

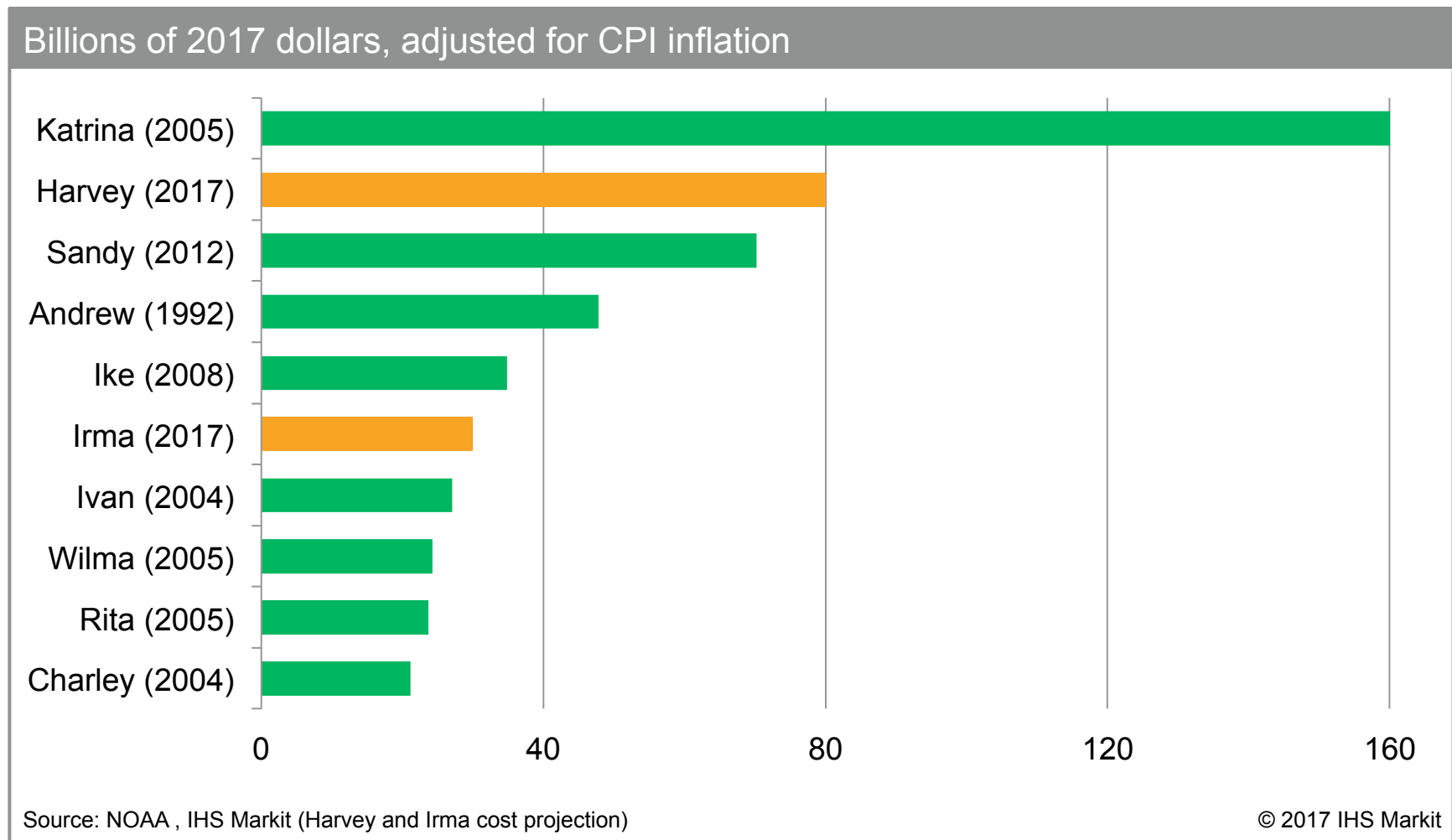
The US Economic Outlook

25 September 2017

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Harvey is expected to be the second-costliest US hurricane since 1980.



Economic impacts of hurricanes

- Lost production due to damaged facilities, logistics constraints, shortages of raw materials, and electricity outages
- Inventory drawdowns resulting from idled productive capacity
- Lost wages and salaries of displaced workers, affecting spending
- Rising credit delinquencies associated with uninsured property losses
- Losses in population and tourism in storm-damaged areas
- Additional government and NGO spending during relief efforts
- Increased construction activity as buildings and infrastructure are repaired or replaced over several years
- Spending to replace damaged vehicles, equipment, and supplies, partly supported by insurance payouts

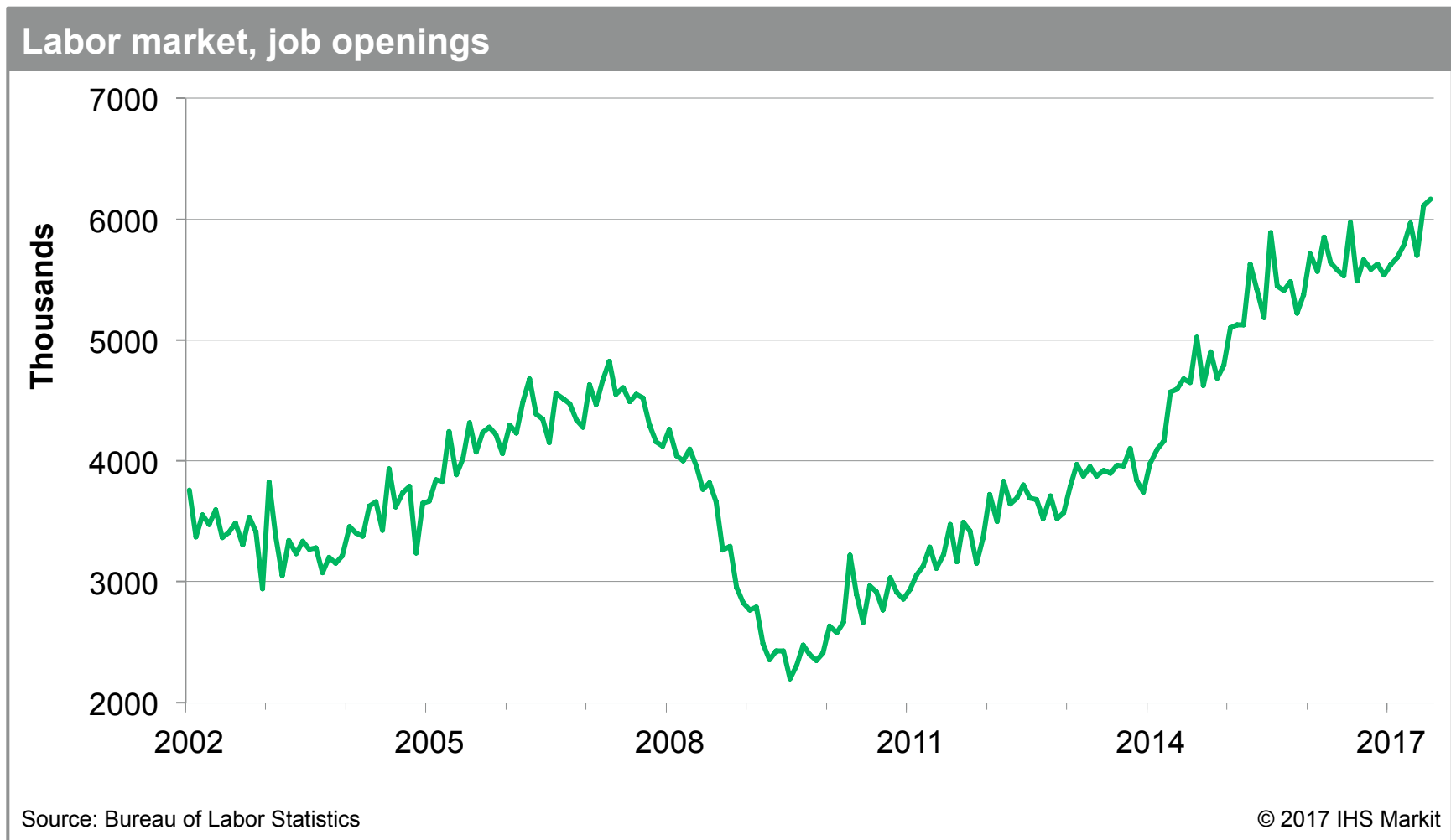
Natural Disasters, GDP, and the BEA

- The BEA is not able to estimate the effects of a natural disaster on GDP because the effects can occur with a lag and they **cannot** be separated from the regular source data
- GDP is a measure of the Nation's **current** production of goods and services, therefore it isn't directly affected by the loss of property
- GDP **can** be affected indirectly by the actions that consumers, businesses, and governments take in response to disruptions in production or to the loss of property caused by natural disasters
 - But these effects cannot be precisely estimated
 - Responses to the natural disaster could be spread out over time
- Under a new methodology adopted in 2003, the value of insurance services produced for policy holders (included in GDP) is not directly affected by the payment of benefits in the wake of a disaster

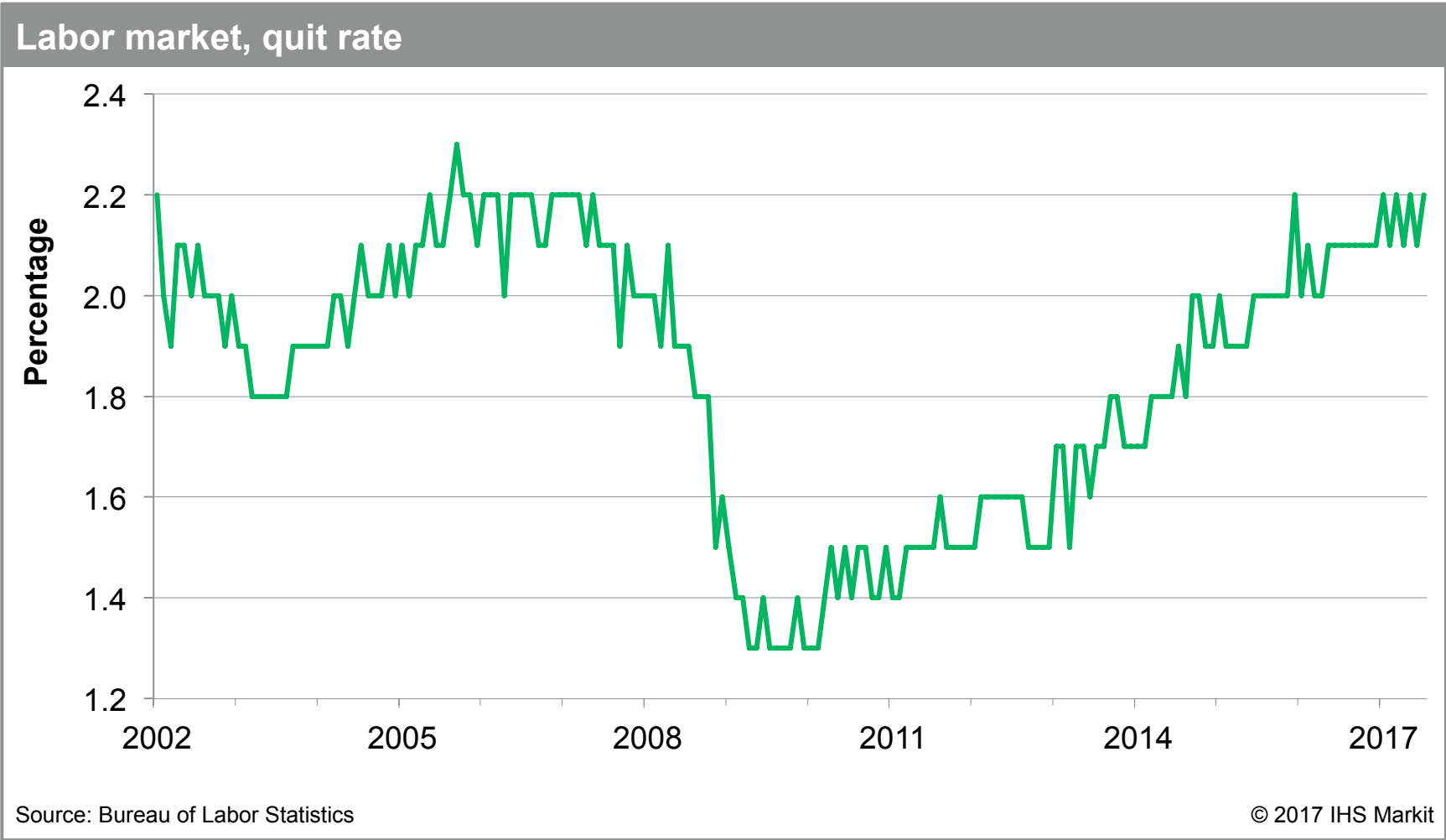
The US economy on a solid growth path

- Real GDP growth picked up from an annual rate of 1.2% in the first quarter to 3.0% in the second quarter as consumer spending accelerated.
- Hurricanes Harvey and Irma have disrupted economic activity in the third quarter, but recovery and rebuilding will boost growth in subsequent quarters.
- Consumer spending continues to drive US economic growth, supported by rising employment, real incomes, and household wealth.
- Business fixed investment will benefit from strengthening global markets and an easing of regulatory policies, although commercial building is slowing.
- Increasing demand, low inventories of homes for sale, and rising prices will encourage more homebuilding, even as interest rates rise.
- The Federal Reserve will gradually raise interest rates (taking the federal funds rate to 3% in late 2019) and reduce its asset holdings.
- The economy's long-term potential growth rate is near 2%.

