general activity, new orders, shipments, and employment all indicated continued expansion this month. In responses to special questions, the firms reported difficulties finding skilled workers, especially those with specific machine and tool skills, and over half of the firms are raising wages to address these shortages. Looking ahead six months, the firms continued to be optimistic about the outlook for manufacturing in the region.” – Mike Trebing, Senior Economic Analyst, The Federal Reserve Bank of Philadelphia

Source: https://www.philadelphiafed.org/research-and-data/regional-economy/business-outlook-survey/2018/bos0318; 3/15/18

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U.S. Economic Indicators

March 2018 Manufacturing Business Outlook Survey

"The diffusion index for current general activity remained positive but declined, from 25.8 in February to 22.3 this month (see Chart 1). Nearly 37 percent of the manufacturers reported increases in overall activity this month, while 14 percent reported decreases. The indexes for current new orders and shipments recorded notable improvements this month. The current new orders index increased 11 points, with 52 percent of the firms reporting an increase in new orders. The shipments index increased 17 points. The indexes for unfilled orders and delivery times were positive and increased 6 points and 10 points, respectively. Inventories were higher this month: The current inventories index increased from -0.9 to 16.5.

The firms continued to report increases in employment. Nearly 35 percent of the responding firms reported increases in employment, while 9 percent reported decreases this month. The current employment index edged slightly higher to 25.6, its highest reading in five months.

Firms Report Cost Pressures

Price increases for purchased inputs were reported by 44 percent of the manufacturers this month. The prices paid diffusion index fell 2 points to 42.6 but remains near last month's reading, which was the highest since 2011. The current prices received index, reflecting the manufacturers own prices, declined 3 points to a reading of 20.7." – Mike Trebing, Senior Economic Analyst, The Federal Reserve Bank of Philadelphia

Source: https://www.philadelphiafed.org/research-and-data/regional-economy/business-outlook-survey/2018/bos0318; 3/15/18

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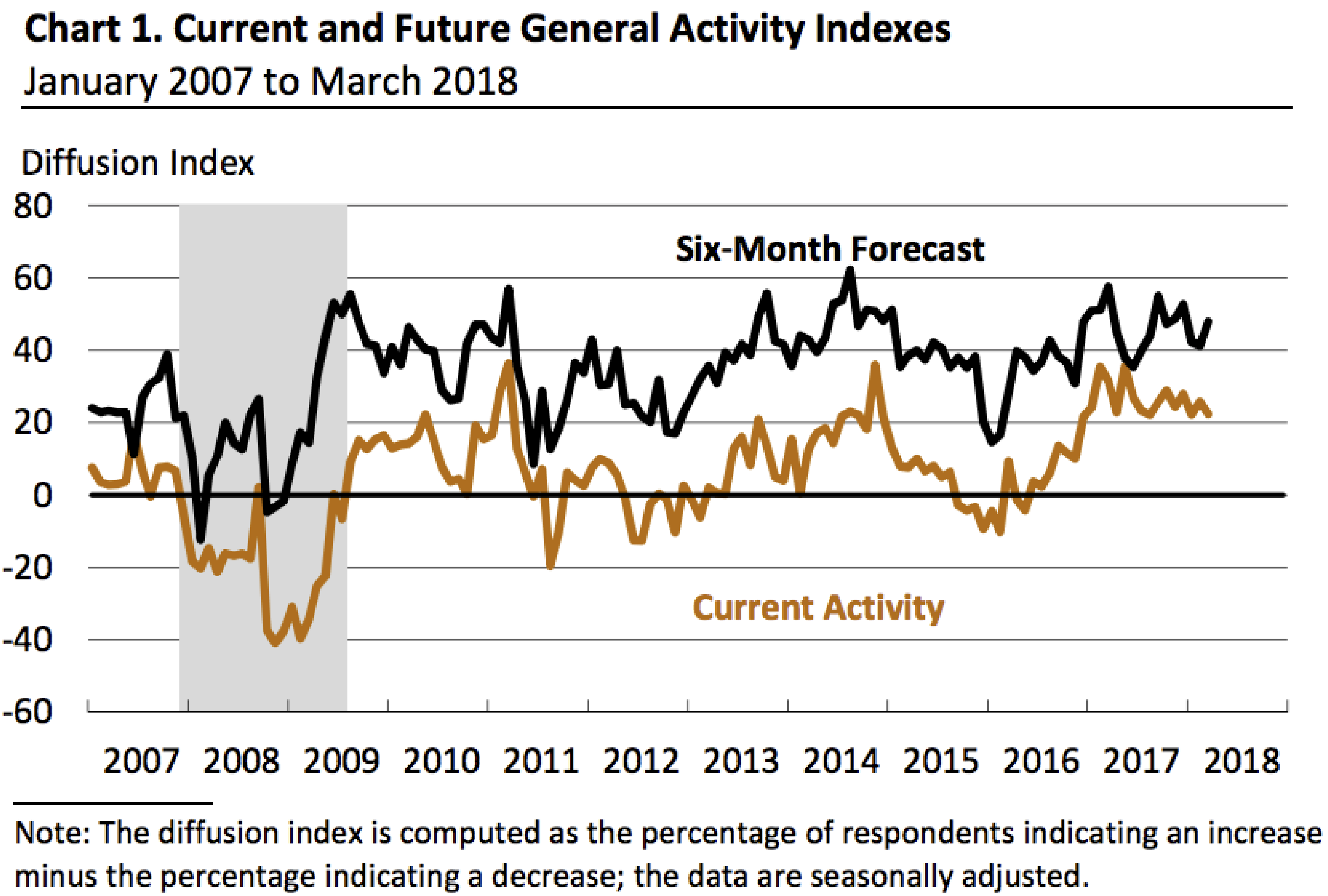
U.S. Economic Indicators



Source: https://www.philadelphiafed.org/research-and-data/regional-economy/business-outlook-survey/2018/bos0318; 3/15/18

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U.S. Economic Indicators

March 2018 Manufacturing Business Outlook Survey

Firms Remain Optimistic

"The diffusion index for future general activity increased from 41.2 in February to 47.9 this month (see Chart 1). Nearly 58 percent of the firms expect increases in activity over the next six months, while 10 percent expect declines. The future new orders and shipments indexes remain at high readings but fell this month: The future new orders index fell less than 1 point, while the future shipments index fell 8 points. Nearly 64 percent of the firms expect price increases for purchased inputs over the next six months, while 54 percent expect higher prices for their own manufactured goods. The future prices received index is now at its highest reading since December 1988.

Firms Report Difficulties Finding Skilled Workers in Tight Labor Market

In special questions this month, firms were asked about current conditions in the labor market. The firms were asked generally about worker shortages, any perceived mismatch between skill requirements and labor supply, and how they were dealing with such skills shortages. Nearly 64 percent of the firms reported labor shortages, while a higher percentage (70 percent) indicated skills mismatches between requirements and available labor. These percentages were slightly higher than the responses the last time the questions were asked in March 2017. Nearly 48 percent of the surveyed firms also reported that they had positions that have remained vacant for more than 90 days.

The scope of the perceived labor and skills shortages were evident in responses to specific questions about hiring difficulties. Over 41 percent of the firms indicated a significant shortage in qualified applicants for some skills and positions, while 35 percent of the firms said they were seeing a tightening labor market, but it was still possible to fill positions." – Mike Trebing, Senior Economic Analyst, The Federal Reserve Bank of Philadelphia

Source: https://www.philadelphiafed.org/research-and-data/regional-economy/business-outlook-survey/2018/bos0318; 3/15/18

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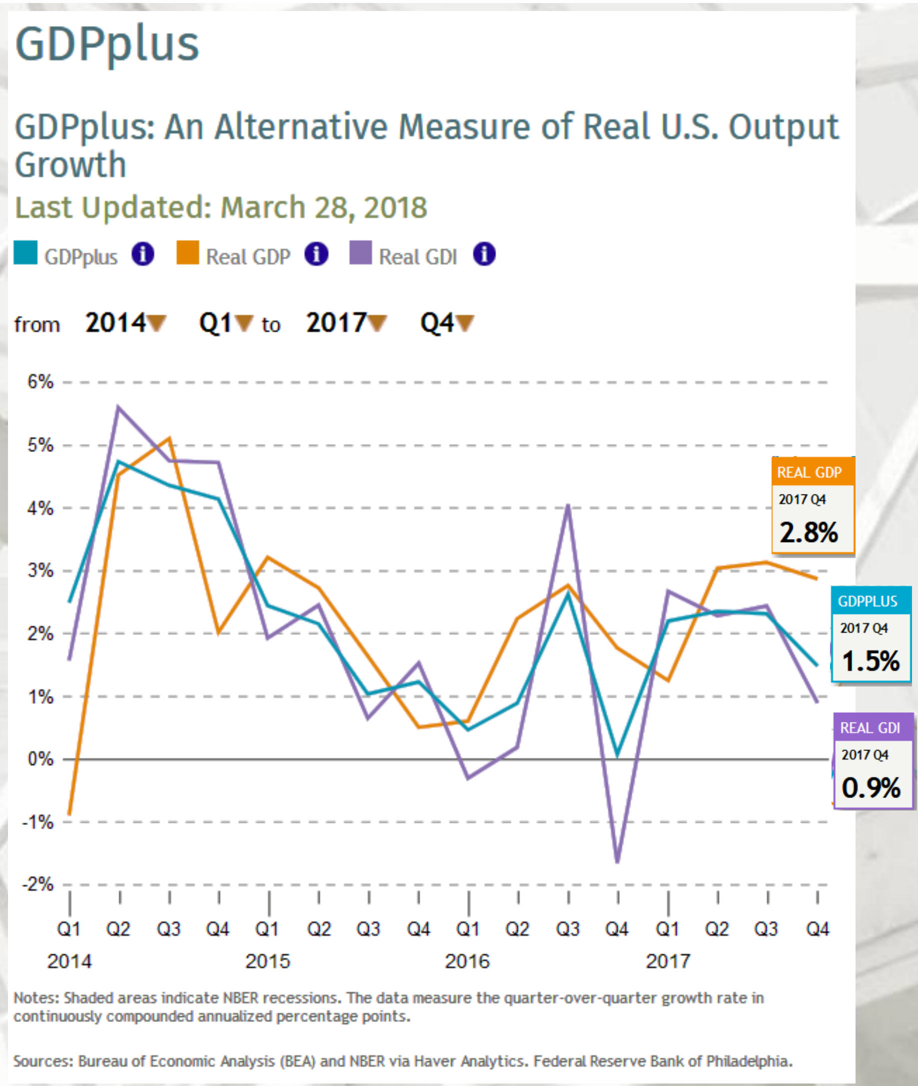
Philadelphia Fed: GDPplus



Source: https://philadelphiafed.org/research-and-data/real-time-center/gdpplus/; 3/28/18

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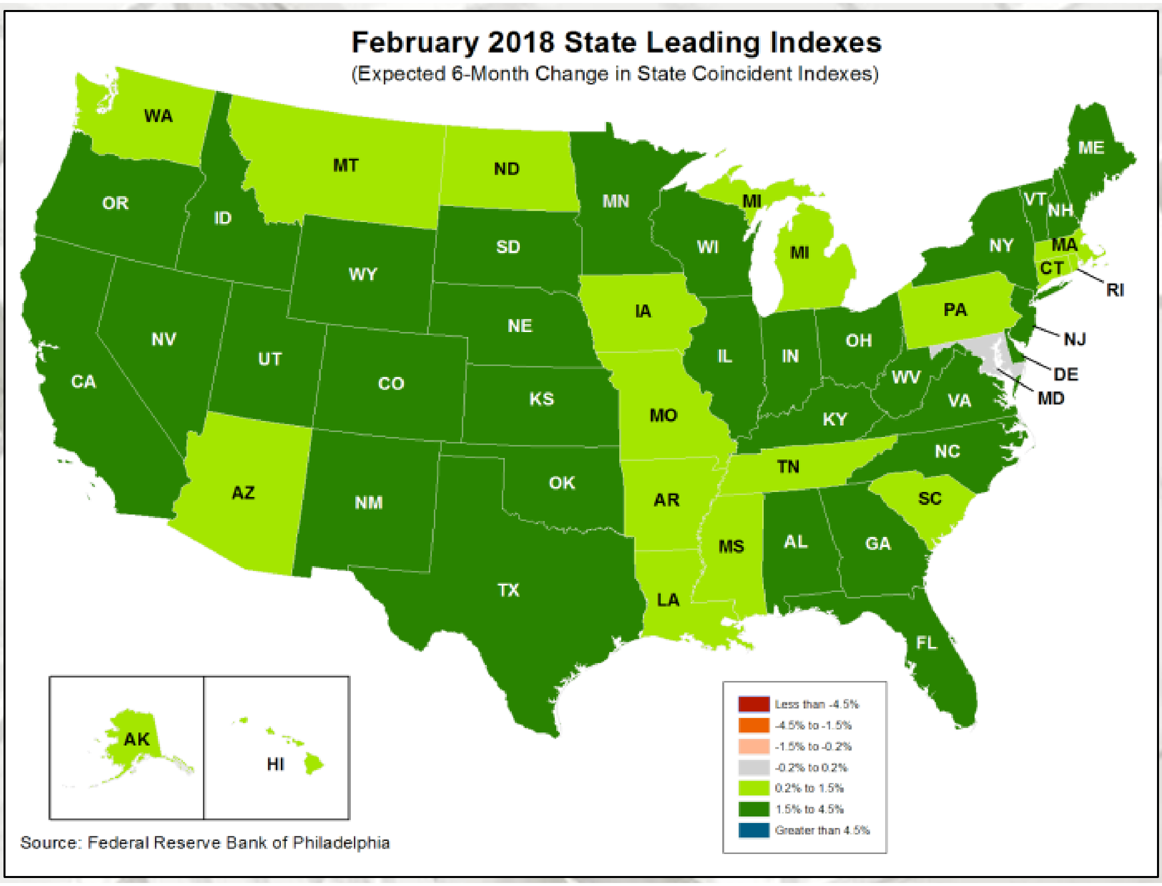
Philadelphia Fed



"The Federal Reserve Bank of Philadelphia has released the leading indexes for the 50 states for February 2018. The indexes are a six-month forecast of the state coincident indexes (also released by the Bank). All 50 state coincident indexes are projected to grow over the next six months. For comparison purposes, the Philadelphia Fed has also developed a similar leading index for its U.S. coincident index, which is projected to grow 1.6 percent over the next six months." – Daniel Mazone, The Federal Reserve Bank of Philadelphia

Source: https://www.philadelphiafed.org/-/media/research-and-data/regional-economy/indexes/leading/2018/LeadingIndexes0218.pdf; 4/13/18

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U.S. Economic Indicators

The Federal Reserve Bank of Richmond

Fifth District Manufacturing Firms Reported Sluggish Growth in March

"Fifth District manufacturing expanded at a slower pace in March, according to the most recent survey results from the Federal Reserve Bank of Richmond. The composite index dropped from a particularly strong reading of 28 in February to 15 in March as each of the three components (shipments, new orders, and employment) fell. However, for each of these variables, a larger share of firms predicted growth in six months than had in February. Firms reported weaker growth in capital expenditures in March but saw an uptick in growth of business services expenditures.

The survey's employment measures suggested slower growth in March. While the availability of skills index increased in March, it remained in negative territory indicating that skills shortages persisted. Firms anticipate stronger growth in all employment measures in the coming months.

District manufacturers saw higher growth in prices paid in March, but growth in prices received slowed slightly. However, firms expected to see accelerating price increases for both prices paid and received in the next six months." – Jeannette Plamp, Economic Analyst, The Federal Reserve Bank of Richmond

Source: https://www.richmondfed.org/research/regional_economy/surveys_of_business_conditions/manufacturing/2018/mfg_03_27_18; 3/27/18

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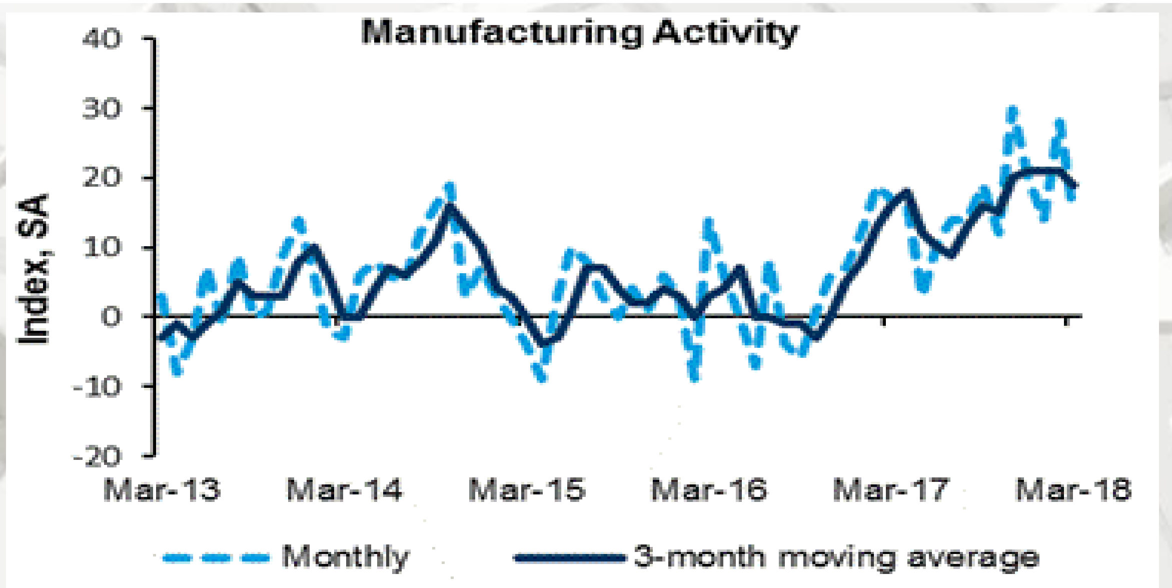
U.S. Economic Indicators



Source: https://www.richmondfed.org/research/regional_economy/surveys_of_business_conditions/manufacturing/2018/mfg_03_27_18; 3/27/18

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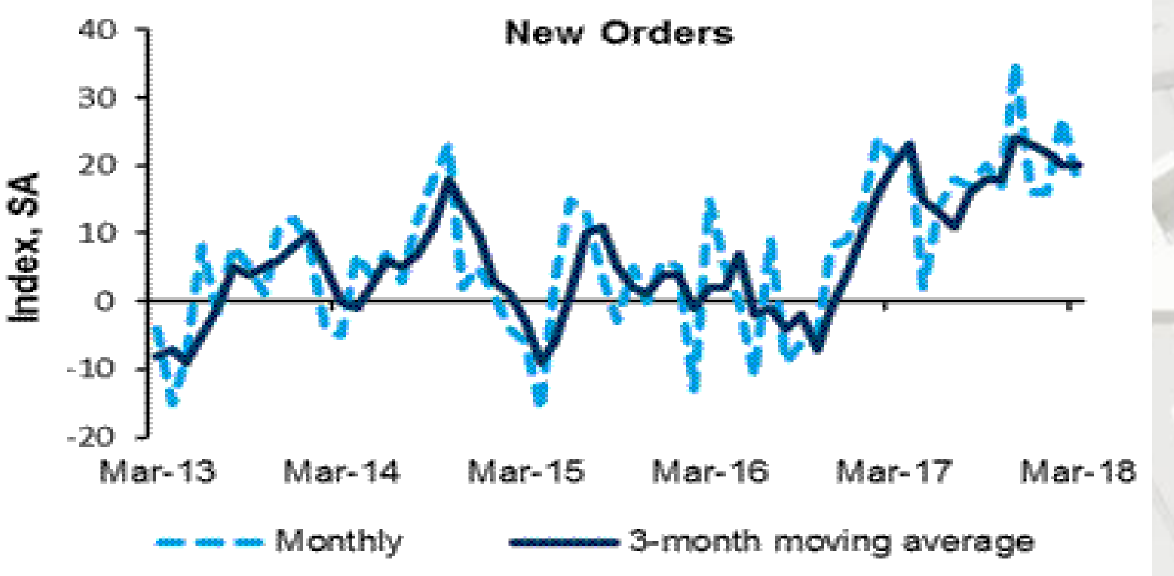
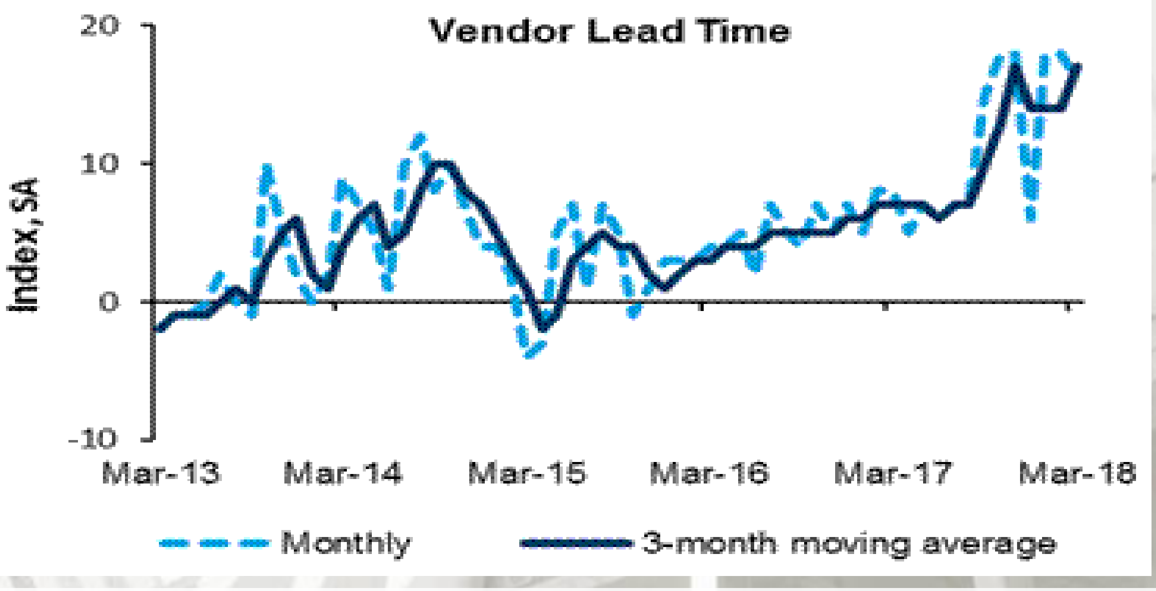
U.S. Economic Indicators