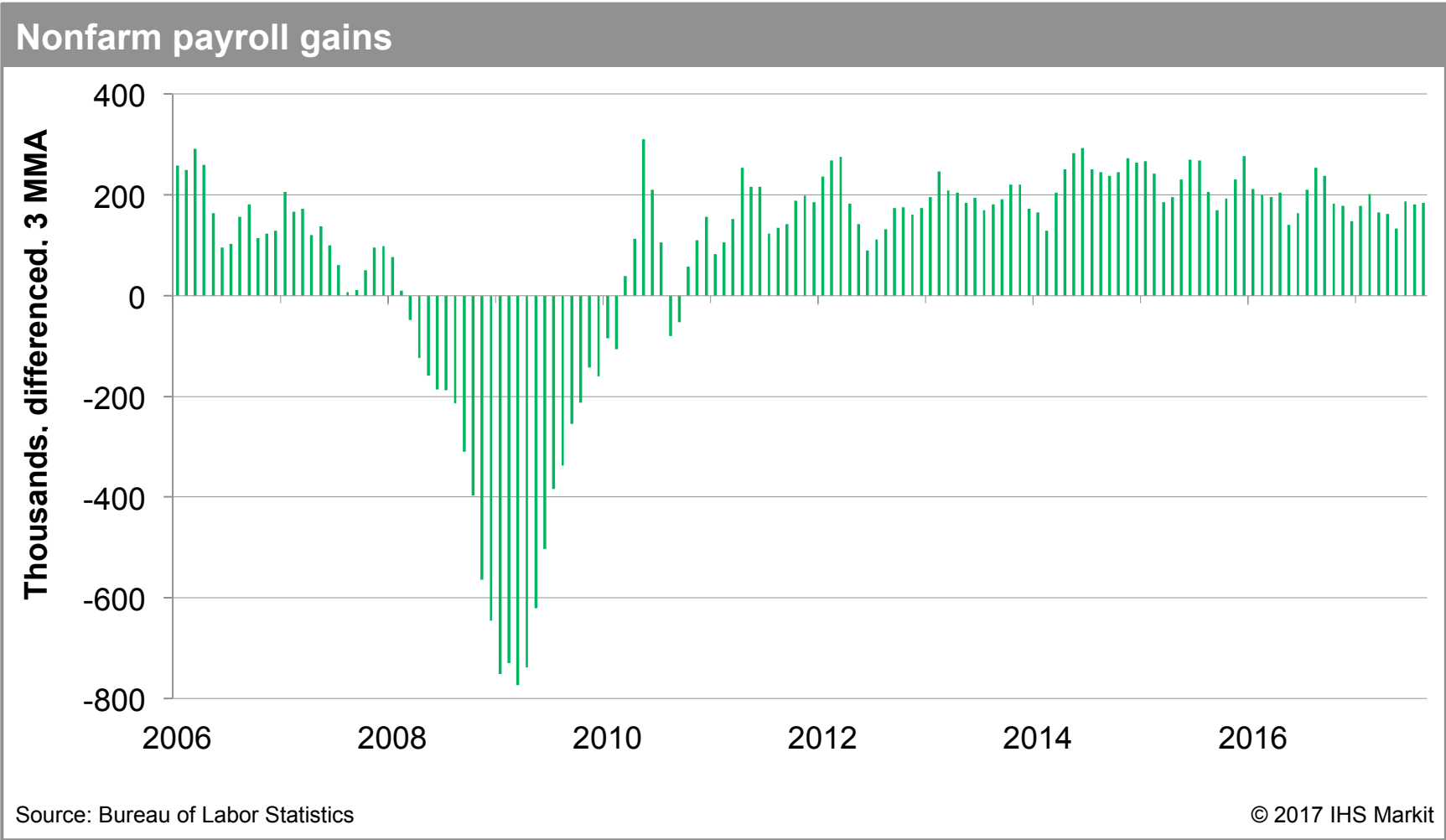
Job Openings at an all-time high



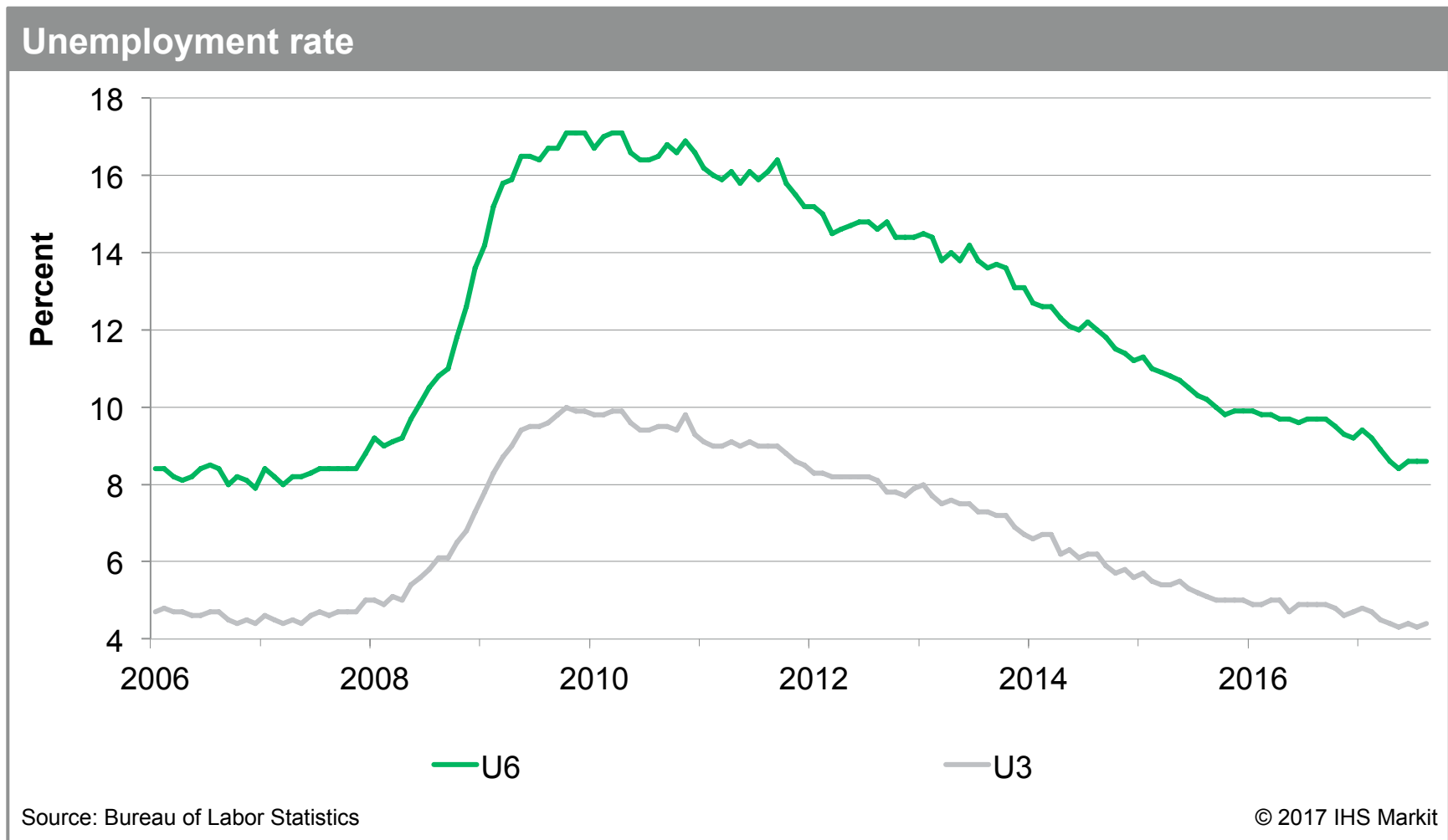
Quits back to normal



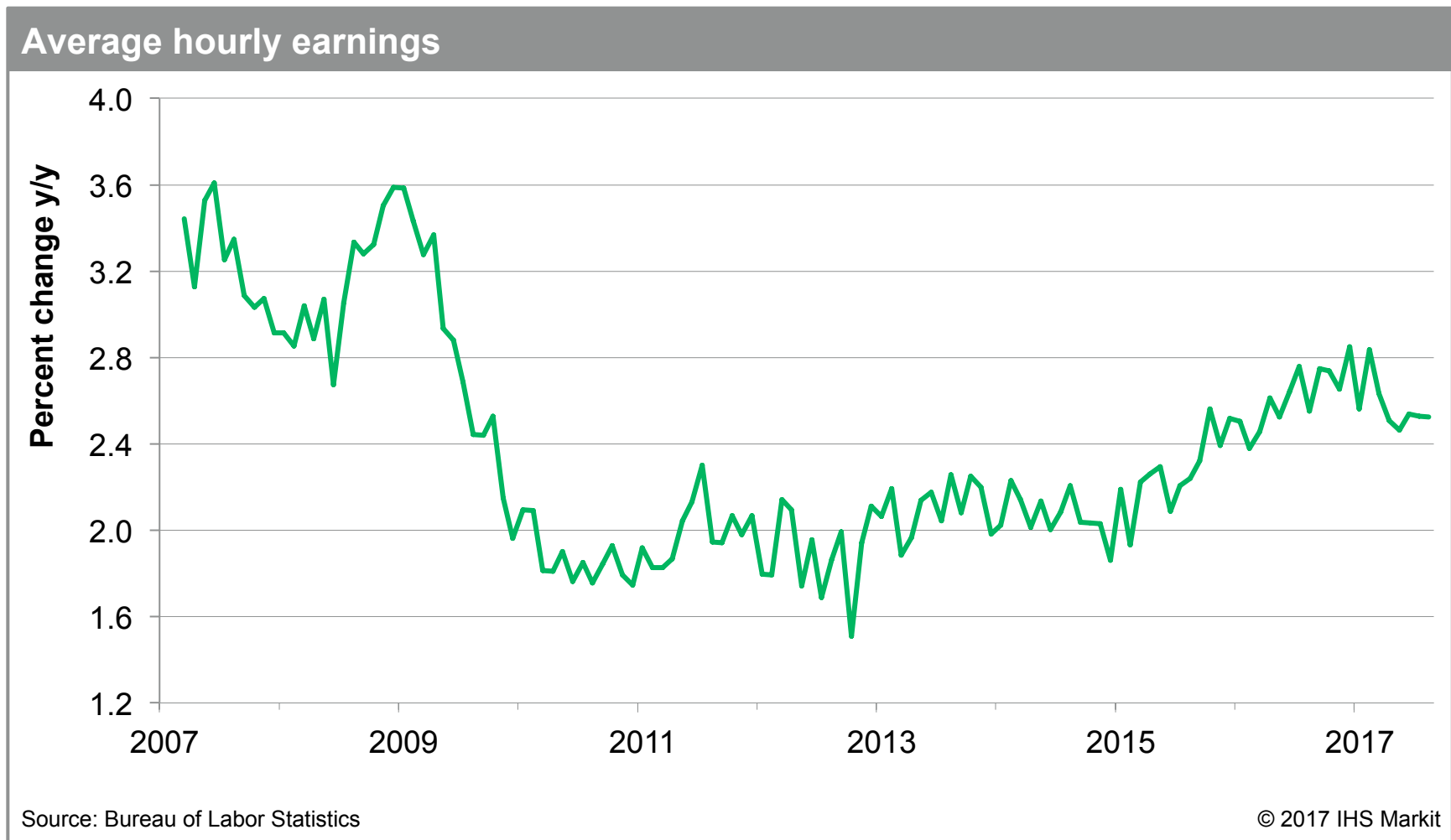
Steady job growth



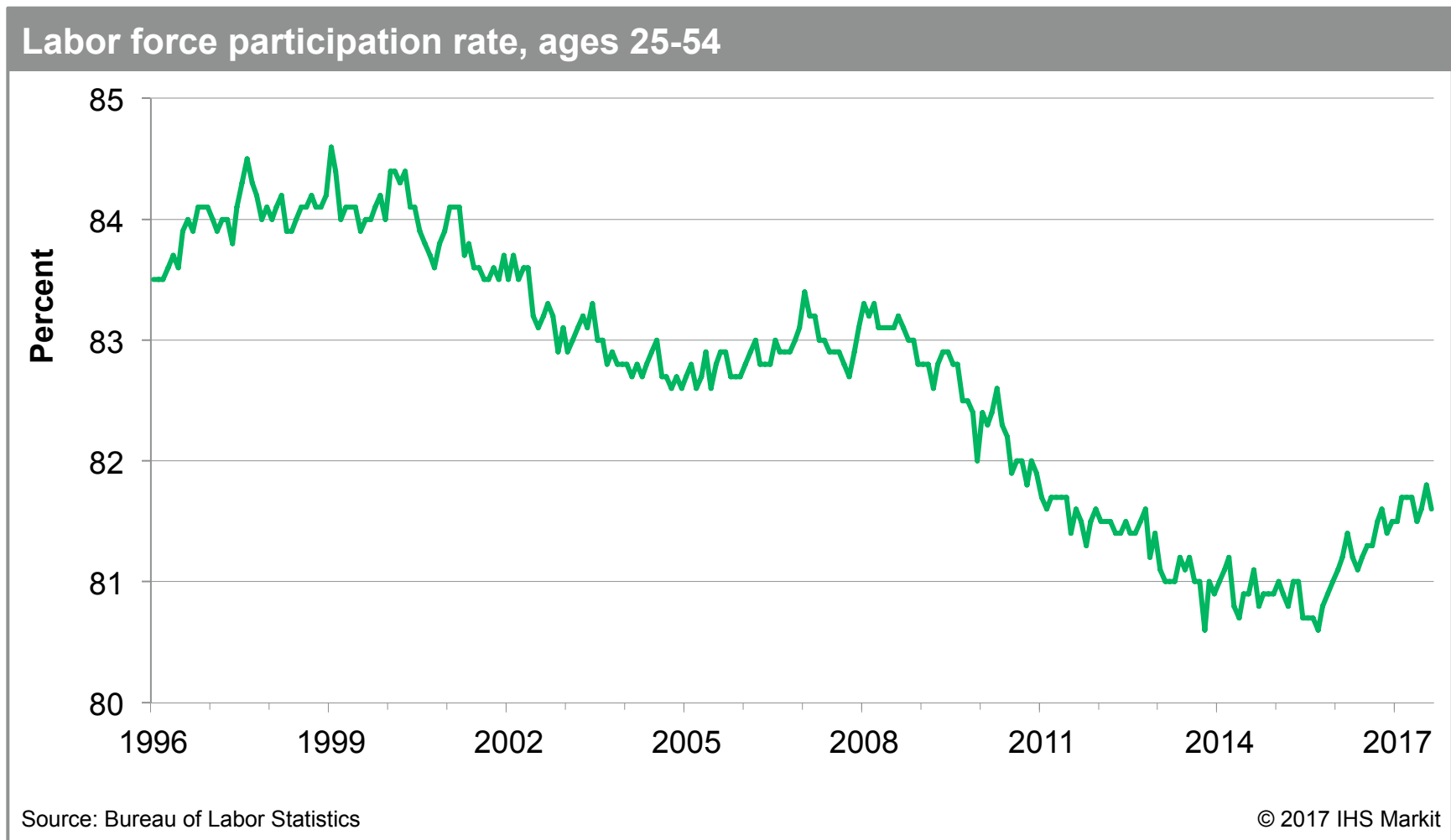
Closing in on full-employment



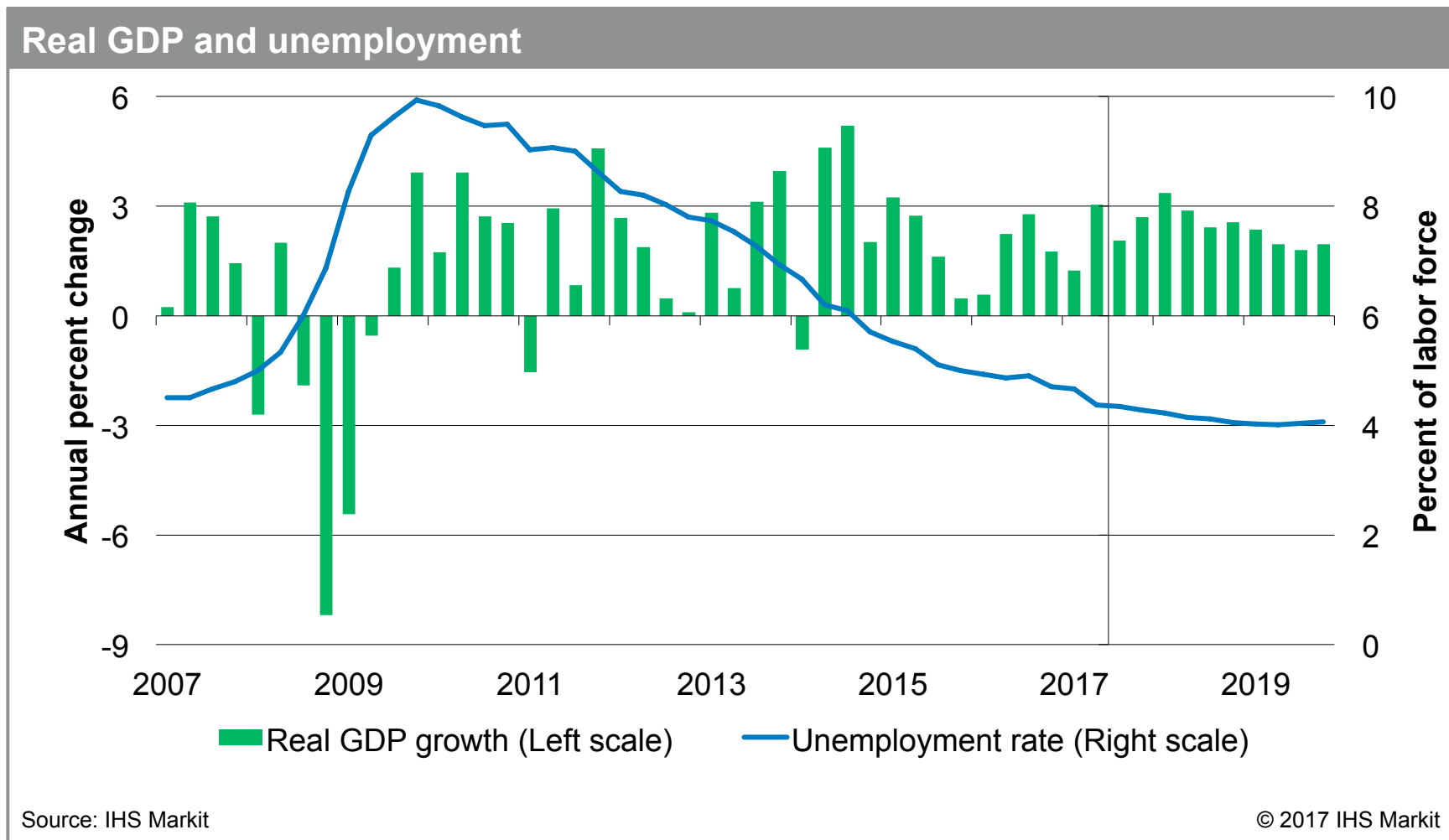
Wages rising hardly more than inflation



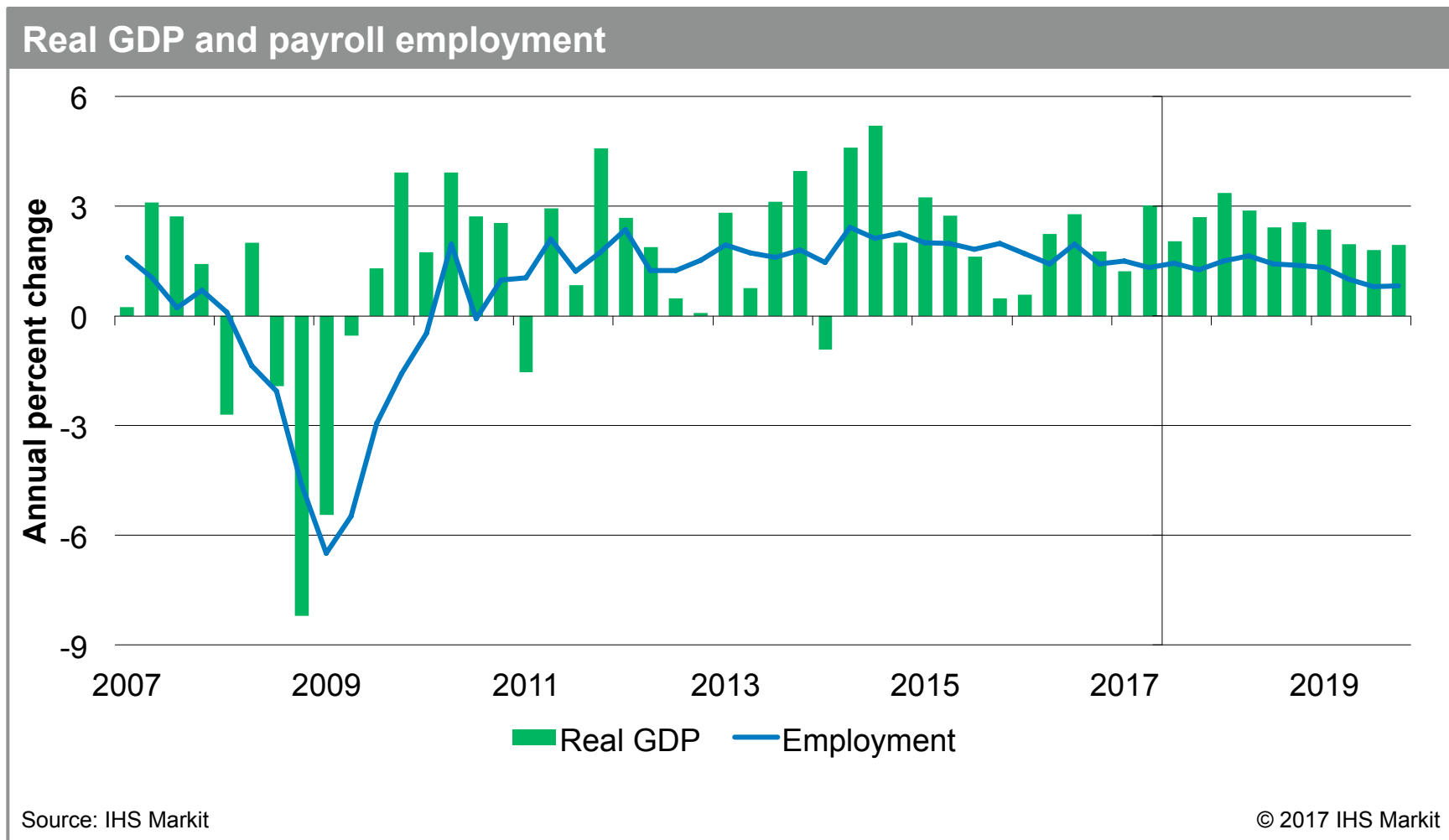
Prime age workers coming back finally



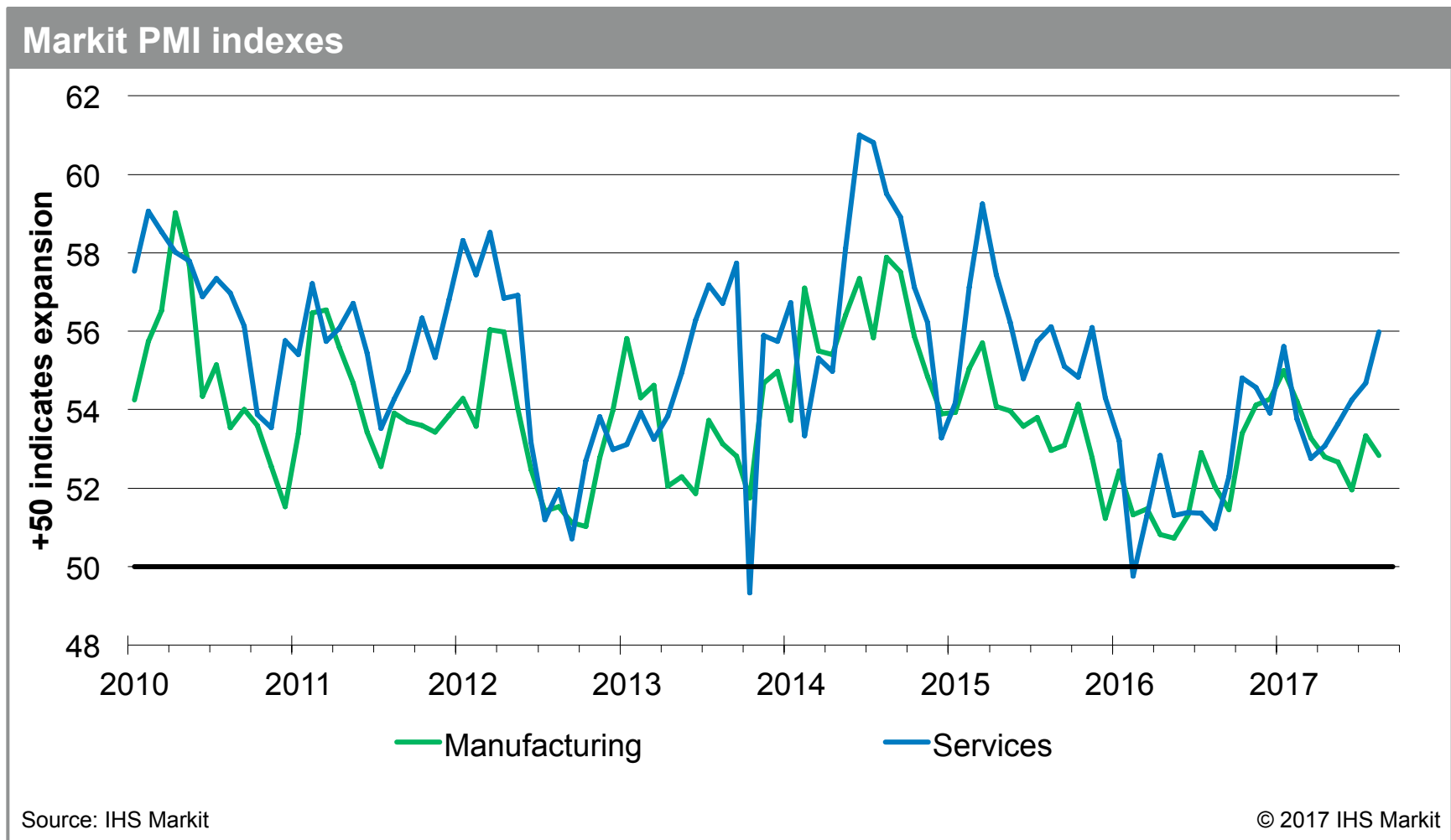
A 2018 pickup in real GDP growth will push the US unemployment rate down to 4%



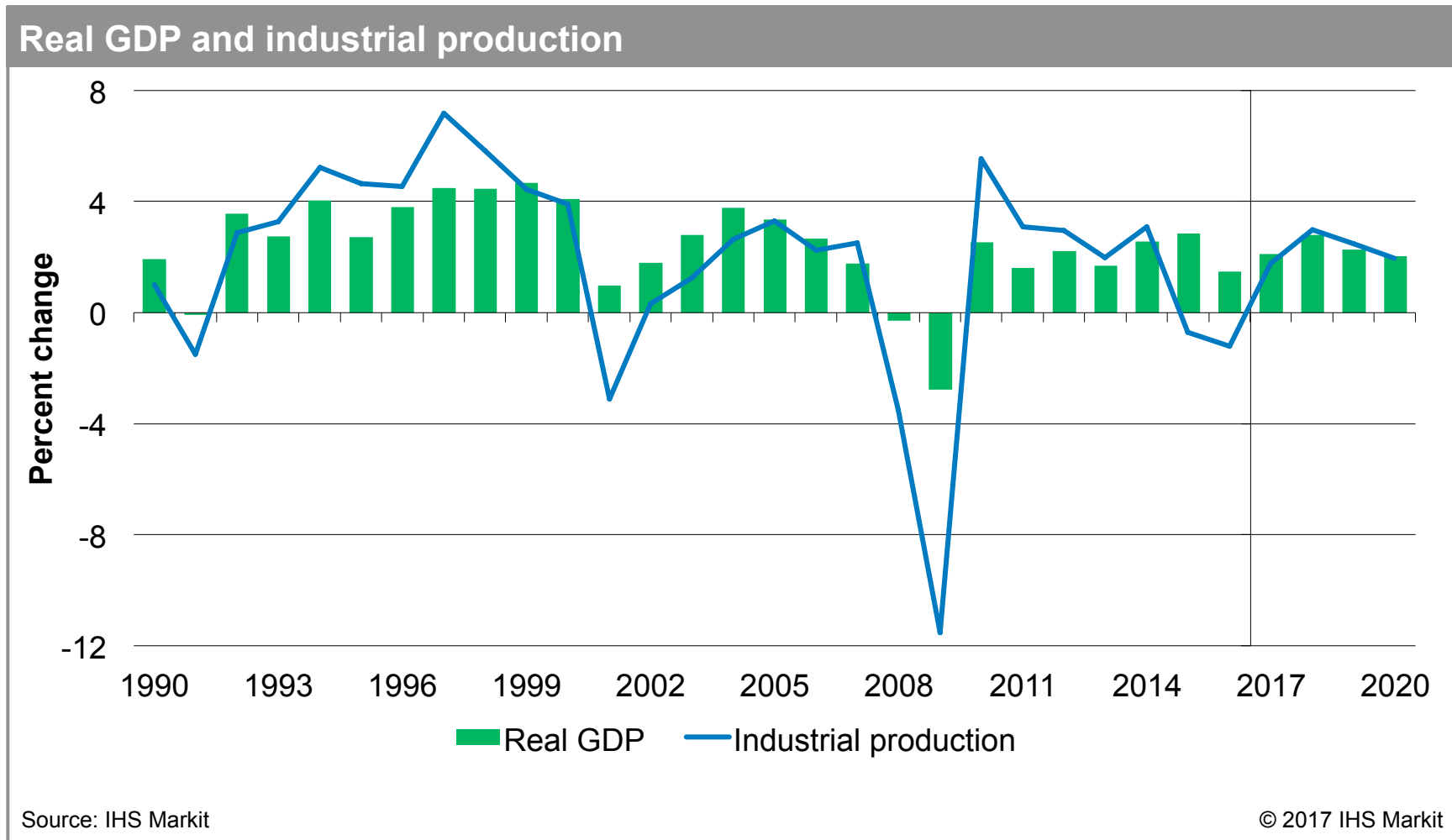
With labor productivity rising, real GDP growth will outpace employment growth



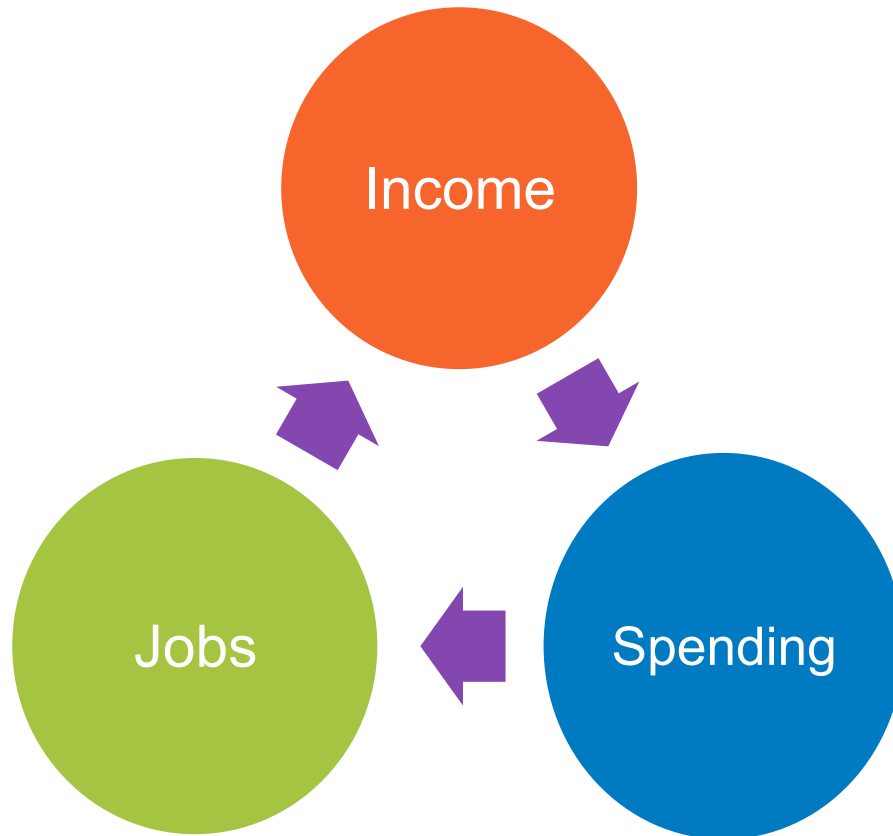
IHS Markit PMIs signal moderate economic growth



Industrial production is reviving as growth in capital spending and exports picks up



Will the US economy ride the virtuous cycle?



Positive forces

- ICT innovation
- asset
- Tax and regulatory reforms

Negative forces

- Skilled labor shortages
- Rising interest rates
- Trade restrictions

US economic growth by sector

Real GDP and its components				
Percent change	2016	2017	2018	2019
Real GDP	1.5	2.1	2.8	2.3
Consumption	2.7	2.7	2.8	2.6
Residential investment	5.5	2.3	5.4	2.8
Business fixed investment	-0.6	4.3	3.7	4.1
Federal government	0.0	0.2	0.3	-0.8
State & local government	1.2	-0.3	0.8	1.3
Exports	-0.3	3.4	3.9	3.4
Imports	1.3	3.7	4.4	5.1

Source: IHS Markit

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US economic growth by sector

Real GDP and its components					
Percent change, annual rate	17Q1	17Q2	17Q3	17Q4	18Q1
Real GDP	1.2	3.0	2.1	2.7	3.4
Consumption	1.9	3.3	2.5	2.8	3.1
Residential investment	11.1	-6.5	0.7	7.0	8.6
Business fixed investment	7.1	6.9	3.0	4.0	2.5
Federal government	-2.4	1.9	2.6	0.8	0.0
State & local government	0.5	-1.7	-1.5	1.4	1.9
Exports	7.3	3.7	4.2	3.1	4.2
Imports	4.3	1.6	1.5	4.5	4.9

Source: IHS Markit

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Other key US indicators

Key indicators				
Percent change	2016	2017	2018	2019
Industrial production	-1.2	1.8	3.0	2.5
Payroll employment	1.8	1.5	1.5	1.2
Light-vehicle sales (Million units)	17.5	17.0	17.2	17.0
Housing starts (Million units)	1.18	1.21	1.35	1.41
Consumer Price Index	1.3	2.0	1.6	2.3
Core CPI	2.2	1.8	1.9	2.0
Brent crude oil price (USD/barrel)	44	52	48	55
Federal funds rate (%)	0.4	1.0	1.7	2.6
10-year Treasury yield (%)	1.8	2.4	3.1	3.8

Source: IHS Markit

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Other key US indicators

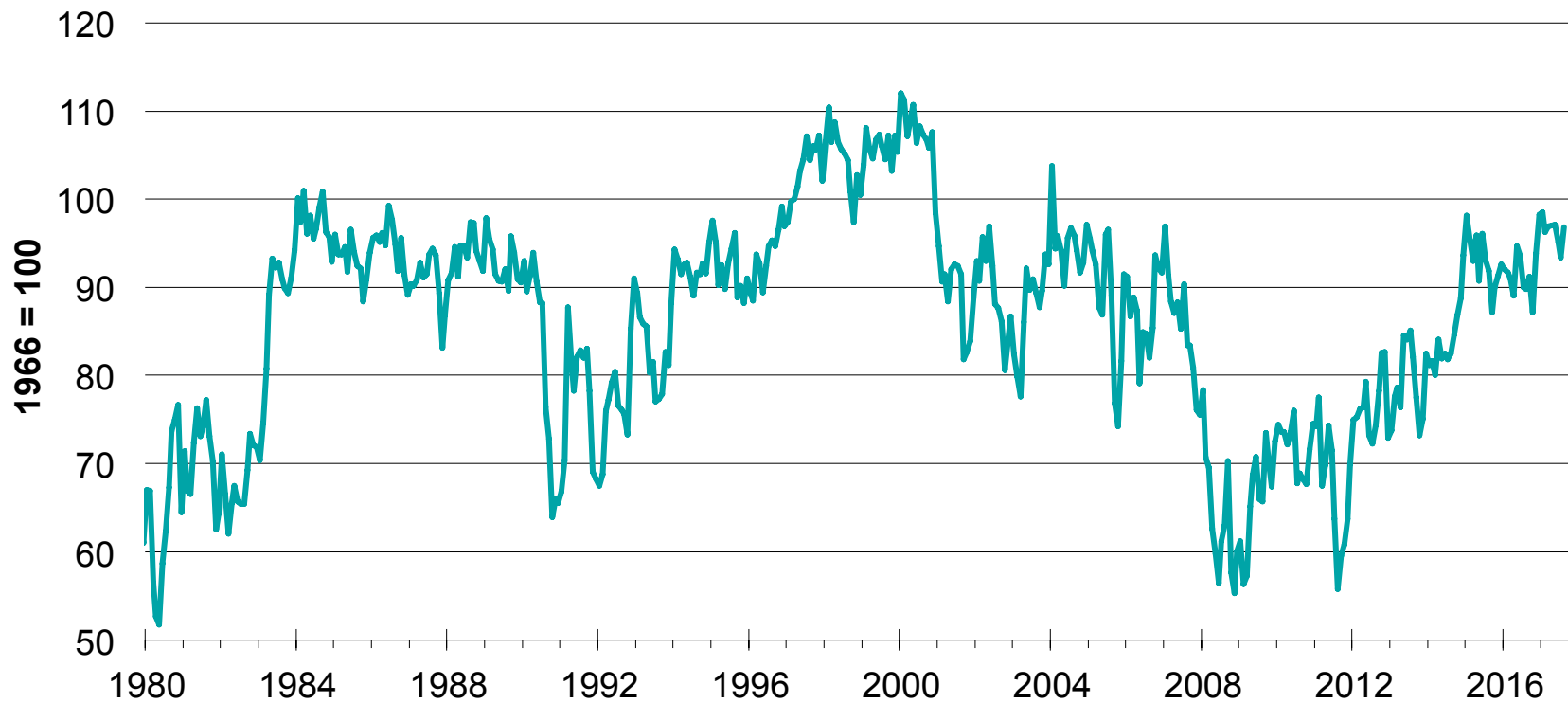
Key indicators					
Percent change, annual rate	17Q1	17Q2	17Q3	17Q4	18Q1
Industrial production	1.6	5.2	0.7	2.1	4.4
Payroll employment	1.5	1.3	1.4	1.3	1.5
Light-vehicle sales (Million units)	17.1	16.8	16.6	17.4	17.5
Housing starts (Million units)	1.24	1.17	1.20	1.25	1.32
Consumer Price Index	3.1	-0.3	1.7	1.9	1.4
Core CPI	2.5	0.6	1.4	2.3	2.0
Brent crude oil price (USD/barrel)	55	51	51	50	50
Federal funds rate (%)	0.7	1.0	1.2	1.3	1.5
10-year Treasury yield (%)	2.4	2.3	2.2	2.5	2.8

Source: IHS Markit

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Consumer sentiment is upbeat, supported by improving household finances

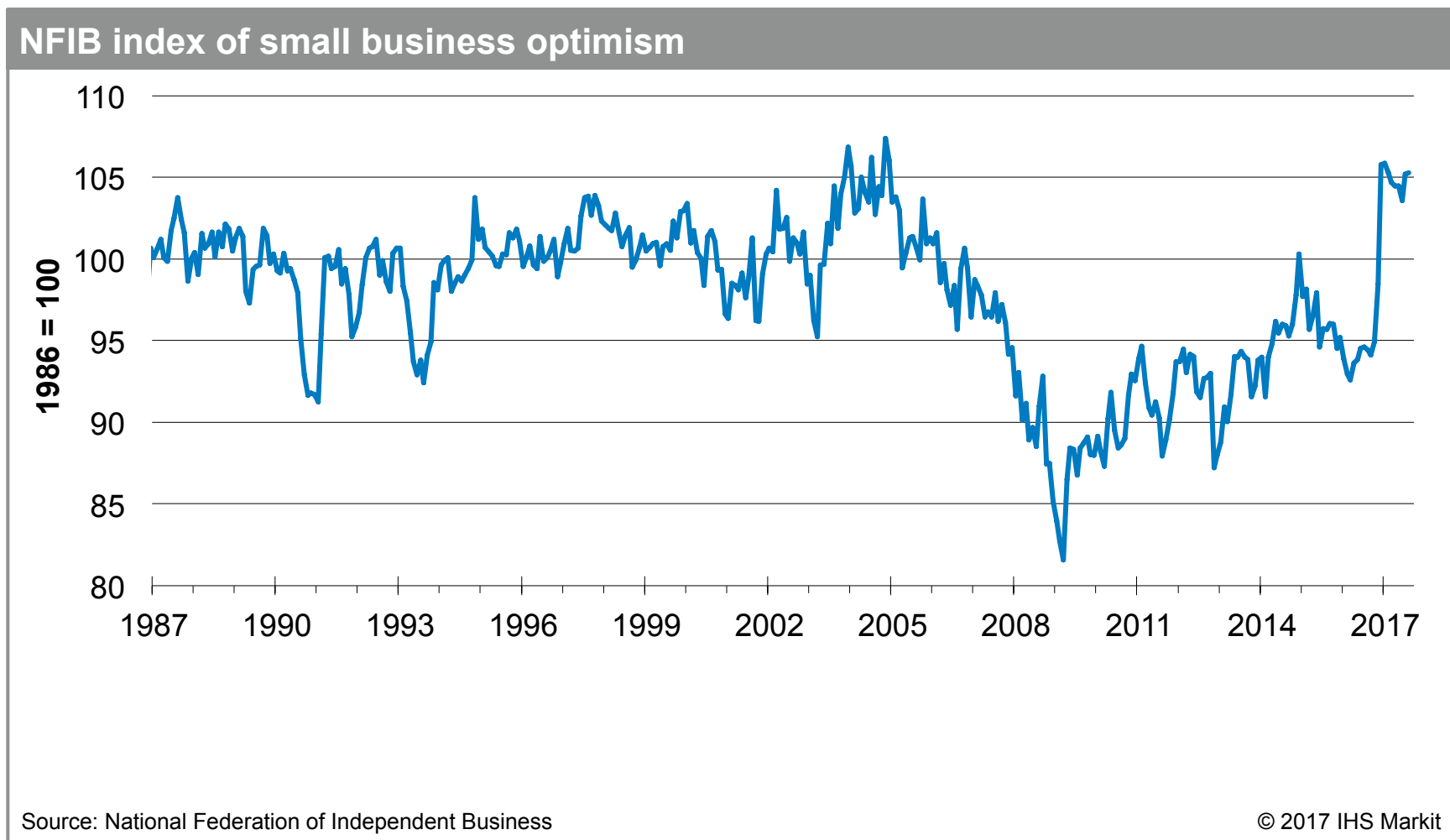
University of Michigan Index of Consumer Sentiment



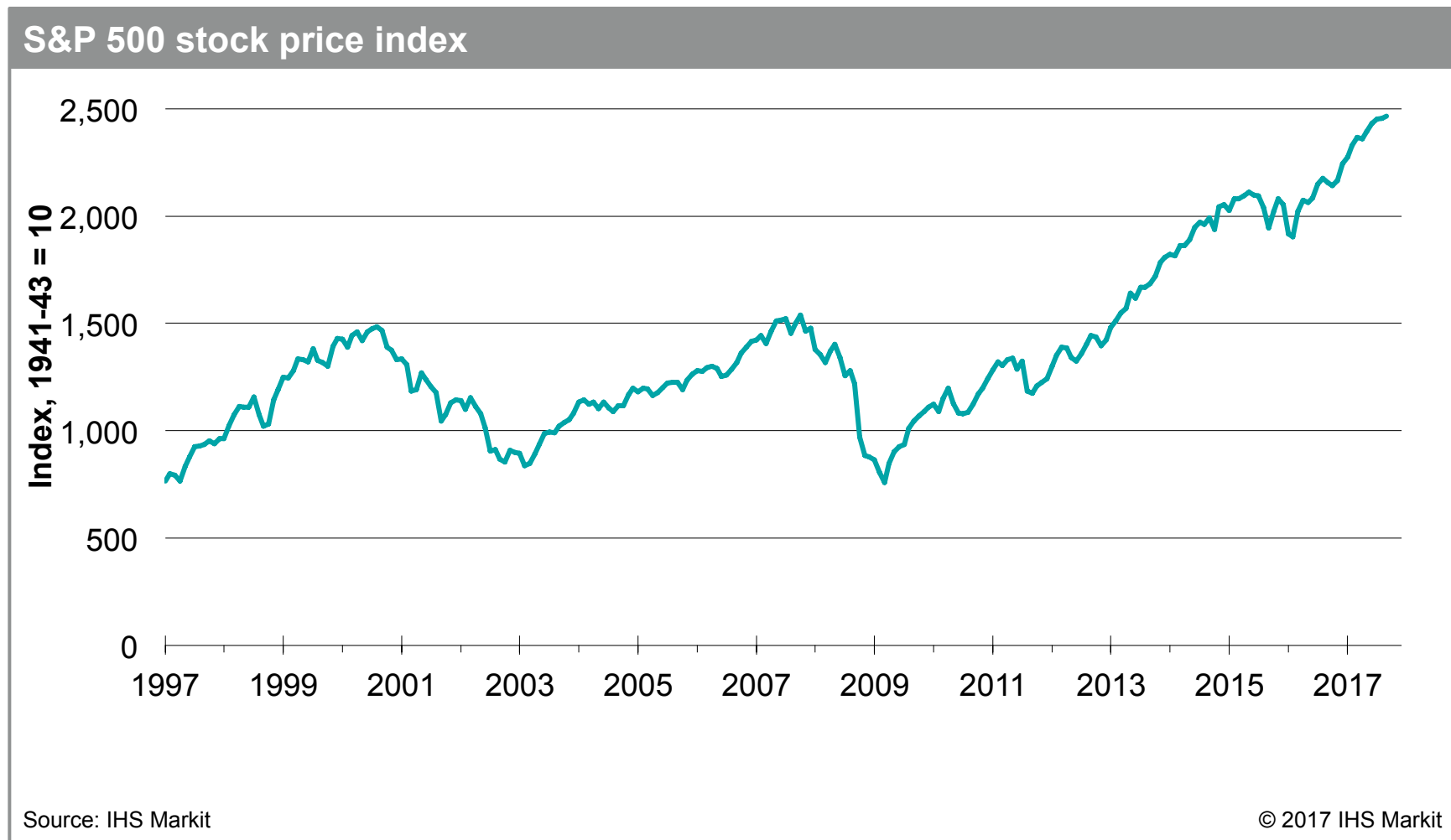
Source: University of Michigan Surveys of Consumers