Source: https://www.richmondfed.org/research/regional_economy/surveys_of_business_conditions/manufacturing/3018/mfg_03_37_18; 3/37/18

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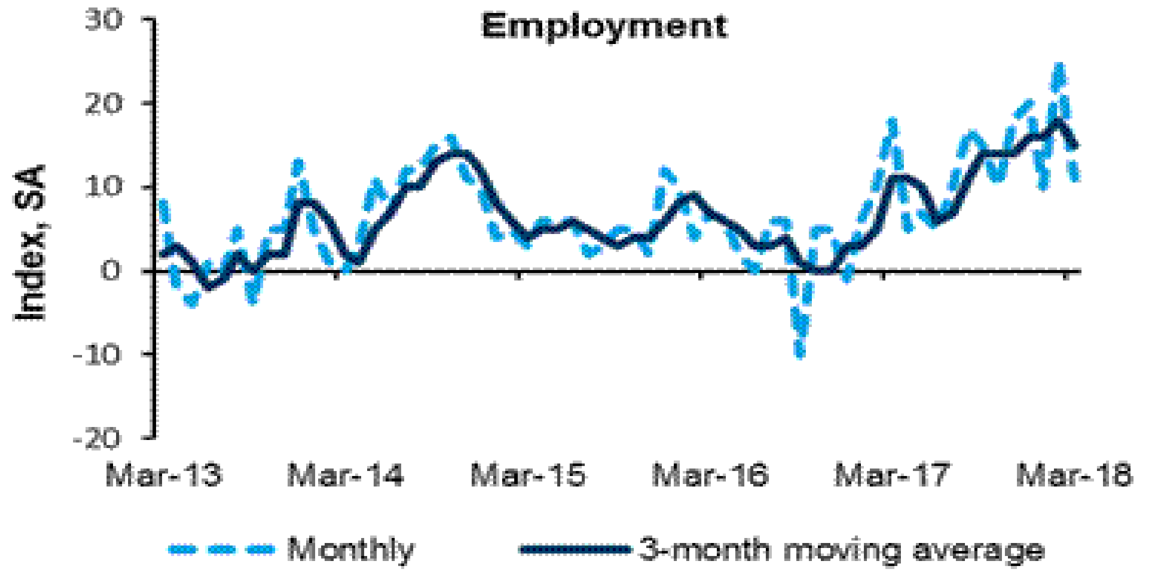
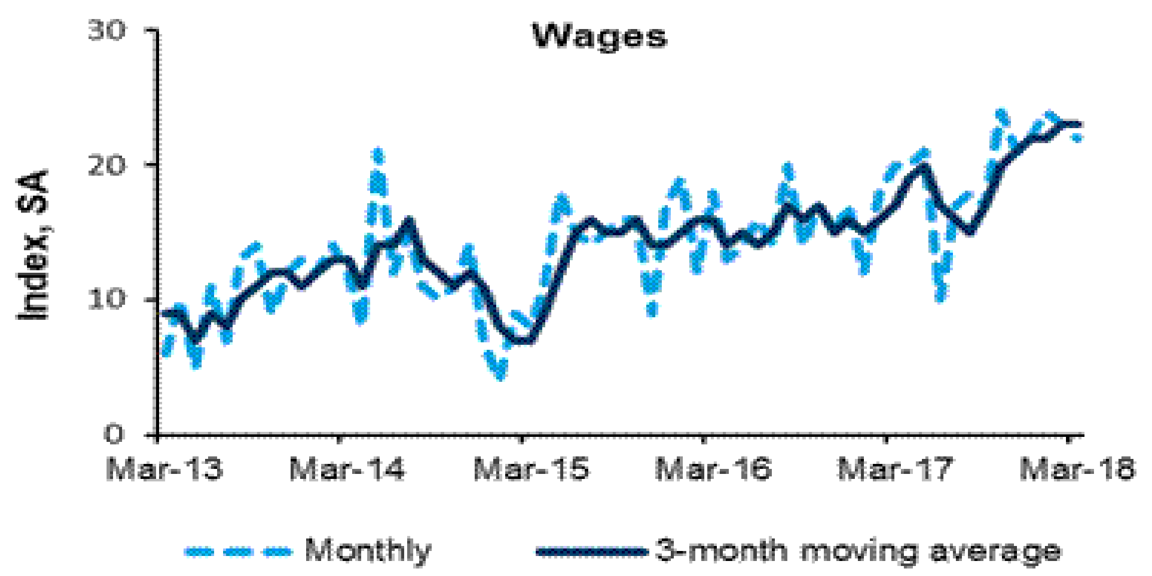
U.S. Economic Indicators





Source: https://www.richmondfed.org/research/regional_economy/surveys_of_business_conditions/manufacturing/2018/mfg_03_27_18; 3/27/18

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U.S. Economic Indicators

The Federal Reserve Bank of San Francisco

FRBSF FedViews

- "Driven largely by robust consumer spending, real GDP grew at an annual rate of 2.5% in the fourth quarter of 2017, according to the latest Bureau of Economic Analysis estimate. We expect similar growth in 2018, bolstered in part by recent tax cut legislation. Growth is likely to moderate over the following few years toward our estimate of sustainable potential output growth of around 1.7%.
- The labor market remains strong. The January unemployment rate remained at 4.1%, below our estimate of its natural level of 4.75%. Going forward, we expect the rate to fall to around 3.5% in late 2019 before gradually returning to its natural level.
- Inflation recently moved up gradually toward the Federal Open Market Committee's 2% target, consistent with the strengthening of the labor market. We expect year-over-year core personal consumption expenditures price inflation, which excludes volatile food and energy prices, to reach 2% by the end of 2019.
- Interest rates have increased notably in recent months, consistent with the gradual removal of monetary policy accommodation. Interest rates may also be responding to expected increases in the federal budget deficit and recent data pointing to higher inflation.
- The recently passed Tax Cuts and Jobs Act (TCJA) represents a major fiscal expansion. The Joint Committee on Taxation estimates that the Act will reduce federal budget revenues over the next decade by $1.5 trillion before accounting for any macroeconomic feedback effects. More than half of this cost, and the associated stimulus to the economy, will occur in the first three years." – Daniel Wilson, Research Advisor, The Federal Reserve Bank of San Francisco

Source: https://www.frbsf.org/economic-research/publications/fedviews/2018/march/march-08-2018 ; 3/8/18

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U.S. Economic Indicators

The Federal Reserve Bank of San Francisco

FRBSF FedViews

- "The TCJA made significant changes to individual taxes, introducing new brackets and rates, repealing the personal exemption, and doubling the standard deduction. The TCJA also places limits on the deductibility of mortgage interest and state and local tax payments and introduces a deduction of up to 20% of income derived from so-called pass-through businesses. The TCJA makes other large changes to the corporate tax system, most significantly by reducing the corporate tax rate from 35% to 21%. Another notable change is the temporary allowance of full capital expensing, which is likely to boost capital spending over the next few years.
- We expect these changes to individual and corporate taxes to provide a temporary boost to GDP growth over the next three years. Based on the particular features of the Act and our reading of the empirical research on past major tax reforms, we forecast that the TCJA will boost real GDP cumulatively by about 0.9 percentage point by 2020, with most of the boost occurring this year." – Daniel Wilson, Research Advisor, The Federal Reserve Bank of San Francisco

Source: https://www.frbsf.org/economic-research/publications/fedviews/2018/march/march-08-2018 ; 3/8/18

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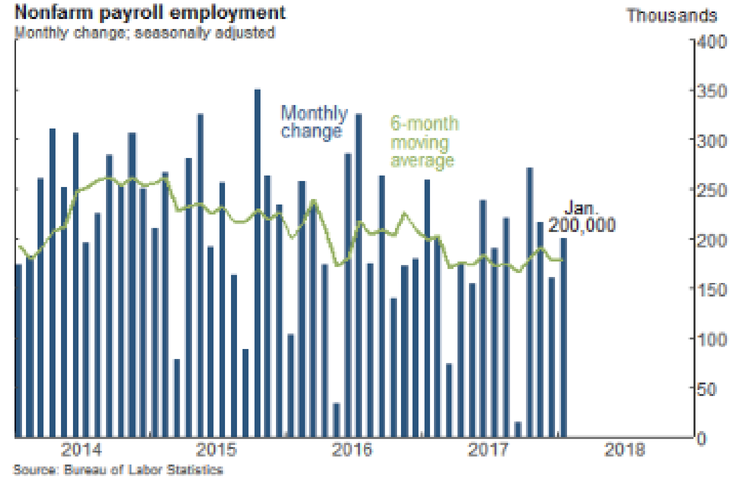
U.S. Economic Indicators

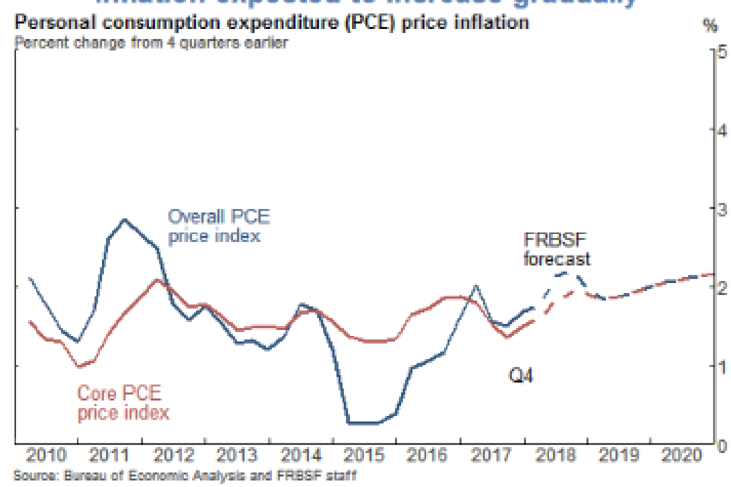
Above trend growth continues

Job growth remains strong



Unemployment below natural rate

Inflation expected to increase gradually



Source: https://www.frbsf.org/economic-research/publications/fedviews/2018/march/march-08-2018 ; 3/8/18

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Global Economic Indicators

The Federal Reserve Bank of Dallas

Fourth-Quarter Growth Revised Down; 2018 Outlook Still Healthy

"Although fourth-quarter Mexico gross domestic product (GDP) growth was revised lower, performance was still strong, and this bodes well for 2018. The recent period contrasts with overall lackluster activity in 2017. GDP grew at its slowest pace in four years, just 1.5 percent (four-quarter change), according to the second estimate. The consensus growth forecast for 2018 is 2.3 percent.

More recent data are mixed. Retail sales fell to end 2017, and exports and industrial production dipped to begin 2018, but employment continued growing. Inflation declined in February, and the peso strengthened against the dollar.

Fourth-Quarter Output Growth Still Solid Following Downward Revision

The Mexican economy faces several sources of continued uncertainty – notably the NAFTA renegotiation and the presidential election in July. While political headwinds abound, there is reason for optimism. Inflation is expected to drop to 3.6 percent by year-end, according to a Banco de México consensus forecast. Labor markets are likely to remain tight. Unfortunately, investment is unlikely to recover absent clarity on NAFTA and the election. Public investment may contract further as fiscal consolidation continues. The Banco de México consensus GDP growth forecast for 2018 calls for a slight acceleration in activity to 2.3 percent annual average growth." – Jesus Cañas, Senior Business Economist and Alexander Abraham, Economic Programmer, Research Department, The Federal Reserve Bank of Dallas

Source: https://www.dallasfed.org/research/update/mex/2018/1802.aspx; 3/28/18

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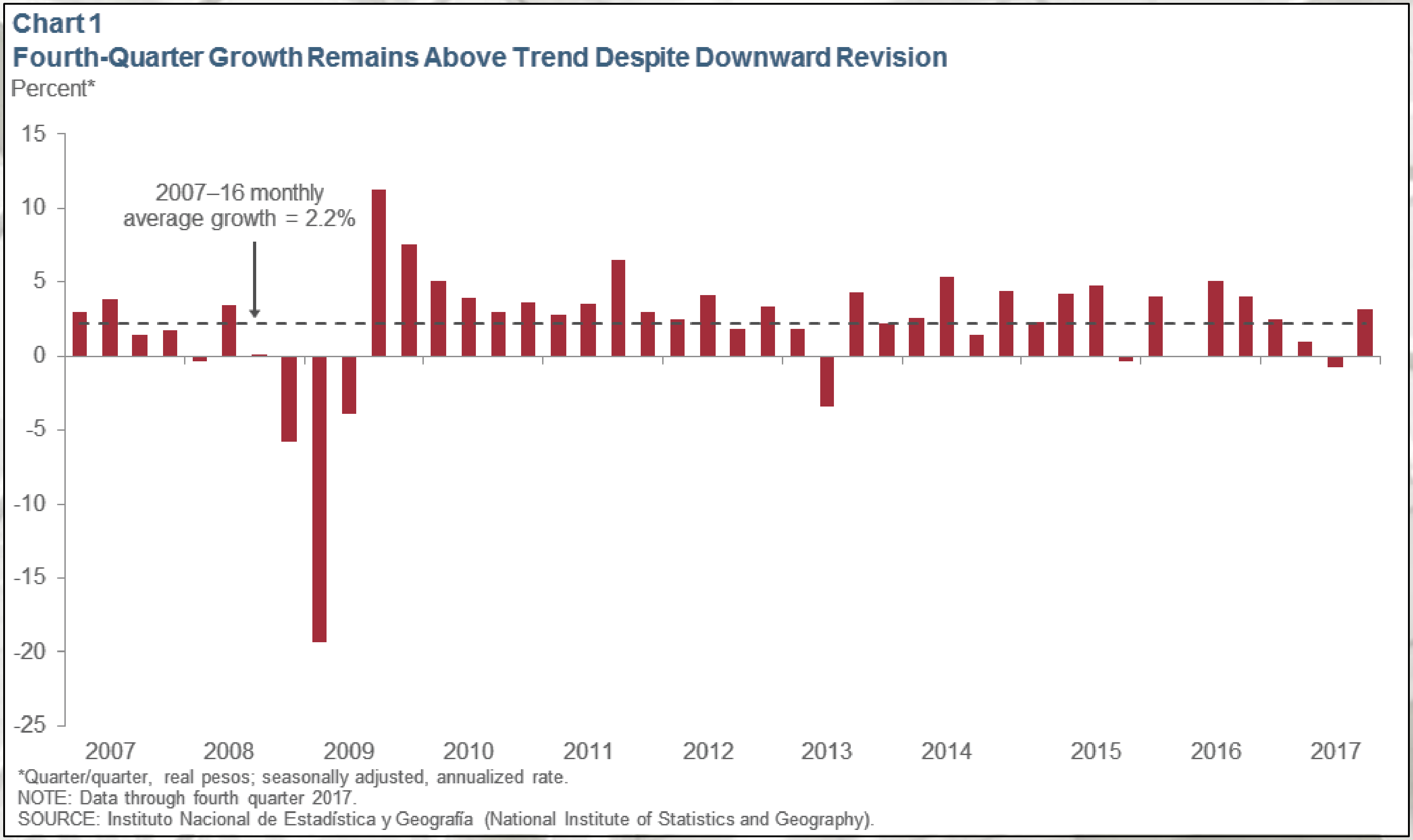
Global Economic Indicators



Source: https://www.dallasfed.org/research/update/mex/2018/1802.aspx; 3/28/18

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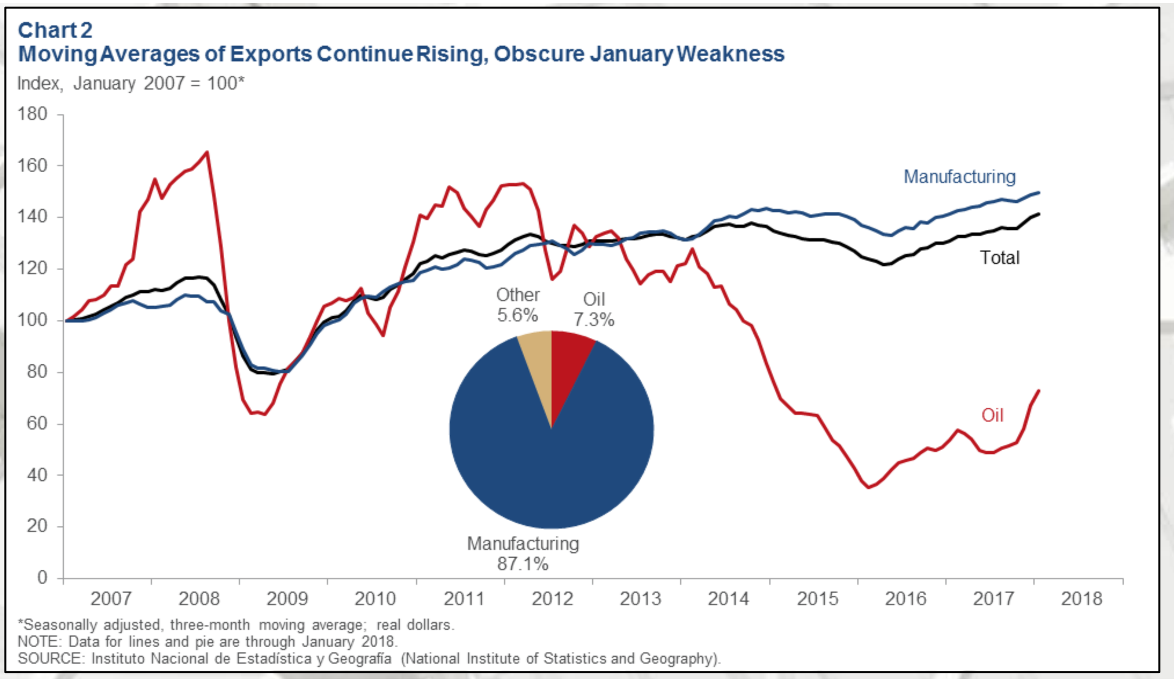
Global Economic Indicators



The Federal Reserve Bank of Dallas

Export Growth Weakens in January Following Recent Positive Momentum

"Total exports fell 2.5 percent in January after growing for two months. Manufactured goods exports fell 2.2 percent, and oil exports slid 9.6 percent. Strong readings in previous months, however, boosted all three-month moving averages (Chart 2). Compared with January 2017, total exports increased 7.3 percent, manufacturing exports rose 5.3 percent, and oil exports climbed 22.4 percent. The rise in oil exports over 2017 and into early 2018 stems largely from higher oil prices, not an increased volume of exports." – Jesus Cañas, Senior Business Economist and Alexander Abraham, Economic Programmer, The Federal Reserve Bank of Dallas

Source: https://www.dallasfed.org/research/update/mex/2018/1802.aspx; 3/28/18

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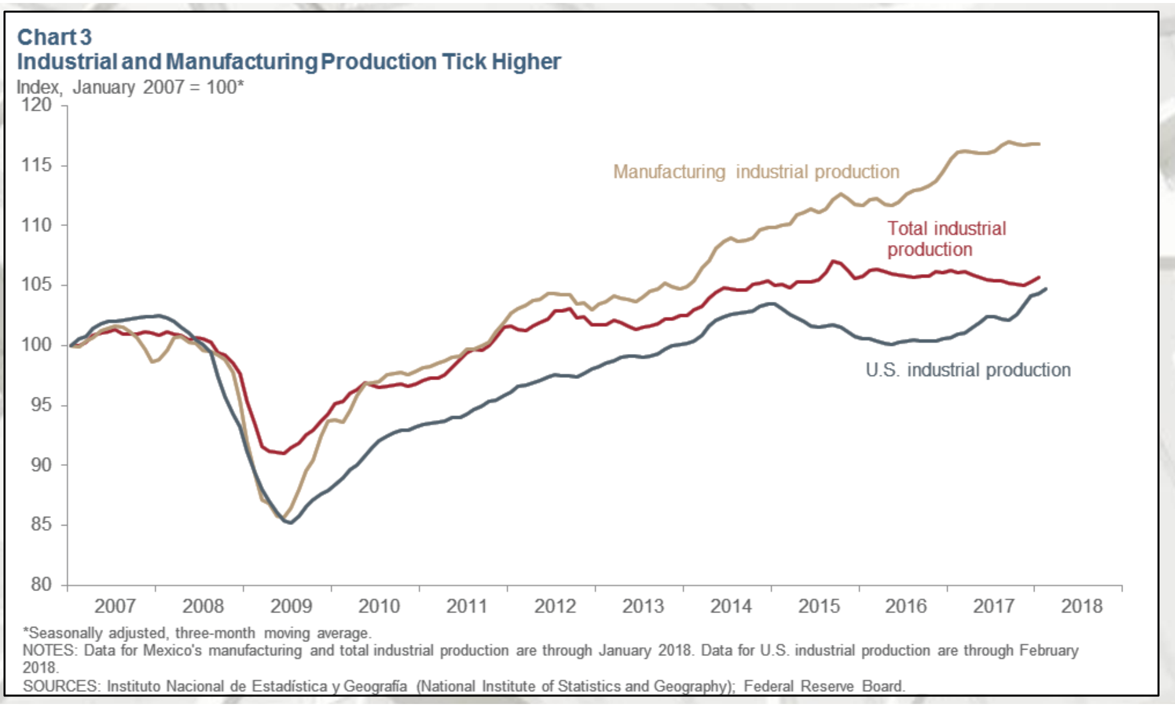
Global Economic Indicators