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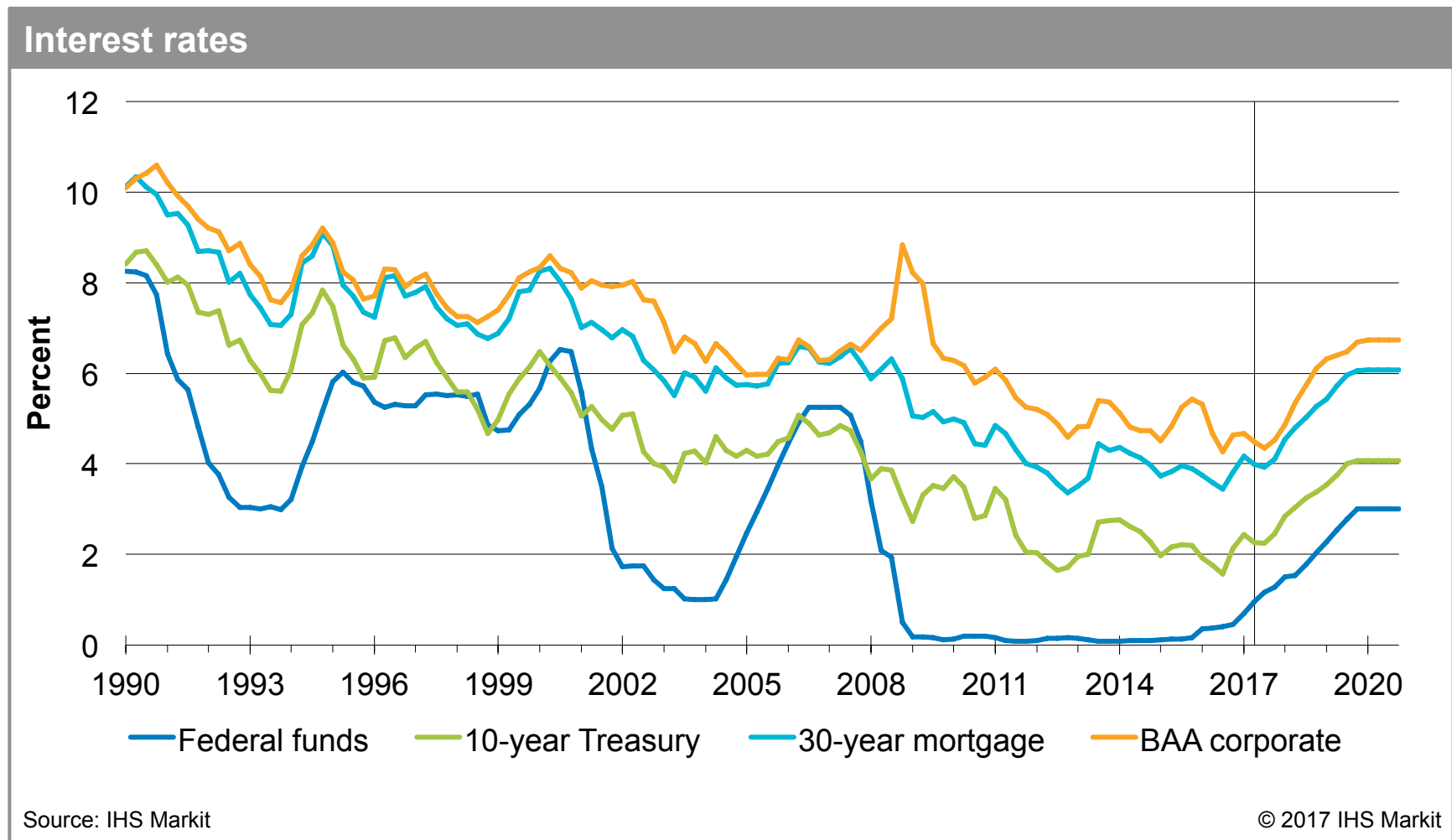
US small business sentiment soared after the November 2016 election and remains high



US stock prices have reached new highs in 2017



US interest rates will rise as the Federal Reserve normalizes monetary policy



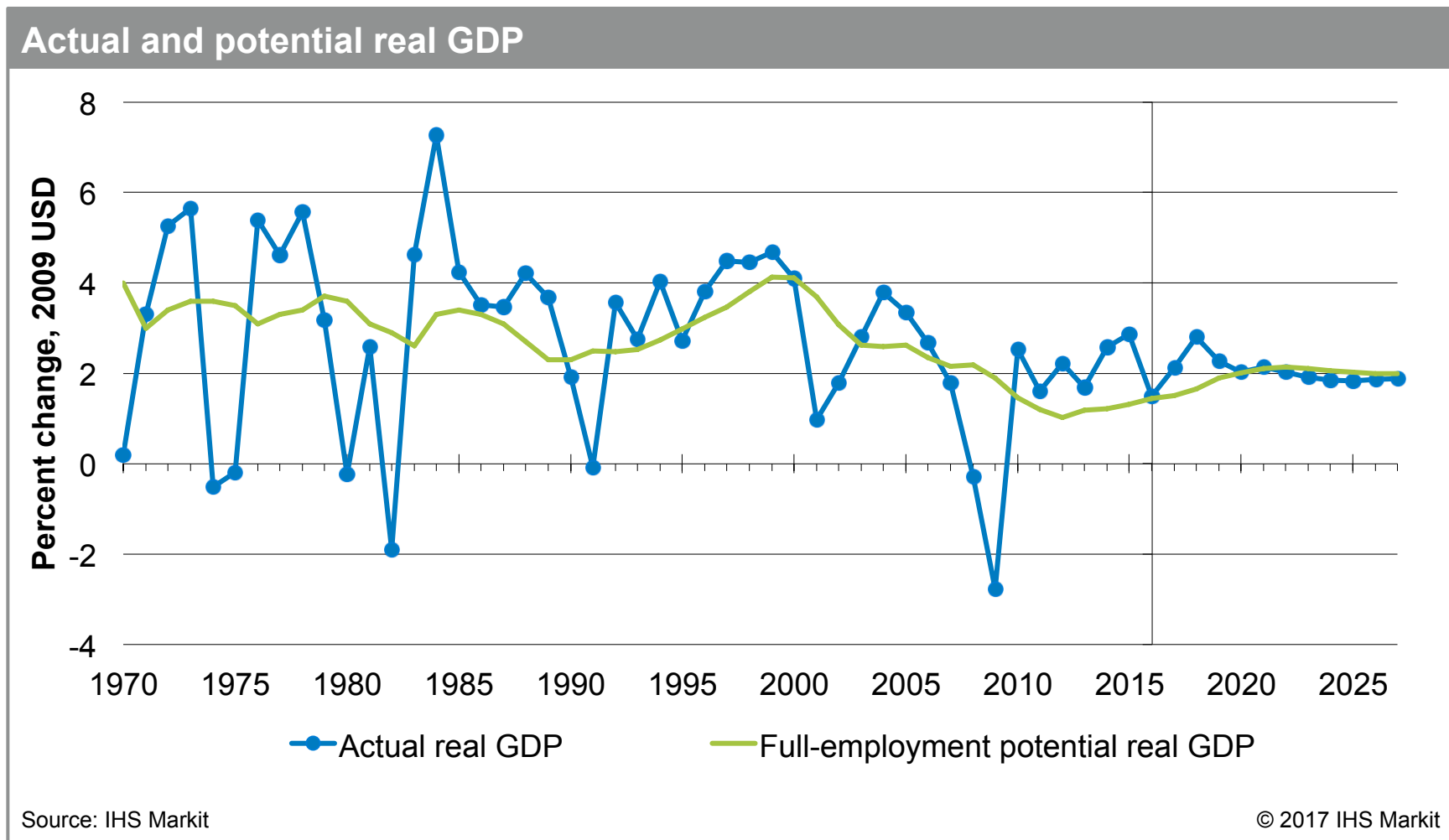
President Trump will have an opportunity to recast the Federal Reserve's Board of Governors

Board of Governors	End of term
Janet Yellen, chair	Chair until 3 February 2018, member to 31 January 2024
Stanley Fisher, vice chairman	Resigning on 13 October 2017 from a term that ends in January 2020
Lael Brainard	2026
Jerome Powell	2028
3 vacancies*	2018, 2022, and 2030

*President Trump has nominated Randal Quarles, who is awaiting Senate confirmation.

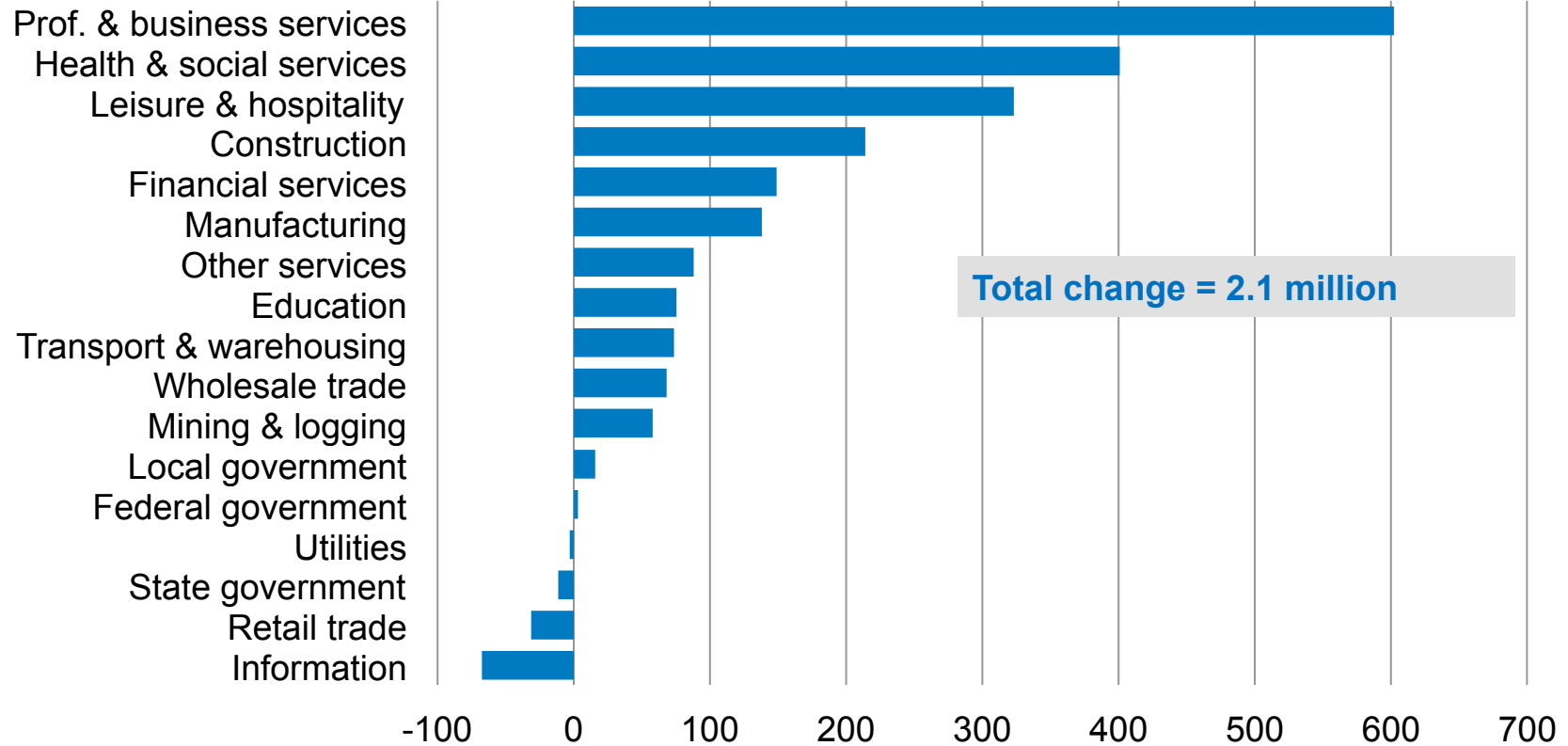
Other Federal Open Market Committee voting members in 2017 are Reserve Bank presidents William Dudley (New York), Charles Evans (Chicago), Patrick Harker (Philadelphia), Robert Kaplan (Dallas), and Neel Kashkari (Minneapolis).

Potential real GDP growth is projected to average 2.0% from 2017 to 2027



Services and recorded the largest employment gains during the 12 months ended August 2017

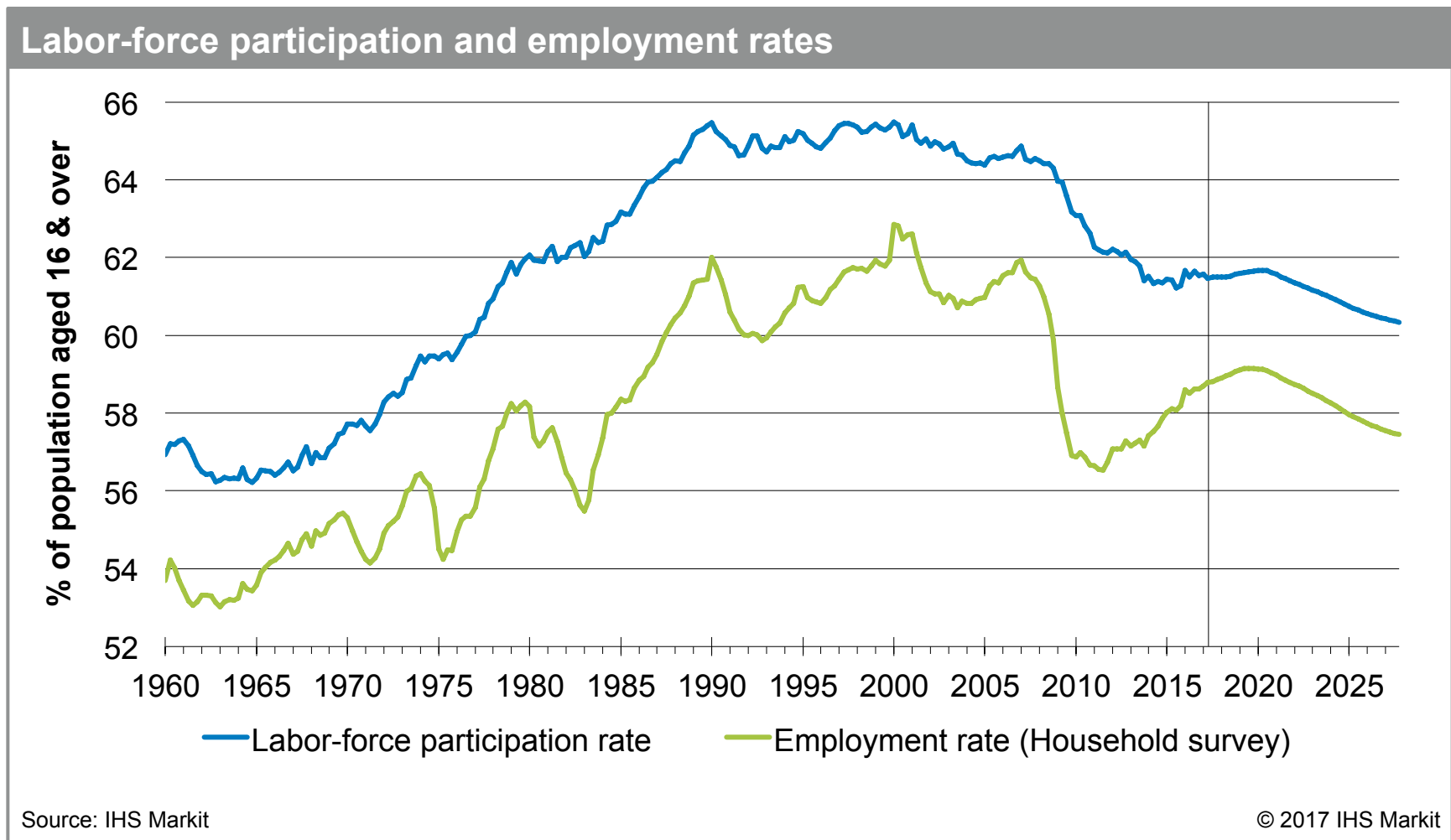
Change in payroll employment, thousands



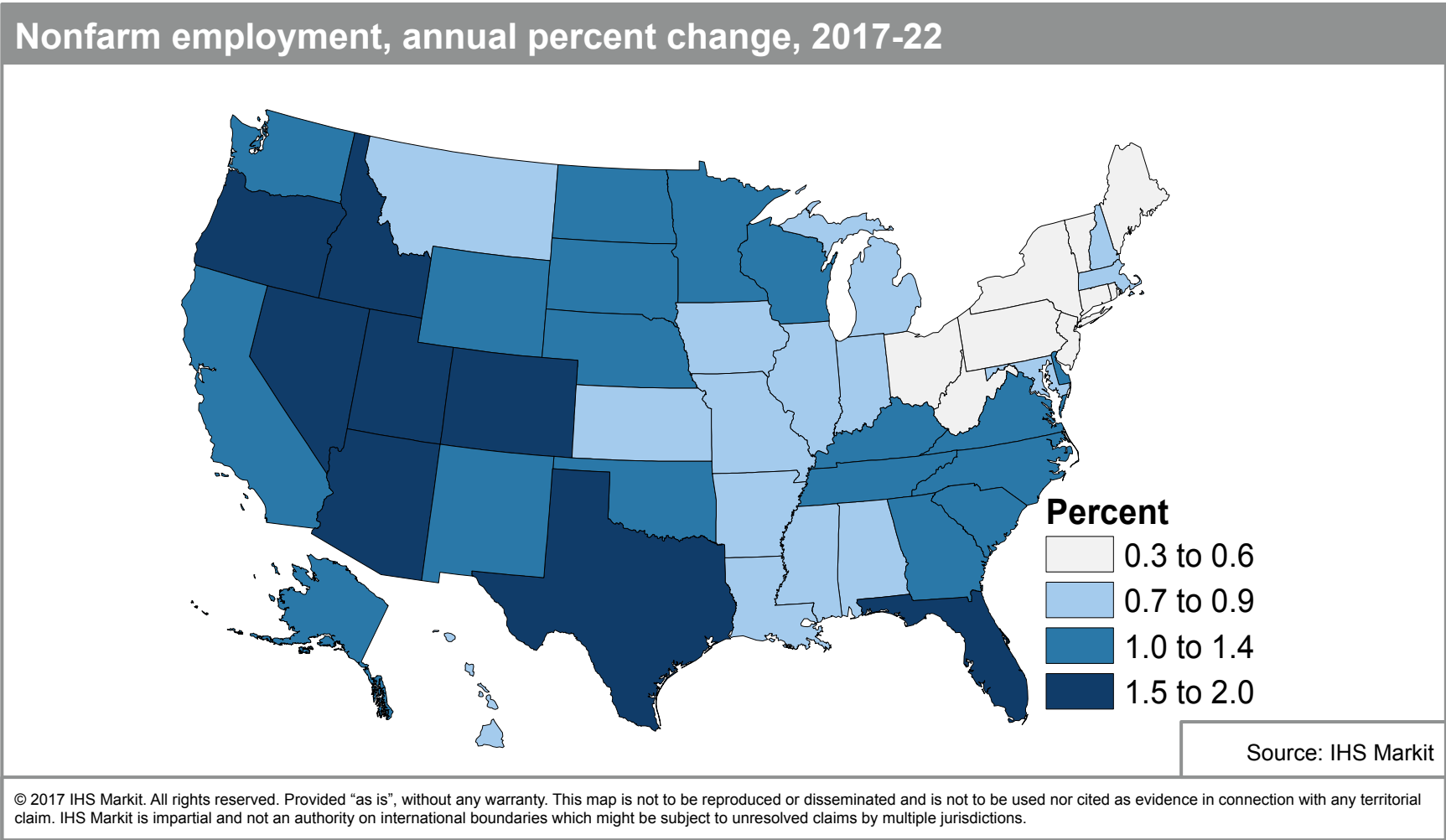
Source: IHS Markit

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With baby boomers aging, labor-force participation and employment rates will not return to earlier peaks

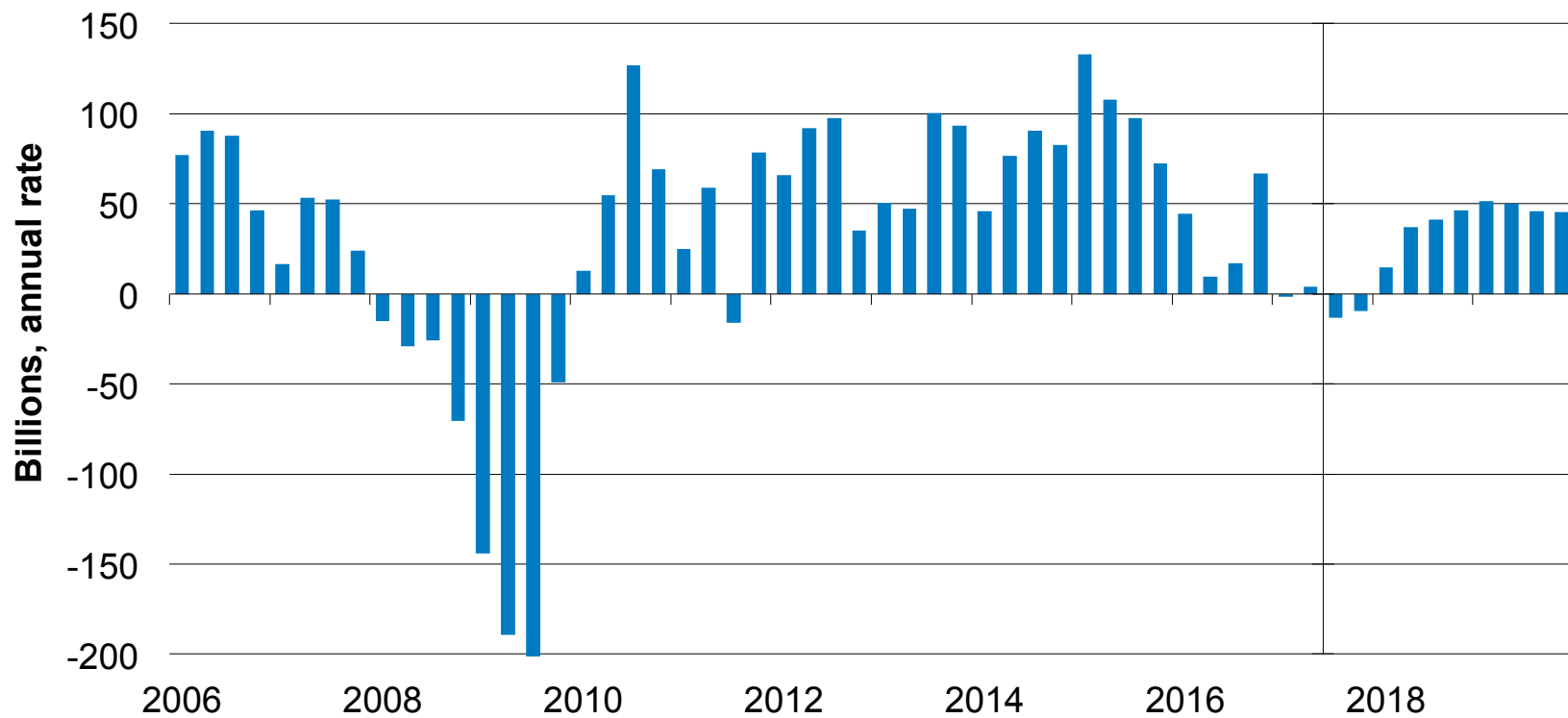


Western and southern states will lead in job growth



A gradual return to normal inventory investment will boost economic growth in 2018

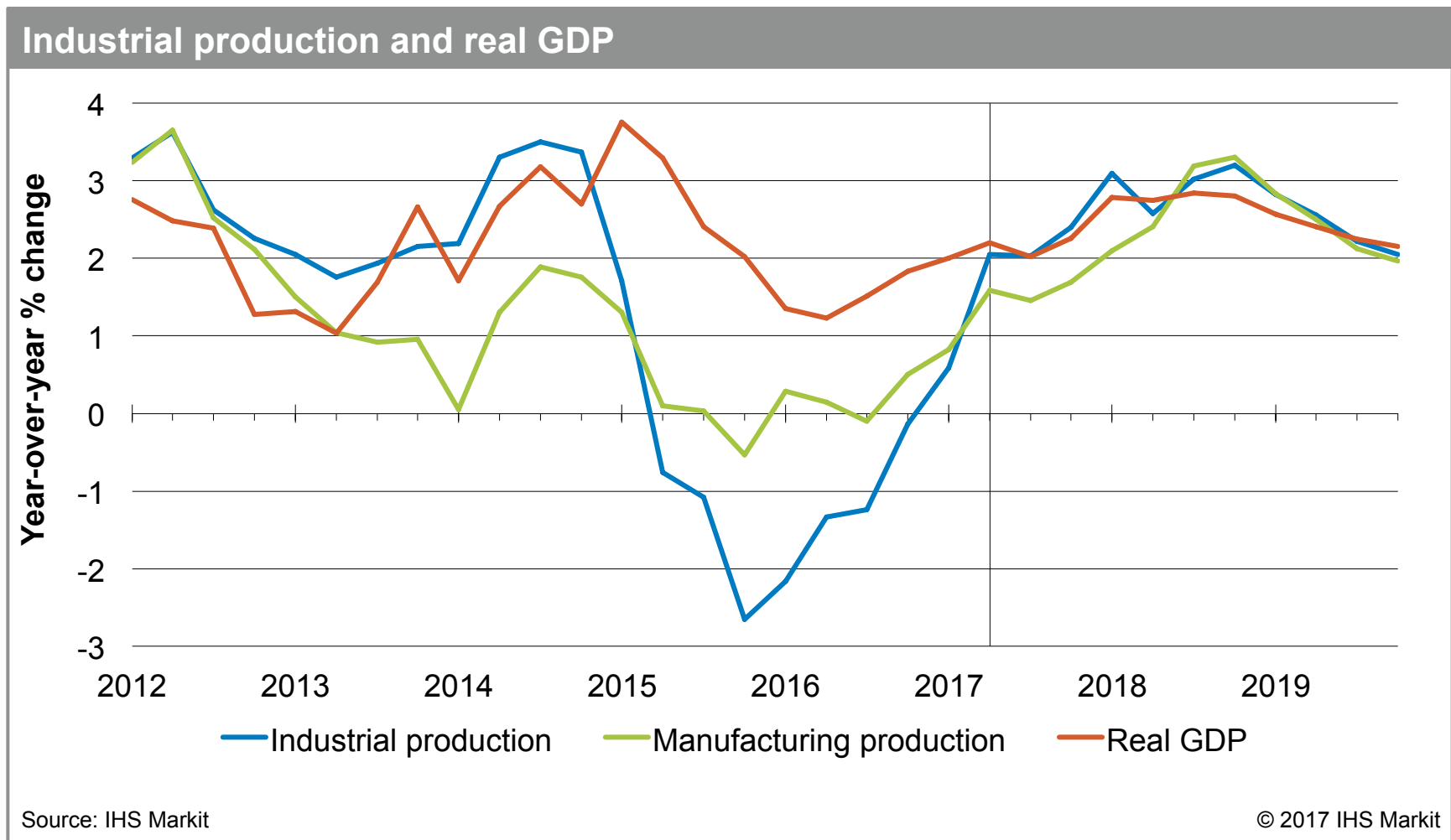
Change in nonfarm inventories, 2009 dollars



Source: IHS Markit

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Industrial production is recovering as global demand strengthens and oil output rises



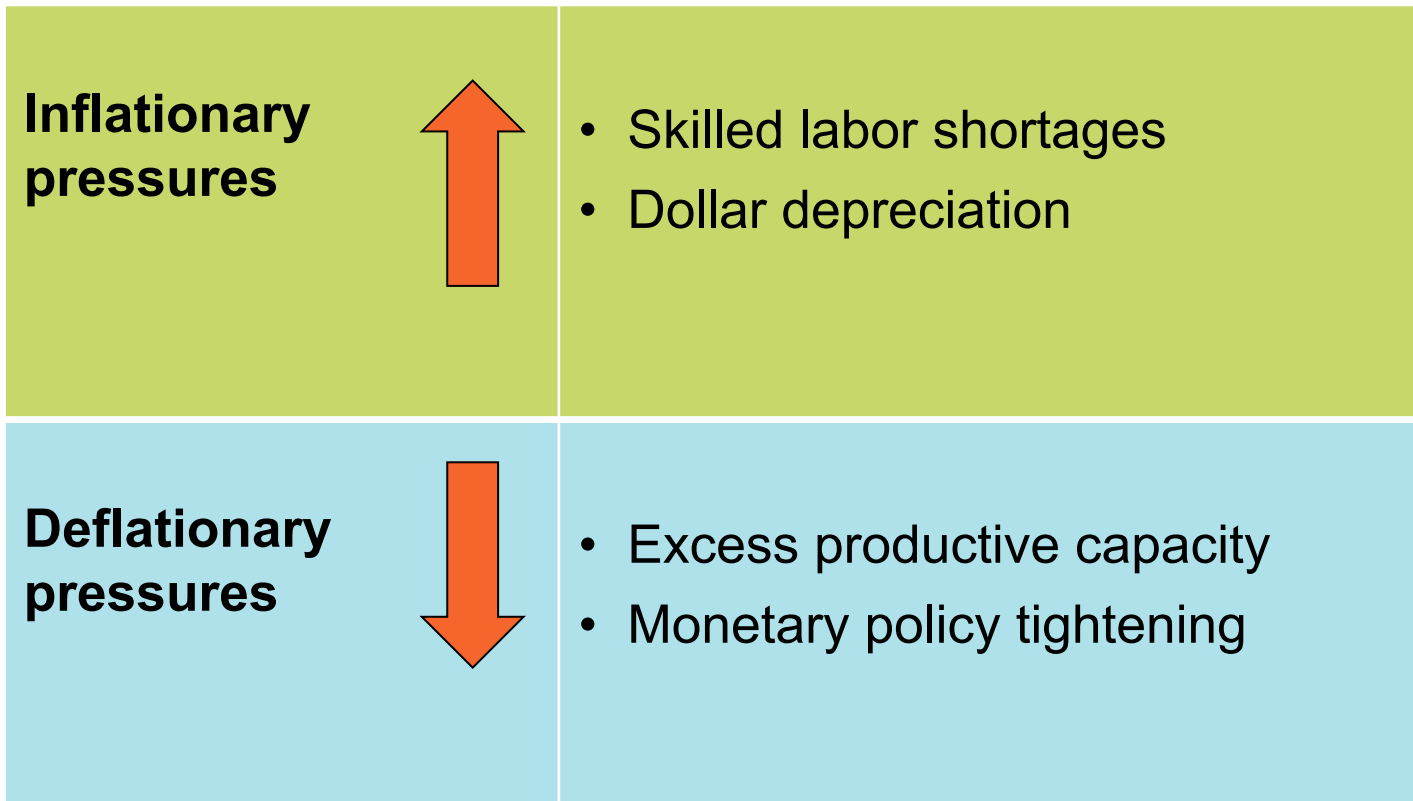
US manufacturing production growth

Industrial production				
Percent change	2016	2017	2018	2019
All manufacturing	0.2	1.4	2.8	2.7
Motor vehicles & parts	4.1	0.0	2.2	1.5
Computers & electronics	1.4	3.4	5.1	4.3
Electrical equip. & appliances	2.2	0.5	2.6	3.6
Machinery	-3.2	4.4	4.3	4.2
Textiles	2.5	-0.2	-0.5	-1.3
Furniture	-0.1	0.1	2.1	3.0
Chemicals	0.7	0.5	4.2	4.1