The Federal Reserve Bank of Dallas

Industrial Production Flat; Manufacturing Down in January

"Mexico's industrial production (IP), which includes manufacturing, construction, oil and gas extraction, and utilities, was flat in January after rising 1 percent in December. Manufacturing IP fell 0.5 percent in January after little change in December. The moving average ticked up for IP but was flat for manufacturing (Chart 3). In the U.S., IP dipped 0.3 percent in January but grew 1 percent in February." – Jesus Cañas, Senior Business Economist and Alexander Abraham, Economic Programmer, The Federal Reserve Bank of Dallas

Source: https://www.dallasfed.org/research/update/mex/2018/1802.aspx; 3/28/18

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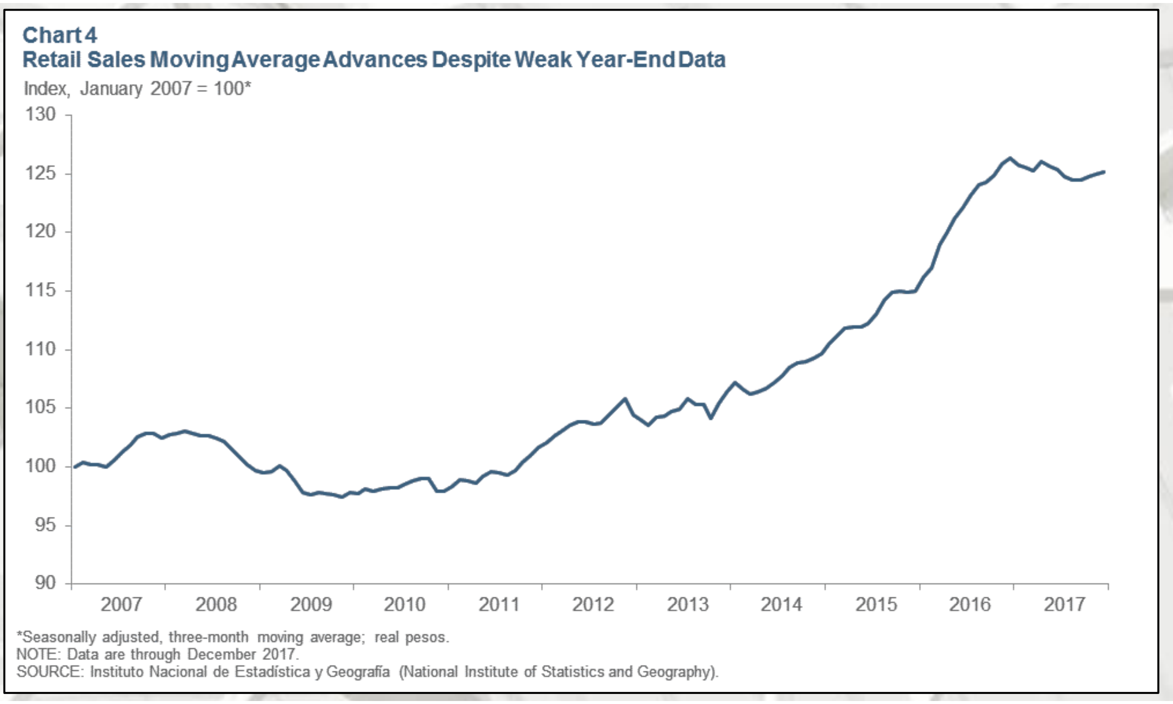
Global Economic Indicators



The Federal Reserve Bank of Dallas

Retail Sales Slip in December

"Retail sales dipped 0.5 percent in December after falling 0.2 percent in November. However, the moving average still ticked up for a third consecutive month (Chart 4). Over the year, retail sales fell 1.2 percent (December over December). Sales were pressured in 2017 by high inflation (which pushed prices higher and real wages lower), increased interest rates that raised the cost of credit and depressed consumer confidence. Consumer confidence inched down in January and February 2018." – Jesus Cañas, Senior Business Economist and Alexander Abraham, Economic Programmer, The Federal Reserve Bank of Dallas

Source: https://www.dallasfed.org/research/update/mex/2018/1802.aspx; 3/28/18

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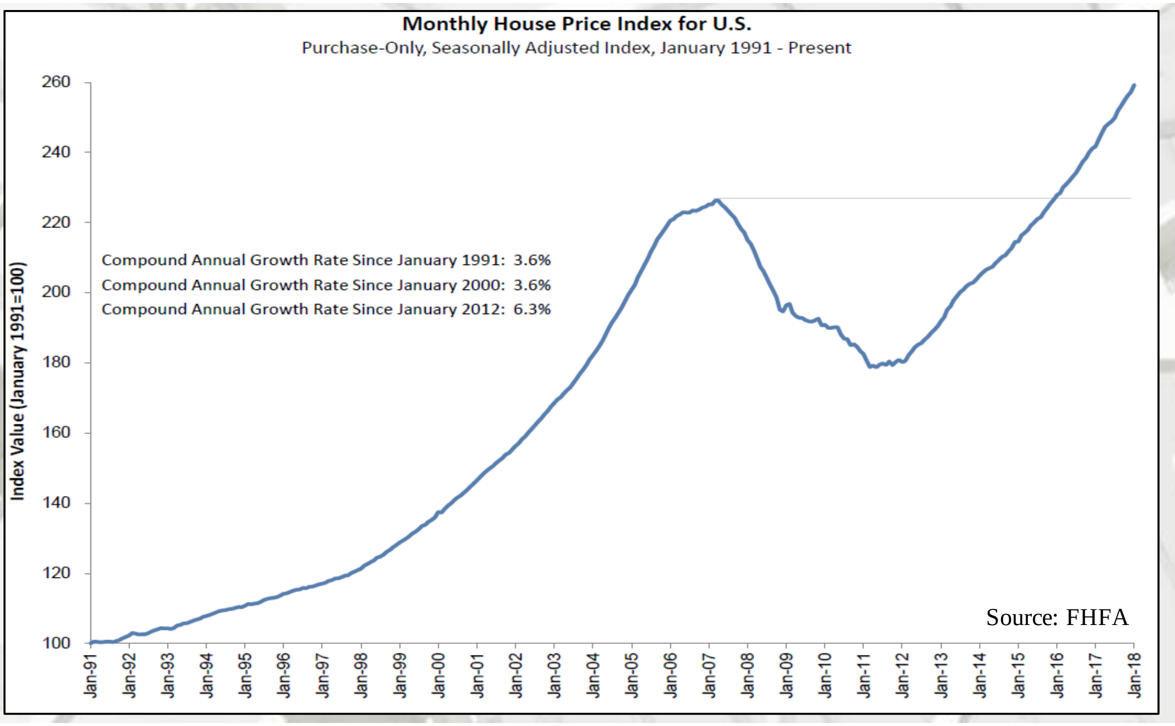
U.S. Economic Indicators



FHFA House Price Index

FHFA House Price Index Up 0.8 Percent in January

"U.S. house prices rose in January, up **0.8 percent** from the previous month, according to the Federal Housing Finance Agency (FHFA) seasonally adjusted monthly House Price Index (HPI). The previously reported 0.3 percent increase in December was revised upward to 0.4 percent.

For the nine census divisions, seasonally adjusted monthly price changes from December 2017 to January 2018 ranged from **-0.7 percent** in the West South Central division to **+1.2 percent** in the New England and Pacific divisions. The 12-month changes were all positive, ranging from **+5.1 percent** in the West South Central division to **+10.0 percent** in the Mountain division." – Stefanie Johnson and Corinne Russell, FHFA

Source: https://www.fhfa.gov/AboutUs/Reports/ReportDocuments/monthlyHPI_March222018.pdf; 3/22/18

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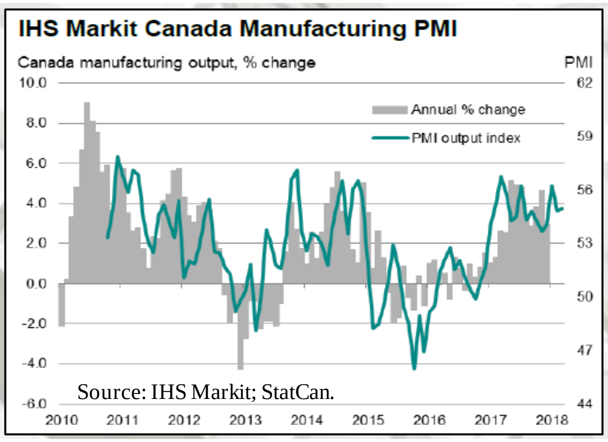
Private Indicators: Global



Markit Canada Manufacturing PMI™

"Adjusted for seasonal influences, the **IHS Markit Canada Manufacturing Purchasing Managers' Index® (PMI™)** registered 55.7, little-changed from 55.6 in February and above the neutral 50.0 threshold for the twenty-fifth consecutive month.

Strong manufacturing growth maintained, but cost inflation highest since April 2014

Canadian manufacturers signalled a robust improvement in business conditions during March, which continued the positive trends seen throughout the first quarter of 2018. Robust manufacturing growth was achieved again in March, driven by strong domestic sales as well as supportive global economic conditions. The forward-looking survey indicators also remain positive, most notably the elevated rates of input buying and inventory accumulation reported across the manufacturing sector in March.

The headline PMI reading in March was supported by a robust and accelerated rise in production volumes across the manufacturing sector. A number of survey respondents noted that strong client demand had resulted in efforts to boost production capacity at their plants.

Intense supply chain pressures and sharply rising raw material costs have been key headwinds for Canadian manufacturing companies so far this year. The latest survey indicated that input price inflation was the highest for around four years, reflecting strong cost pressures for end users of steel and chemicals in particular." – Tim Moore, Associate Director at Survey Compilers, IHS Markit

Source: https://www.markiteconomics.com/Survey/PressRelease.mvc/e8928e17585e4af9a722b0cd43399c67; 34/2/18

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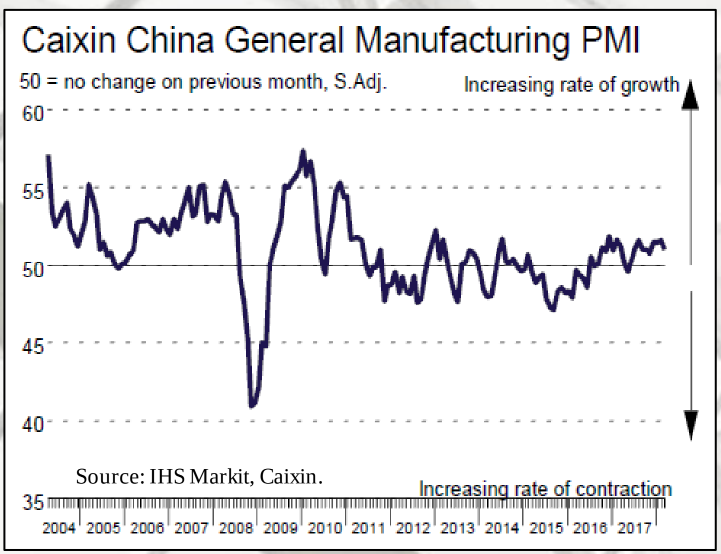
Private Indicators: Global



Caixin China General Manufacturing PMI™

Manufacturing PMI dips to four-month low in March

"Adjusted for seasonal factors, the headline Purchasing Managers' Index™ (PMI™) – a composite indicator designed to provide a single-figure snapshot of operating conditions in the manufacturing economy – posted 51.0 in March, down from 51.6 in February. Although the reading signalled a further improvement in the health of the sector, the latest upturn was only slight and the weakest recorded since last November.

Chinese manufacturing companies signalled only a marginal improvement in overall operating conditions at the end of the first quarter. Production and total new orders both expanded at the weakest rates for four months, while export sales increased only marginally. At the same time, staff numbers declined at the quickest pace since last August amid reports of cost-cutting plans. Overall inflationary pressures meanwhile cooled further, with input costs increasing at the slowest rate for nine months, while firms raised their selling prices only modestly. Encouragingly, confidence towards growth prospects improved to a one-year high amid forecasts of greater investment and expectations of better market conditions.

Overall, the manufacturing PMI reading in March showed that demand was not as strong as expected, leading to lower willingness of manufacturers to produce and restock. However, the ability of manufacturers to make a profit was beefed up by the stable increase in new orders and the much slower jump in input costs. The growth momentum of the Chinese manufacturing economy may have weakened in March, but at a marginal pace." – Dr. Zhengsheng Zhong, Director of Macroeconomic Analysis, CEBM Group

Source: https://www.markiteconomics.com/Survey/PressRelease.mvc/94ced48869d44b839104185fad70d016; 4/2/18

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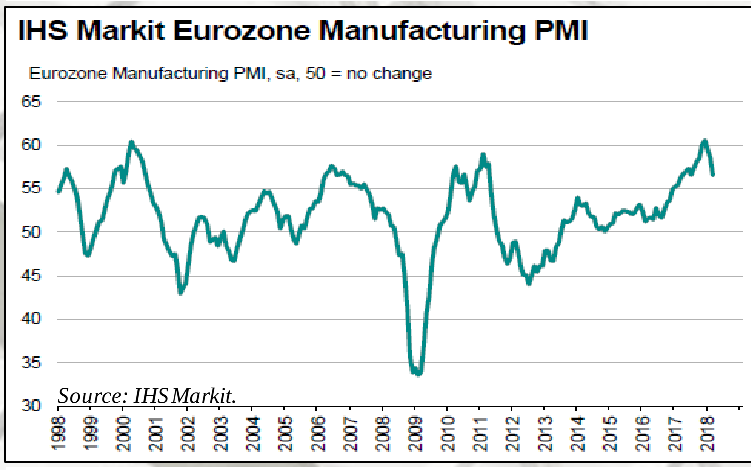
Private Indicators: Global



Markit Eurozone Manufacturing PMI®

"The final IHS Markit Eurozone Manufacturing PMI® posted 56.6 in March, unchanged from the earlier flash estimate and down further from December's series-record high. The latest reading and the average over the first quarter as a whole (58.2) both remained indicative of solid growth nonetheless.

Eurozone PMI at eight-month low amid broad-based growth slowdown

Eurozone manufacturing operating conditions improved to the least marked extent in eight months during March, as the sector continued its post turn of the year slowdown. Rates of expansion eased across all of the nations covered by the latest PMI surveys and across the consumer, intermediate and investment goods industries.

March saw the biggest fall in the manufacturing PMI since June 2011 and the third successive slowing in the pace of expansion. We should not be too worried by the fall in the PMI as some moderation in the pace of growth from the surge seen at the turn of the year was inevitable, not least because short-term capacity constraints limit the economy's ability to grow so quickly for long periods. This has been clearly evident in the recent lengthening of supply delivery times. Some of the slowdown has also been attributable to temporary factors such as bad weather. …

The overall pace of growth nevertheless remains robust by historical standards, with decent PMI readings seen in all countries, including Greece, to indicate a steady, broad-based expansion. Manufacturing should therefore make another substantial contribution to GDP growth in the first quarter, and the presence of sustained inflationary pressures will be welcomed by policymakers." – Chris Williamson, Chief Business Economist, Markit®

Source: https://www.markiteconomics.com/Survey/PressRelease.mvc/ab24481298ce43d8b0f820c500b66474; 4/3/18

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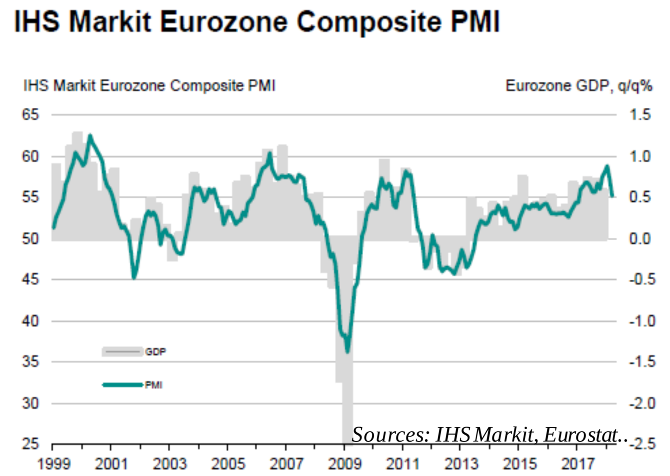
Private Indicators: Global



Markit Eurozone Composite PMI®

"March saw eurozone economic activity expand at the weakest pace since the start of 2017, as rates of increase moderated in both the manufacturing and service sectors. The slowing signalled by the latest PMI data reflected a combination of a mild deceleration in new order growth, bad weather in some northern regions and supply-chain constraints resulting from the recent growth spurt.

Eurozone economic growth slows further in March

The final **IHS Markit Eurozone *PMI*® Composite Output Index** posted 55.2 in March, down from 57.1 in February and below the earlier flash estimate of 55.3. The headline index has nonetheless signalled expansion in each of the past 57 months. Manufacturing production rose to the lowest extent since November 2016, whereas service sector business activity increased at the weakest pace since August last year.

The eurozone economy came off the boil in March, though continued to run hot. Although the final PMI numbers showed the weakest rise in business activity since the start of last year, adding to signs that the growth spurt has peaked, the surveys are still indicative of the economy growing at an impressive 0.6% quarterly rate in March, down from a clearly unsustainably rapid 0.8-0.9% rate around the start of the year. …

Gauging the true extent of any slowdown is consequently difficult due to the disruptions to business from bad weather in recent months. April's PMI data will therefore be particularly important in ascertaining true underlying growth momentum and in providing a steer on the likely timing of any ECB policy changes." – Chris Williamson, Chief Business Economist, Markit®

Source: https://www.markiteconomics.com/Survey/PressRelease.mvc/b284e0d0232b42949 1083dcaccd0e29e; 4/5/18

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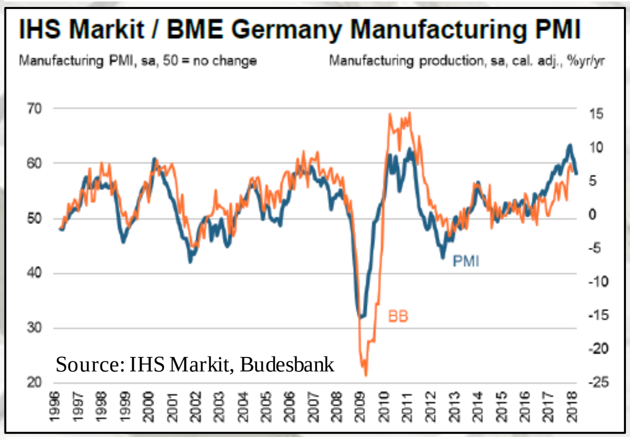
Private Indicators: Global



Markit/BME Germany Manufacturing PMI®

"Germany's manufacturing sector continued to lose momentum in March, with output growth slowing for the third consecutive month, according to the latest PMI® survey data from IHS Markit and BME. Goods producers meanwhile faced another record increase in average delivery times for inputs – the third in the past four months – in a sign of ongoing capacity constraints in supply chains.

Manufacturing output growth slows to 15-month low

The headline IHS Markit/BME Germany Manufacturing PMI – a single-figure snapshot of the performance of the manufacturing economy – registered a reading of 58.2 in March, down from 60.6 in February. Although still signalling a strong overall improvement in business conditions within the goods-producing sector, the latest figure was the lowest since July 2017 and well below that seen at peak of the upturn last December.

Although the manufacturing PMI remains at an elevated level by historical standards, a third consecutive drop in the index signals slowing momentum in Germany's factories. Growth of output and new orders has softened throughout 2018 so far, dragging the headline PMI lower, and in March the rates of expansion were less than half those seen at the end of 2017.

The issues facing manufacturers are, in a way, the symptoms of the sector's own success. German factories have seen uninterrupted growth for almost three-and-half years, and the added injection of pace since the late-2016, combined with a global upturn, has left supply chains struggling to keep up. Manufacturers in the eurozone's largest member state still expect to continue growing in 2018, but the recent pace of expansion was evidently unsustainable and we are likely to see a steadier upturn in the remainder of the year." – Phil Smith, Principal Economist, IHSMarkit®

Source: https://www.markiteconomics.com/Survey/PressRelease.mvc/d69b663954e44be9851453ecbaeb1a52; 4/3/18

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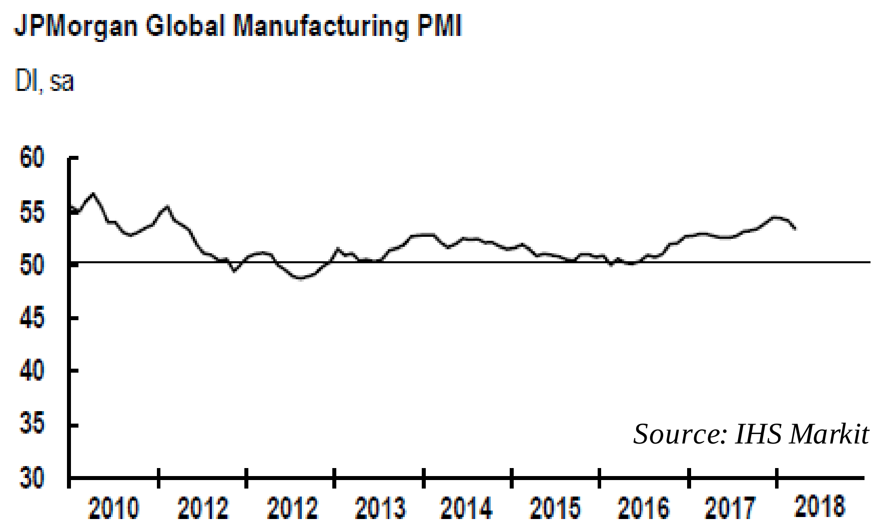
Private Indicators: Global



JP Morgan Global Manufacturing PMI™

"The J.P. Morgan Global Manufacturing PMI™ – a composite index1 produced by J.P. Morgan and IHS Markit in association with ISM and IFPSM – posted 53.4 in March, down from 54.1 in February and its lowest reading since October 2017. The average level over the opening quarter as a whole (54.0) was nonetheless unchanged from the prior quarter.

Global Manufacturing PMI at five-month low in March

The rate of expansion in the global manufacturing sector eased to a five-month low in March, as companies reported slower growth of output, new orders and employment. March data signalled slower rates of expansion in both the consumer and intermediate goods sectors, with growth at three- and seven-month lows respectively. The Investment Goods PMI rose to its highest level in the year-so-far.

National PMI data signalled expansions in almost all of the nations covered, with only South Korea, Malaysia and Thailand seeing contractions. Growth slowed in the euro area, China, Japan, India and Australia, but improved in the US, the UK, Brazil and Russia.

Global manufacturing production increased at the slowest pace in eight months during March, as growth of total new orders and new export business both eased further. The increase in new export orders was the weakest in 15 months. Inflows of new work were still sufficient to test capacity, however, leading to a rise in work-in-hand for the twenty-second straight month. … " – David Hensley, Global Economist, J.P. Morgan

Source: https://www.markiteconomics.com/Survey/PressRelease.mvc/0db3741a42a04095825f736f65c9a6da; 4/3/18

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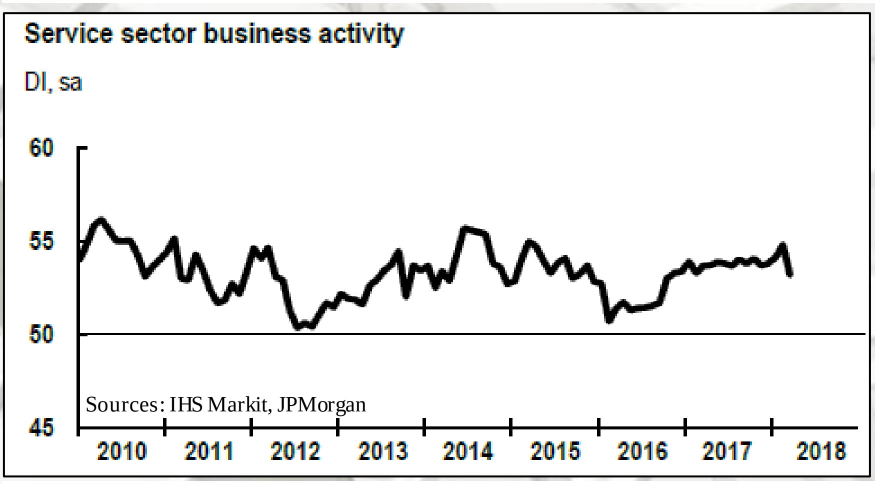
Private Indicators: Global



JP Morgan Global Services PMI™

"The upturn in the global service sector slowed to a 17-month low in March, with a softer expansion in business activity being accompanied by weaker growth of new orders. Business confidence remained positive, but slipped to its weakest in the year-so-far.

Global services expands at slowest pace in 17 months

The J.P. Morgan Global Services Business Activity Index – a composite index produced by J.P. Morgan and IHS Markit in association with ISM and IFPSM – posted 53.2 in March, down from 54.8 in February. The average reading for the opening quarter as a whole (54.1) was still the best outcome since the third quarter of 2014.

The expansion remained broad-based by both nation and sub-sector in March. Output rose across the three categories of activity covered by the survey (business, consumer and financial services) and also in all of the countries included. However, the slowdown was almost as broad as its base of expansion, with growth easing across the three sub-sectors. India (which returned to expansion) and Australia (where growth hit an eight-month high) were the only nations to improved output trends. …

Business optimism remained positive in March, with companies forecasting (on average) that business activity would be higher one year from now. However, the degree of confidence eased to a three-month low and was below the long-run series average." – David Hensley, Global Economist, J.P. Morgan

Source: https://www.markiteconomics.com/Survey/PressRelease.mvc/3796d78369b849d9a5589ce5fde2fb5f; 4/5/18

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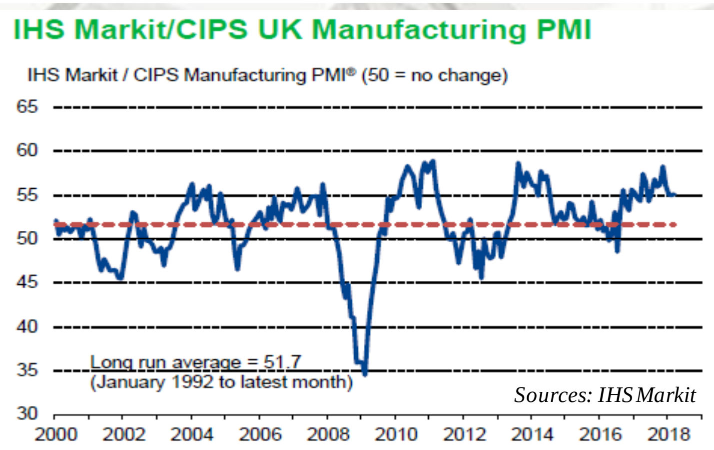
Private Indicators: Global



Markit/CIPS UK Manufacturing PMI™

"The seasonally adjusted IHS Markit/CIPS Purchasing Managers' Index® (PMI®) posted 55.1 in March, little-changed from 55.0 in February. The average reading over the opening quarter as a whole (55.1) was the weakest in a year, suggesting that the underlying pace of expansion has been generally slower since the start 2018.

UK Manufacturing PMI signals steady growth rate at end of opening quarter

The UK manufacturing sector maintained a steady pace of expansion during March. Output growth picked up, although this was offset by slower increases in both new orders and employment. On the price front, rates of inflation in input costs and output charges remained elevated despite easing slightly since February.

The latest PMI survey provided further evidence that UK manufacturing has entered a softer growth phase so far this year. Although the pace of output expansion ticked higher in March, which is especially encouraging given the heavy snowfall during the month, this was offset by slower increases in new orders and employment. Average rates of increase over the opening quarter as a whole are also down noticeably from the growth spurt seen at the end of 2017. Compared to official data, the performance through quarter one is consistent with only a 0.4-0.5% gain in production volumes, a considerable slide from the fourth quarter's 1.3% increase. The key question is whether growth can now be sustained, albeit at a lower level, into the coming months. On that front the news is generally positive. Manufacturers are still reporting solid inflows of new work from domestic and overseas markets. …." – Rob Dobson, Director & Senior Economist, IHS Markit

Source: https://www.markiteconomics.com/Survey/PressRelease.mvc/6f38e654e95e43b68ebc6138ed9b0841; 4/3/18

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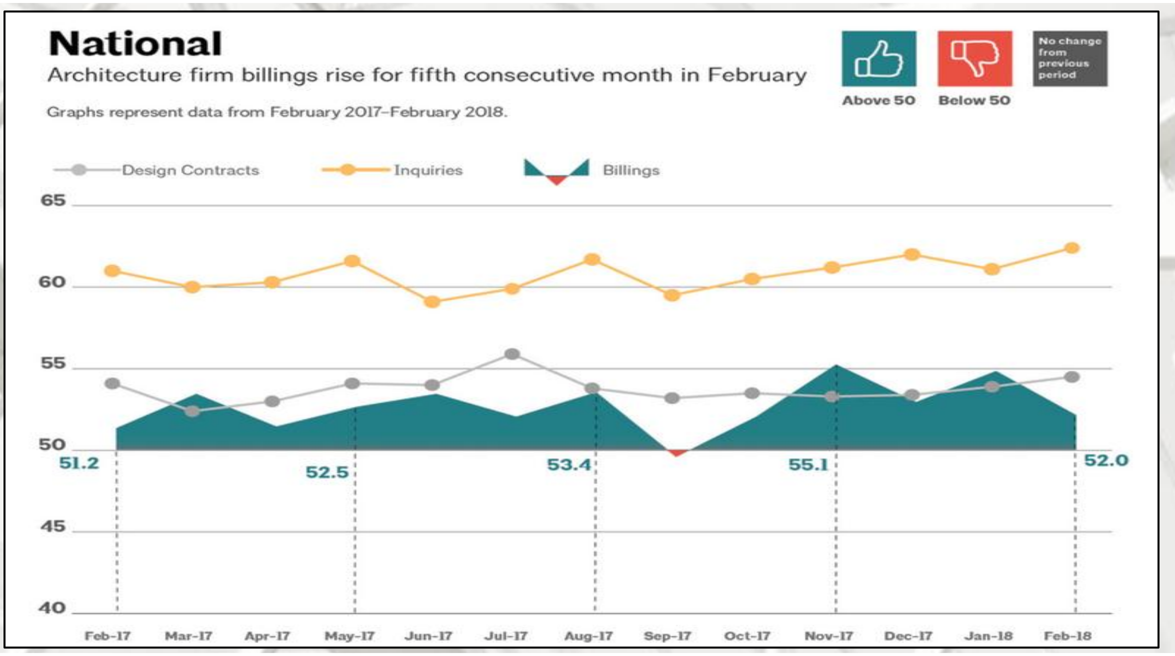
Private Indicators
American Institute of Architects (AIA)



February Architecture Billings Index
Billings growth at firms slows modestly

"With an Architecture Billings Index (ABI) score of 52.0 in February, business conditions at architecture firms remained strong for the month, although billings grew at a modestly slower pace than in January (any score over 50 indicates an increase in architecture firm billings). Firm billings have now increased for the last five consecutive months and 11 months out of the last year. Inquiries into new projects and the value of new signed design contracts both increased in February, as firms remain generally optimistic about future work in the pipeline." – Kermit Baker, Chief Economist, AIA , Honorable AIA

Source: https://www.aia.org/pages/183976-abi-february-2018-billings-growth-at-firms-/; 3/31/18

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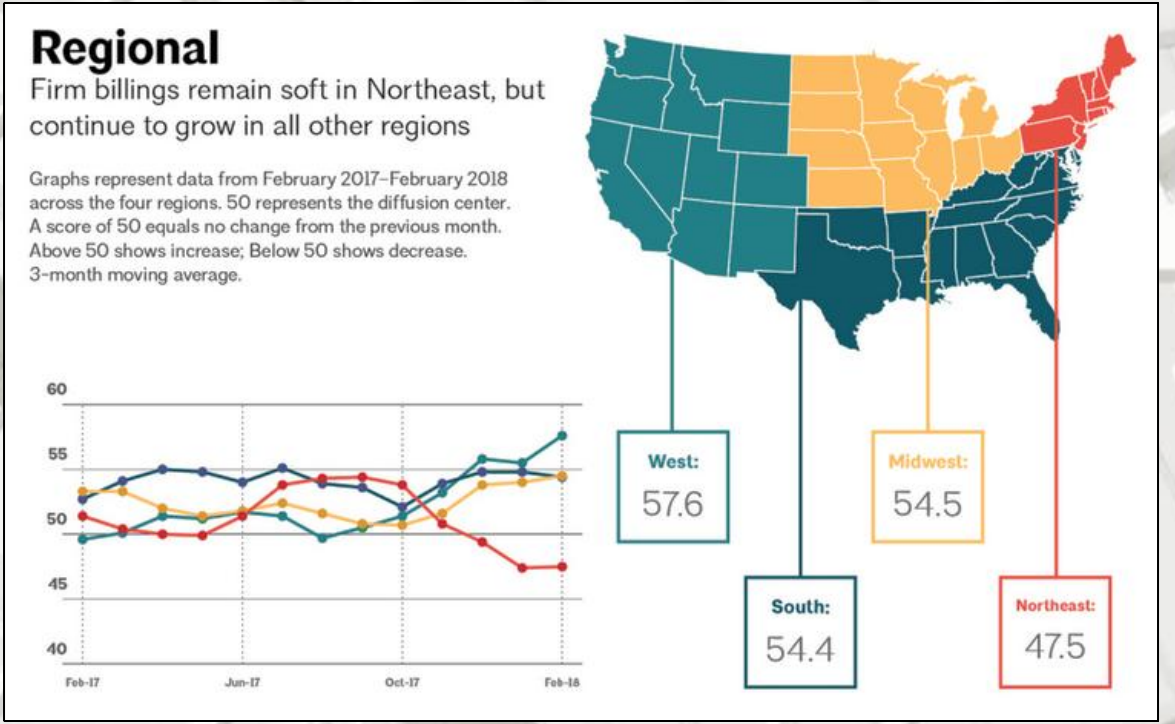
Private Indicators: AIA



Region

"Business conditions remained strong at architecture firms located in all regions of the country except the Northeast in February, with firms located in West reporting the strongest conditions for that region in more than a decade. Firms located in the Northeast, on the other hand, saw their billings decline for the third consecutive month." – Kermit Baker, Chief Economist, AIA , Honorable AIA

Source: https://www.aia.org/pages/183976-abi-february-2018-billings-growth-at-firms-/; 3/31/18

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Private Indicators: AIA

Sector

"Architecture firm billings increased at firms of all specializations in February; firms with a residential specialization continuing to report the strongest growth, as they have for the last five months." – Kermit Baker, Chief Economist, AIA , Honorable AIA

Source: https://www.aia.org/pages/183976-abi-february-2018-billings-growth-at-firms-/; 3/31/18

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Private Indicators

Dodge Data & Analytics

New Construction Starts in February Recede 3 Percent

"At a seasonally adjusted annual rate of $708.1 billion, new construction starts in February slipped 3% from the previous month, according to Dodge Data & Analytics. The reduced activity in February followed a 2% decline in January, as the early months of 2018 are showing some loss of momentum after the 12% increase reported back in December.

The nonbuilding construction sector, comprised of public works and electric utilities/gas plants, fell 23% in February, resulting in the decline for total construction starts for the second month in a row. In contrast, nonresidential building grew 5% in February, continuing the strengthening trend which resumed in December, and residential building improved a slight 1%. During the first two months of 2018, total construction starts on an unadjusted basis were $102.4 billion, down 7% from the same period a year ago which had been lifted by the start of several unusually large projects, including the $3.6 billion Central Terminal replacement project at LaGuardia Airport in New York NY. On a twelve-month moving total basis, total construction starts for the twelve months ending February 2018 were up 2% from the twelve months ending February 2017." – Benjamin Gorelick, Spector & Associates

Source: https://www.construction.com/news/new-construction-starts-february-recede-3-percent-mar-2018; 3/22/18

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Private Indicators

Dodge Data & Analytics

"The 152 average for the Dodge Index during the first two months of 2018 is the same as the 152 average reported for the fourth quarter of 2017, as the pace of construction starts viewed over several months seems to have leveled off. What's important to keep in mind is that the moderately subdued amount for total construction starts during the first two months of 2018 reflects diminished activity by public works and electric utilities, which given their inherent volatility are likely to bounce back over the next month or two. Compared to last year's fourth quarter, the first two months of 2018 have seen further increases for nonresidential building, helped by its institutional building segment, and residential building, helped by multifamily housing. This suggests that the construction expansion, while slowing, is still in progress.

It's true that the construction industry is now seeing more headwinds. Material prices have risen over the past year, and the tariffs on steel and aluminum announced by the Trump Administration will lead to further price hikes. The Federal Reserve is tightening monetary policy, and concerns about inflation by the financial markets have contributed to rising long-term interest rates. The prospects of an infrastructure program getting passed by Congress this year remain uncertain, against the backdrop of a mounting federal budget deficit. At the same time, the economy is expected to get a near term lift from tax reform, which would benefit commercial and manufacturing building, while funding from recent bond measures will support such institutional project types as school construction. On balance, the rate of growth for total construction is decelerating, but activity for 2018 is expected to stay at a relatively healthy amount." – Robert A. Murray, Chief Economist, Dodge Data & Analytics

Source: https://www.construction.com/news/new-construction-starts-february-recede-3-percent-mar-2018; 3/22/18

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Private Indicators

Dodge Data & Analytics

"**Residential building** in February was $343.3 billion (annual rate), up 1% from January. Multifamily housing increased 7%, reflecting the start of eleven projects valued each at $100 million or more. Leading the way was the $700 million City View Tower at Court Square in Queens NY, followed by a $300 million high-rise condominium building in Miami FL and a $215 million high-rise condominium building in New York NY. In February, the top five metropolitan areas ranked by the dollar amount of multifamily starts were – New York NY, Miami FL, Washington DC, San Francisco CA, and Boston MA. Metropolitan areas ranked 6 through 10 were – Dallas-Ft. Worth TX, Denver CO, Phoenix AZ, Orlando FL, and Chicago IL.

Single family housing in February slipped 1%, easing back for the second month in a row following the modest increases witnessed during the second half of 2017. In February, single family housing by major region showed gains in the Northeast, up 12%; and the Midwest, up 8%; but declines in the South Atlantic, down 2%; the South Central, down 4%; and the West, down 5%."– Robert A. Murray, Chief Economist, Dodge Data & Analytics

Source: https://www.construction.com/news/new-construction-starts-february-recede-3-percent-mar-2018; 3/22/18

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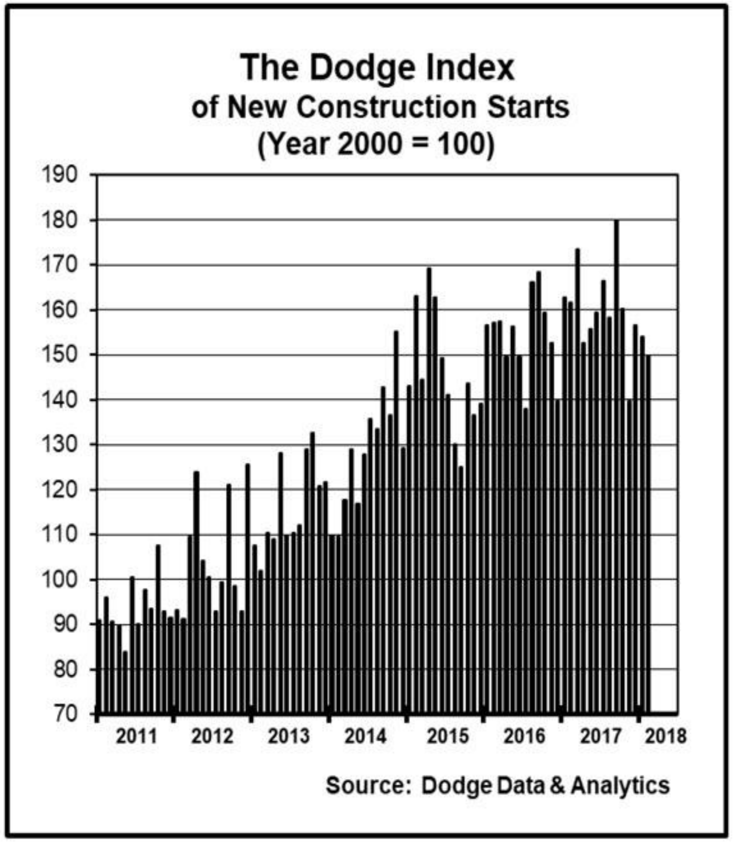
Private Indicators

February 2018 Construction Starts



February 2018 Construction Starts

Monthly Summary of Construction Starts

Prepared by Dodge Data & Analytics

Monthly Construction Starts

Seasonally Adjusted Annual Rates, in Millions of Dollars

	February 2018	January 2018	% Change
Nonresidential Building	$246,663	$236,037	+5
Residential Building	343,281	338,678	+1
Nonbuilding Construction	118,205	153,949	-23
Total Construction	$708,149	$728,664	-3

The Dodge Index

Year 2000=100, Seasonally Adjusted

February 2018 150

January 2018 154

Year-to-Date Construction Starts

Unadjusted Totals, in Millions of Dollars

	2 Mos. 2018	2 Mos. 2017	% Change
Nonresidential Building	$34,631	$41,928	-17
Residential Building	48,287	44,017	+10
Nonbuilding Construction	19,447	24,545	-21
Total Construction	$102,365	$110,490	-7
Total Construction, excluding electric utilities/gas plants	$100,846	$106,376	-5

Source: https://www.construction.com/news/new-construction-starts-february-recede-3-percent-mar-2018; 3/22/18

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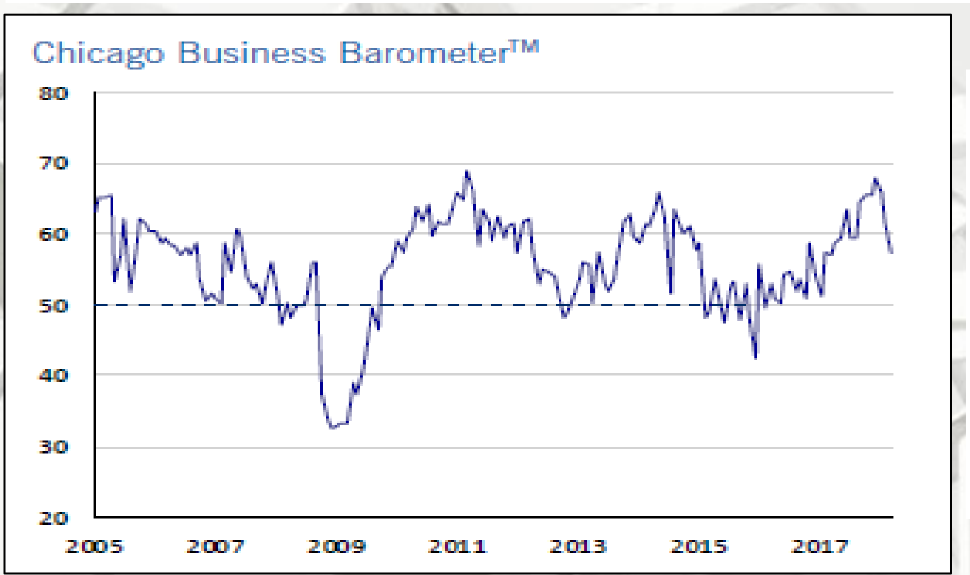
Private Indicators



MNI Chicago March Business Barometer Declines to 57.4

"The MNI Chicago Business Barometer fell 4.5 points to 57.4 in March, down from 61.9 in February, hitting the lowest level in exactly one year.