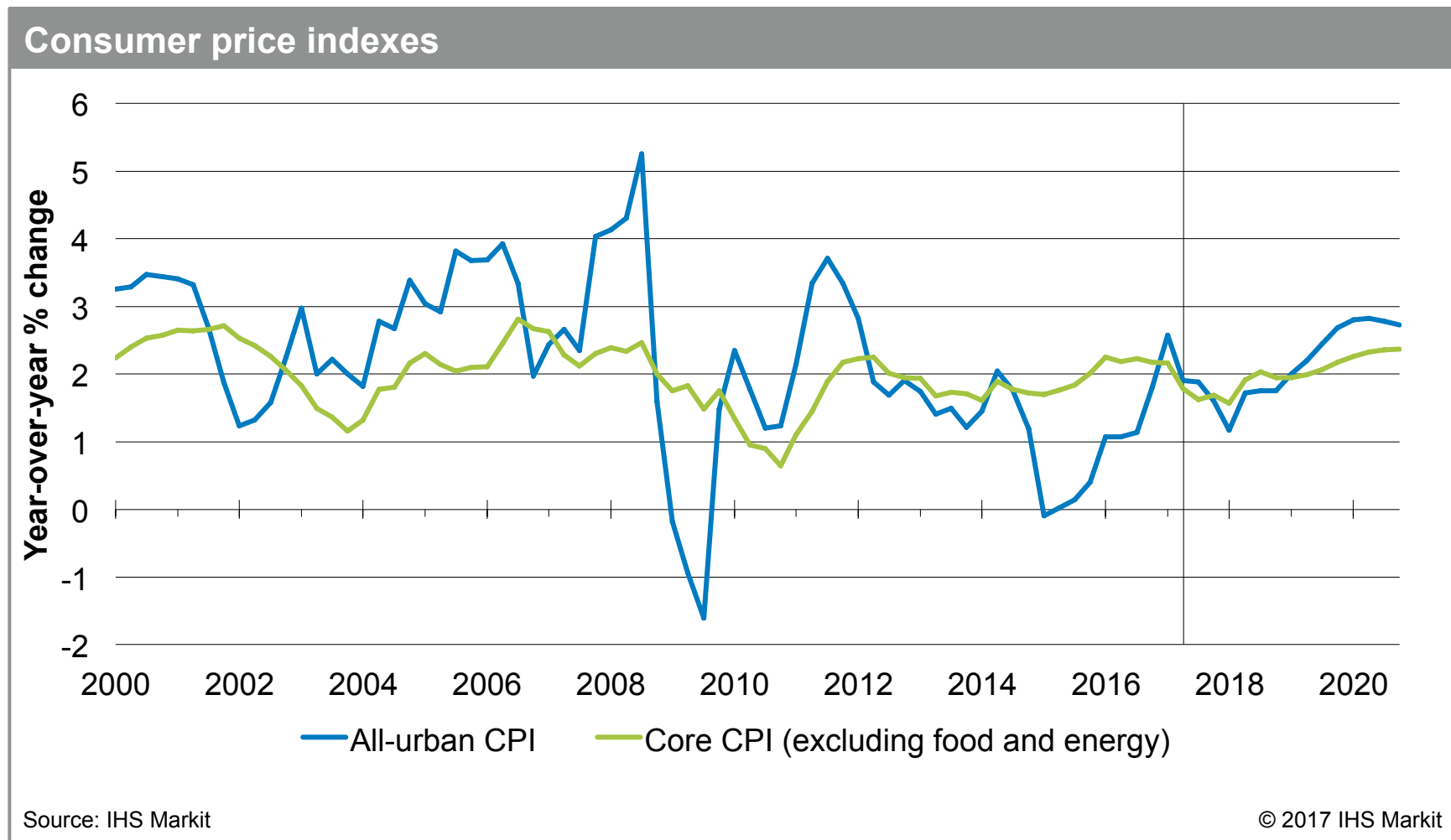
Source: IHS Markit

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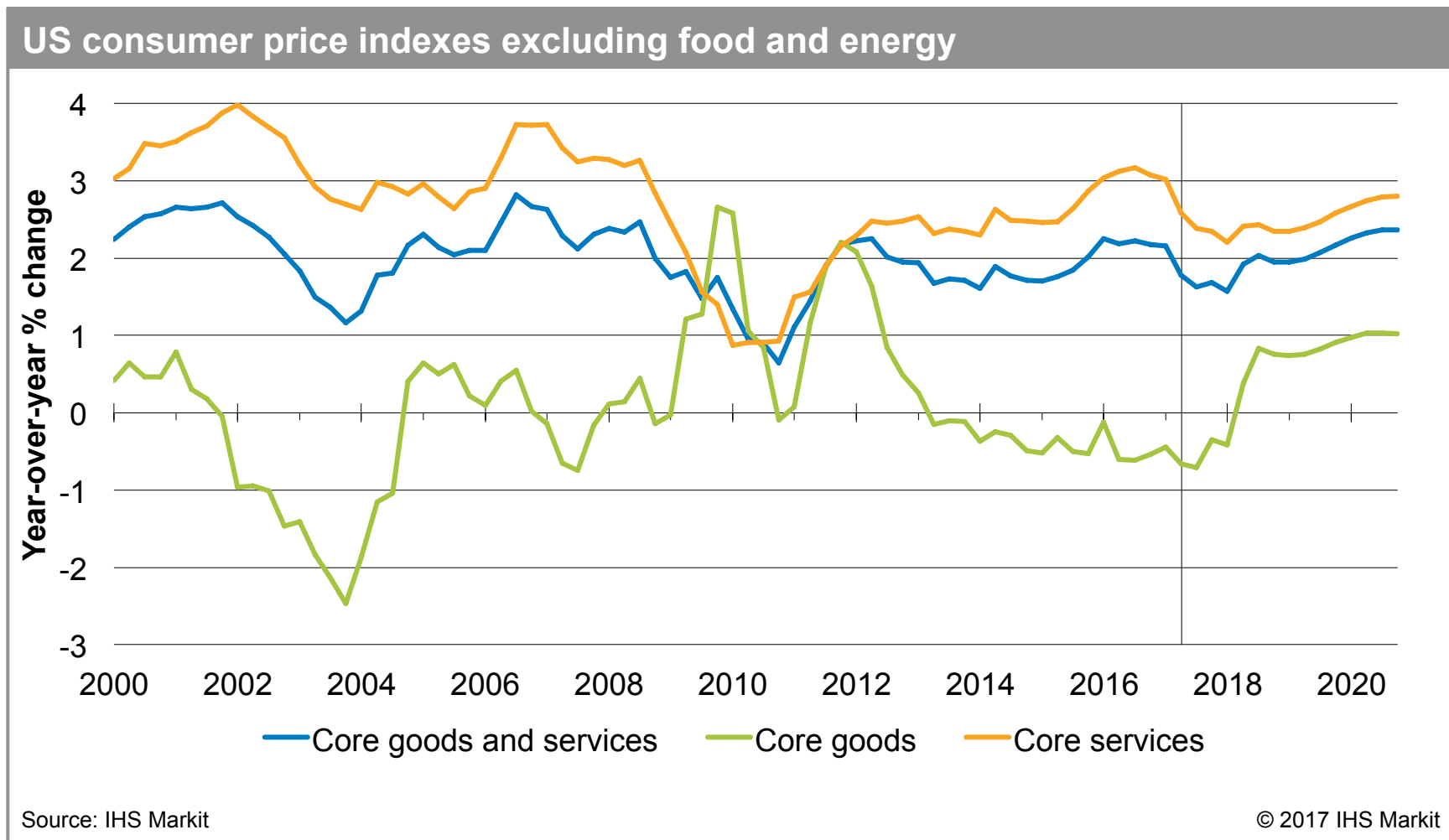
US inflation dynamics



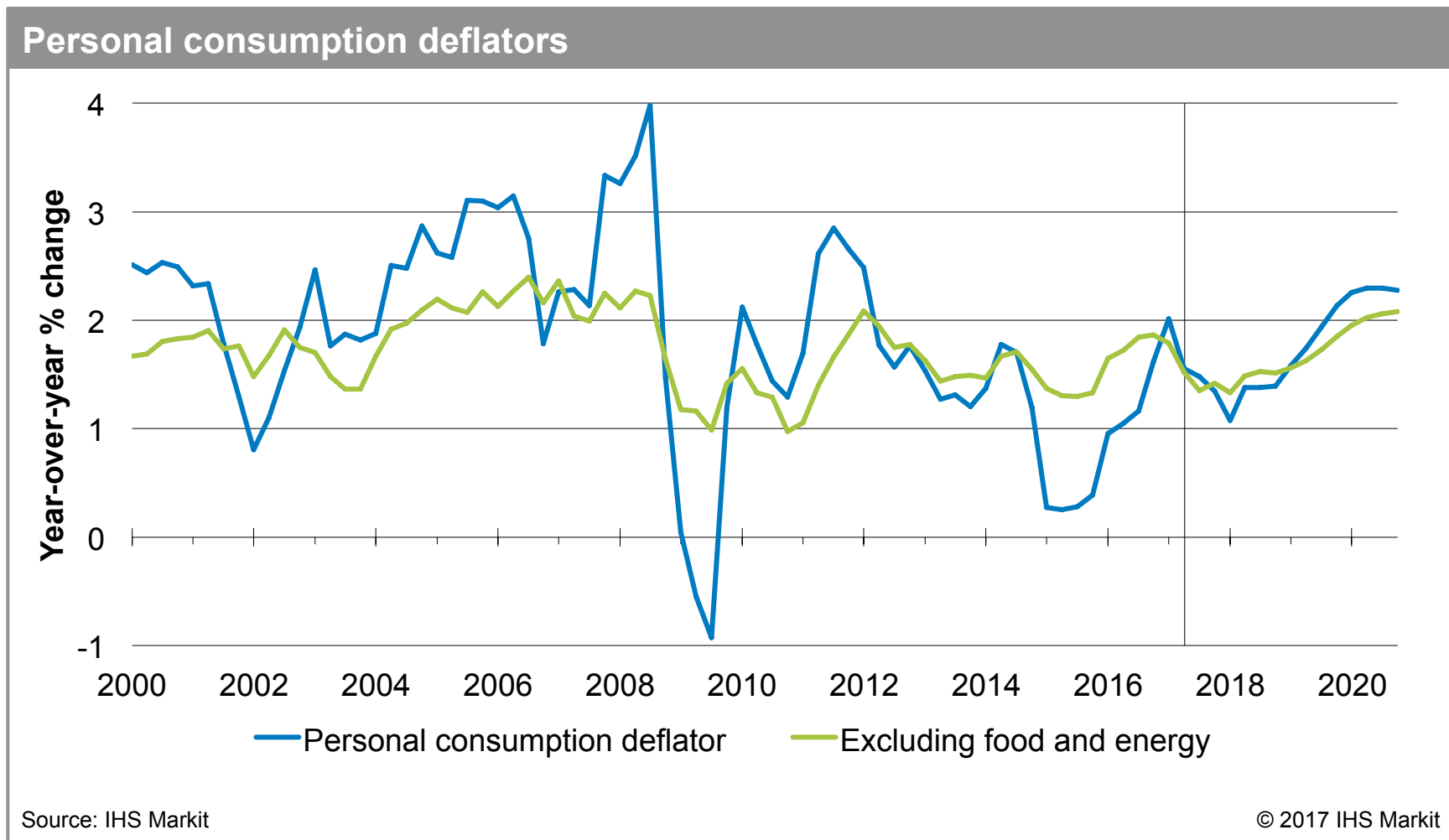
Core consumer price inflation is fluctuating around 2%



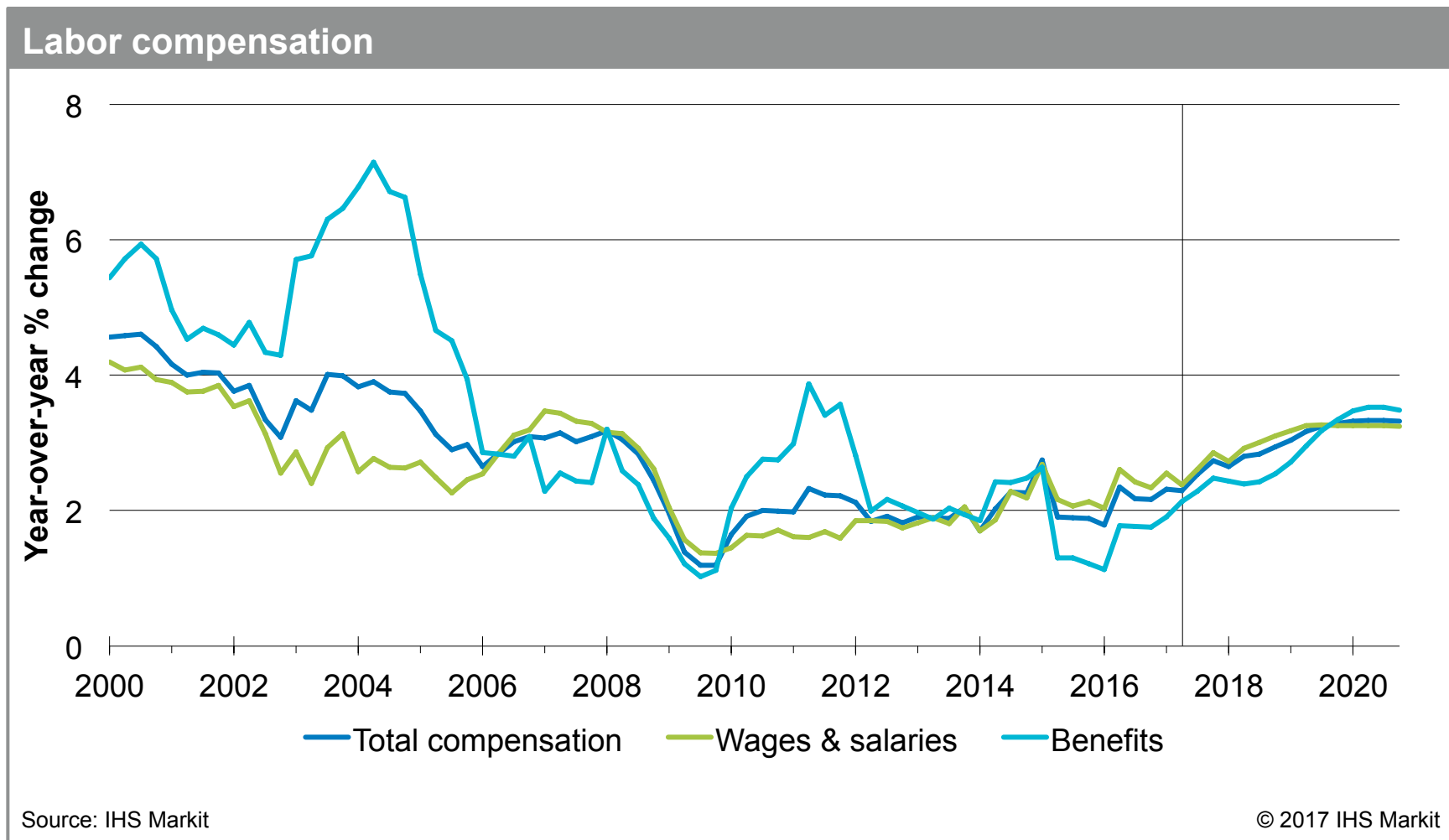
A divergence between goods and services inflation



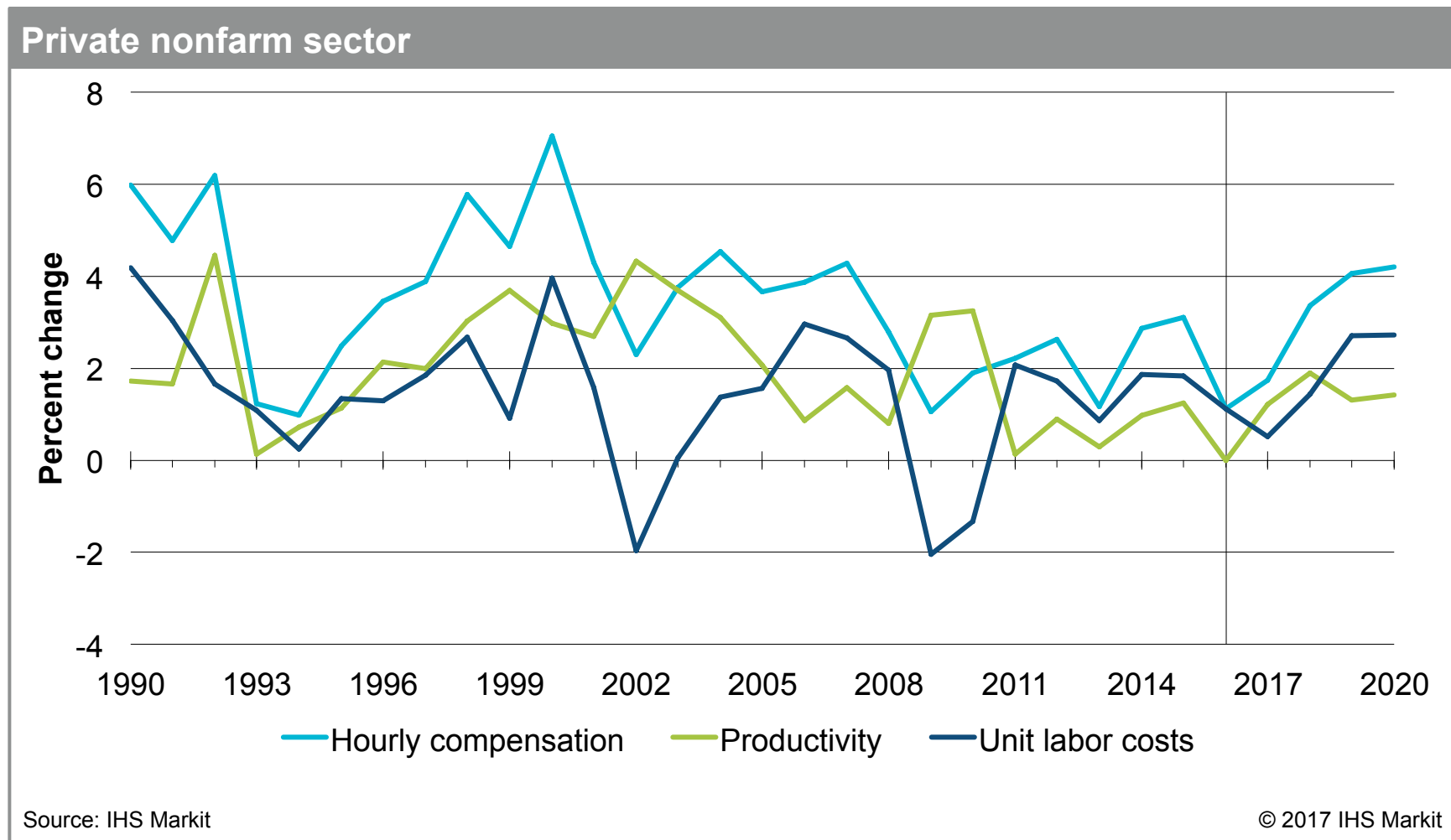
Consumer price inflation will pick up in 2019–20 as labor and product markets tighten



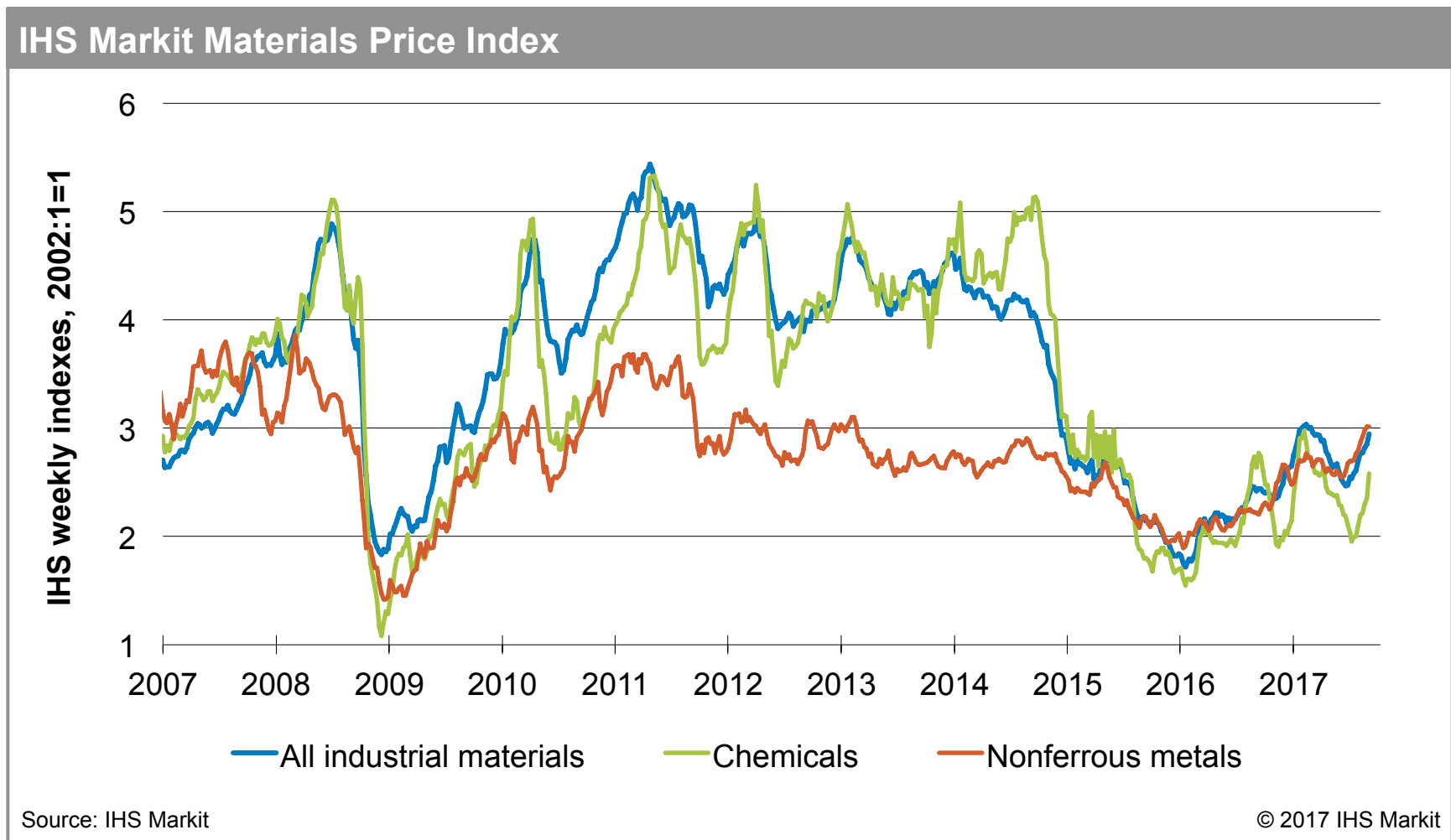
Wages and benefits will accelerate in response to a tightening US labor market



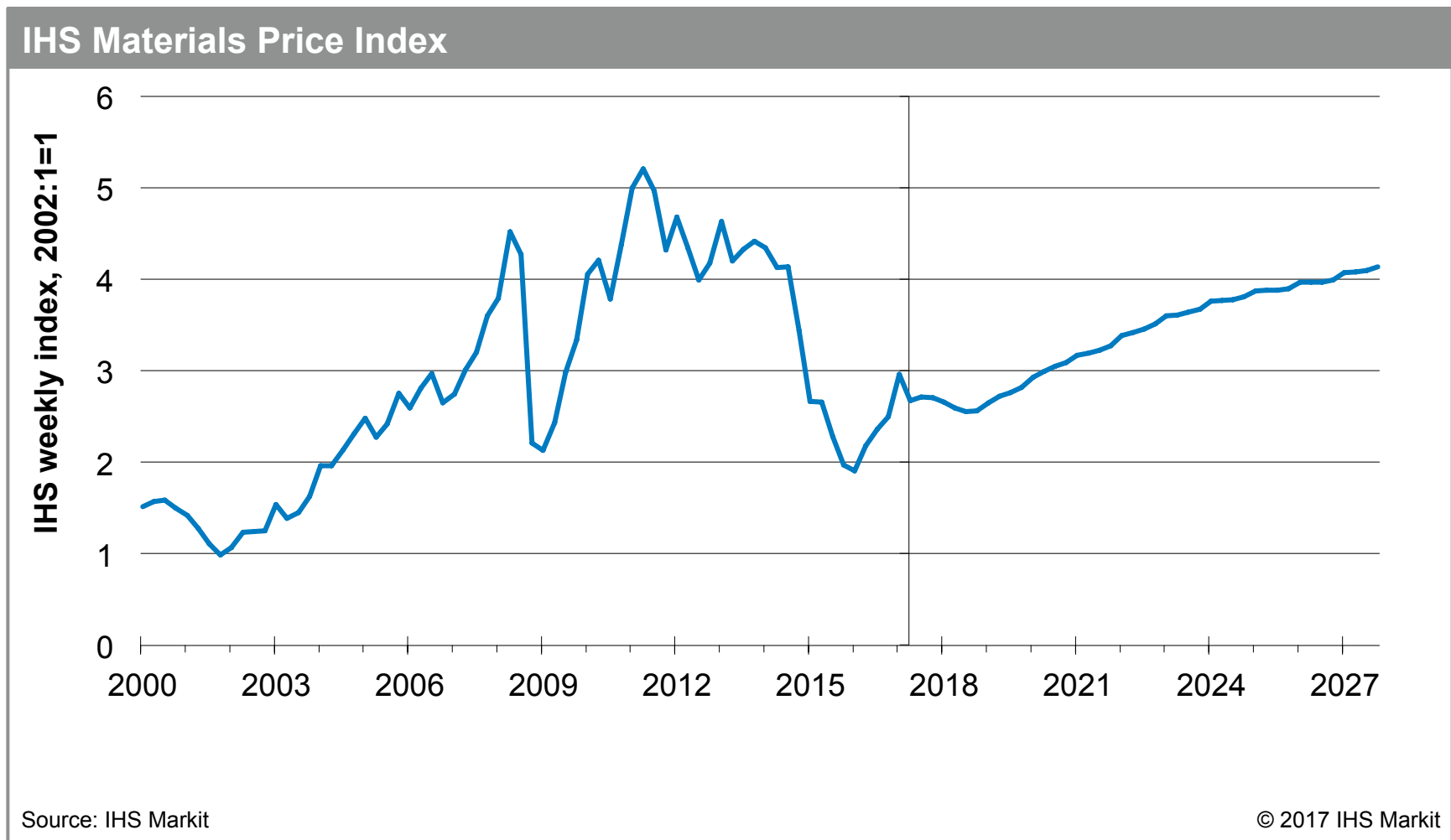
Hourly compensation, productivity, and unit labor costs



Industrial materials prices are recovering but remain well below their previous peaks



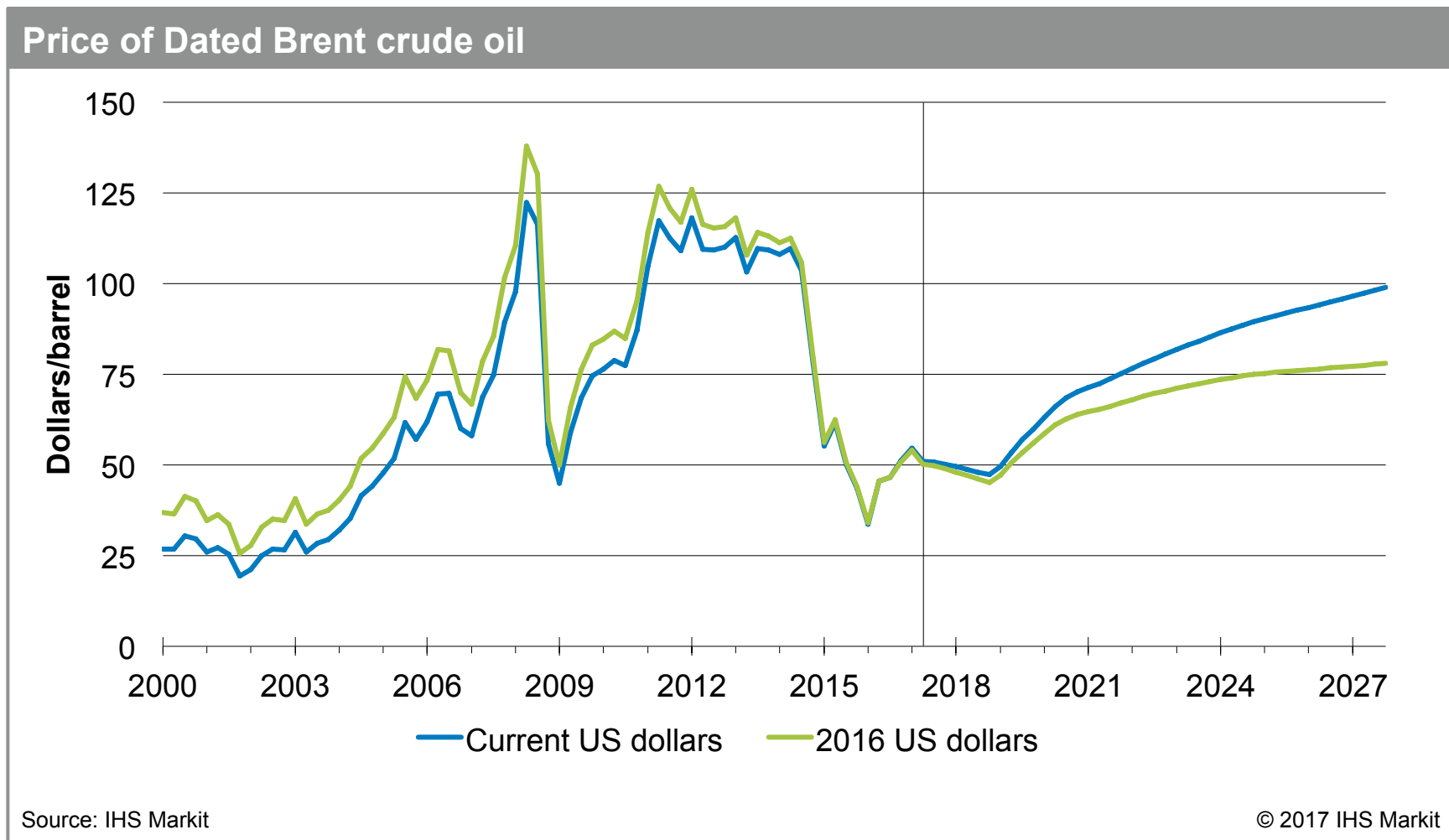
After a mild correction, industrial materials prices will gradually rise



Crude oil prices will decline in 2018 before recovering

- Prices have firmed in recent weeks, with Brent trading above USD50/barrel.
- Strong seasonal demand, declining US crude oil inventories, and expectations that US supply growth will moderate have outweighed rising OPEC output.
- Hurricane Harvey briefly disrupted crude oil production along the Texas coast; chemical plants and refineries were hit harder but most are restarting.
- Although world oil demand growth will remain firm, a production surplus will reemerge through 2018. North America, Brazil, the United Kingdom, and Kazakhstan will contribute to global production growth.
- OPEC will likely continue to restrict its output next year. This decision could be made at its 30 November ministerial meeting.
- A 2018 drop in oil prices will lead to a downturn in US drilling activity.
- Price recovery is expected after 2018, when supply growth slows.