Marked Fall in Production Drives Barometer To 1-Year Low

Firms' operations continued to expand in March, but the pace of expansion moderated for a third straight month. Three of the five Barometer components receded on the month, with only Employment and Supplier Deliveries expanding.

Compared to March last year, the Barometer was up 0.5%. On the quarter, the Barometer was down on Q4 2017 but Q1's outturn was still the second-best calendar quarter result since Q2 2014 and the best first quarter outturn since 2011.

The Chicago Business Barometer calendar quarter average had increased for six straight quarters until Q1 2018, with the halt largely due to the recent downward trajectory of orders and output. Troubles higher up in firms' supply chains are restraining their productive capacity and higher prices are being passed on to consumers. On a more positive note, firms remain keen to expand their workforce." – Jamie Satchi, Economist, MNI Indicators

Source: https://www.ism-chicago.org/index.cfm; 3/28/18

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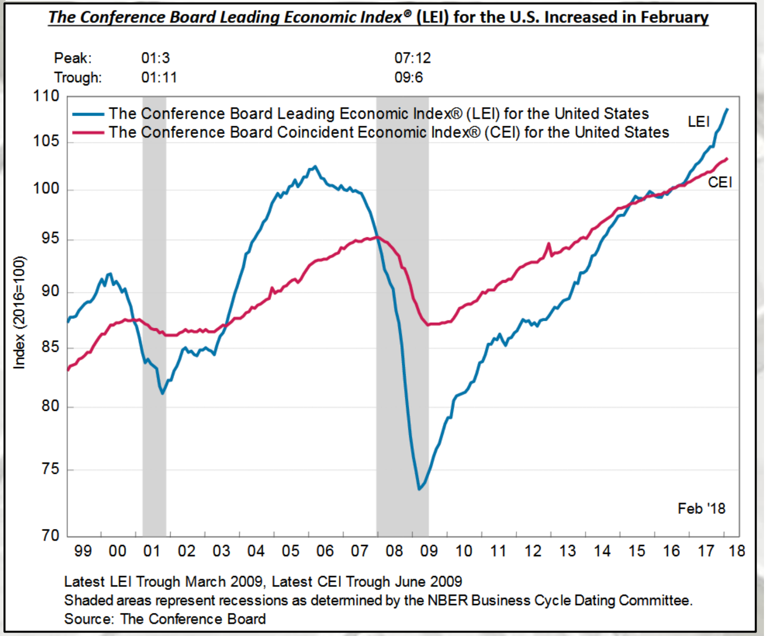
Private Indicators

The Conference Board Leading Economic Index® (LEI) for the U.S. increased 0.6 percent in February to 108.7 (3016 = 100), following a 0.8 percent increase in January, and a 0.7 percent increase in December..

U.S. Composite Economic Indexes (3016 = 100)



Robust Economic Growth to Continue Through 2018

"The U.S. LEI rose again, despite a sharp downturn in stock markets and weakness in housing construction in February. The LEI points to robust economic growth throughout 2018. Its six-month growth rate has not been this high since the first quarter of 2011. While the Federal Reserve is on track to continue raising its benchmark rate for the rest of the year, the recent weakness in residential construction and stock prices – important leading indicators – should be monitored closely." – Ataman Ozyildirim, Director of Business Cycles and Growth Research, The Conference Board

"**The Conference Board Coincident Economic Index®** (CEI) for the U.S. increased 0.3 percent in February to 103.3 (2016 = 100), following a 0.1 percent increase in January, and a 0.2 percent increase in December.

The Conference Board Lagging Economic Index® (LAG) for the U.S. increased 0.4 percent in February to 104.3 (2016 = 100), following a 0.1 percent increase in January and a 0.6 percent increase in December." – The Conference Board

Source: https://www.conference-board.org/data/bcicountry.cfm; 3/22/18

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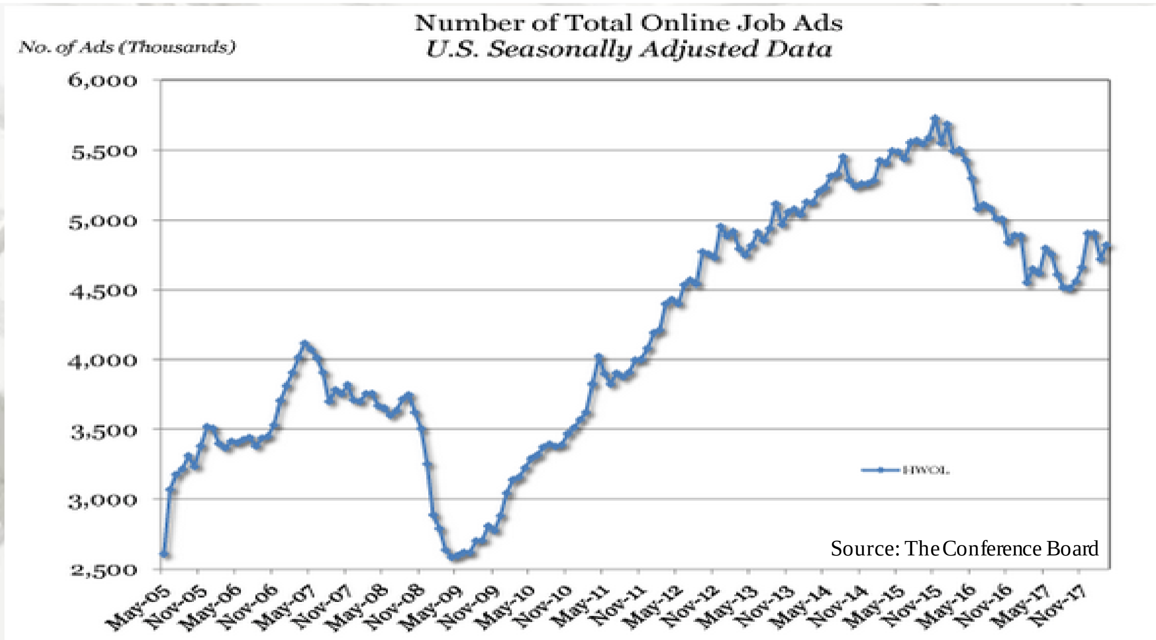
Private Indicators



The Conference Board Help Wanted OnLine® (HWOL)
Online Job Ads Increased 102,100 in March

- "Most States showed small gains
- Most occupations showed gains over the month

Online advertised vacancies increased 102,100 to 4,819,700 in March, according to ***The Conference Board Help Wanted OnLine®*** **(HWOL) Data Series**, … . The February Supply/Demand rate stands at 1.42 unemployed for each advertised vacancy, with a total of 2.0 million more unemployed workers than the number of advertised vacancies. The number of unemployed was approximately 6.7 million in February.

The Professional occupational category saw gains in Management (14.4) and Healthcare practitioners and technical (11.7). The Services/Production occupational category saw changes in Sales (21.2), Transportation (14.6), and Food prep (-11.7)." – Carol Courter, The Conference Board

Source: https://www.conference-board.org/data/helpwantedonline.cfm; 4/4/18

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Private Indicators

Equipment Leasing and Finance Association

Industry Confidence Eases in March

"The **Equipment Leasing & Finance Foundation** (the Foundation) releases the March 2018 **Monthly Confidence Index for the Equipment Finance Industry** (MCI-EFI). Overall, confidence in the equipment finance market is 72.2 in March, easing slightly from 73.2 in February." – Anneliese DeDiemar, Author, Equipment Leasing & Finance Association

"We are seeing growth in capex spending across a broad segment of the economy. While some areas are expanding more quickly than others, all are moving in a positive direction. Businesses are more positive then we have seen in over a decade and activity is picking up momentum. The equipment finance industry is healthy and poised to support the expanding economy." – Anthony Cracchiolo, President and CEO, U.S. Bank Equipment Finance

Source: https://www.elfaonline.org/news/press-room/press-releases/details/2018/03/15/equipment-leasing-and-finance-industry-confidence-eases-in-march; 3/15/18

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Private Indicators

Equipment Leasing and Finance Association

March 2018 Survey Results:

"The overall MCI-EFI is 72.2 in March, easing from 73.2 in February.

- When asked to assess their business conditions over the next four months, 54.8% of executives responding said they believe business conditions will improve over the next four months, an increase from 46.4% in February. 45.2% of respondents believe business conditions will remain the same over the next four months, a decrease from 53.6% the previous month. None believe business conditions will worsen, unchanged from the previous month.
- 67.7% of survey respondents believe demand for leases and loans to fund capital expenditures (capex) will increase over the next four months, unchanged from February. 32.3% believe demand will "remain the same" during the same four-month time period, relatively unchanged from 32.1% the previous month. None believe demand will decline, also unchanged from February.
- 22.6% of the respondents expect more access to capital to fund equipment acquisitions over the next four months, down from 28.6% in February. 74.2% of executives indicate they expect the "same" access to capital to fund business, an increase from 67.9% last month. 3.2% expect "less" access to capital, down slightly from 3.6% last month.
- When asked, 41.9% of the executives report they expect to hire more employees over the next four months, a decrease from 42.9% in February. 51.6% expect no change in headcount over the next four months, a decrease from 53.6% last month. 6.5% expect to hire fewer employees, up from 3.6% in February." – Anneliese DeDiemar, Author, Equipment Leasing & Finance Association

Source: https://www.elfaonline.org/news/press-room/press-releases/details/2018/03/15/equipment-leasing-and-finance-industry-confidence-eases-in-march; 3/15/18

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Private Indicators

Equipment Leasing and Finance Association

February 2018 Survey Results:

"29.0% of the leadership evaluate the current U.S. economy as "excellent," up from 25.0% last month. 71.0% of the leadership evaluate the current U.S. economy as "fair," down from 75.0% in February. None evaluate it as "poor," unchanged from last month.

45.2% of the survey respondents believe that U.S. economic conditions will get "better" over the next six months, a decrease from 60.7% in February. 51.6% of survey respondents indicate they believe the U.S. economy will "stay the same" over the next six months, an increase from 35.7% the previous month. 3.2% believe economic conditions in the U.S. will worsen over the next six months, a slight decrease from 3.6% in February.

In March, 51.6% of respondents indicate they believe their company will increase spending on business development activities during the next six months, a decrease from 53.6% in February. 45.2% believe there will be "no change" in business development spending, a decrease from 46.4% the previous month. 3.2% believe there will be a decrease in spending, an increase from none who believed so last month." – Anneliese DeDiemar, Author, Equipment Leasing & Finance Association

Source: https://www.elfaonline.org/news/press-room/press-releases/details/2018/03/15/equipment-leasing-and-finance-industry-confidence-eases-in-march; 3/15/18

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Private Indicators

Equipment Leasing and Finance Association

Monthly Leasing & Finance Index: February 2018

February New Business Volume Up 31 Percent Year-over-year, 13 Percent Month-to-Month, 20 Percent Year-to-date

"The **Equipment Leasing and Finance Association's** (ELFA) **Monthly Leasing and Finance Index (MLFI-25)**, which reports economic activity from 25 companies representing a cross section of the $1 trillion equipment finance sector, showed their overall new business volume for February was $7.7 billion, up 31 percent year-over-year from new business volume in February 2017. Volume was up 13 percent month-to-month from $6.9 billion in January. Year to date, cumulative new business volume was **up 20 percent** compared to 2017.

Receivables over 30 days were 1.60 percent, down from 1.90 percent the previous month and up from 1.50 percent the same period in 2017. Charge-offs were 0.28 percent, down from 0.34 percent the previous month, and down from 0.38 percent in the year-earlier period.

Credit approvals totaled 74.2 percent in February, down from 76.9 percent in January. Total headcount for equipment finance companies was up 1.4 percent year over year. During 2017, headcount was elevated due to acquisition activity at an MLFI reporting company.

Separately, the Equipment Leasing & Finance Foundation's Monthly Confidence Index (MCI-EFI) in March is 72.2, easing from 73.2 in February." – Amy Vogt, Vice President, Communications and Marketing, ELFA

Source: https://www.elfaonline.org/news/press-room/press-releases/details/2018/03/22/equipment-leasing-and-finance-association-s-survey-of-economic-activity-monthly-leasing-and-finance-index; 3/22/18

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Private Indicators

Equipment Leasing and Finance Association

"February originations offer further proof that 2018 is shaping up to be a very strong year for the equipment finance industry. Momentum spurred on by recently enacted tax changes together with an economy beginning to hit on most, if not all, cylinders, is creating a compelling demand cycle for capital equipment acquisition by American businesses, large and small. In addition, portfolios continue to perform at high levels, helping to contribute to the sense of optimism carried over from the second half of 2017." – Ralph Petta, President and CEO, ELFA

"Business activity across many of the key industries we serve continues to be favorable. This can be attributed to the current positive overall industry fundamentals and economic conditions in the U.S. Although the outlook is for a continued increase in U.S. interest rates, our customers are still benefitting from historically low interest rates and evaluating the benefits of recent U.S. tax reform. As our customers continue to work towards successfully growing their businesses, we remain optimistic about the year ahead and focused on maintaining a healthy portfolio." – David Walton, President and CEO, Caterpillar Financial Services Corporation

Source: https://www.elfaonline.org/news/press-room/press-releases/details/2018/03/22/equipment-leasing-and-finance-association-s-survey-of-economic-activity-monthly-leasing-and-finance-index; 3/22/18

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March 2018 Manufacturing ISM® Report On Business®

March PMI® at 59.3%

New Orders, Production, and Employment Growing
Supplier Deliveries Slowing at Slower Rate; Backlog Same
Raw Materials Inventories Growing, Customers' Inventories Too Low
Prices Increasing at Faster Rate; Exports and Imports Growing

"Economic activity in the **manufacturing sector** expanded in February, and the **overall economy** grew for the 107th consecutive month, say the nation's supply executives in the latest **Manufacturing ISM®** ***Report On Business®***. The March PMI® registered 59.3 percent, an decrease of 1.5 percentage points from the February reading of 59.1 percent.

The New Orders Index registered 61.9 percent, a decrease of 2.3 percentage points from the February reading of 64.2 percent.

The Production Index registered 61 percent, a 1 percentage point decrease compared to the February reading of 62 percent.

The Employment Index registered 57.3 percent, a decrease of 2.4 percentage points from the February reading of 59.7 percent.

The Supplier Deliveries Index registered 60.6 percent, a 0.5 percentage point decrease from the February reading of 61.1 percent.

The Inventories Index registered 55.5 percent, a decrease of 1.2 percentage points from the February reading of 56.7 percent.

The Prices Index registered 78.1 percent in March, a 3.9 percentage point increase from the February reading of 74.2 percent, indicating higher raw materials prices for the 25th consecutive month." – Timothy R. Fiore, CPSM, CPSD, Chair of the ISM® Manufacturing Business Survey Committee

Source: http://www.ism.ws/ISMReport/MfgROB.cfm?navItemNumber=12942; 4/2/18

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March 2018 Non-Manufacturing ISM® Report On Business®

March PMI® at 58.8%

Business Activity Index at 60.6%; New Orders Index at 59.5%
Employment Index at 56.6%

“Economic activity in the **non-manufacturing sector** grew in March for the 98th consecutive month, say the nation’s purchasing and supply executives in the latest **Non-Manufacturing ISM® Report On Business®**.

"The NMI® registered 58.8 percent, which is 0.7 percentage point lower than the February reading of 59.5 percent. This represents continued growth in the non-manufacturing sector at a slightly slower rate.

The Non-Manufacturing Business Activity Index decreased to 60.6 percent, 2.2 percentage points lower than the February reading of 62.8 percent, reflecting growth for the 104th consecutive month, at a slower rate in March.

The New Orders Index registered 59.5 percent, 5.3 percentage points lower than the reading of 64.8 percent in February.

The Employment Index increased 1.6 percentage points in March to 56.6 percent from the February reading of 55 percent.

The Prices Index increased by 0.5 percentage point from the February reading of 61 percent to 61.5 percent, indicating that prices increased in March for the 25th consecutive month.

According to the NMI®, 15 non-manufacturing industries reported growth. Despite the slight dip in the NMI® composite index, the non-manufacturing sector enjoyed another month of strong growth in March. The cooling off of the New Orders Index possibly prevented an even stronger reading for the NMI® composite index. The majority of respondents remain positive about business conditions.” – Timothy R. Fiore, CPSM, CPSD, Chair of the ISM® Manufacturing Business Survey Committee

Source: http://www.ism.ws/ISMReport/MfgROB.cfm?navItemNumber=12942; 4/2/18

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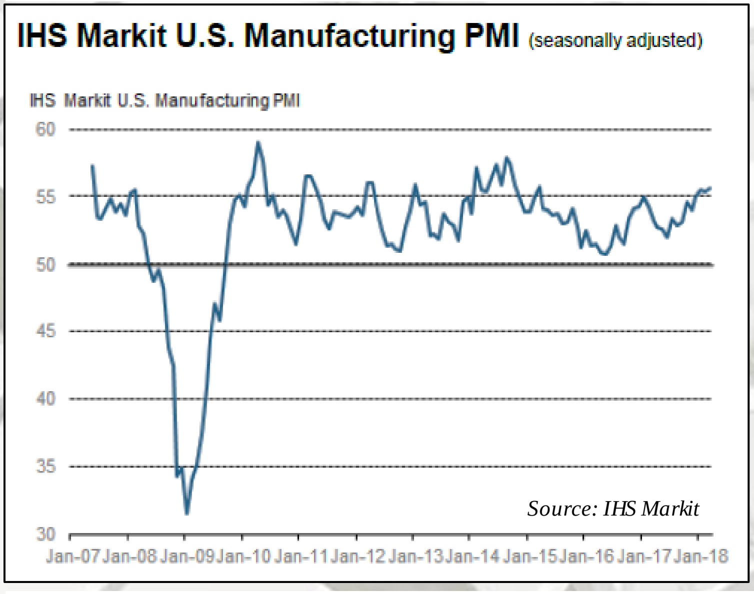
Private Indicators



Markit U.S. Manufacturing PMI™

"The seasonally adjusted **IHS Markit final U.S. Manufacturing Purchasing Managers' Index™ (PMI™)** registered 55.6 in March, up from 55.3 in February. The latest PMI reading indicated the strongest improvement in manufacturing business conditions since March 2015. The average PMI reading over the opening three months of 2018 meanwhile indicated the best quarterly performance since the third quarter of 2014.

March PMI indicates strongest manufacturing growth for three years

March PMI survey data signalled a strong overall improvement in operating conditions across the U.S. manufacturing sector. Output and new orders continued to rise markedly, despite rates of growth softening slightly since February. Job creation also remained strong and backlogs of uncompleted work increased solidly as a result of the recent upturn in client demand. Business confidence about the year ahead meanwhile rose to the highest since February 2015.

US factories reported a strong end to the first quarter, with the PMI advancing to a three-year high. The goods producing sector should therefore make a positive contribution to economic growth in the first quarter, as rising demand fueled further improvements in factory production.

Optimism about the year ahead has meanwhile also risen to its highest for three years, generating yet another solid payroll gain and suggesting strong growth momentum will be sustained in the second quarter." – Chris Williamson, Chief Economist, Markit®

Source: https://www.markiteconomics.com/Survey/PressRelease.mvc/d1fdb501d2e746188020b537e15d4705; 4/2/18

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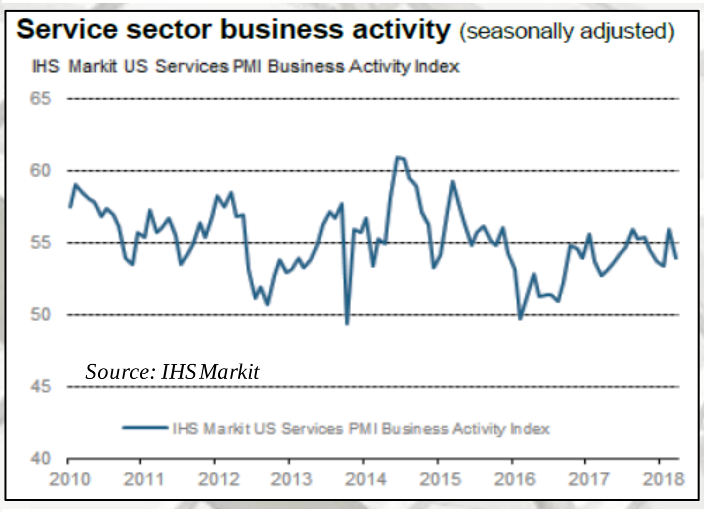

Markit U.S. Services PMI™

"The seasonally adjusted final **IHS Markit U.S. Services Business Activity Index** registered 54.0 in March, down from 55.9 in February. Nonetheless, output growth was strong overall. Moreover, the index average for first three months of 2018 was broadly in line with the rate of expansion seen over 2017 as a whole. Panellists largely linked the upturn in business activity to diversification and more favourable demand conditions.

Service sector growth remains strong in March

March survey data indicated a strong expansion in business activity across the U.S. service sector. That said, the growth rate softened from that seen in February and was below the long-run series average. Similarly, the upturn in new business softened from the previous month but was sharp overall. In line with sustained increases in client demand, the rate of job creation accelerated to a seven-month high. Meanwhile, both input price and output charge inflation remained strong and above their respective series averages.

Measured across both manufacturing and services sectors, US business activity growth slowed in March compared to February's 27-month high, but remained encouragingly solid. The month rounds off a quarter in which the PMI surveys indicate that the economy grew at an annualised rate of approximately 2.5% (though official GDP data are likely to come in at least 0.5% weaker, due to seasonality issues).

Expectations about future growth were mixed: while recent protectionist announcements appear to have helped bolster confidence in parts of the domestic manufacturing sector, service sector optimism came off the boil." – Chris Williamson, Chief Economist, Markit®

Source: https://www.markiteconomics.com/Survey/PressRelease.mvc/6f83fd15abd247348938a9a16e414073; 4/4/18

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National Association of Credit Management – Credit Managers' Index

"In February, there seemed to be a trend toward positive Credit Managers' Index (CMI) growth – after all, there were two months in a row where the data was improving. It is not that the bottom dropped out this month, but there was a reversal, and numbers tilted a little down. A movement from 56.5 to 55.6 would normally not be cause for alarm; it really isn't cause for panic now. It is simply that there have been expectations and they have not been met. The big tax reform effort was supposed to kick things into high gear, but it is starting to look a bit like a dud. That was a concern from the start, as it was coming so late in the game.

There was a decline in both the favorable and unfavorable categories, but the decline was more precipitous in the favorable. Still, the numbers remain high and very comfortably within the 60s. In February, the favorable reading was at 64.9 and this month it is at 63.2. The sub-index numbers showed the same general pattern. The sales category slipped from 66.8 to 64.1, still higher than it notched in either January or December of last year. The new credit applications also slid a little (63.3 to 62.7), while the often-volatile dollar collections reading went from 62.9 to 59.6. This also remains higher than was the case in December or January. This reading has often been twinned with the unfavorable factor measuring slow pays. The indicator for amount of credit extended stayed high and almost the same as it was the month prior, only moving from 66.4 to 66.2.

The unfavorable factors also saw a decline, but not as dramatic as the one affecting the favorable. The overall score went from 50.9 to 50.6 – hanging on to the expansion category (anything above 50) by the razor's edge . The rejections of credit applications improved a little (51.5 to 53.3)." – Adam Fusco, Associate Editor, NACM

Source: http://web.nacm.org/CMI/PDF/CMIcurrent.pdf; 3/30/18

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Private Indicators

National Association of Credit Management – Credit Managers' Index

"How much difference was this tax break going to make with an economy already growing at a 3% pace? At this point, it doesn't appear to have had much impact, but there may be an upside to this. Without that surge in growth, there has been less threat of break-out inflation and the pressure on the Fed to hike interest rates. There is still a lot of credit being offered – especially to some of the larger customers." – Dr. Chris Kuehl, Economist, NACM

Source: http://web.nacm.org/CMI/PDF/CMIcurrent.pdf; 3/30/18

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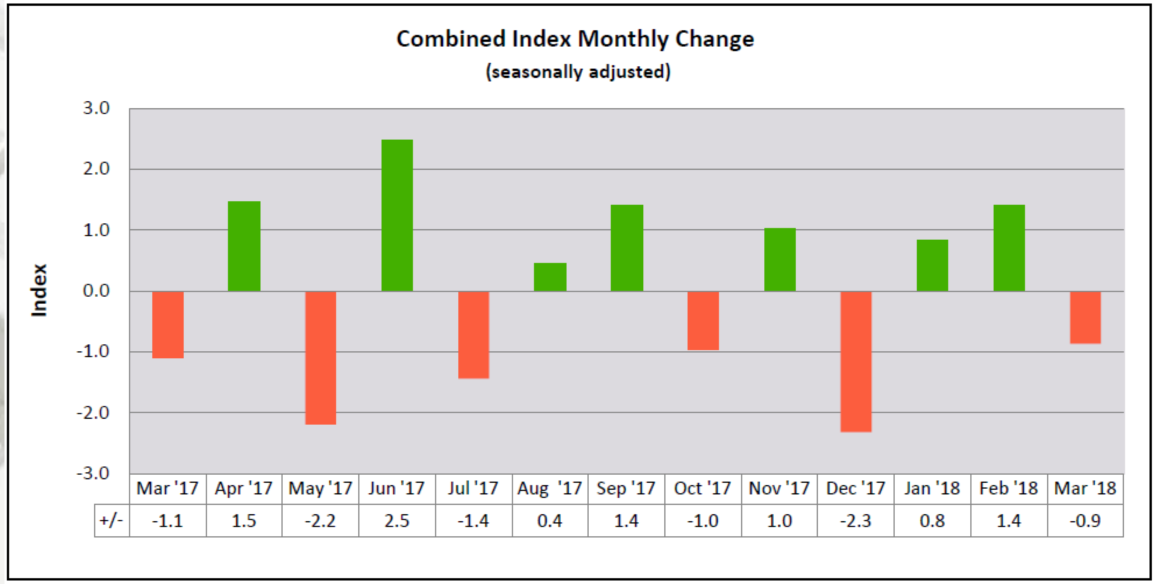

Combined Manufacturing and Service Sectors (seasonally adjusted)	Mar '17	Apr '17	May '17	Jun '17	Jul '17	Aug '17	Sep '17	Oct '17	Nov '17	Dec '17	Jan '18	Feb '18	Mar '18
Sales	61.2	63.8	60.6	66.5	62.8	62.2	67.3	66.8	68.3	59.2	63.0	66.8	64.1
New credit applications	60.5	62.0	59.3	59.8	59.7	61.2	60.5	62.8	63.7	57.3	59.8	63.3	62.7
Dollar collections	56.4	61.2	56.7	62.5	60.2	58.9	60.0	60.2	63.1	59.1	58.7	62.9	59.6
Amount of credit extended	64.4	67.2	63.6	66.8	64.1	66.7	66.3	65.5	67.8	61.8	64.3	66.4	66.2
Index of favorable factors	**60.6**	**63.6**	**60.0**	**63.9**	**61.7**	**62.2**	**63.5**	**63.8**	**65.7**	**59.4**	**61.4**	**64.9**	**63.2**
Rejections of credit applications	51.6	52.1	52.4	52.6	51.9	52.2	52.5	51.8	52.4	51.4	51.8	51.5	53.3
Accounts placed for collection	49.8	49.0	48.5	49.3	48.9	48.7	50.3	49.5	50.5	49.8	51.7	49.8	50.4
Disputes	48.5	49.1	47.9	50.4	48.8	49.1	51.7	47.6	48.3	49.7	49.6	49.6	47.7
Dollar amount beyond terms	47.4	51.0	45.9	50.4	48.3	47.4	50.4	47.3	47.5	49.3	47.0	49.9	47.2
Dollar amount of customer deductions	49.8	49.2	48.7	49.1	48.1	49.2	49.8	48.7	48.9	49.7	49.7	49.1	49.8
Filings for bankruptcies	53.8	53.5	52.7	53.4	53.6	55.3	56.2	55.3	55.1	55.0	55.2	55.4	55.2
Index of unfavorable factors	**50.2**	**50.6**	**49.3**	**50.9**	**49.9**	**50.3**	**51.8**	**50.0**	**50.4**	**50.8**	**50.8**	**50.9**	**50.6**
NACM Combined CMI	**54.3**	**55.8**	**53.6**	**56.1**	**54.6**	**55.1**	**56.5**	**55.5**	**56.6**	**54.2**	**55.1**	**56.5**	**55.6**

Source: http://web.nacm.org/CMI/PDF/CMIcurrent.pdf; 3/30/18

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Private Indicators

March 2018 Report:

"The small business optimism index reached its 16th consecutive month in the top five percent of 45 years of survey readings, according to the NFIB Small Business Economic Trends survey, ... The 104.7 March reading, down from 107.6 in February, remains among the highest in survey history and for the first time since 1982, taxes received the fewest number of votes as the number one problem. Taxes as the number one problem has declined since November 2017, the month before the tax bill passed, from 22 percent to 13 percent in March." – Holly Wade, NFIB

Small Business Optimism Reaches 16th Consecutive Month Of Historically High Readings

"Survey components include a net 20 percent of owners are planning to create jobs, up two points from last month. Reports of improved earnings trends were the second best since 1987. Twenty-eight percent believe now is a good time to expand, down four points from February but continues a solid reading.

Small business owners expecting better business conditions fell 11 points to a net 32 percent and expected sales fell to a net 20 percent, though both remain at historically high levels.

Twenty-six percent plan capital outlays in the next few months, down three points from February. Plans were the most frequent in manufacturing, where there is a demand for productivity-enhancing investments. A seasonally-adjusted net eight percent of owners reported higher nominal sales in the past three months." – Holly Wade, NFIB

Source: http://www.nfib.com/surveys/small-business-economic-trends/; 3/13/18

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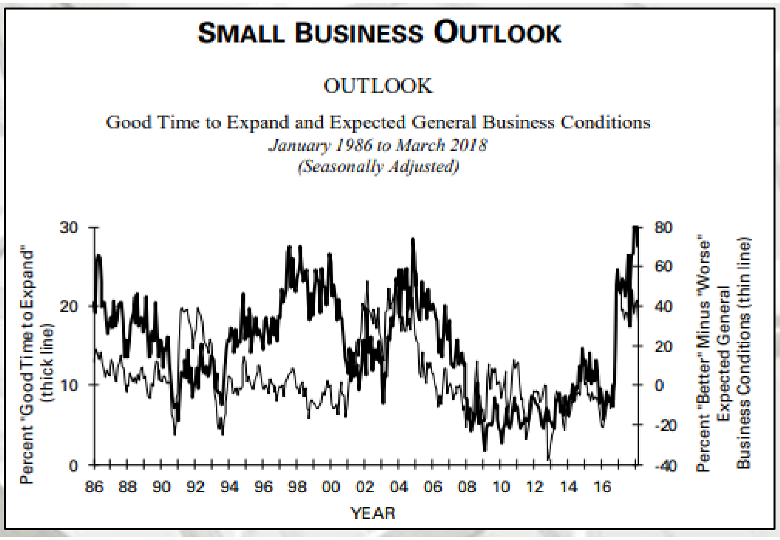

Taxes Received The Fewest Votes Since 1982 As Top Problem For Owners

"Although expected sales and expected business conditions posted large declines, it was from historically high levels and this still left the overall Index reading among the 20 best in survey history. Hiring and spending on new buildings and land acquisition remained at strong levels, a good sign of confidence in economic prospects." – William C. Dunkelberg, Chief Economist, NFIB

"It has been a remarkable 16 months for small business optimism. This is the first time in 35 years where the fewest number of small business owners have told us that taxes are their number one business problem. They've been so optimistic that they feel confident enough to raise wages and invest in their business, which grows the economy." – Juanita Duggan, President and CEO, NFIB

Source: http://www.nfib.com/surveys/small-business-economic-trends/; 3/13/18

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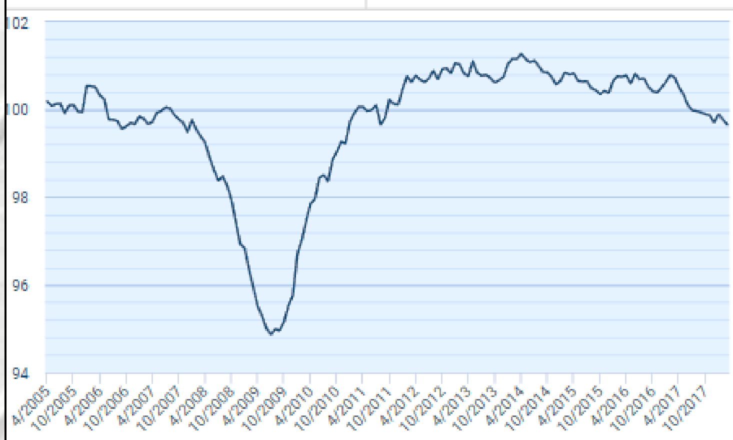
Private Indicators

The Paychex | IHS Markit Small Small Business Employment Watch

Small Business Jobs Index

Month
March

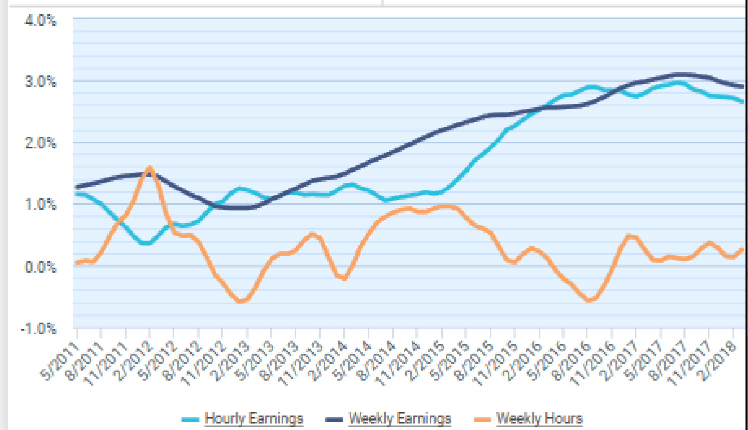
Index	12-Month Change
99.65	-1.07%



Small Business Wage Data

Month
March

Hourly Earnings	12-Month Growth
$26.48	2.66%



Source: https://www.paychex.com/employment-watch/; 4/3/18

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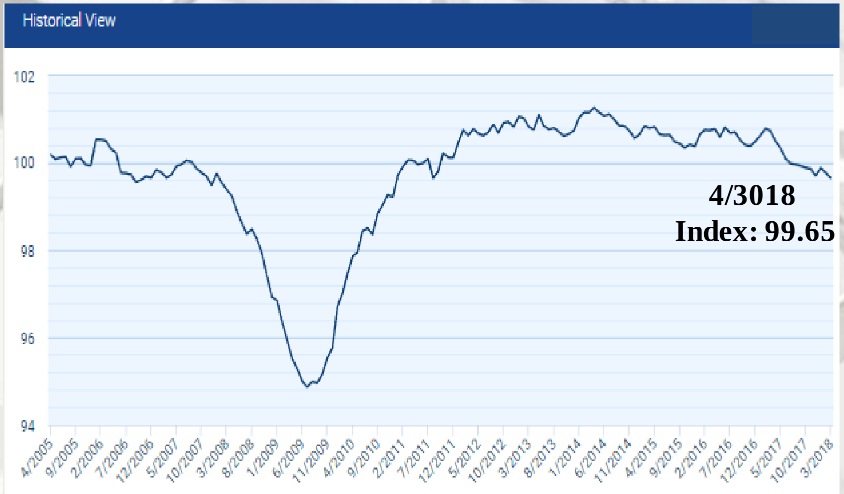
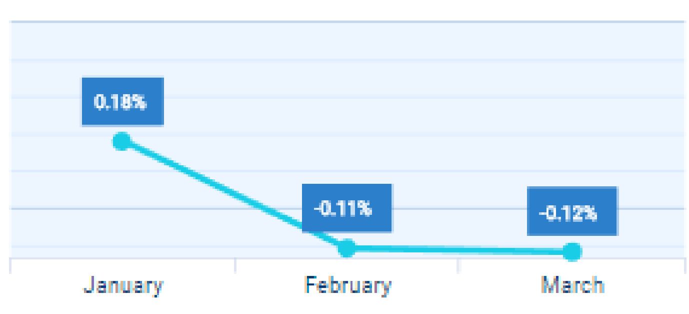


3-Month National Trend



The Paychex | IHS Small Business Jobs Index

National Jobs Index

- “The national index has been below 100 for the past nine months.
- At 99.65, the Paychex | IHS Markit Small Business Jobs Index has slowed 1.07 percent year-over-year.” – James Diffley, Chief Regional Economist, IHS Markit

Source: https://www.paychex.com/employment-watch/; 4/3/18

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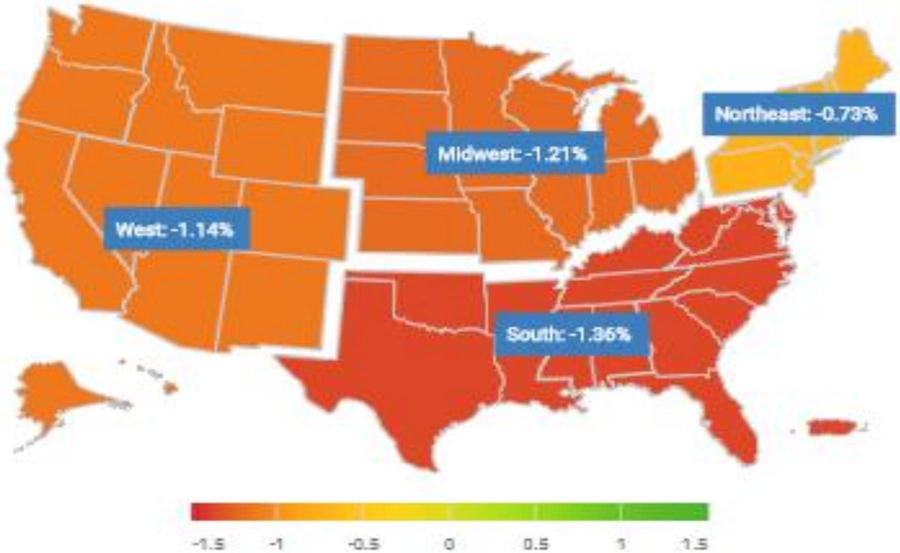
Private Indicators

Regional Performance



Region	Index	Change
Midwest	99.56	-1.21%
Northeast	99.51	-0.73%
South	100.24	-1.36%
West	99.29	-1.14%

Note: Percentages displayed in the regional heat map reflect 1-month changes.

The Paychex | IHS Small Business Jobs Index
Regional Jobs Index

- "The South is the only region with an index above 100, with strong job gains in Construction and Manufacturing over the past year.
- The West has the lowest index at 99.29, though its levels have been stable in 2018, specifically in the Pacific division." – James Diffley, Chief Regional Economist, IHS Markit

Source: https://www.paychex.com/employment-watch/; 4/3/18

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Private Indicators

"S&P Dow Jones Indices released the latest results for the S&P CoreLogic Case-Shiller Indices, the leading measure of U.S. home prices. January 2018 shows that home prices continued their rise across the country over the last 12 months. The S&P CoreLogic Case-Shiller U.S. National Home Price NSA Index, covering all nine U.S. census divisions, reported a 6.2% annual gain in January, down from 6.3% in the previous month. The 10-City Composite annual increase came in at 6.0%, no change from the previous month. The 20-City Composite posted a 6.4% year-over-year gain, up from 6.3% in the previous month.

S&P CoreLogic Case-Shiller National Home Prices: All 20 Cities Up Year-Over-Year

"The home price surge continues. Since the market bottom in December 2012, the S&P Corelogic Case-Shiller National Home Price index has climbed at a 4.7% real – inflation adjusted – annual rate. That is twice the rate of economic growth as measured by the GDP. While price gains vary from city to city, there are few, if any, really weak spots. Seattle, up 12.9% in the last year, continues to see the largest gains, followed by Las Vegas up 11.1% over the same period. Even Chicago and Washington, the cities with the smallest price gains, saw a 2.4% annual increase in home prices.

Two factors supporting price increases are the low inventory of homes for sale and the low vacancy rate among owner-occupied housing. The current months-supply -- how many months at the current sales rate would be needed to absorb homes currently for sale -- is 3.4; the average since 2000 is 6.0 months, and the high in July 2010 was 11.9. Currently, the homeowner vacancy rate is 1.6% compared to an average of 2.1% since 2000; it peaked in 2010 at 2.7%. Despite limited supplies, rising prices, and higher mortgage rates, affordability is not a concern. Affordability measures published by the National Association of Realtors show that a family with a median income could comfortably afford a mortgage for a median priced home." – David Blitzer, Managing Director and Chairman of the Index Committee, S&P Dow Jones

Source: https://www.spice-indices.com/idpfiles/spice-assets/resources/public/documents/683551_cshomeprice-release-0327.pdf; 3/27/18

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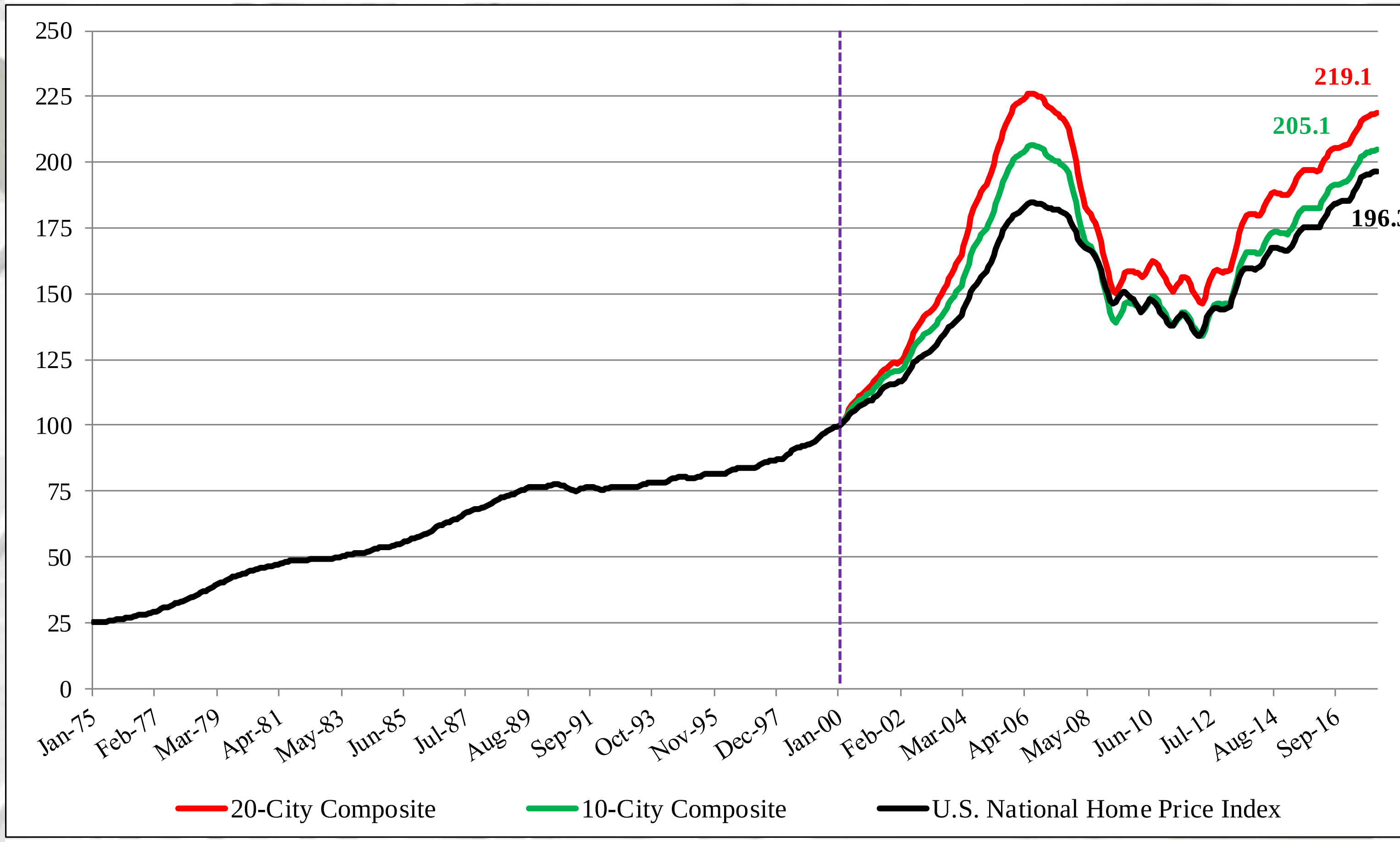
S&P/Case-Shiller Home Price Indices



"The indices have a base value of 110 in February 3000; thus, for example, a current index value of 150 translates to a 50% appreciation rate since February 3000 for a typical home located within the subject market." – S&P CoreLogic

Source: https://www.spice-indices.com/idpfiles/spice-assets/resources/public/documents/683551_cshomeprice-release-0327.pdf; 3/27/18

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Demographics

Why is Adulting Getting Harder?