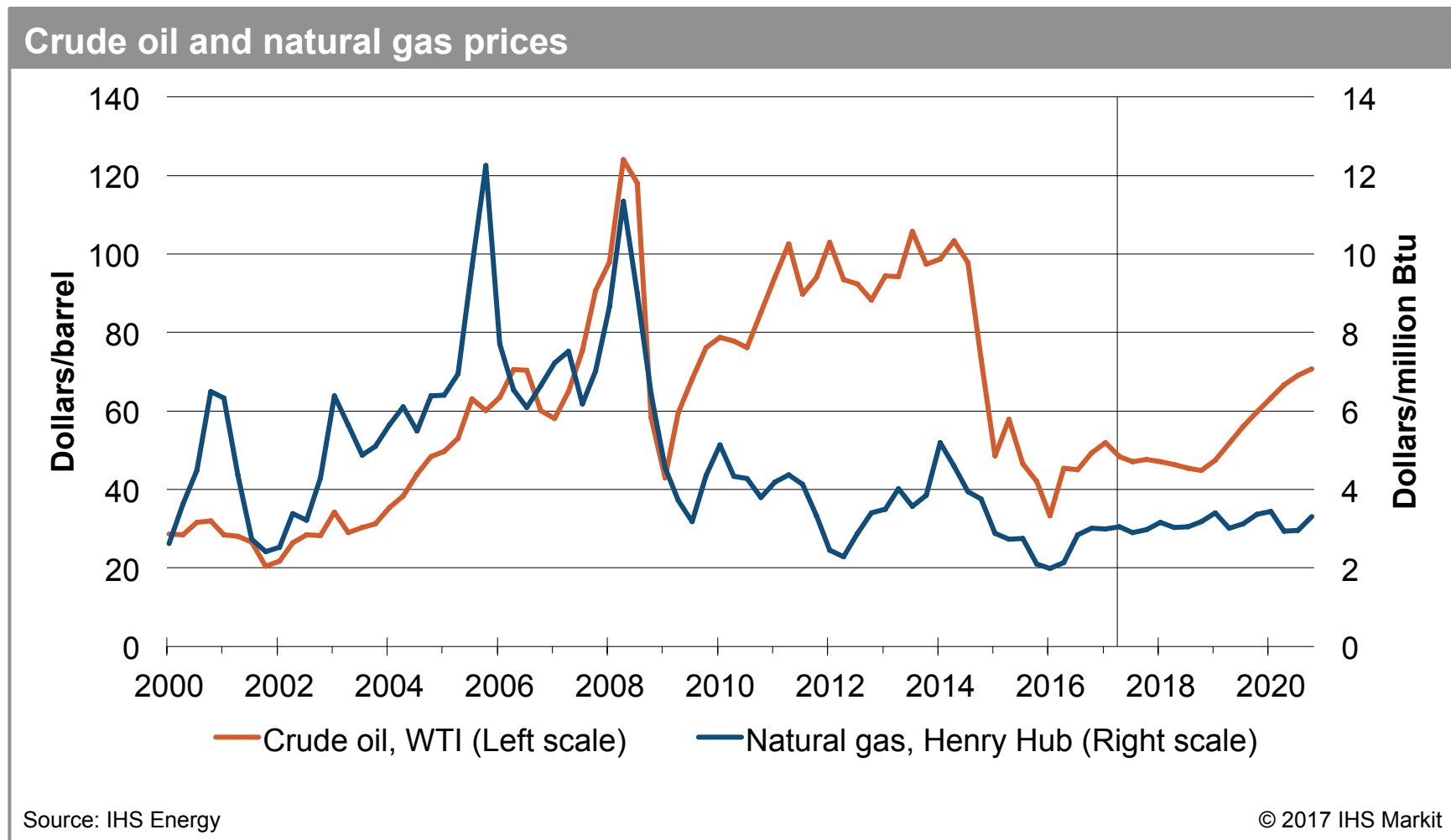
Crude oil prices will gradually recover after 2018



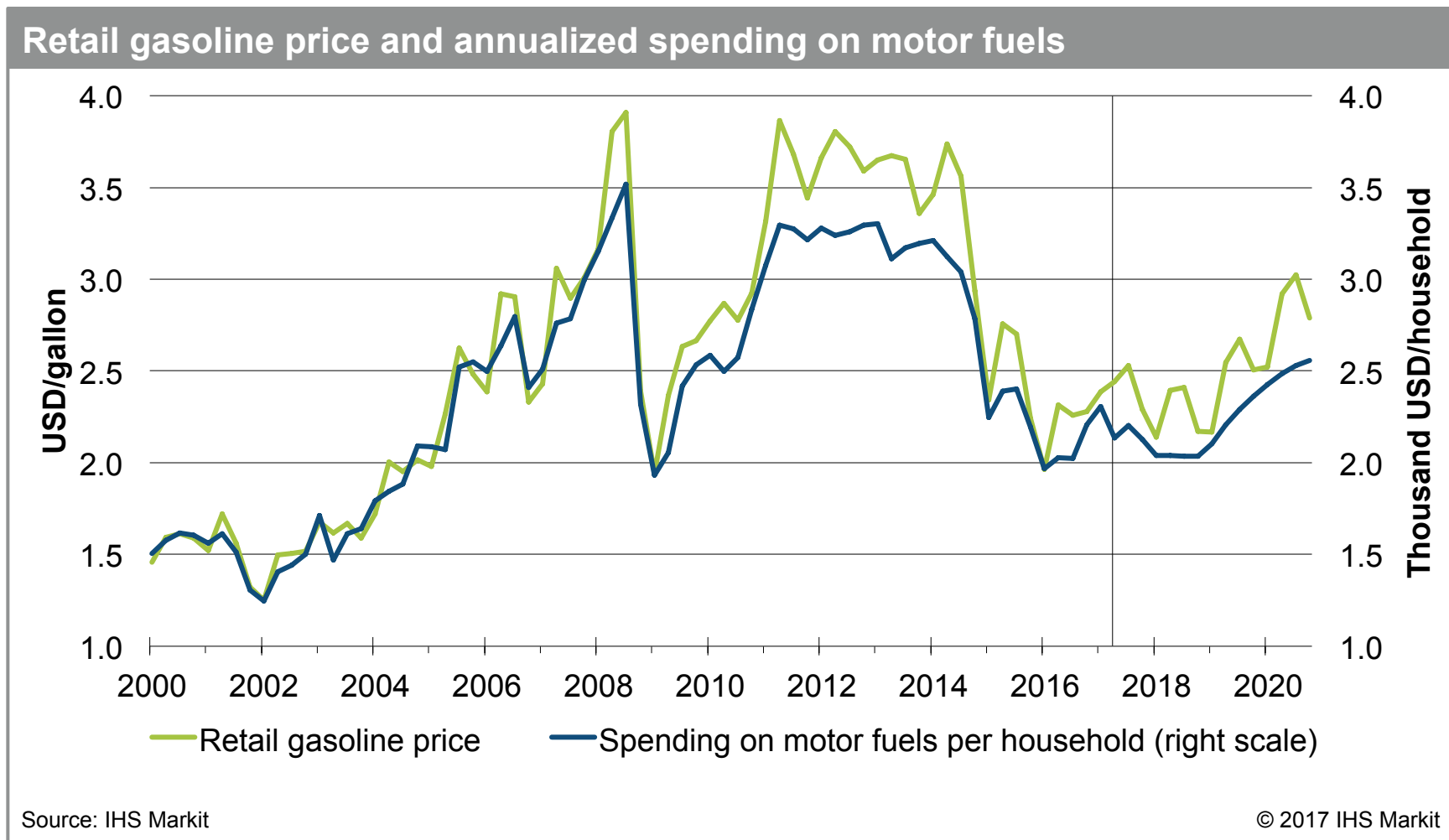
North American natural gas markets

- With seasonal electricity loads declining and gas production increasing, Henry Hub gas prices are currently below \$3/million Btu.
- Electricity outages resulting from hurricanes Harvey and Irma have temporarily reduced gas demand. More gas is flowing into storage.
- Industrial gas demand is increasing as new capacity at ammonia, methanol, and ethylene facilities comes online.
- Exports to Mexico by pipeline and liquefied natural gas (LNG) exports will also support total gas demand growth.
- Global LNG supply will, however, increase 50% over the next three years, creating excess supply.
- The North American gas resource base is expanding and costs are declining, due to improved resource recovery and new discoveries.

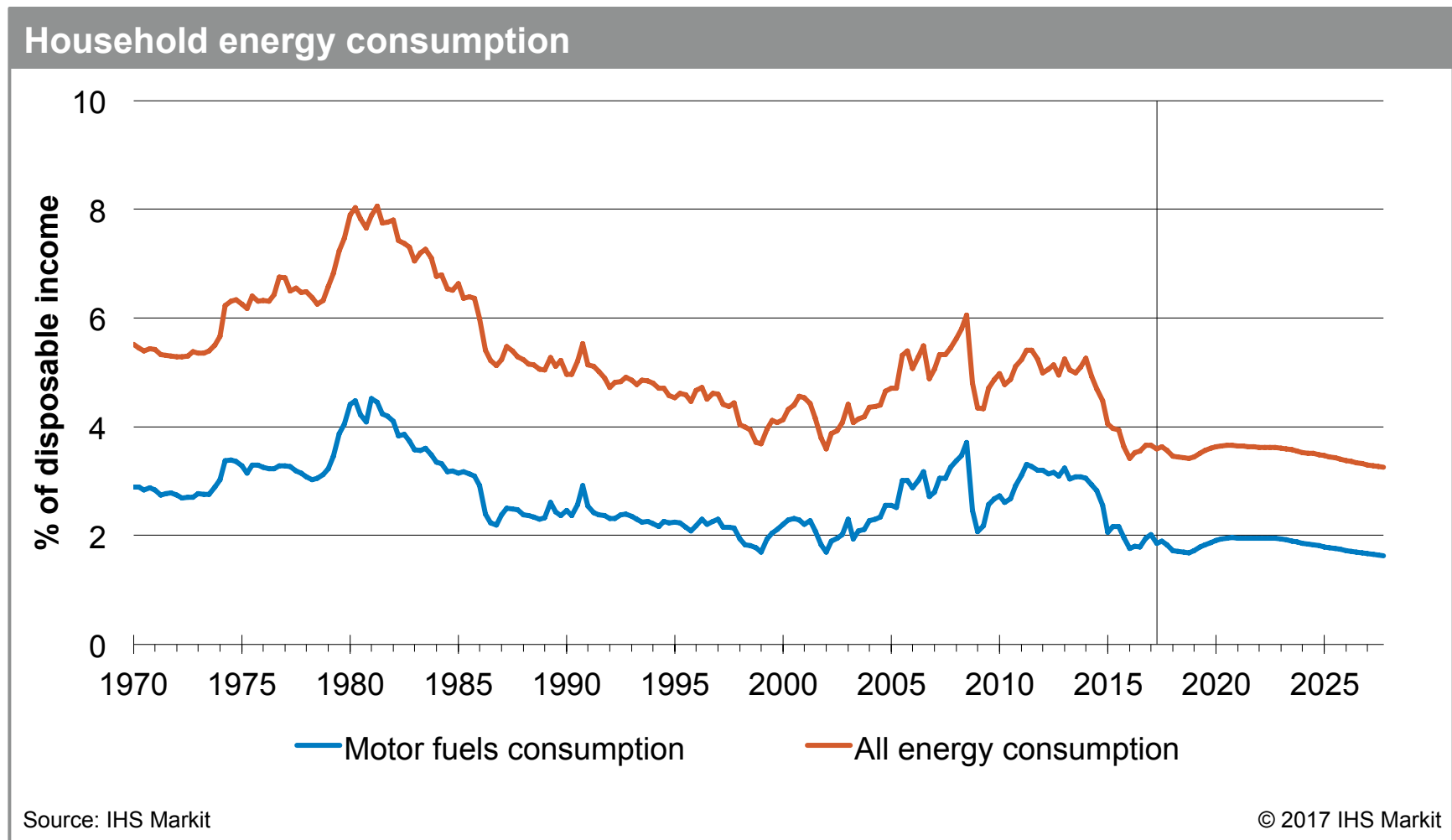
US crude oil and natural gas prices



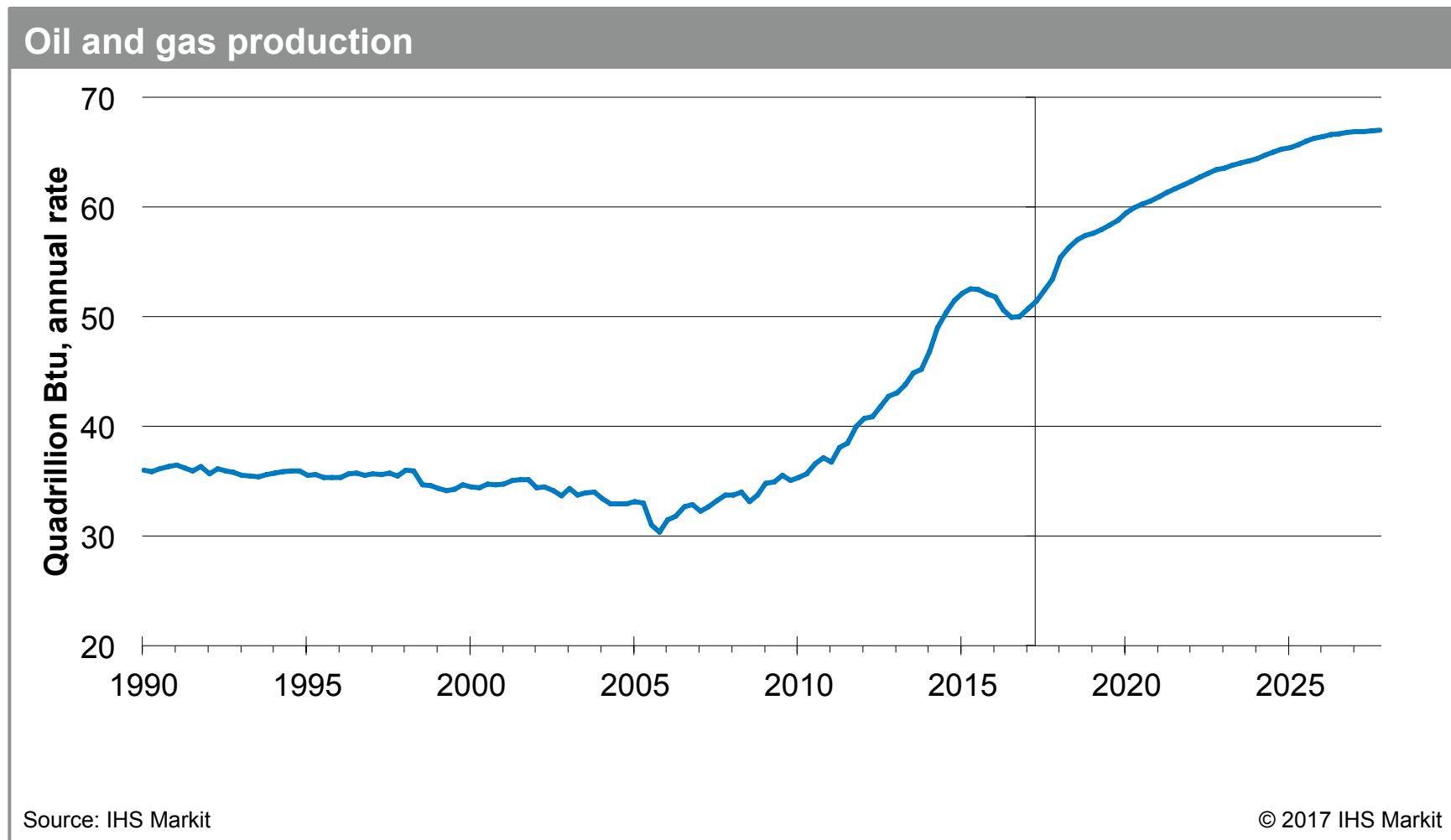
Retail gasoline prices have increased temporarily in the aftermath of Hurricane Harvey



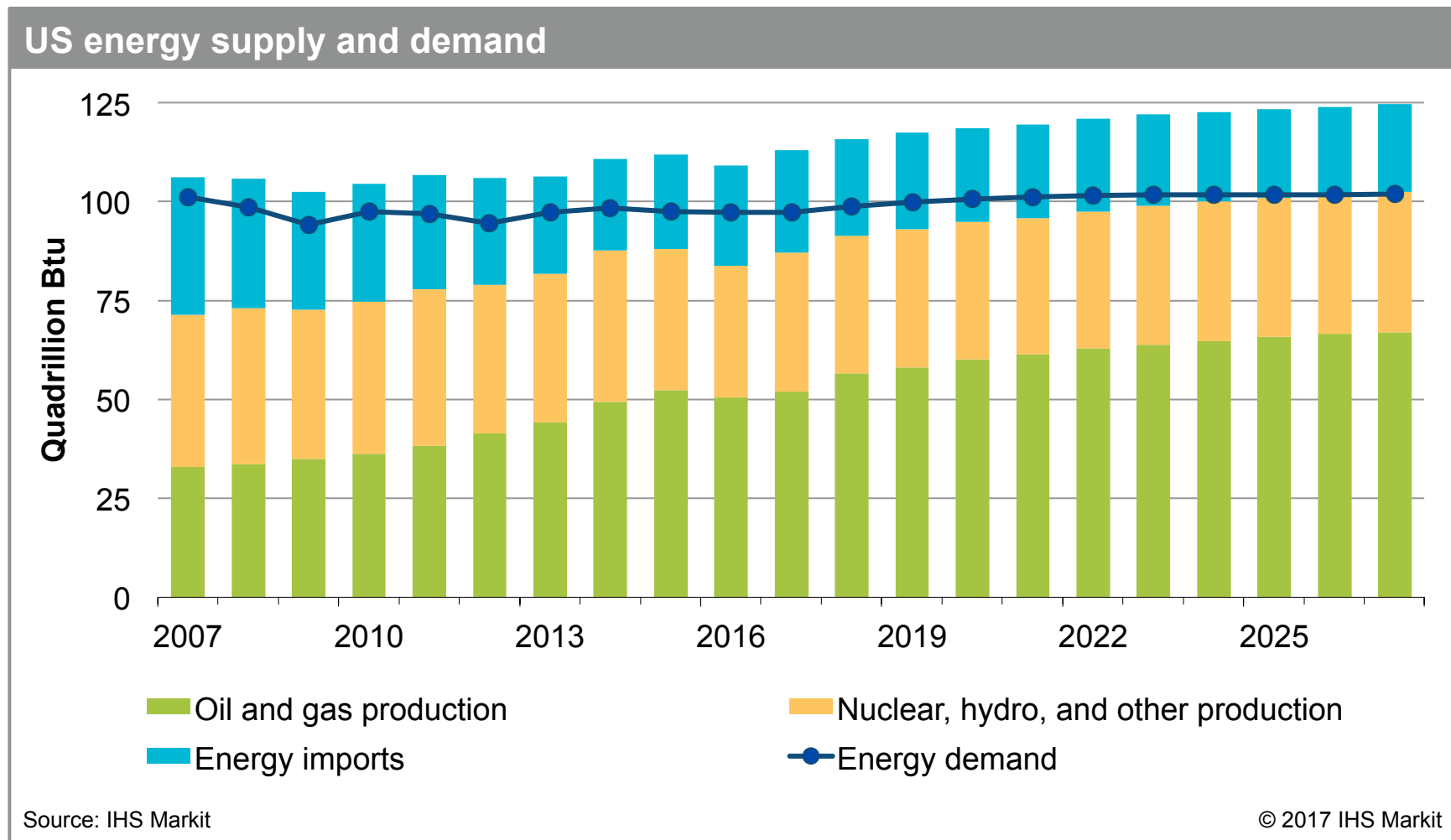
US households are spending less than 4% of disposable income on energy



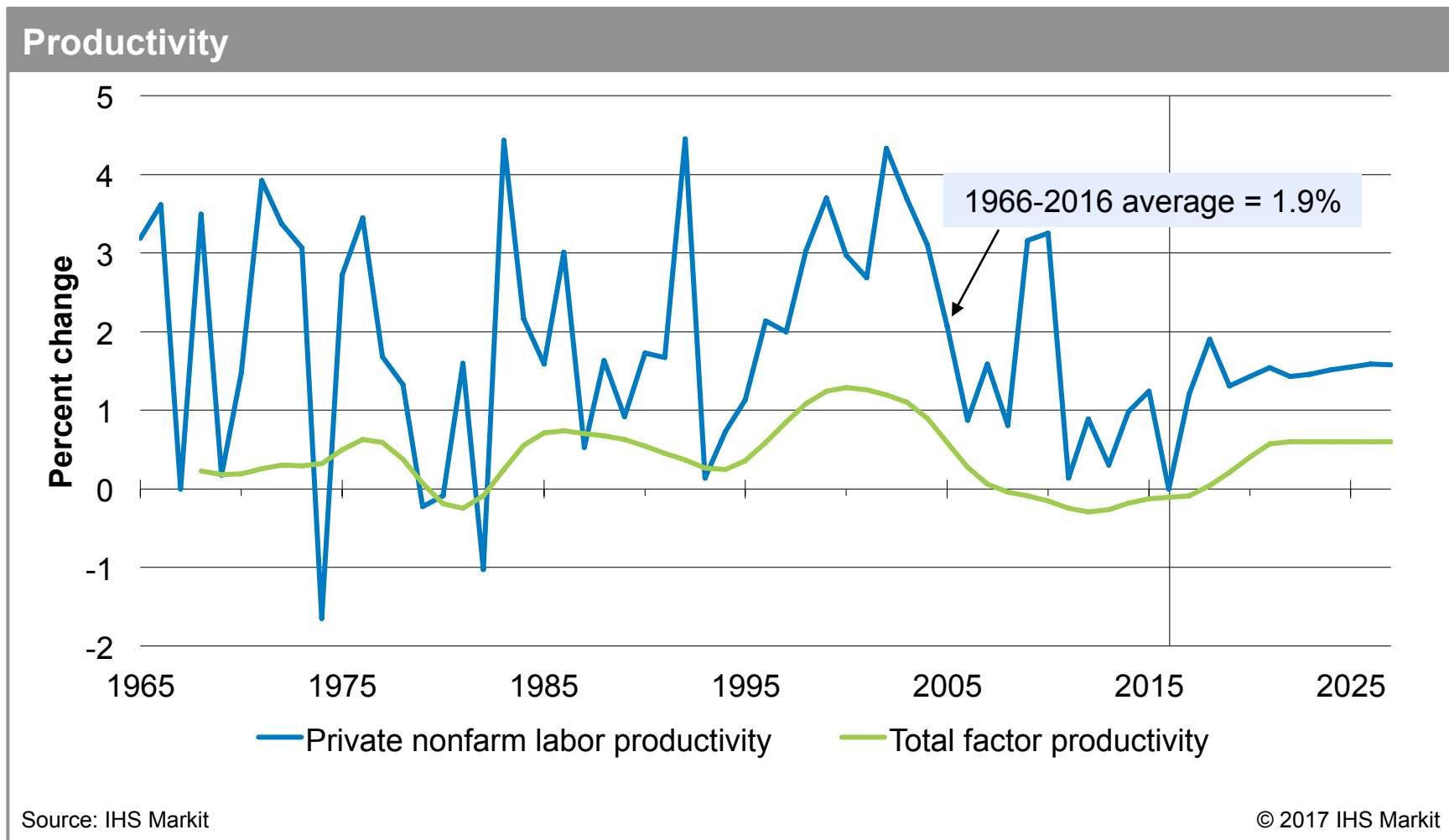
US oil and gas production has resumed growth



US energy production will catch up with demand in the decade ahead



Labor productivity and total factor productivity growth have been exceptionally weak in recent years



Consumer spending

Forces affecting consumer spending

Positive forces

- Employment growth
- Real wage growth
- Rising asset values
- Income tax cuts in 2018
- Expansion of e-commerce



Negative forces

- High student debt burdens
- Saving for retirement
- Asset and income inequality



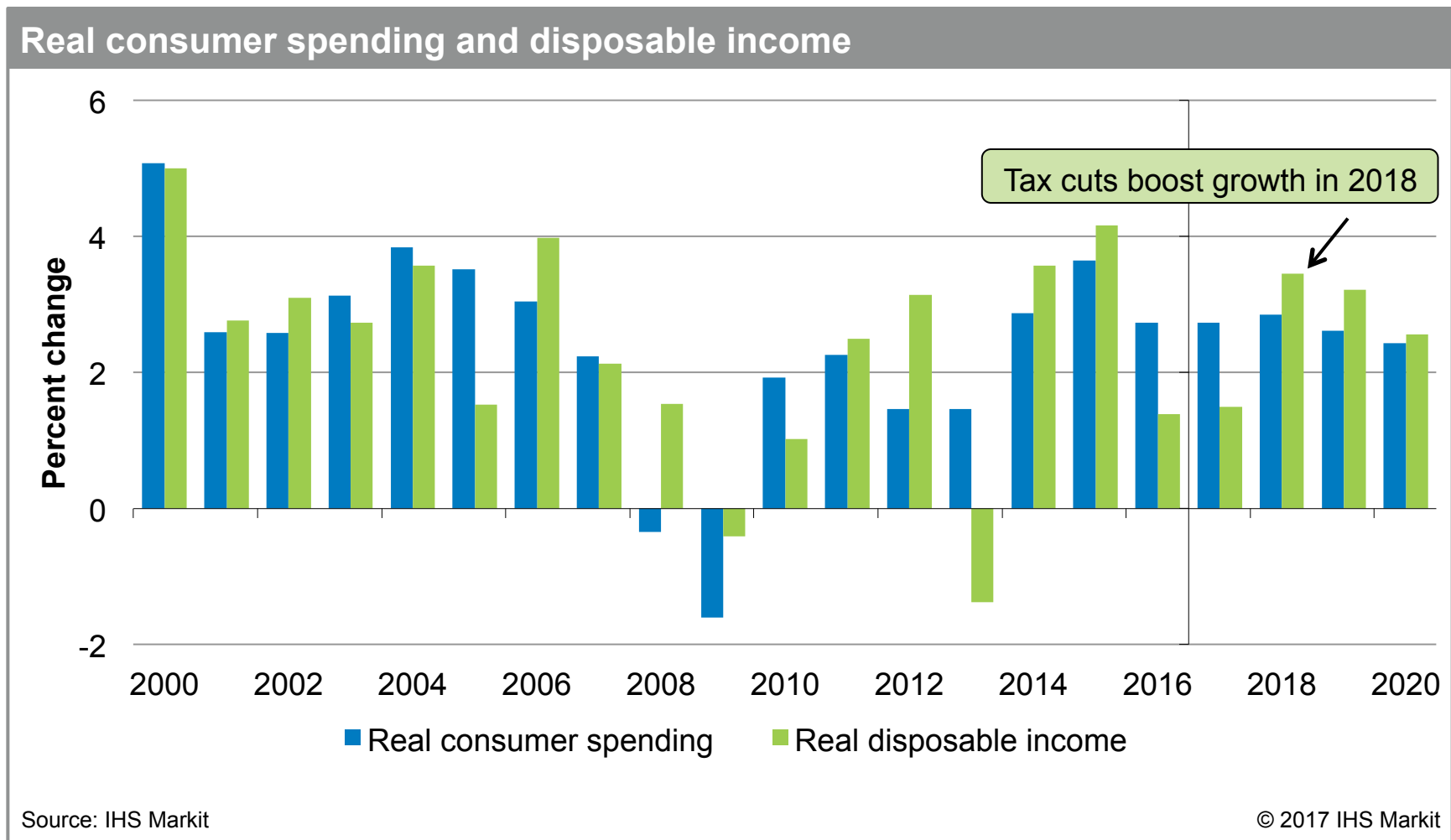
The consumer market environment is favorable

Consumer market indicators				
Percent change	2016	2017	2018	2019
Real consumption	2.7	2.7	2.8	2.6
Real disposable income	1.4	1.5	3.5	3.2
Real household net worth	4.6	4.3	2.5	1.9
Payroll employment	1.8	1.5	1.5	1.2
Real wage rate	1.1	1.0	1.6	1.4
Consumption price deflator	1.2	1.6	1.3	1.9
Light-vehicle sales (Millions)	17.5	17.0	17.2	17.0
Single-family home sales (Millions)	5.39	5.58	5.71	5.65