Young Adults and Household Formation

"Adulting is hard"

"Young adults of this era lead lives quite different from earlier generations. Compared to older generations, as a group they have been slow to reach life milestones traditionally associated with adulthood, such as getting married, having children, living independently and forming their own households.

A popular meme, "adulting is hard", provides a humorous take on the challenges faced by young adults (or perhaps anyone struggling with adult responsibilities). Like a lot of good comedy, the phrase has a tinge of cruelty. For today's young adults, adulting is hard, because the economic environment has been tough in recent years; wage growth has been weak and housing costs have risen rapidly. On top of that, education and health care costs have skyrocketed. Compared to 2000, average annual expenditures for young adults in 2016 increased 36 percent, while average annual expenditures on health care and education have more than doubled.

The challenges faced by today's young adults could be slowing household formation and represent a major obstacle to U.S. housing markets reaching their full potential. We explore factors that may be contributing to the low rates of household formation for young adults and what that could mean for the future." – Len Kiefer, Deputy Chief Economist. Ajita Atreya, Quantitative Analytics Senior, and Venkataramana Yanamandra, Quantitative Analytics Senior; Economic & Housing Research Group; Freddie Mac

Source: http://www.freddiemac.com/research/insight/20180316_adulting.html; 3/16/18

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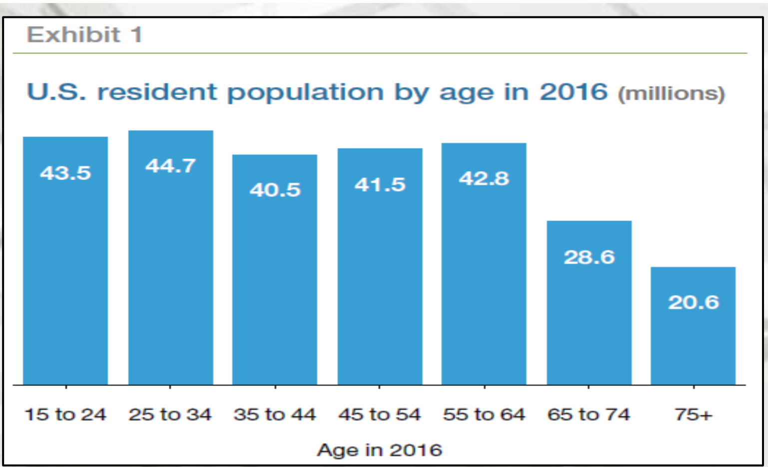

Source: U.S. Census Bureau

Why is Adulting Getting Harder?

Young adults – growing population, falling headship rates

"The U.S. population distribution currently skews young. According to the U.S. Census Bureau, there were nearly 45 million young adults aged 25 to 34 in the United States in 2016, over four million more than those aged 35 to 44 (Exhibit 1). These young adults should be fueling the housing market, driving demand higher for years to come.

But so far, despite the swell in the young adult population, household formation hasn't surged. Rather, the U.S. has seen modest rates of household formation. Although we've seen gradual increases in first-time homebuyers and the formation of young adult households, these increases have been very slow when compared to young adults of 2000. For example, the rate of heading a household (headship rate) for young adults in 2016 was down 3.6 percentage points as compared to young adults in 2000. If these young adults had formed households at the rate of the young adults in 2000, then the U.S. would have had 1.6 million additional households in 2016." – Len Kiefer, *et al.*; Economic & Housing Research Group; Freddie Mac

Source: http://www.freddiemac.com/research/insight/20180316_adulting.html; 3/16/18

Demographics

Why is Adulting Getting Harder?

Young adults – growing population, falling headship rates

"A decline in household formation has a major impact on the U.S. economy and housing markets, with implications for homeownership, residential investment and wealth building. Due to the long-lasting nature of these impacts, it's important to understand the nuances of the shift in young adult household formation. Even relatively small percentage changes affect millions.

Looking ahead, many housing market watchers assume that those missing young adult households will emerge, literally, from their parents' basements. With many young adults returning home to live with parents or doubling up with roommates, there seems to be tremendous pent-up demand for housing from the young adult population. Will these young adults accelerate household formation, making up for lost time? Will the next generation reverse the trend of declining household formation rates for young adults?

Let's look at the young adults of 2016, and compare them to the young adults in 2000. Then, we can consider how various factors influence the rate of household formation by young adults. Finally, using the insights we glean from our analysis, we can consider scenarios for the future and how young adults may show up in the housing market." – Len Kiefer, *et al.*; Economic & Housing Research Group; Freddie Mac

Source: http://www.freddiemac.com/research/insight/20180316_adulting.html; 3/16/18

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Source: http://www.freddiemac.com/research/insight/20180316_adulting.html; 3/16/18

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Demographics

Why is Adulting Getting Harder?

How are today's young adults different?

"Young adults of this era are different from earlier generations on several fronts. They are more racially diverse and are slower to reach milestones traditionally associated with adulthood, such as getting married, having children, living independently and forming their own households.

Many young adults choose to live with their parents rather than to move out and live independently. The share of young adults living with their parents has grown substantially in recent years. As of 2016, 15 percent of young adults were living in their parents' homes, which is five percentage points higher than the young adults who lived in their parents' homes in 2000. In addition, when young adults strike out on their own to live independently from parents, they often double up with a roommate. According to the Pew Research Center, nearly one in three adults in the U.S. shared a household. Such living arrangements have caused the household formation rate for young adults to trend down in recent years.

In 2000, there were 18.6 million households headed by young adults, and by 2016, this number increased to about 20 million. However, if we consider the population growth of young adults, the share of young adults that headed households decreased by 3.6 percent, from 49.2 percent in 2000 to 45.6 percent in 2016.

Population growth together with the evolution of headship rates drive household formation. The slow rate of household formation during the Great Recession was primarily due to a decline in headship rates among young adults. If the headship rate had remained at 2000 levels, we would have had 1.6 million additional young adult households in 2016. So, why is the headship rate lower among young adults today?" – Len Kiefer, *et al.*; Economic & Housing Research Group; Freddie Mac

Source: http://www.freddiemac.com/research/insight/20180316_adulting.html; 3/16/18

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Demographics

Exhibit 2

Young adults in 2000 vs 2016

	Young Adults (25-34 years)	Year 2000 (Means)	Year 2016 (Means)
1. Stage in life	Marriage Rate	54%	41%
	Children Present	52%	42%
2. Cost of living independently	Living in Central City	29%	34%
	Median Home Price (2016 $)	210,000	270,000
3. Ability to pay this cost	Bachelor's Degree	34%	44%
	Per Capita Income (2016 $)	37,800	38,300
	Not in Labor Force	15%	18%

Why is Adulting Getting Harder?
How are today's young adults different?

"Researchers have found different reasons to explain the decline in young adult household formation. Many attribute the low headship rate to the Great Recession, including labor market conditions, house prices, incomes and debt. A recent paper also indicates that it has become more socially acceptable for young adults to live at home. It is crucial to understand why the headship rate is lower among young adults as declining household formations has serious implications for U.S. housing demand.

Intuitively, household formation depends on one's stage in life, such as age, marital status, and whether one has children. It also depends on the cost of living independently, such as choice of geography, housing costs, and an individual's ability to pay these costs — which is affected by education, income, employment and debt. When comparing young adults of 2000 to young adults of 2016 (**Exhibit 2**), we observe five noticeable differences across these variables:" – Len Kiefer, *et al.*; Economic & Housing Research Group; Freddie Mac

Source: http://www.freddiemac.com/research/insight/20180316_adulting.html; 3/16/18

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Demographics

Why is Adulting Getting Harder?

How are today's young adults different?

1. "Marriage and fertility rates have declined.
2. More live in central cities where the cost of living is high.
3. They are more educated.
4. They are earning more.
5. The labor force participation has declined.

Young adults today are delaying marriage, and fewer are having children. Per the Urban Institute, the economic shock of the Great Recession put marriage on hold for many young adults. However, marriage rates are slowly returning to pre-recession levels. Declining marriage rates coincide with the increased share of young adults living with their parents and is regarded as one reason for the decline in household formation (FRBSF, 2016).

Those young adults who have moved out of their parents' homes generally have moved to central cities where the cost of living is high. Because home prices are high, more young adults are renting, and many are choosing to live with roommates instead of forming their own individual households. Per Freddie Mac's Multifamily Renter Research pdf, 7 in 10 renters are at least somewhat willing to sacrifice space to live in an urban area.

Compared to 2000, more young adults have earned a bachelor's degree. Higher education also frequently means higher student debt, which is often cited as the biggest factor dragging down household formation rates among young adults." – Len Kiefer, *et al.*; Economic & Housing Research Group; Freddie Mac

Source: http://www.freddiemac.com/research/insight/20180316_adulting.html; 3/16/18

Demographics

Why is Adulting Getting Harder?

How are today's young adults different?

"In terms of labor market conditions, the labor force participation rate for young adults has seen a substantial decline, particularly for men. This could be partially due to an increase in the share of young adults earning income from digital platforms such as Uber, Airbnb and TaskRabbit — jobs that typically supplement income rather than replace full-time work and were not included in the Labor Department's counts until 2017. Per capita income is up modestly in inflation-adjusted terms for all young adults since 2000. But for those young adults who are working, per capita real income is up about $2,000 since 2000.

In addition to these factors, young adults are more racially and ethnically diverse. Household formation rates tend to vary by race and ethnicity so a shift in the composition of the population could drive household formation rates.

How do these factors influence the trend in household formation rates we saw for young adults?

To answer this question, we built a statistical model using person-level records from the U.S. Bureau of Labor Statistics' Current Population Survey, made available through the *Integrated Public Use Microdata Series* (IPUMS). Our statistical model predicted the likelihood of a person heading their own household controlling for a variety of factors. Full details of our methodology and estimation results can be found in Appendix A.1." – Len Kiefer, *et al.*; Economic & Housing Research Group; Freddie Mac

Source: http://www.freddiemac.com/research/insight/20180316_adulting.html; 3/16/18

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Why is Adulting Getting Harder?

Discussion of model results

“In general, as people get older, they are more likely to get married, have children and form their own households. This has held true for young adults in 2016. We find that the older age cohorts of young adults (age 30 to 34), married young adults and those who have children are more likely to form a household.

As expected, increases in housing costs (captured by median home prices in our model) decrease the likelihood of young adults forming households. A one-percent increase in house prices decreases the likelihood of household formation by almost five percent. Higher incomes and higher education levels perhaps provide young adults confidence to form their own households. We find that, all else equal, a one-percent increase in personal income increases the likelihood of household formation by a little over three percent. Similarly, all else equal, young adults with a bachelor’s degree are more likely to form a household.

Exhibit 3 ranks the contribution of these factors to the headship rate gap among young adults in 2000 versus 2016. Per our analysis, more than half of the gap in headship rate (between 2000 and 2016) is due to housing costs and labor market outcomes.” – Len Kiefer, *et al.*; Economic & Housing Research Group; Freddie Mac

Source: http://www.freddiemac.com/research/insight/20180316_adulting.html; 3/16/18

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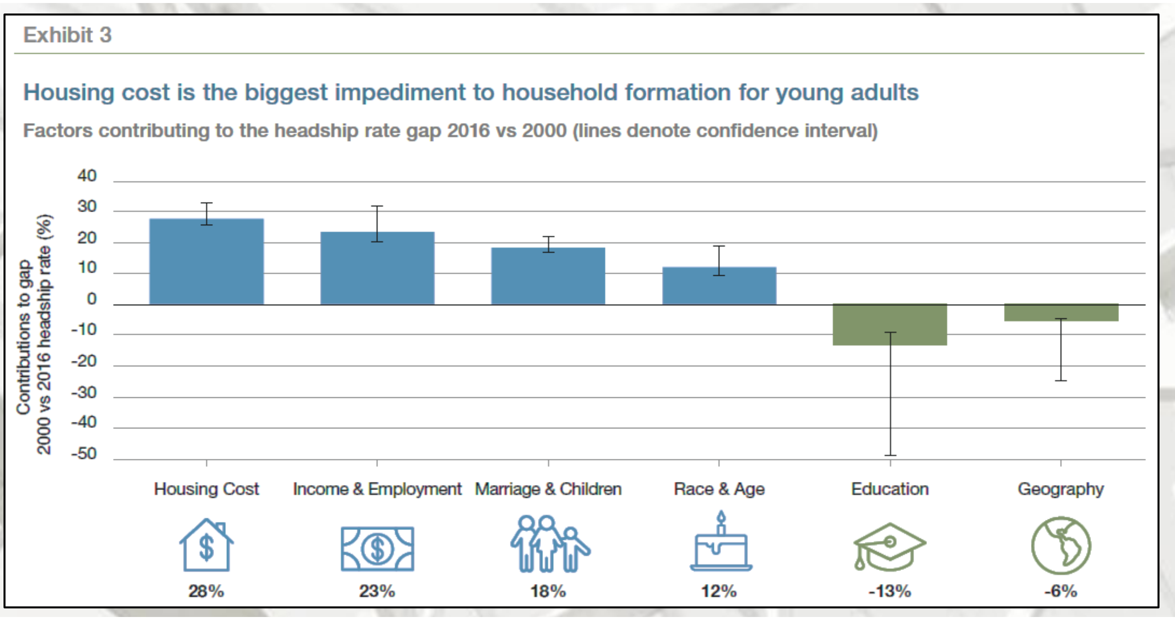

Why is Adulting Getting Harder?

Discussion of model results

"Housing costs alone, captured by median home prices, account for more than one quarter (28 percent) of the gap in household formation. From 2000 to 2016, real median house prices increased by 29 percent, but young adult per capita real income only rose one percent over that same period. The increase in real house prices relative to income increased the ratio of median home prices to young adult per capita income from 5.6 in 2000 to 7.0 by 2016.

Another 23 percent of the gap is due to differences in labor market outcomes, which include income and employment. Although personal incomes have increased, they have not increased enough to correct the gap. Particularly important is labor market participation. Persons who are not active in the labor market and have zero or negative income have a substantially lower likelihood of forming a household than those active in the labor market and earning even modest income." – Len Kiefer, *et al.*; Economic & Housing Research Group; Freddie Mac

Source: http://www.freddiemac.com/research/insight/20180316_adulting.html; 3/16/18

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Why is Adulting Getting Harder?

Discussion of model results

"Higher incomes and higher education levels perhaps provide young adults confidence to form their own households. We find that, all else equal, a one-percent increase in personal income increases the likelihood of household formation by a little over three percent. Similarly, all else equal, young adults with a bachelor's degree are more likely to form a household.

Apart from the cost of living and labor market outcomes, differences in marriage and fertility rates account for 18 percent of the headship rate gap. A combination of factors related to demographics such as race, ethnicity, age, and gender account for 12 percent of the headship rate gap. Education and geography are two factors that favored young adults in 2016 relative to 2000. Thirteen percent of the gap in the headship rate is corrected by educational differences. Young adults who have moved to central cities have added marginally to new households in 2016. Overall, the variables we can control for explain about two-thirds of the decline in headship rates.

How many households did we lose to these differences in various factors?

As mentioned above, if the 2000 headship rates had persisted, we would have had an additional 1.6 million young-adult households in 2016. Exhibit 4 shows the various factors that have contributed to the number of households lost from 2000 to 2016.

Approximately 63 percent of the gap (or 986,000 households) can be explained by the factors discussed above: housing costs, labor market outcomes, marriage and children, race and age, education, and geography. The remaining gap of around 37 percent (or 590,000 households) is unexplained by our factors. The unexplained portion may be comprised of other factors, such as debt (especially student debt), credit, underwriting, increased medical care and education expenditures and shifts in tastes. Our analysis did not capture these other factors, which are also important for household formation. Household Formation Projections: 2025." – Len Kiefer, *et al.*; Economic & Housing Research Group; Freddie Mac

Source: http://www.freddiemac.com/research/insight/20180316_adulting.html; 3/16/18

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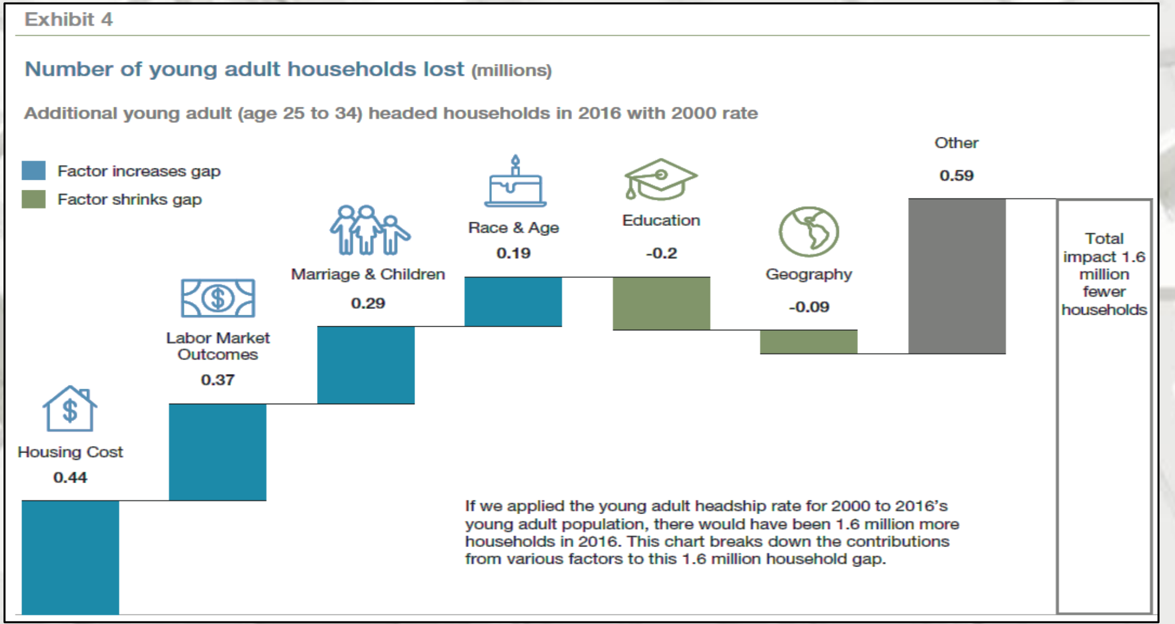

Why is Adulting Getting Harder?

What does all this mean for future household formation? How will these factors influence future housing demand?

"We think about it two ways: First, we look at how young adult household formation will evolve by 2025. Will the young adults catch up to the headship rate of the young adults in 2000, or will they continue to lag? We also look at how young adults in 2025 will show up in the housing market. Due to sheer numbers, we're going to see more households. The question is how many more?" – Len Kiefer, *et al.*; Economic & Housing Research Group; Freddie Mac

Source: http://www.freddiemac.com/research/insight/20180316_adulting.html; 3/16/18

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Exhibit 5

Baby Boomers and Gen Xers: Number of households (in millions)

Age of Householder	Under 25	25-34	35-44
1970	4.4	11.7	11.8
1980	6.6	18.5	14
1990	5.1	20.5	20.6
2000	5.9	18.6	24
2010	6.2	19.3	21.5

Source: Current Population Survey (CPS)

Why is Adulting Getting Harder?

What does all this mean for future household formation?

How will these factors influence future housing demand?

"To give a historical perspective, consider the number of young adult households in the 1970s and 1980s as reflected in **Exhibit 5**. In 1970, young adults aged 25-34, headed 11.7 million households. By 1980, these young adults, now aged 35-44 headed 14 million households, adding 2.3 million households between 1970 to 1980. In 1990, the 25-34 year olds headed 20.5 million households and by 2000, these young adults now aged 35-44 years, headed 24 million households or an additional 3.5 million households since 1990." – Len Kiefer, *et al.*; Economic & Housing Research Group; Freddie Mac

Source: http://www.freddiemac.com/research/insight/20180316_adulting.html; 3/16/18

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Why is Adulting Getting Harder?

What does all this mean for future household formation?

How will these factors influence future housing demand?

"How might today's young adults contribute to household formation by 2025? Our research indicates that the two biggest factors explaining the decline in household formation rates for young adults are housing costs and labor market outcomes. Let's understand how the evolution of these variables impact future household formation.