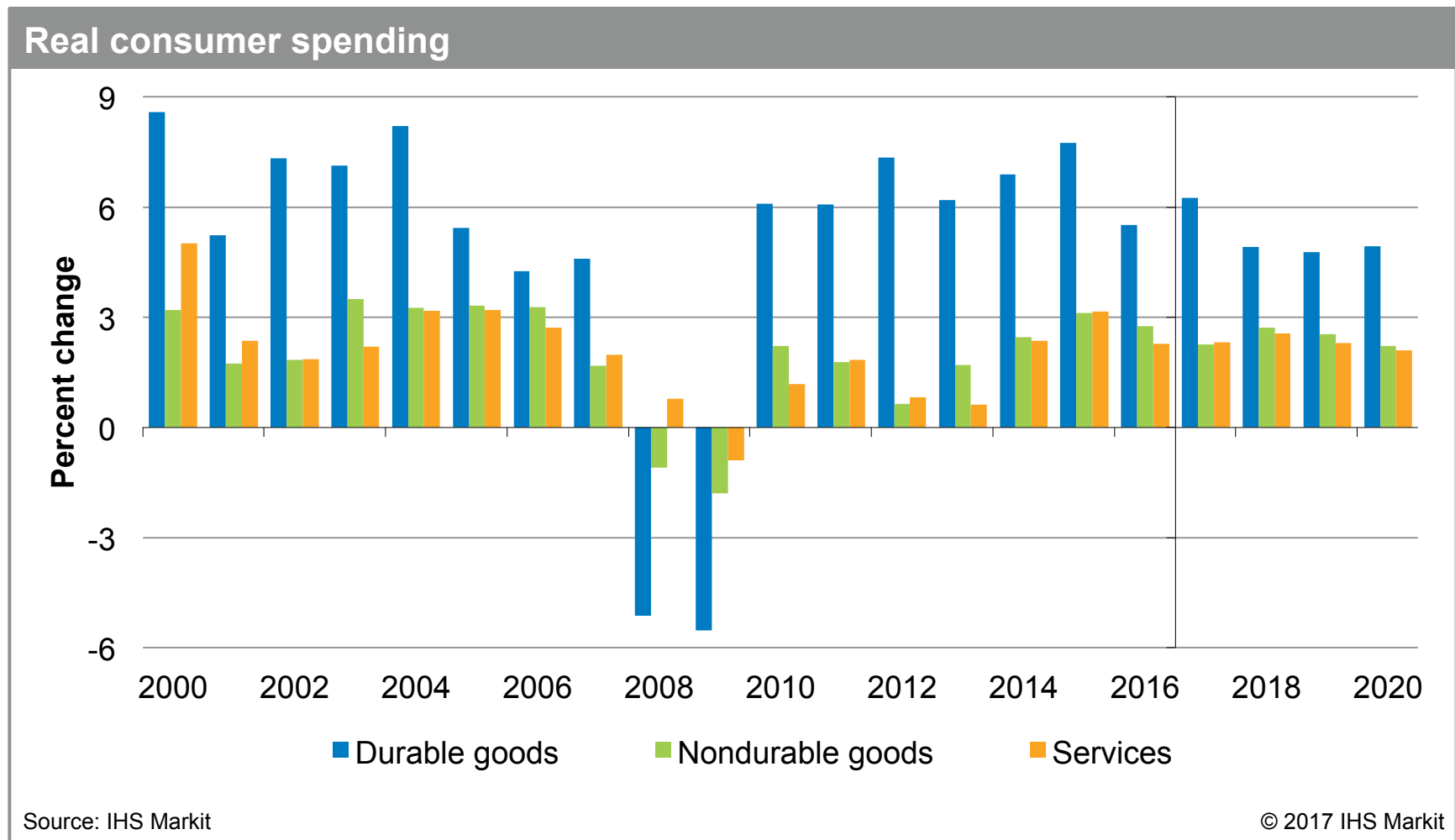
Source: IHS Markit

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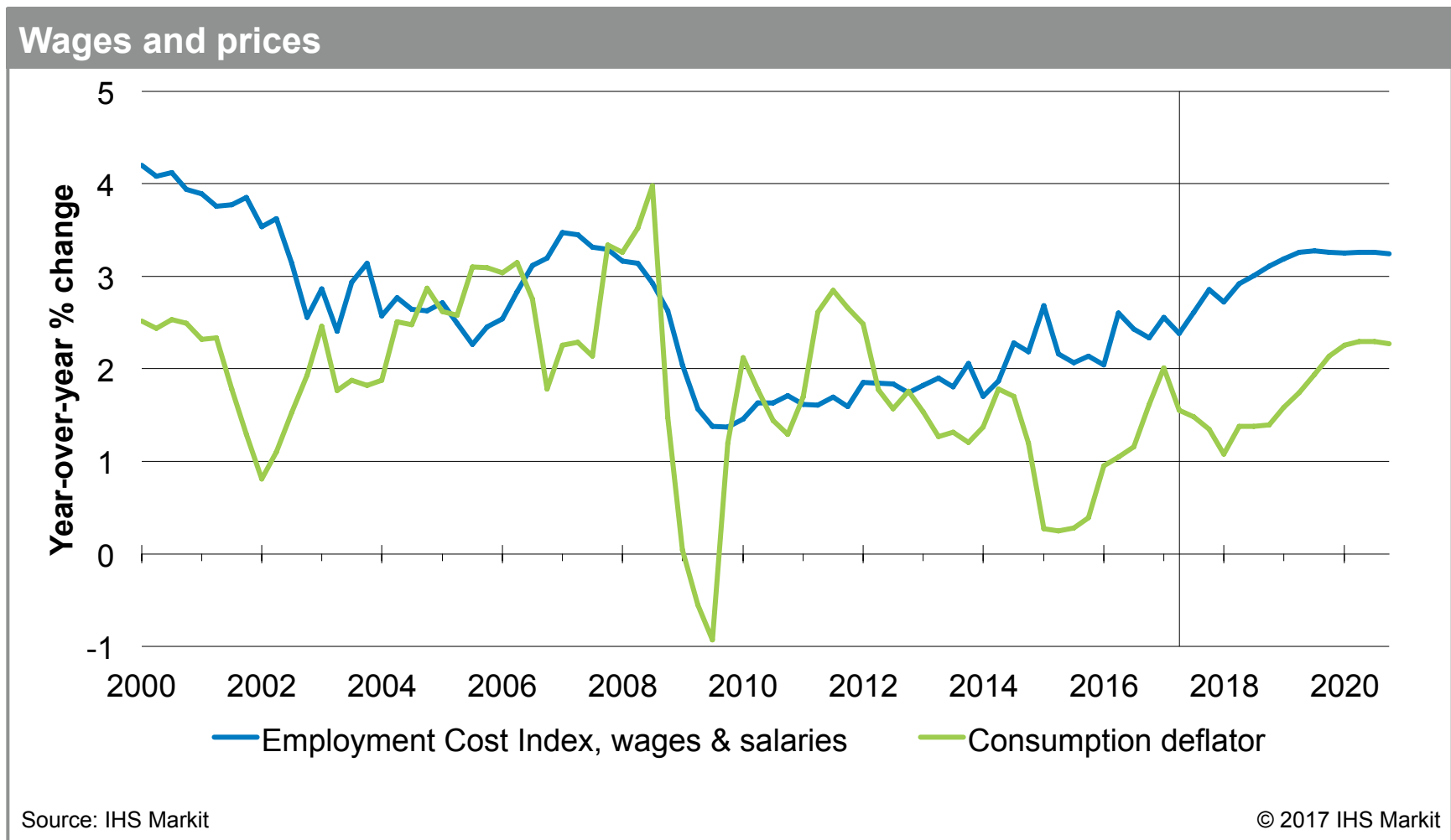
Consumer spending will be supported by solid growth in real disposable income



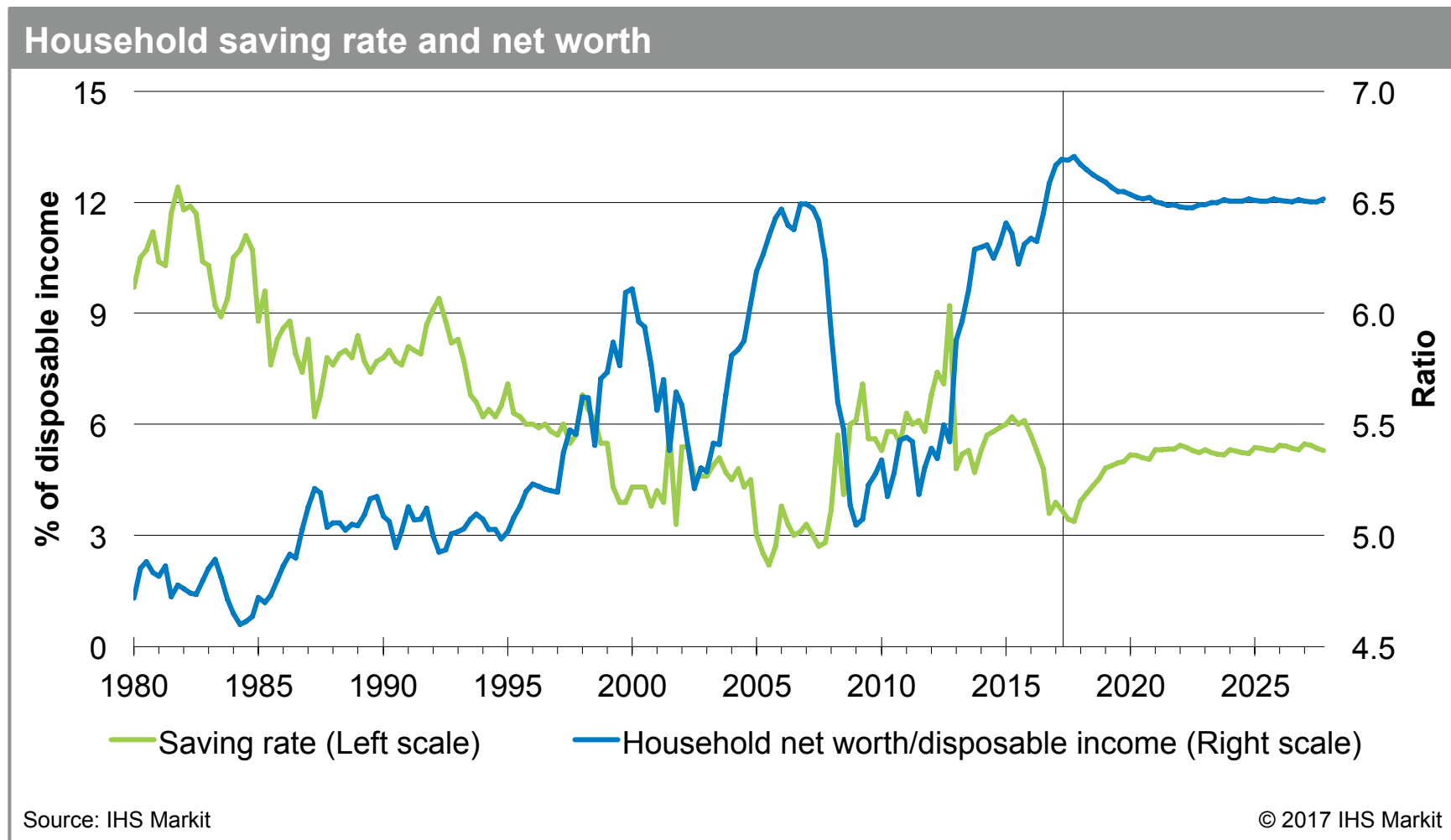
Durable goods lead growth in real consumer spending



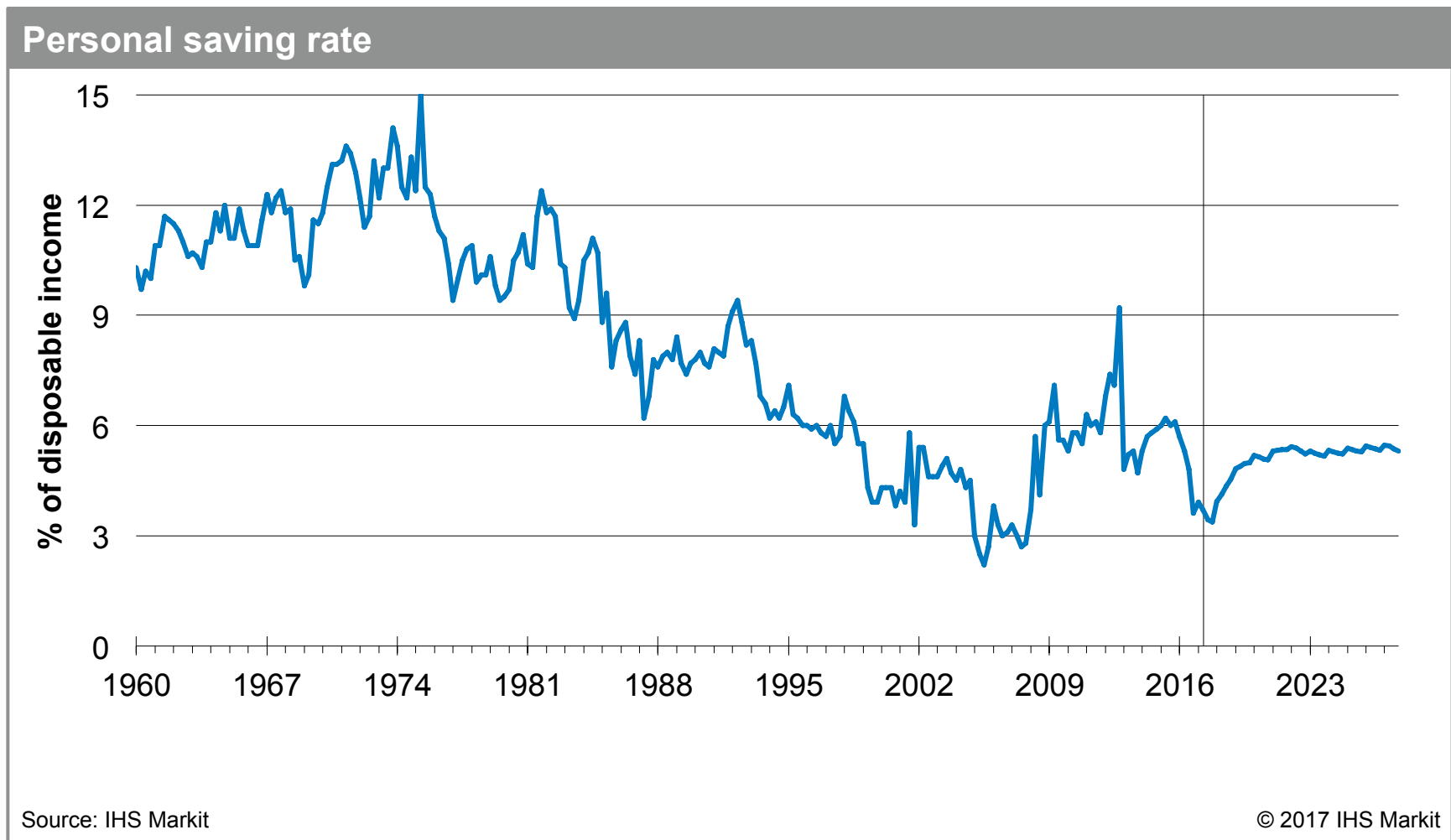
Wage gains will continue to outpace inflation



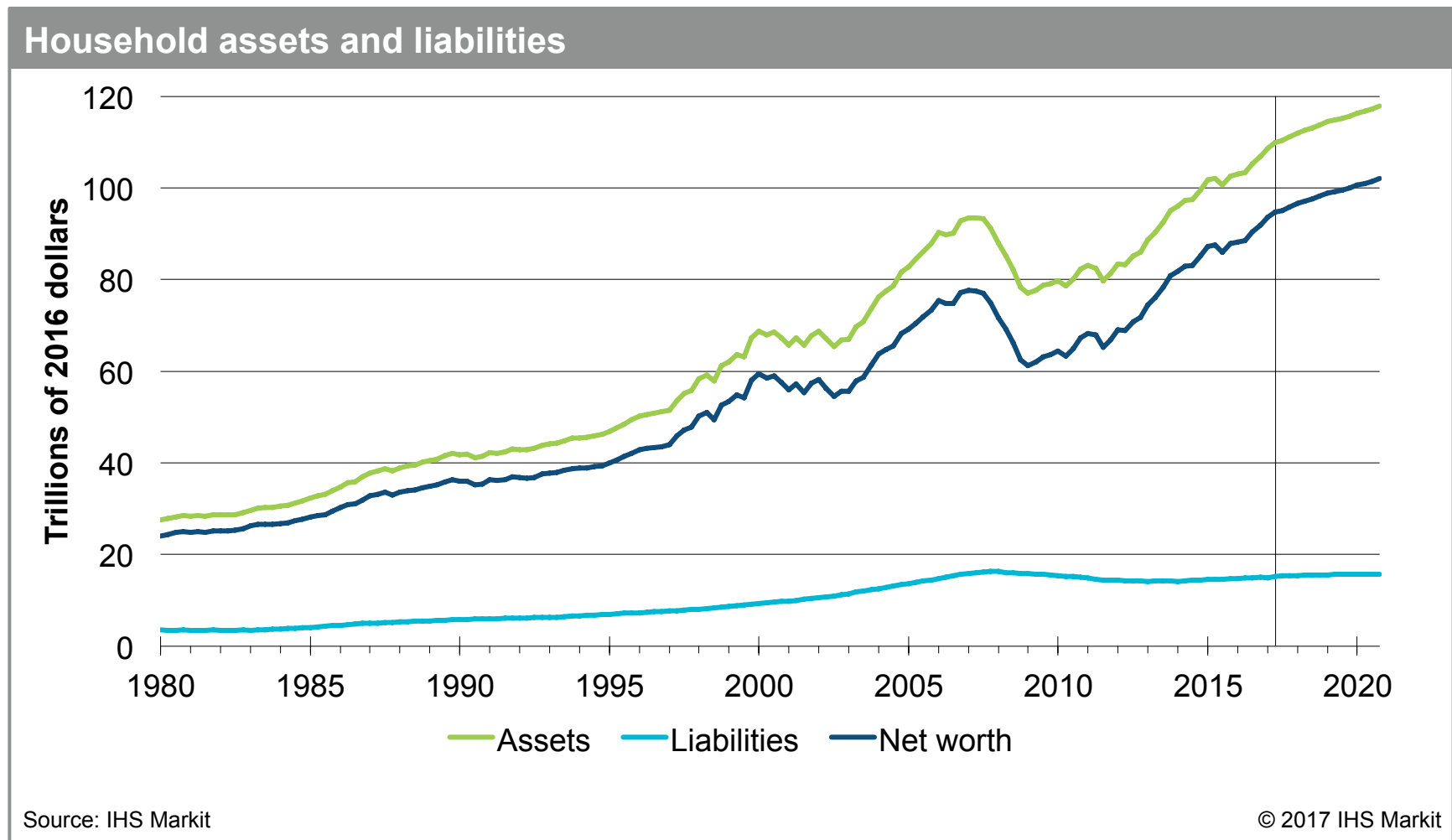
Household net worth and the personal saving rate



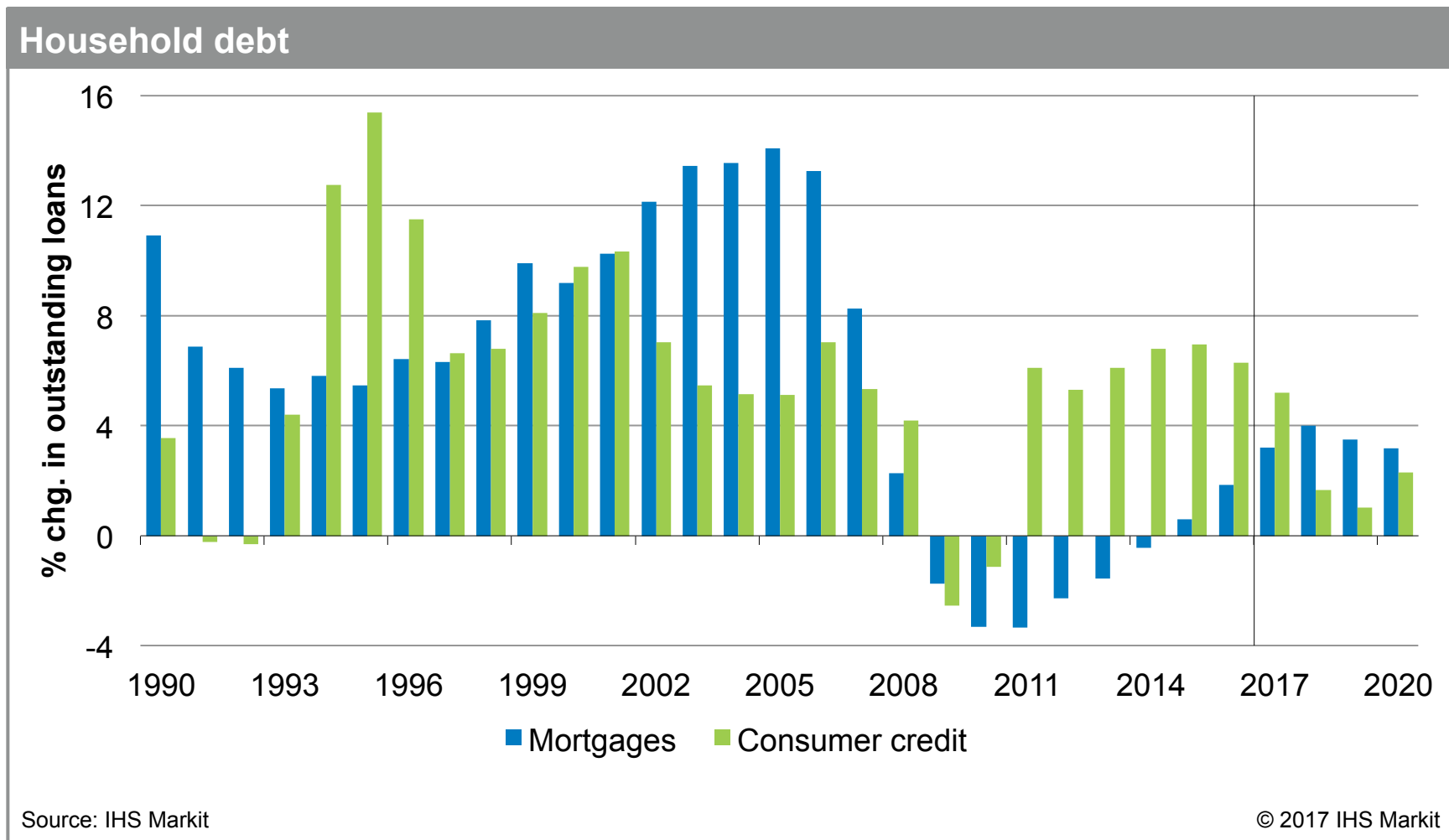
The personal saving rate is below its historical average



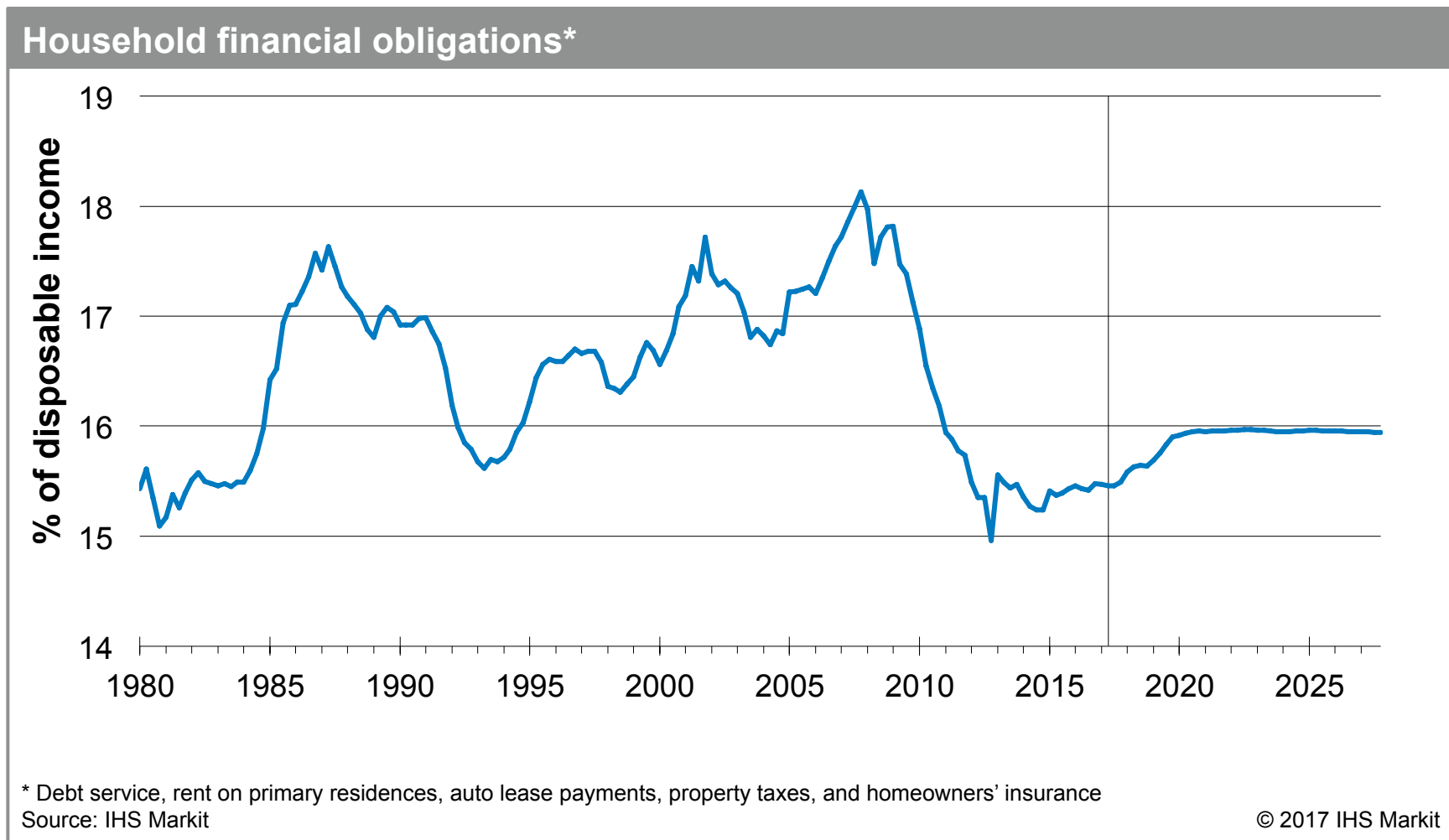
Real household net worth has reached a new high



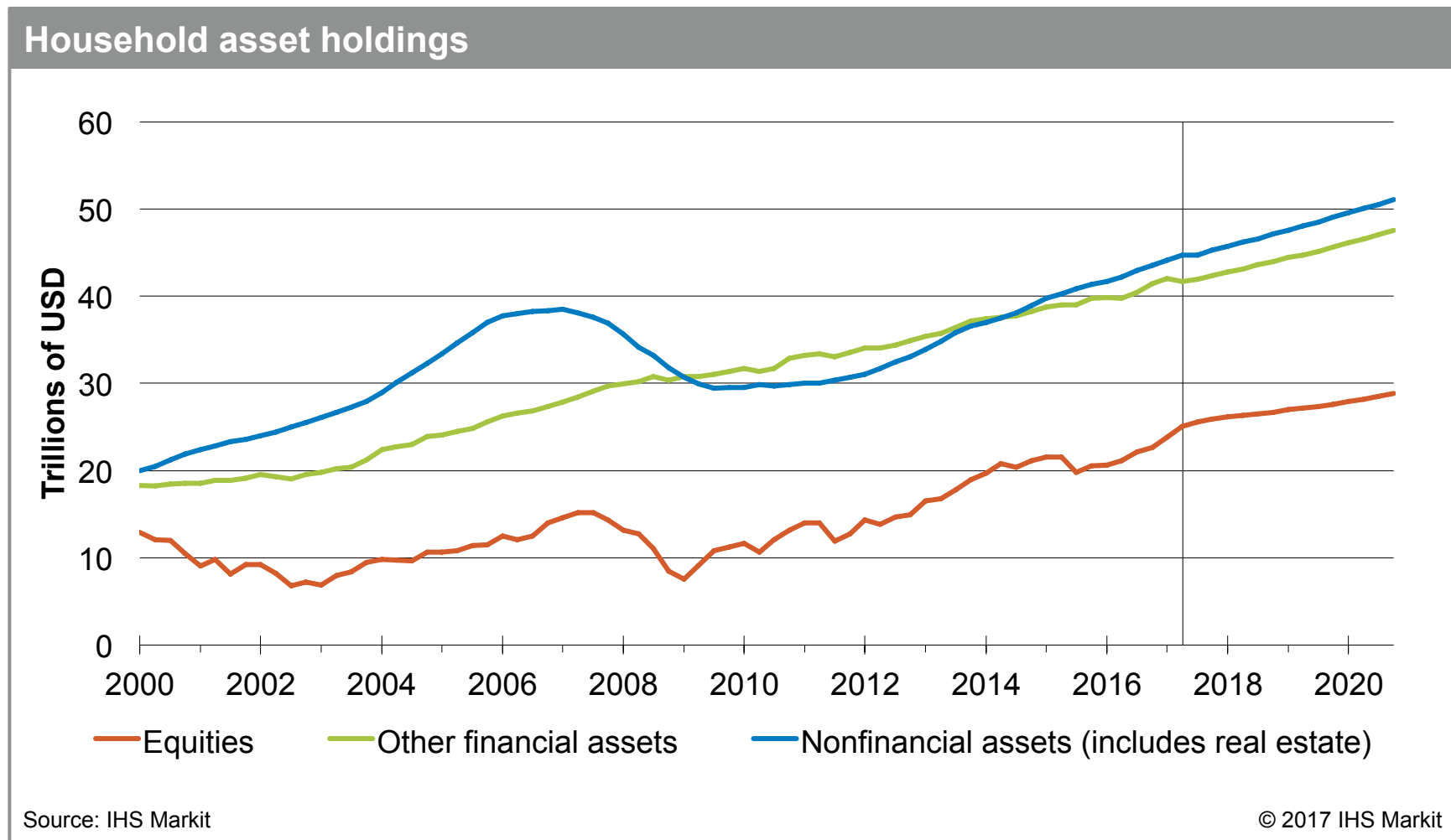
Household debt will increase at a moderate pace



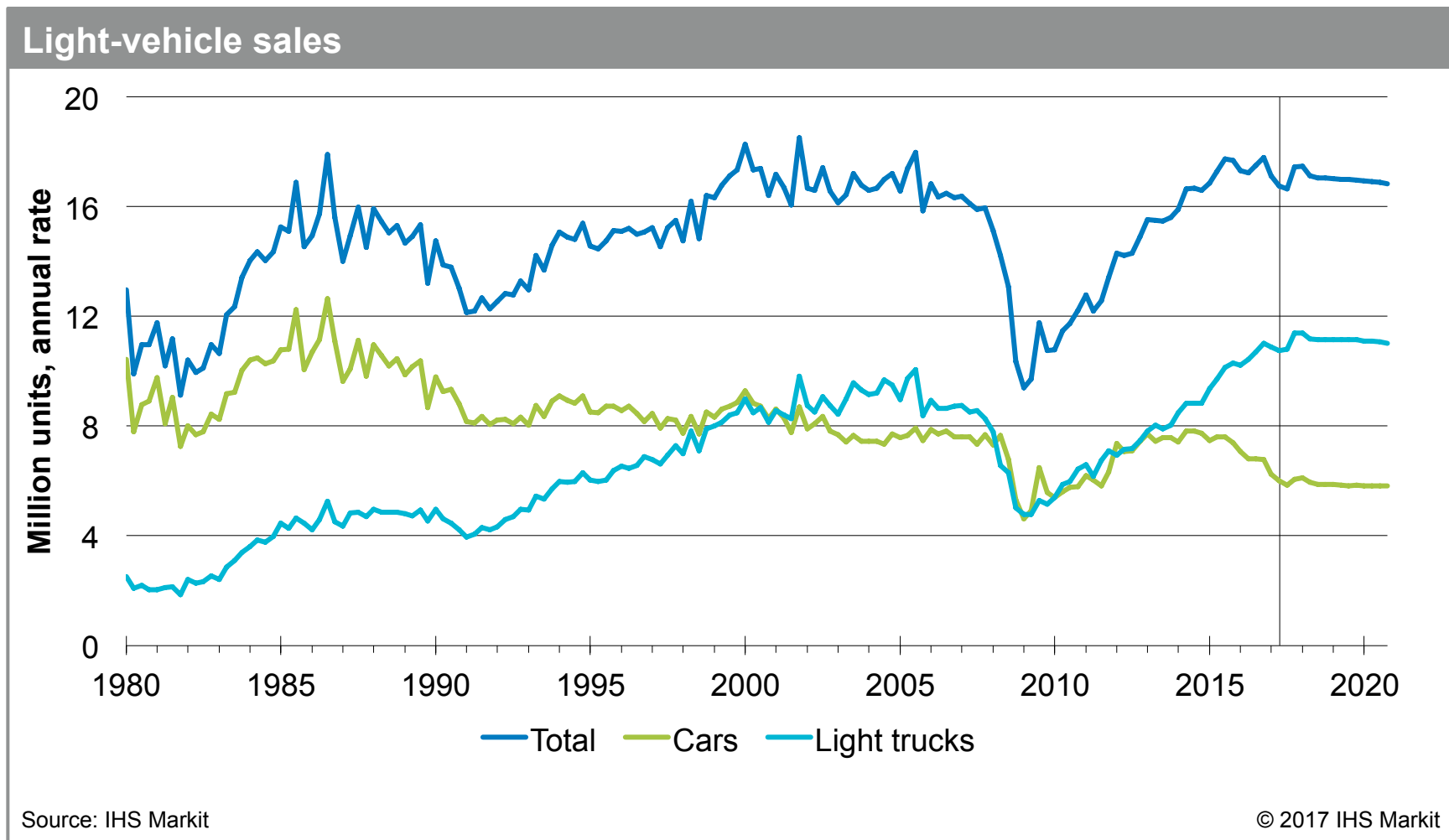
Households' financial obligations ratio will increase slightly as interest rates rise



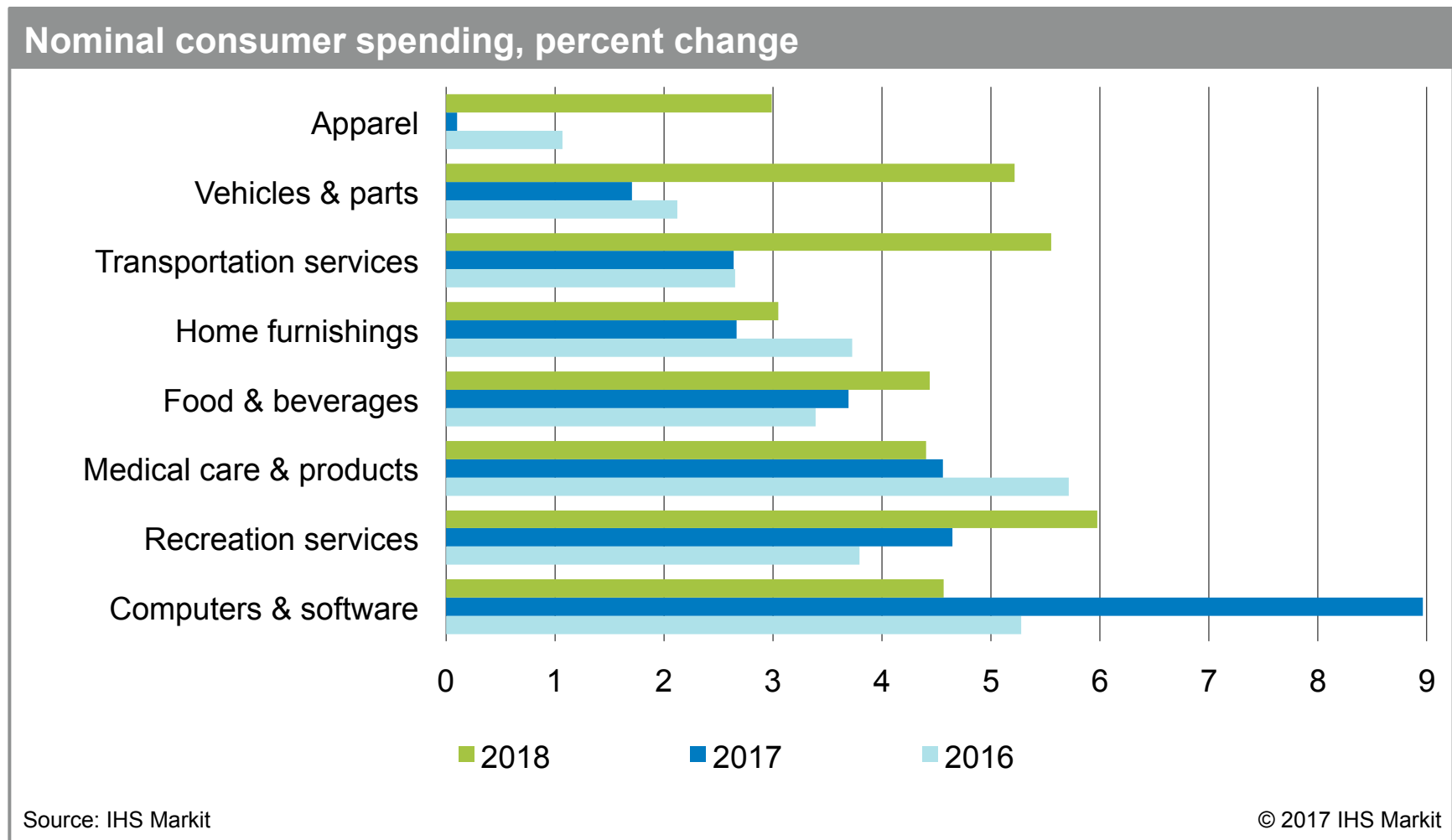
Household financial and real estate assets are rising



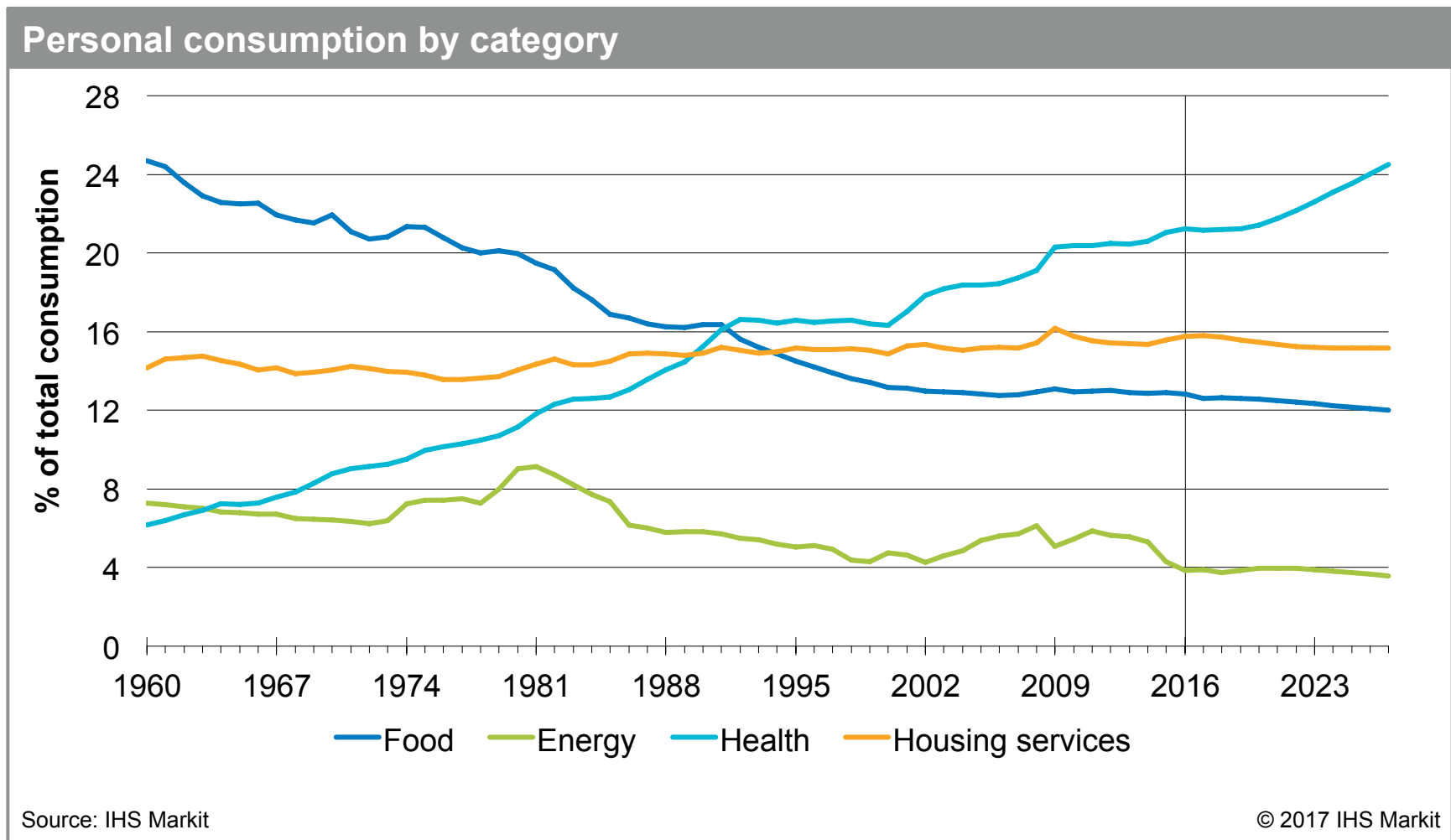
US light-vehicle sales have reached their peak; light trucks will continue to outsell cars



Nominal consumer spending growth by category



Healthcare will account for a rising share of personal consumption



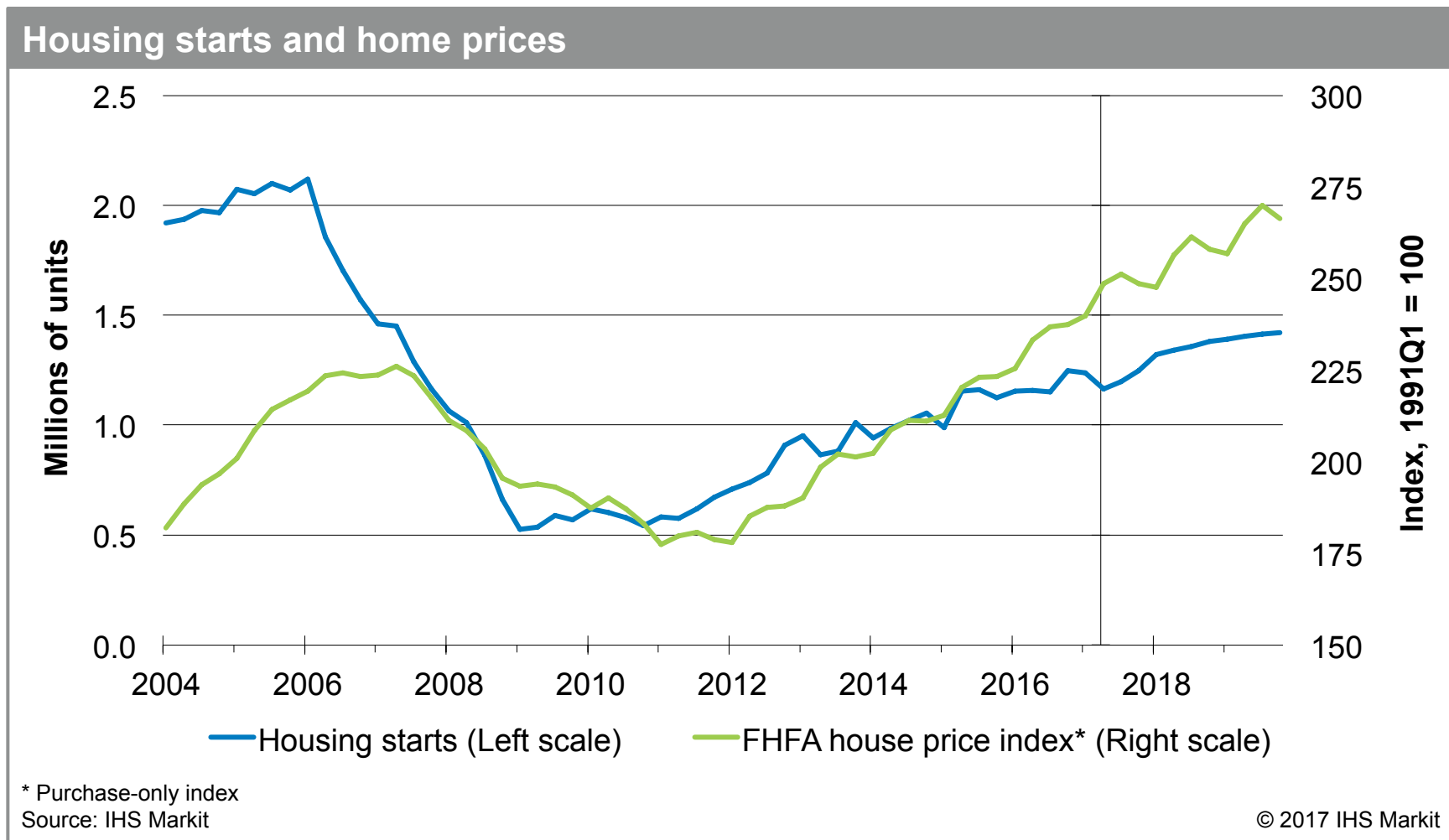
Housing markets

Homebuilding continues its slow recovery

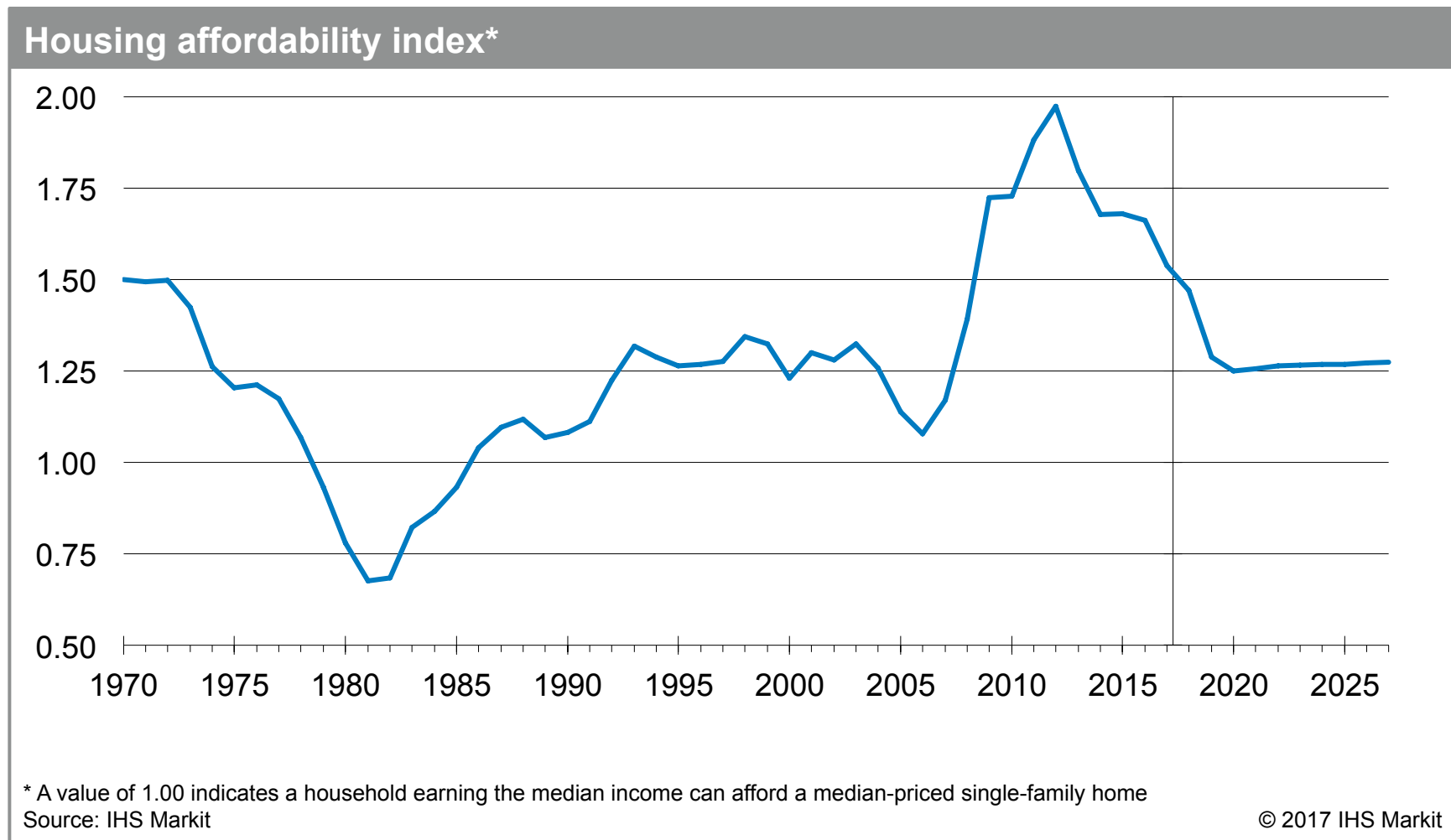
- Housing demand is supported by sustained growth in employment and real incomes. Mortgage rates are low, but will rise through 2019.
- Supply is constrained by shortages of labor and developed lots.
- As demand outpaces supply, home prices are rising.
- After hitting a 51-year low in 2016, the homeownership rate is rising in 2017, led by an upturn in homeownership among young adults.
- Lean inventories, strong demand, rising prices, and builder optimism will lead to increasing home construction.



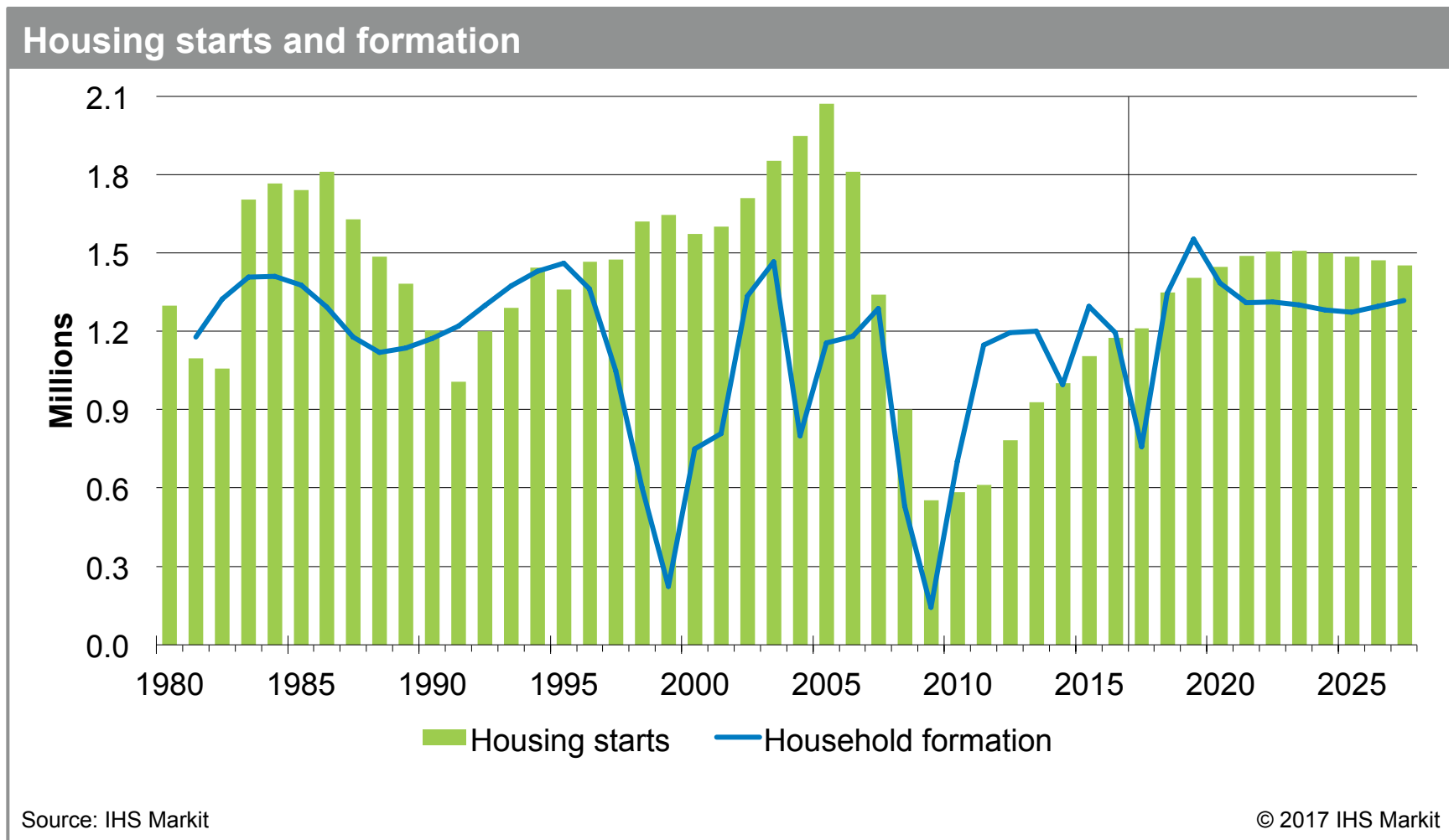
A slow recovery in housing starts is contributing to upward pressure on home prices



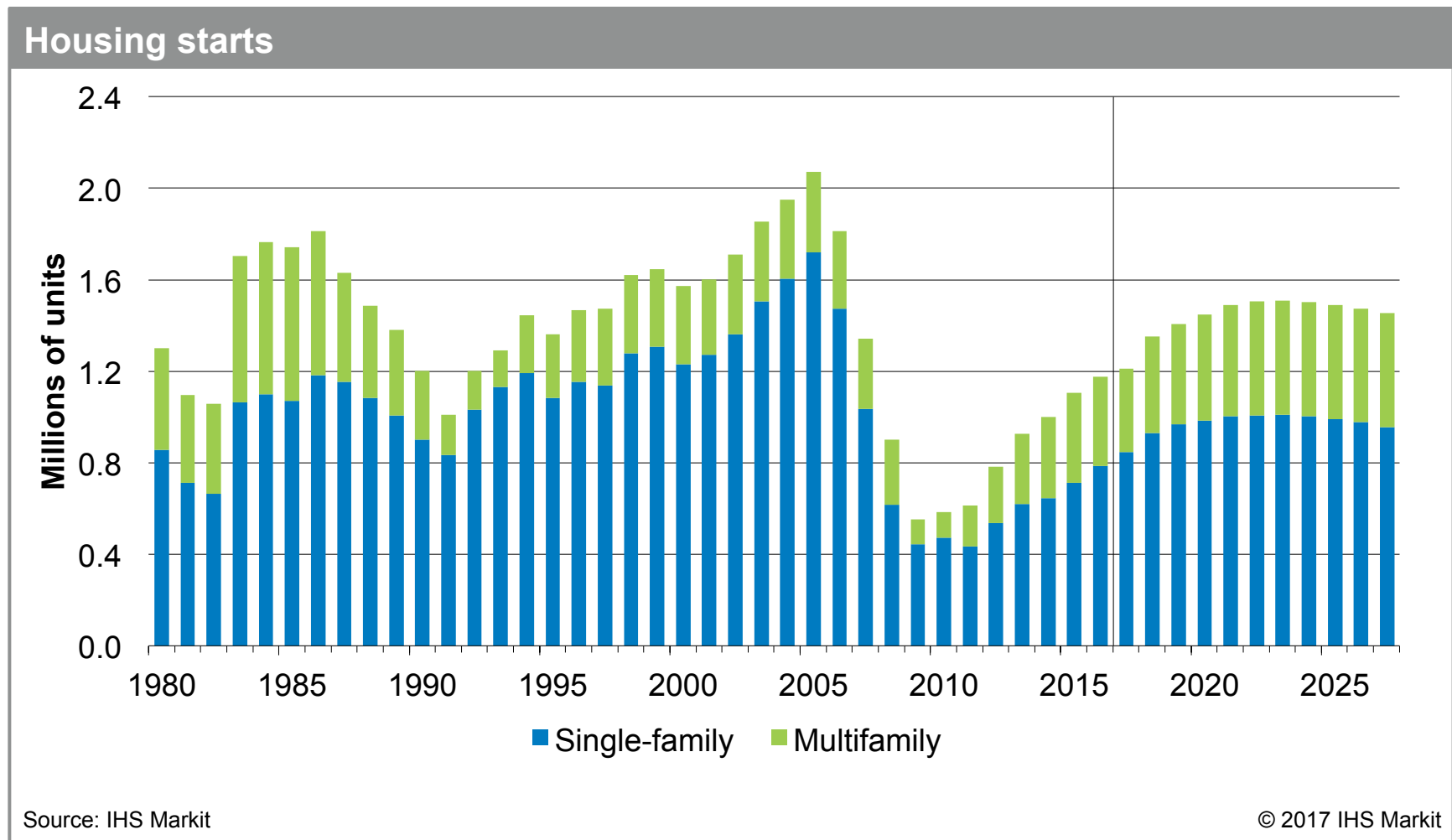
Housing affordability will deteriorate through 2020 as home prices and mortgage rates rise



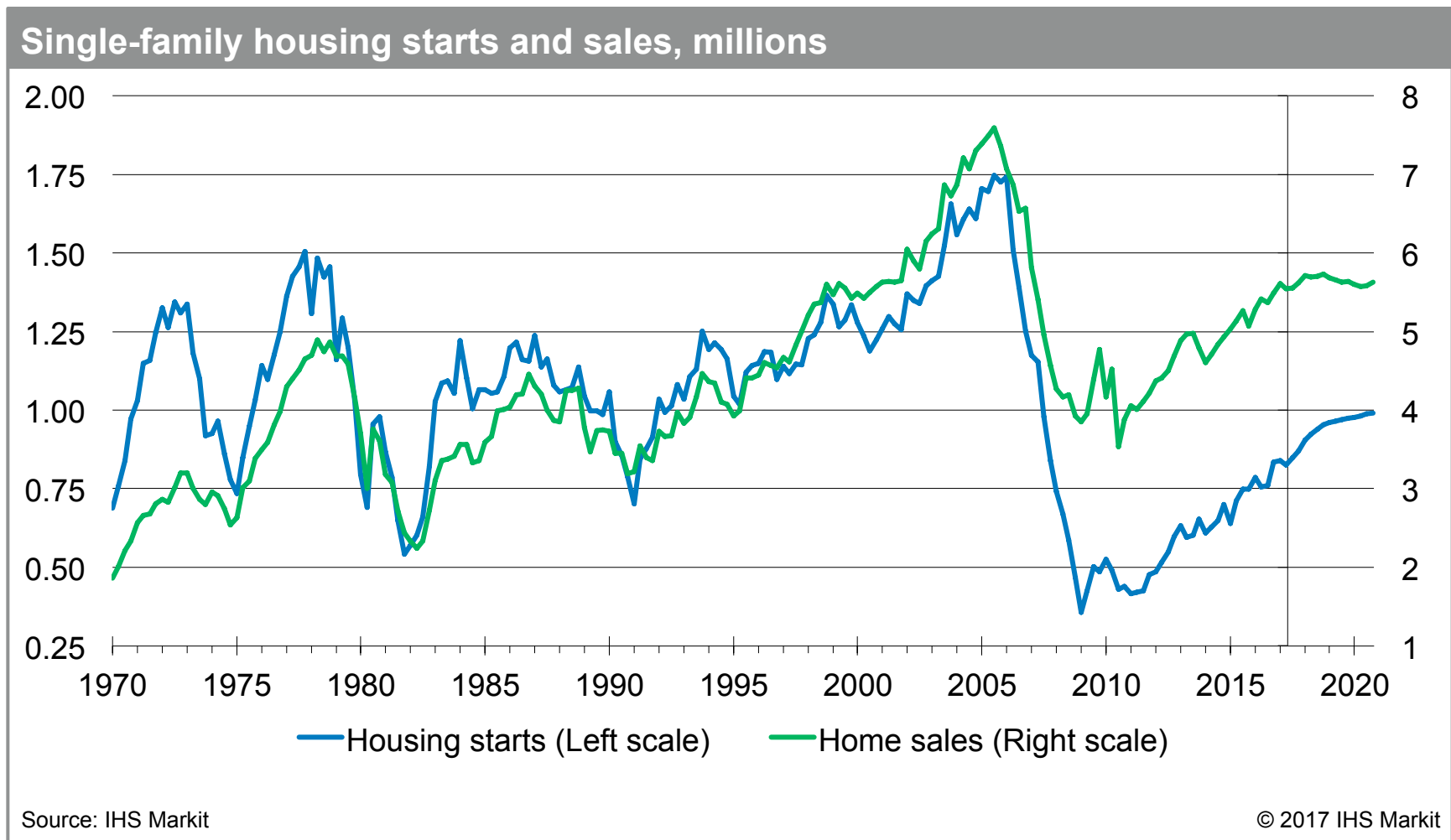
Household formation and rebuilding after hurricanes will support further gains in housing starts



US housing starts continue their gradual recovery



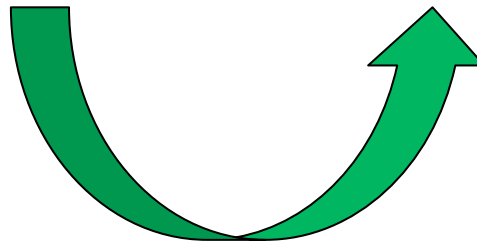
Single-family home sales and construction are not expected to regain their 2005 peaks