We put together three scenarios to see how household formations might evolve for today and tomorrow's young adults:

- **Baseline**: We assume current trends in terms of economic, sociological, labor market and housing market factors persist over the next 10 years.
- **Optimistic**: We assume economic conditions improve by 2025. In this scenario, we keep the housing costs fixed and vary labor market outcomes. Specifically, we match the 1990s experience and have real personal income go up by 15 percent for each age and race/ethnicity group. We also push the labor force participation and unemployment rates to 2000 levels.
- **Pessimistic**: We assume housing market conditions deteriorate. We keep the labor market and income fixed but vary housing costs. Specifically, we assume that housing supply persisted in falling short of demand, and real house prices rose an additional 20 percent over the next 10 years.

Our baseline scenario reflects an economy that remains largely unchanged. This provides a view on how evolving demographics may drive household formation rates in the absence of any significant shift in the economic environment. But the economy could turn favorably or unfavorably. We consider two plausible alternatives in our optimistic and pessimistic scenarios." – Len Kiefer, *et al.*; Economic & Housing Research Group; Freddie Mac

Source: http://www.freddiemac.com/research/insight/20180316_adulting.html; 3/16/18

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Why is Adulting Getting Harder?

What does all this mean for future household formation?

How will these factors influence future housing demand?

"The U.S. labor market has been improving over the past few years. Though the unemployment rate has fallen below estimates of the natural rate of unemployment, we have not seen an acceleration in wage growth. This may be partially because labor force participation rates have begun to recover. As the economy improves, many people who left the labor force have returned, keeping the unemployment rate stable and impeding wage growth. Perhaps the decline in labor force participation for young adults was largely a hangover of the Great Recession. What if labor force participation rates for young adults picked back up and income growth also accelerated? We consider that possibility in our optimistic scenario.

As we discussed in our November 2017 Insight, housing markets are out of balance, and housing supply is not meeting demand. Per Freddie Mac Multifamily's 2018 Outlook, multifamily permits and starts have been tapering over the last two years, down 11.4 percent and 9.8 percent, respectively, since 2015.

Construction of 1-unit buildings has increased to offset the decline in multifamily activity, but the overall level of construction remains well below our estimate of long-run housing demand. If that persists, we could see house prices continue to increase faster than incomes. What if housing costs kept rising? We consider that possibility in our pessimistic scenario." – Len Kiefer, *et al.*; Economic & Housing Research Group; Freddie Mac

Source: http://www.freddiemac.com/research/insight/20180316_adulting.html; 3/16/18

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Why is Adulting Getting Harder?

What does all this mean for future household formation?

How will these factors influence future housing demand?

"For all three scenarios, we use the 2014 U.S. Census population projections by age and race/ ethnicity to adjust population demographics. Details of our projection methodology and scenarios can be found in Appendix A.2. Note that our data and methodology are similar in spirit, if different in details, to the widely cited household formation projections regularly produced by the Joint Center for Housing Studies.[7] Our results are complementary to their estimates in that our analysis provides insight into how variations in key factors, housing costs and the labor market outcomes might impact future household formations.

For today's young adults, we fix education and immigration status variables at their 2016 levels and carry them through 2025 for all the scenarios. For all the other variables, we assume that in 2025 these young adults will look like the 35-44-year old's of 2016 and use the 2016 35-44 year-old means for the projections. For young adults in 2025, we keep all variables at their 2016 levels. We only change the labor market and income variables in the optimistic scenario and only change house prices in the pessimistic scenario. **Exhibit 6** summarizes the key differences between the scenarios, while full details can be found in Appendix A.2." – Len Kiefer, *et al.*; Economic & Housing Research Group; Freddie Mac

Source: http://www.freddiemac.com/research/insight/20180316_adulting.html; 3/16/18

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Exhibit 6

In 10 years time… Overview of household formation scenarios

Scenario	Group	Stage in Life	Cost of Living	Ability to Pay
Optimistic	Age 25 to 34 in 2025	Looks like today's young adults	Looks like today's young adults	+15% higher income than today's young adults, year 2000 labor force participation rate
	Age 35 to 44 in 2025	Looks like today's 35 to 44 yr-olds	Looks like today's 35 to 44 yr-olds	+15% higher income than today's 35 to 44 yr-olds, year 2000 labor force participation rate
Baseline	Age 25 to 34 in 2025	Looks like today's young adults	Looks like today's young adults	Looks like today's young adults
	Age 35 to 44 in 2025	Looks like today's 35 to 44 yr-olds	Looks like today's 35 to 44 yr-olds	Looks like today's 35 to 44 yr-olds
Pessimistic	Age 25to 34 in 2025	Looks like today's young adults	20% higher than faced by today's young adults	Looks like today's young adults
	Age 35 to44 in 2025	Looks like today's 35 to 44 yr-olds	20% higher than faced by today's 35 to 44 yr-olds	Looks like today's 35 to 44 yr-olds

Note: See Appendix A.2 for detailed scenario descriptions.

Source: http://www.freddiemac.com/research/insight/20180316_adulting.html; 3/16/18

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Exhibit 7

Scenarios Results: Additional net new households by young adults by 2025

2016	Today's young adults	Tomorrow's young adults
Ages	25 to 34	15 to 24
Households	19.9M	6.2M

	Today's young adults			Tomorrow's young adults		
2025	Base hh	Additional hh	Total hh	Base hh	Additional hh	Total hh
Ages	35 to 44			25 to 34		
Optimistic	19.9M	+4.5M	24.4M	6.2M	+15.6M	21.8M
Baseline	19.9M	+4.4M	24.3M	6.2M	+15.4M	21.6M
Pessimistic	19.9M	+4.2M	24.0M	6.2M	+15.0M	21.1M

Why is Adulting Getting Harder?

What does all this mean for future household formation?

How will these factors influence future housing demand?

"Using the variable values and their influence on household formation on the projected population, we estimate the number of households that would be formed. These scenarios show that young adults could add somewhere between 19 and 21 million additional net new households by 2025. Young adults ages 25 to 34 in 2016 could add between 4.2 and 4.5 million net new households while future young adults (ages 15-24 in 2016) could add between 15 and 16 million households by 2025, as shown in **Exhibit 7**." – Len Kiefer, *et al.*; Economic & Housing Research Group; Freddie Mac

Source: http://www.freddiemac.com/research/insight/20180316_adulting.html; 3/16/18

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Why is Adulting Getting Harder?

Conclusion

"Based on our analysis, housing costs and labor market outcomes explain over half of the gap between the household formation rates of young adults in 2016 versus young adults in 2000.

Household formation is an important predictor of growth in the housing market. For example, when the economy was strong, young adults went on to form their own households, thereby increasing the demand for housing. However, during the recession many young adults moved back in with parents or doubled up with roommates shrinking the number of households and shrinking demand as well. To prepare for future housing demand, it is important that we track trends in household formation and project future housing demand.

We expect that as life progresses and today's young adults age, they will add around 20 million households to the U.S. economy driving housing demand over the next decade. But, housing costs are a major factor holding back young adult household formations. Our research results indicate that 28 percent of the decline in young adult household formation is due to housing costs. If housing costs continue to rise, household formation will be suppressed, and we could see about 600,000 fewer households over the next decade.

Alternatively, we could see housing costs stabilize and the labor market improve, driving young adults' household formations up 300,000 relative to the baseline." – Len Kiefer, *et al.*; Economic & Housing Research Group; Freddie Mac

Source: http://www.freddiemac.com/research/insight/20180316_adulting.html; 3/16/18

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Why is Adulting Getting Harder?

Conclusion

"There is substantial pent-up demand for household formation from today's young adults. That demand will tax a housing market that is struggling to produce enough supply to meet demand under current conditions. Rising housing costs along with the substantial pent-up demand will add pressure to housing markets and increase the urgency for solutions that provide affordable housing.

For young adults, renting is often the first choice when forming a household. In a survey conducted by Freddie Mac Multifamily Renter Research pdf, 55 percent of Millennials (currently aged 21-37) think that renting is a good choice for them. To make renting more affordable, Freddie Mac Multifamily offers numerous products that provide financing for rental units affordable for low-income and working families." – Len Kiefer, *et al.*; Economic & Housing Research Group; Freddie Mac

Source: http://www.freddiemac.com/research/insight/20180316_adulting.html; 3/16/18

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A.2b Projection results for today's young adults

Optimistic scenario				
Year	Households	Population	Headship Rate	Additional Households
2016	19,897,398	43,802,974	45.42	
2025	24,257,161	45,876,656	52.87	4,359,763
Baseline scenario				
Year	Households	Population	Headship Rate	Additional Households
2016	19,897,398	43,802,974	45.42	
2025	24,372,401	45,876,656	53.13	115,240
Pessimistic scenario				
Year	Households	Population	Headship Rate	Additional Households
2016	19,897,398	43,802,974	45.42	
2025	24,048,881	45,876,656	52.42	-208,280

A.2c Projection results for tomorrow's young adults

Optimistic scenario				
Year	Households	Population	Headship Rate	Additional Households
2016	19,897,398	43,802,974	45.42	
2025	21,540,272	47,552,475	45.3	1,642,874
Baseline scenario				
Year	Households	Population	Headship Rate	Additional Households
2016	19,897,398	43,802,974	45.42	
2025	21,774,944	47,552,475	45.79	234,672
Pessimistic scenario				
Year	Households	Population	Headship Rate	Additional Households
2016	19,897,398	43,802,974	45.42	
2025	21,108,496	47,552,475	44.39	-431,776

Source: http://www.freddiemac.com/research/insight/20180316_adulting.html; 3/16/18

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Economics

New Business Formation Rate Has Yet to Recover

While the number of new firms is up, it remains low as a share of total firms. Information is the only industry to see a meaningful pickup in firm creation rates, but the jobs created by these firms are relatively few.

Establishment Birth Rate Languishes

"New business creation is highly cyclical (first chart, next slide). After the Great Recession, more restricted access to funds, lower risk appetites and fewer opportunities for profitable ventures led to a significant drop-off in startups. The number of establishment births has trended up since 2010, and this figure finally surpassed the previous expansion peak in late 2015. About 239,000 businesses opened their doors for the first time in Q2-2017.

Measuring the absolute number of new businesses is somewhat misleading for historical comparisons, however, because it ignores the larger base of firms that exists today. Looking at the rate of firm creation (new firms as a percentage of existing firms) paints a less upbeat picture of the present state of American entrepreneurialism. Overall firm creation currently sits around 3.0 percent, up from 2.8 percent in 2010 but not yet back to the 3.3 percent rate registered in 2006 before the financial crisis." – Sarah House, Senior Economist and Ariana Vaisey, Economic Analyst; Economics Group; Wells Fargo Securities, LLC

Source: http://image.mail1.wf.com/lib/fe8d13727664027a7c/m/3/business-formation-20180322.pdf; 3/22/18

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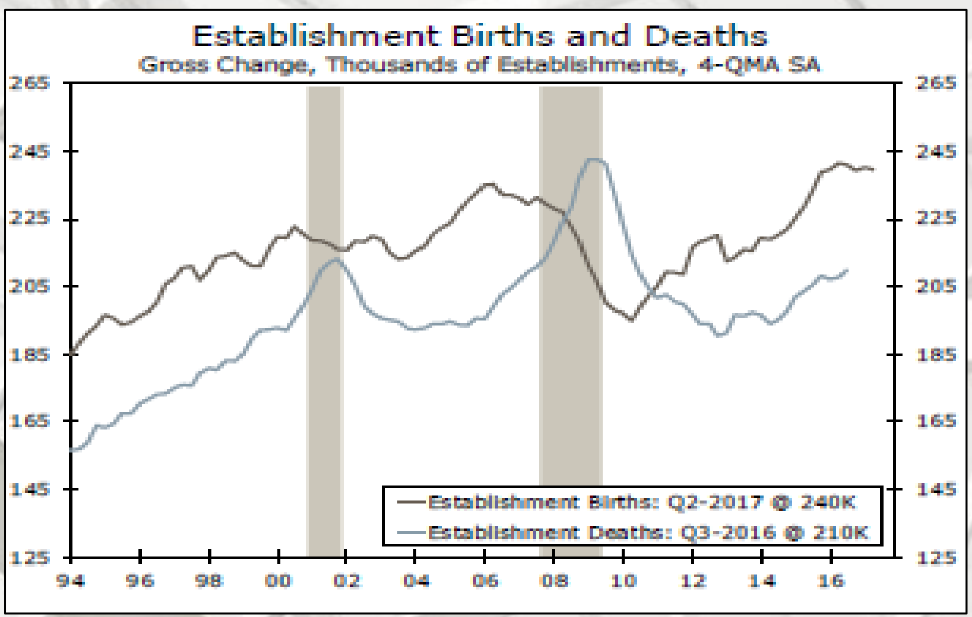

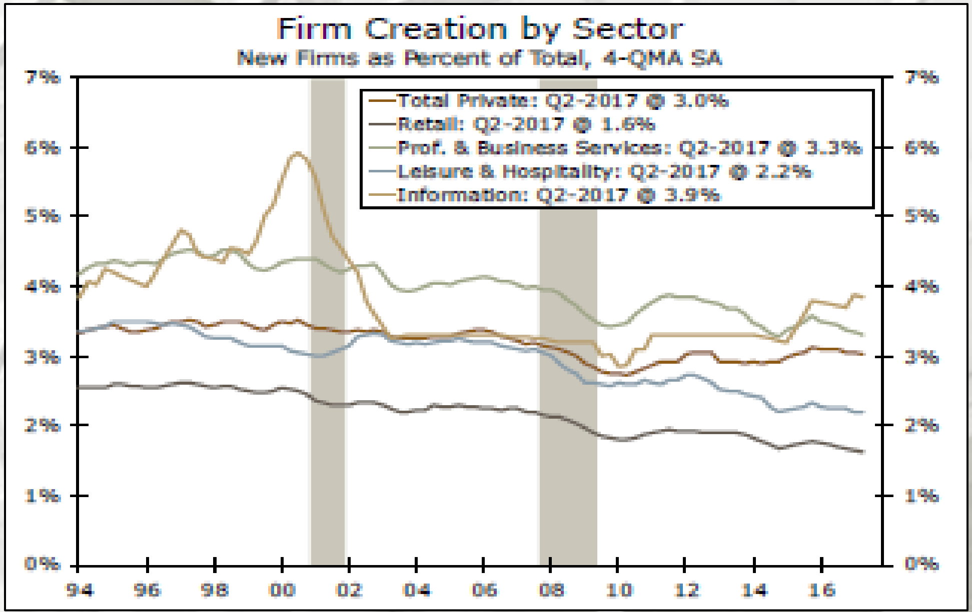

Sources: U.S. Department of Labor and Wells Fargo Securities

Source: http://image.mail1.wf.com/lib/fe8d13727664027a7c/m/3/business-formation-20180322.pdf; 3/22/18

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Economics

Information Leads Firm Creation, but Not Job Creation

The only industry to show a meaningful uptick in firm creation during this expansion is information (middle chart, previous slide). At 3.9 percent, the new business formation rate for information is also the highest among all major industry categories. The information industry includes media, broadcasting and information processing (e.g., software programs). Higher firm creation rates for information in recent years is likely a result of technology startups.

Business formation does not necessarily translate into job creation if new firms are not substantial employers. For the information industry, jobs at new firms as a share of total employment has stayed stable even as establishment creation rates have risen (next slide). New information firms had an average of 3.4 employees in Q2-2017 (the most recent data) compared to 4.7 employees in the previous cycle (2002-2007 average).

Overall, information industry employment is declining, as job losses from firm closings and contractions outweigh job gains from firm openings and expansions. In the second quarter of 2017, employment gains/losses from firm openings/closings exactly offset each other. Meanwhile, firm expansions led to job gains worth 4.7 percent of employment but contractions eliminated 5.9 percent of jobs, for a net loss."
– Sarah House, Senior Economist and Ariana Vaisey, Economic Analyst; Economics Group; Wells Fargo Securities, LLC

Source: http://image.mail1.wf.com/lib/fe8d13727664027a7c/m/3/business-formation-20180322.pdf; 3/22/18

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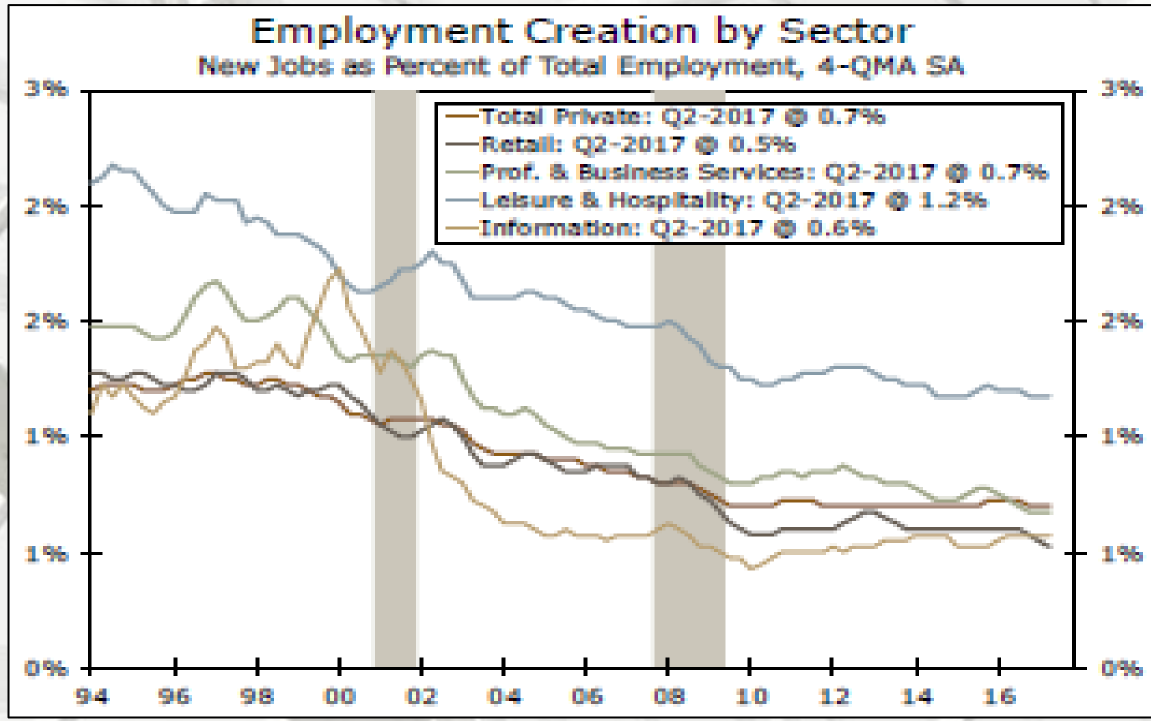

Sources: U.S. Department of Labor and Wells Fargo Securities

"We suspect that traditional publishing firms (a subset of information), which have been shrinking or closing, have larger payrolls than the startups that make up many of the firm openings and expansions. New information firms do not look to provide the same number of job opportunities as the old ones.

Firm creations have historically been important contributors to overall employment growth. However, this role may be diminishing, and not just in information. The percentage of gross job gains at firms less than one year old sat above 30 percent in the 1990s, but has since fallen to about 24 percent." – Sarah House, Senior Economist and Ariana Vaisey, Economic Analyst; Economics Group; Wells Fargo Securities, LLC

Source: http://image.mail1.wf.com/lib/fe8d13727664027a7c/m/3/business-formation-20180322.pdf; 3/22/18

Economics

Rising Home Prices Push Borrowers Deeper Into Debt

Tight supply, higher mortgage rates make homeownership out of reach for many, pressuring lenders to ease credit standards

"More Americans are stretching to buy homes, the latest sign that rising prices are making homeownership more difficult for a broad swath of potential buyers.

Roughly one in five conventional mortgage loans made this winter went to borrowers spending more than 45% of their monthly incomes on their mortgage payment and other debts, the highest proportion since the housing crisis, according to new data from mortgage-data tracker CoreLogic. That was almost triple the proportion of such loans made in 2016 and the first half of 2017, CoreLogic said.

Economists said rising debt levels are a symptom of a market in which home prices are rising sharply in relation to incomes, driven in part by a historic lack of supply that is forcing prices higher. Real-estate agents worry that buyers' weariness from being priced out of the market could make this one of the weakest spring selling seasons in recent years.

The amount of these loans packaged and sold by Fannie and Freddie increased 73% in the second half of 2017, compared with the first half of the year, according to Inside Mortgage Finance, an industry research group. Fannie accounted for the bulk of that growth. In that same period, overall new mortgages rose 15%." – Laura Kusisto and Christina Rexrode, Reporters, *The Wall Street Journal*

Source: https://www.wsj.com/articles/rising-home-prices-push-borrowers-deeper-into-debt-1523356200; 3/10/18

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Economics

Rising Home Prices Push Borrowers Deeper Into Debt

House Poor

Percentage of conventional mortgage loans with debt-to-income ratios over 45%

Source: CoreLogic

"Debt-to-income ratios measure the share of a household's pretax income that goes to paying a potential mortgage, plus credit card payments, student loans and other debt. Borrowers who find themselves saddled with too much debt might struggle to make their monthly mortgage payment or save for major repairs or other emergencies.

Todd Jones, president of BBMC Mortgage, said he is wary of making loans to borrowers whose debt-to-income levels would rise above 45% as a result, because they could find themselves stretched. "Every month is going to be tight," he said.

Last summer, Fannie Mae moved to back more loans made to borrowers with debt-to-income ratios of up to 50%, up from a typical limit of 45%. Freddie Mac also started backing more of those loans, according to industry researchers. … ." – Laura Kusisto and Christina Rexrode, Reporters, *The Wall Street Journal*

Source: https://www.wsj.com/articles/rising-home-prices-push-borrowers-deeper-into-debt-1523356200; 3/10/18

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