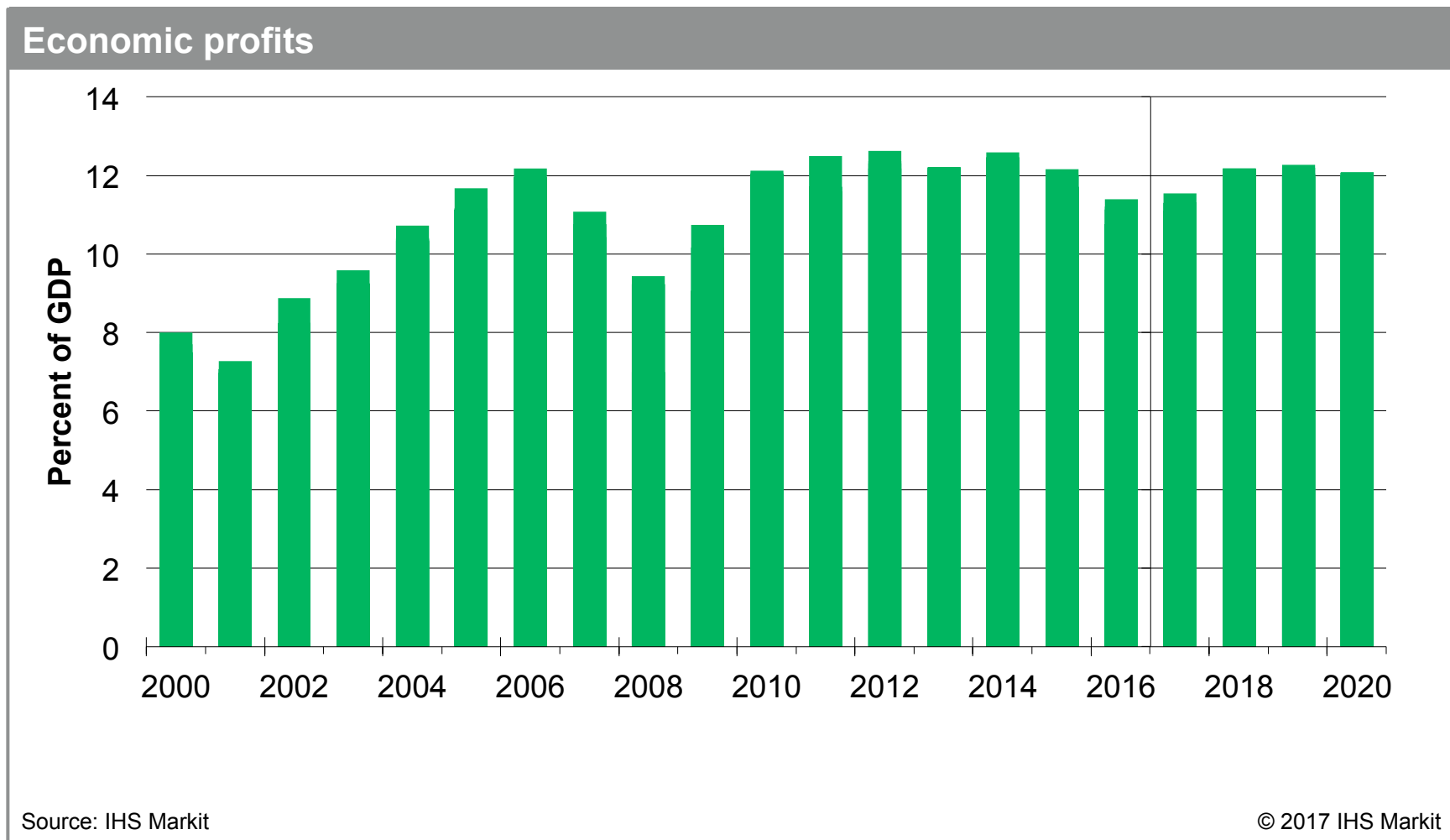
Business investment

Forces driving business fixed investment

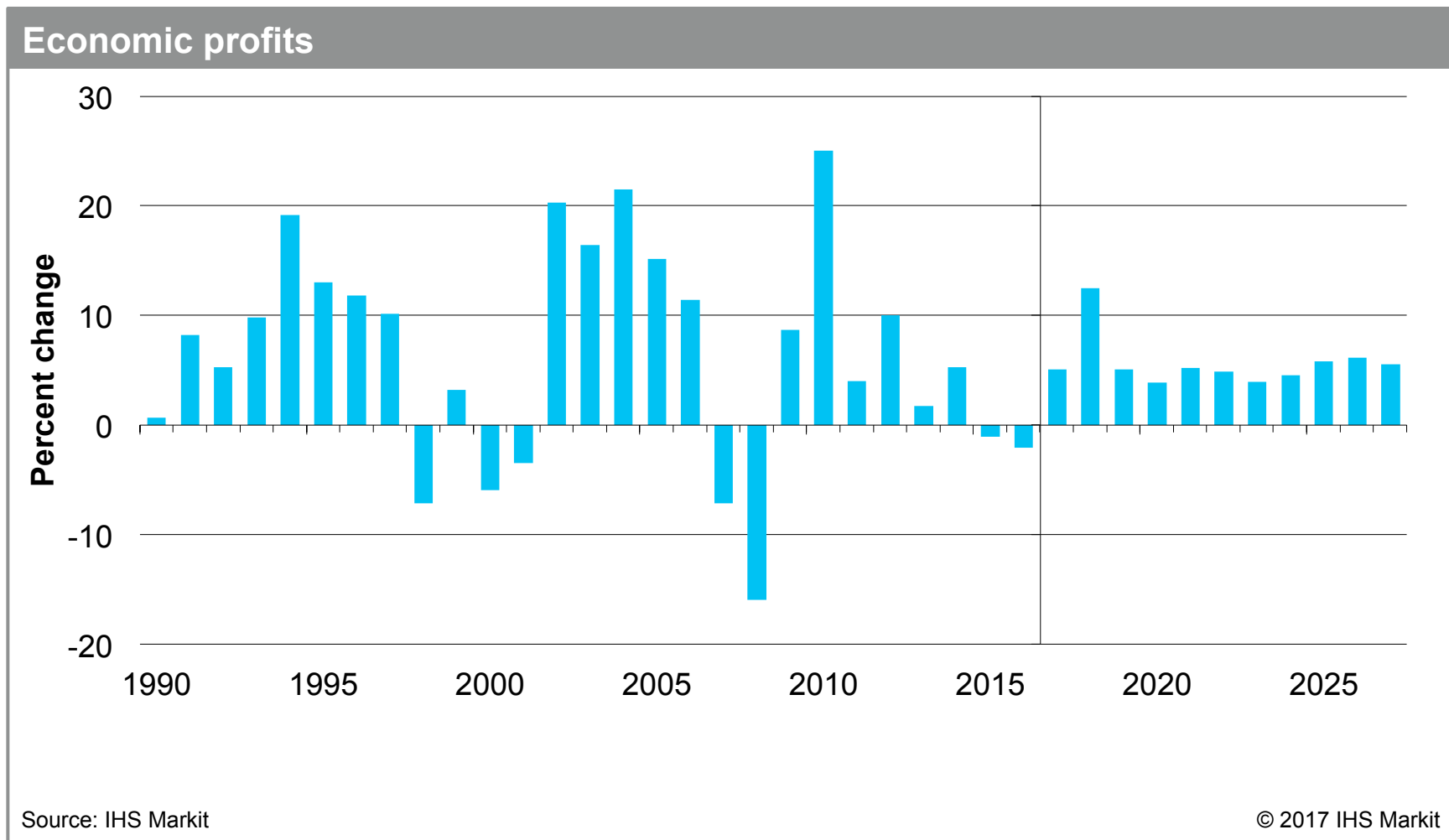
- Expected market growth
- Cost of capital
- Technological advances
- Efficiency gains
- Corporate profits



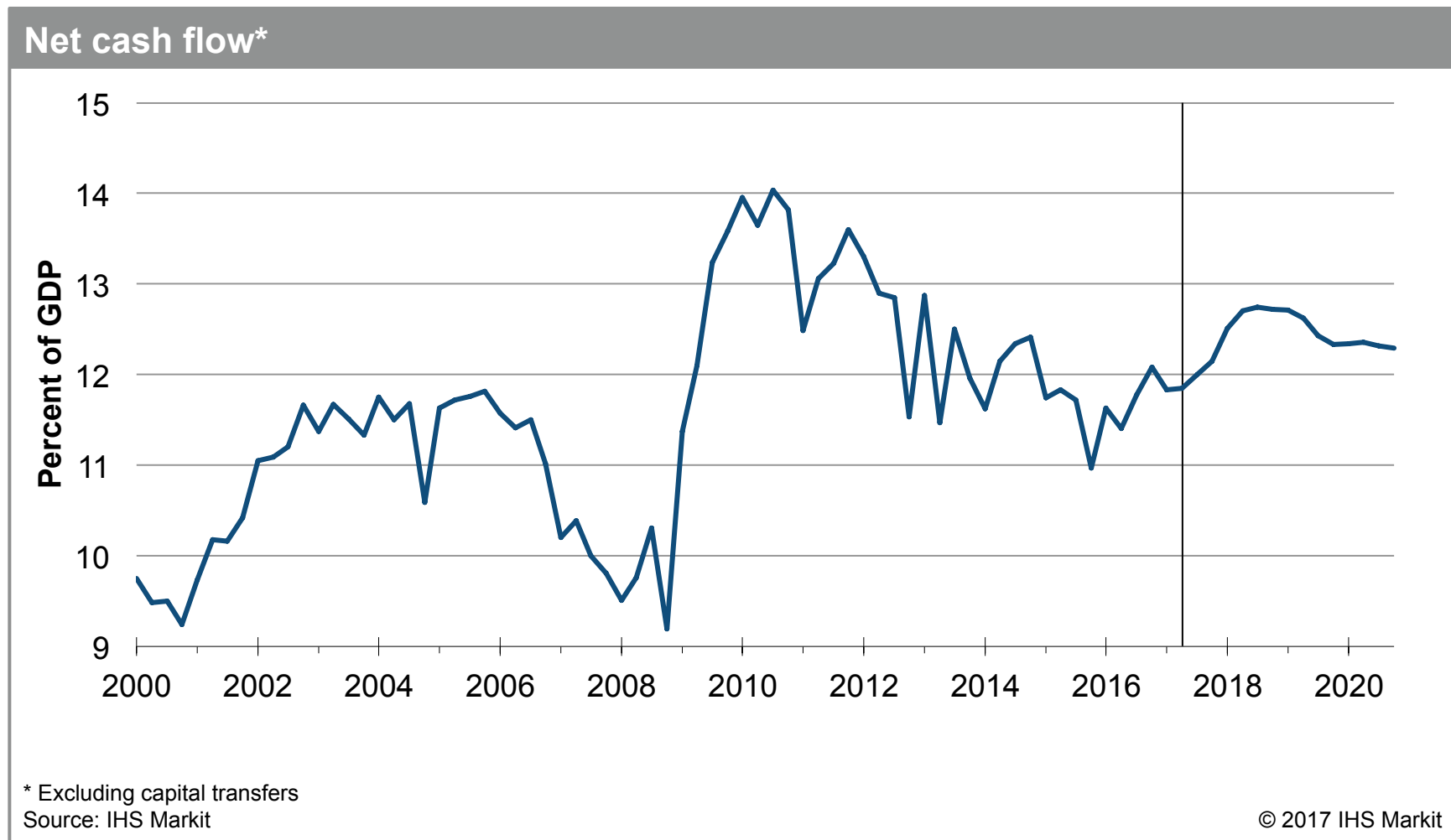
Corporate economic profits' share of GDP



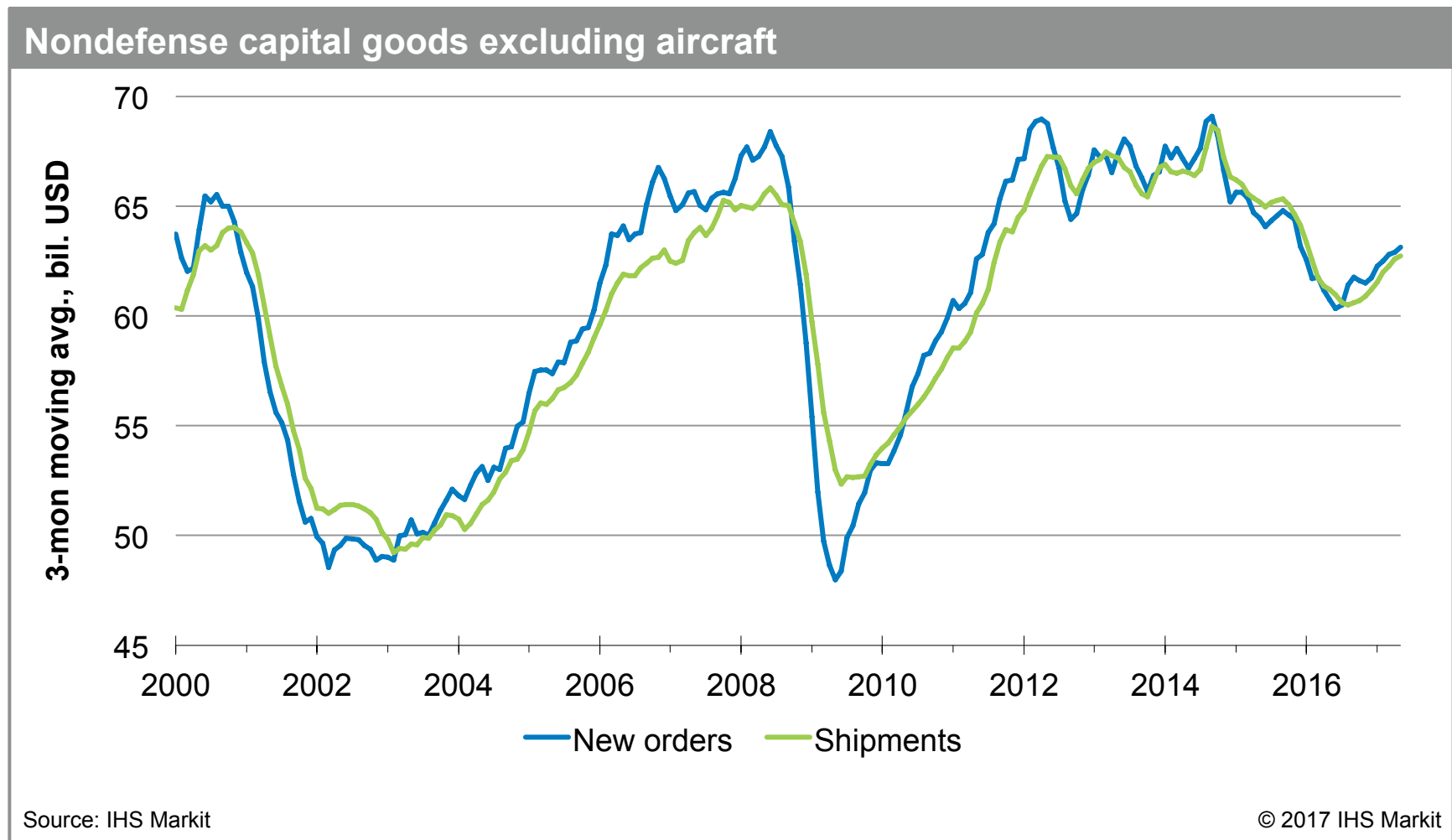
Corporate economic profits are rising again



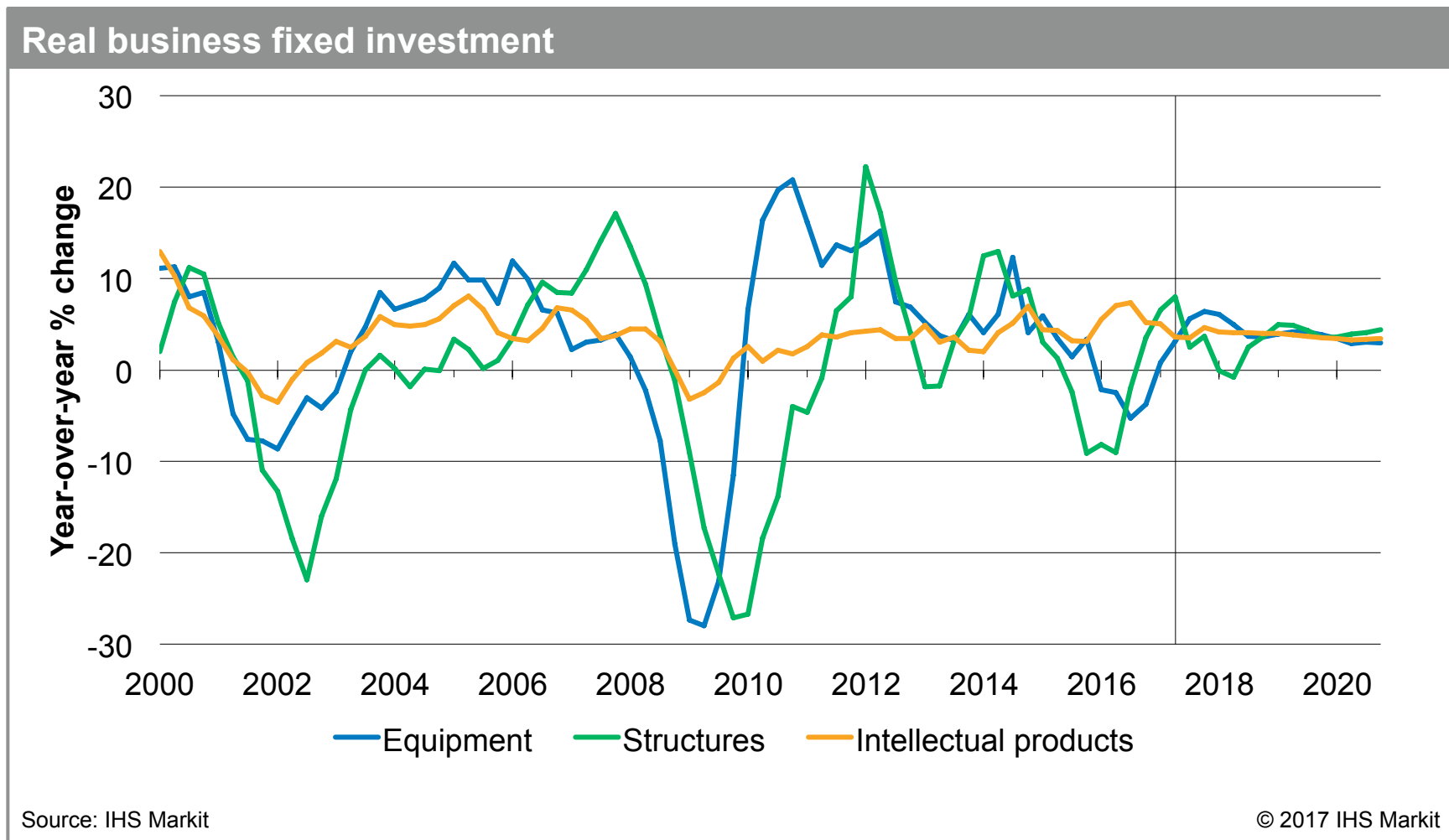
US corporate cash flow's share of GDP peaked in 2010



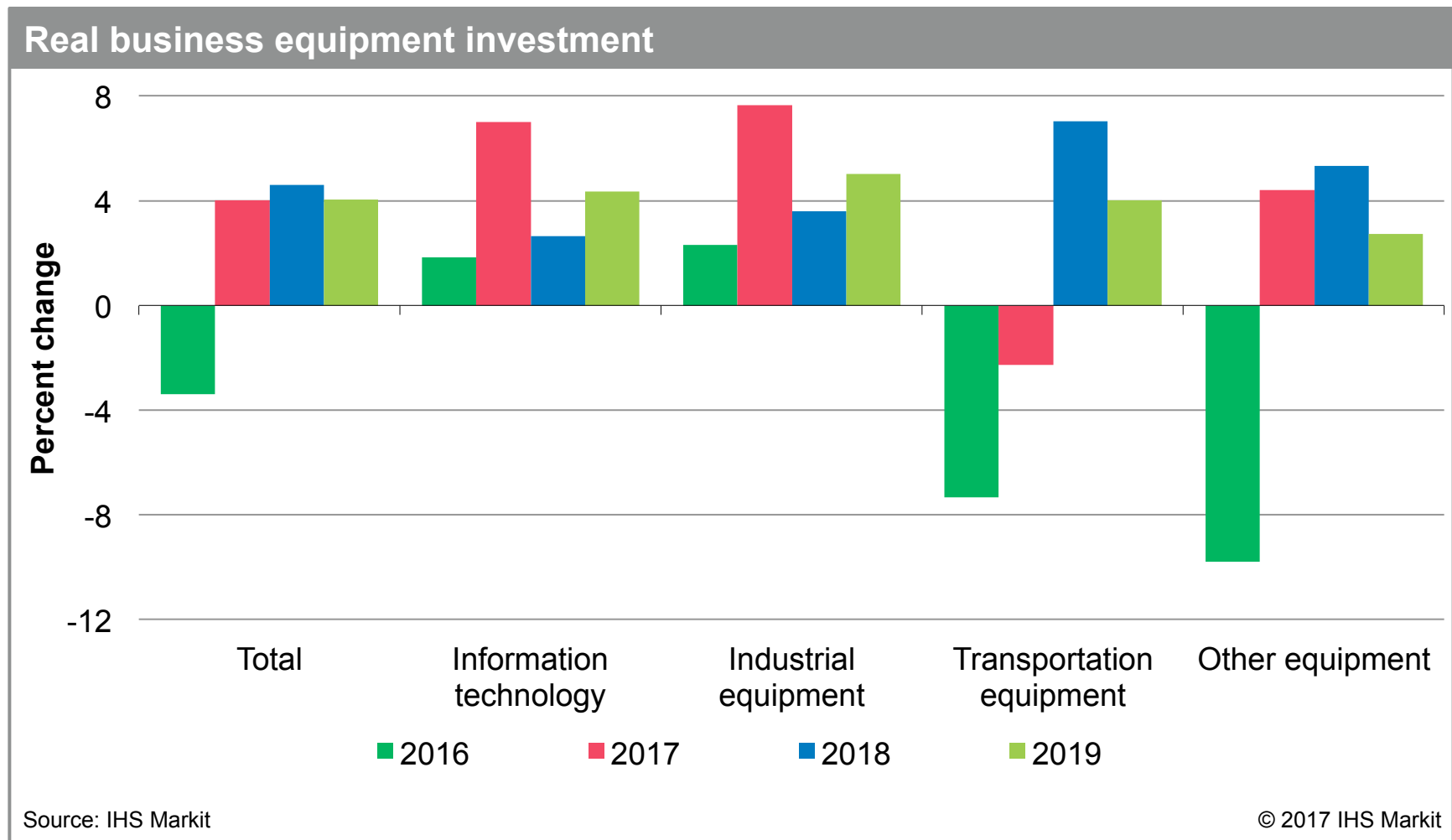
Core capital goods orders and shipments are recovering



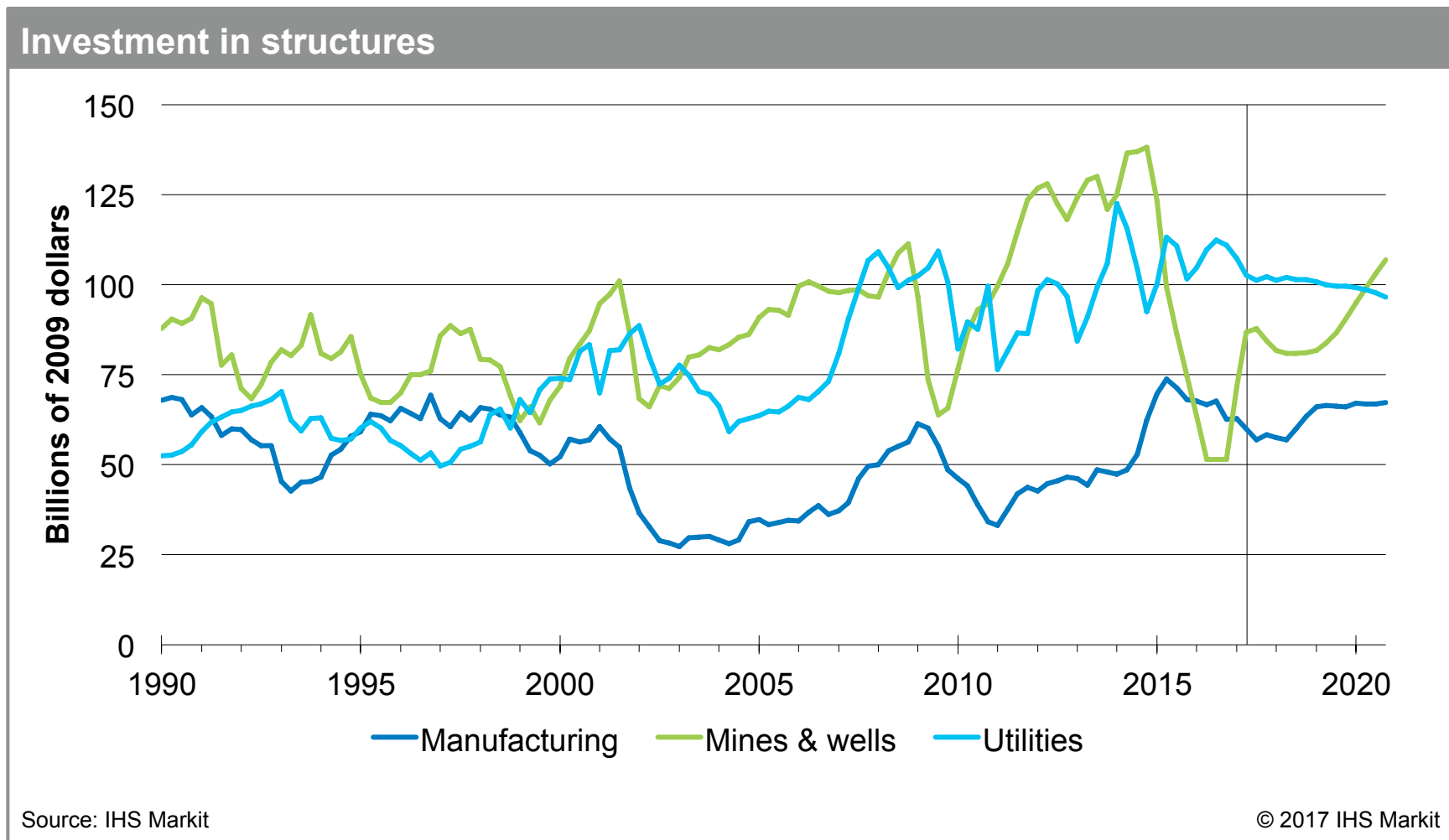
The upturn in real capital spending is led by structures



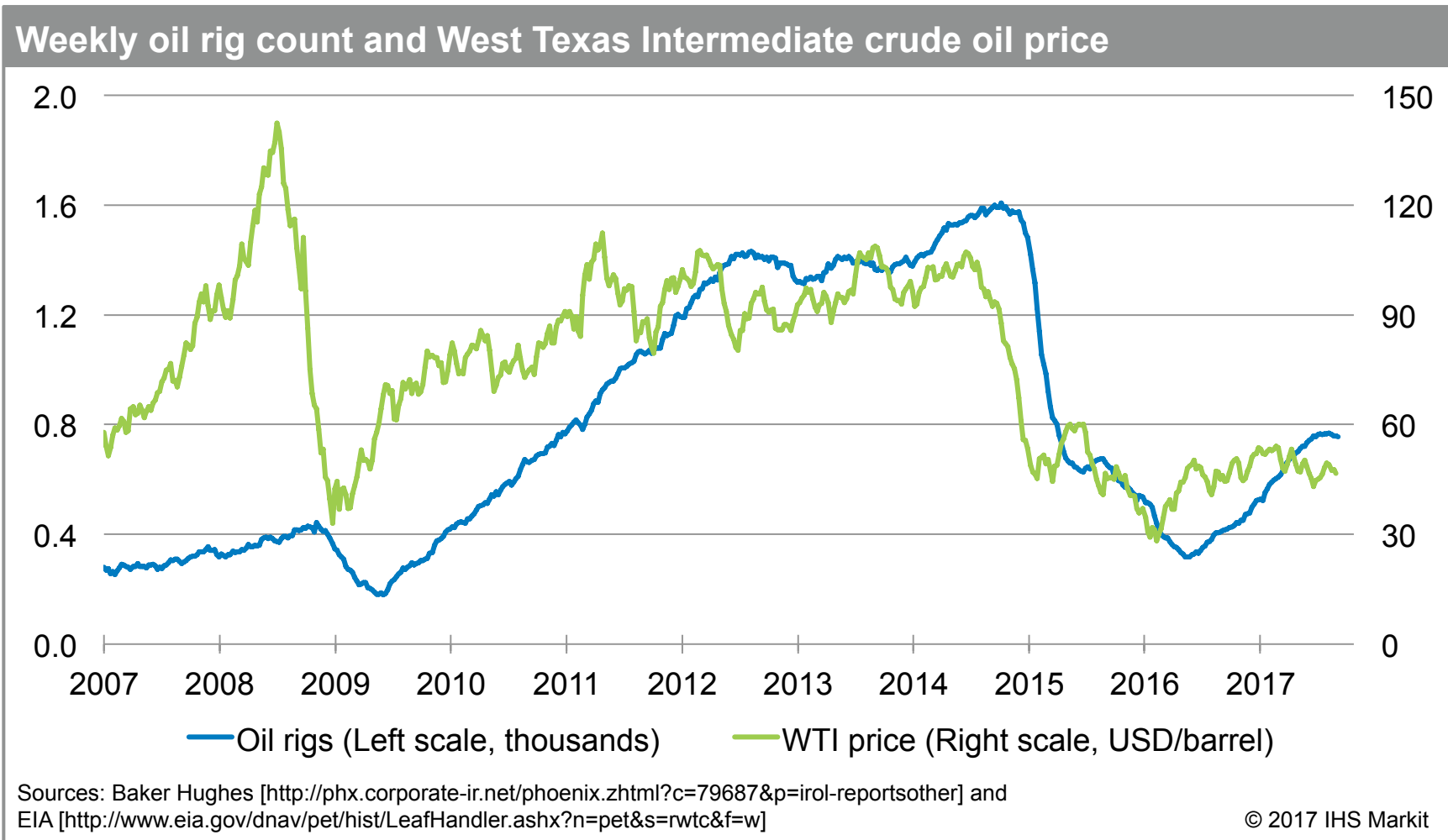
Real business equipment investment growth by type



Investment in manufacturing structures is down, while investment in mines and wells is up



US oil drilling follows crude oil prices



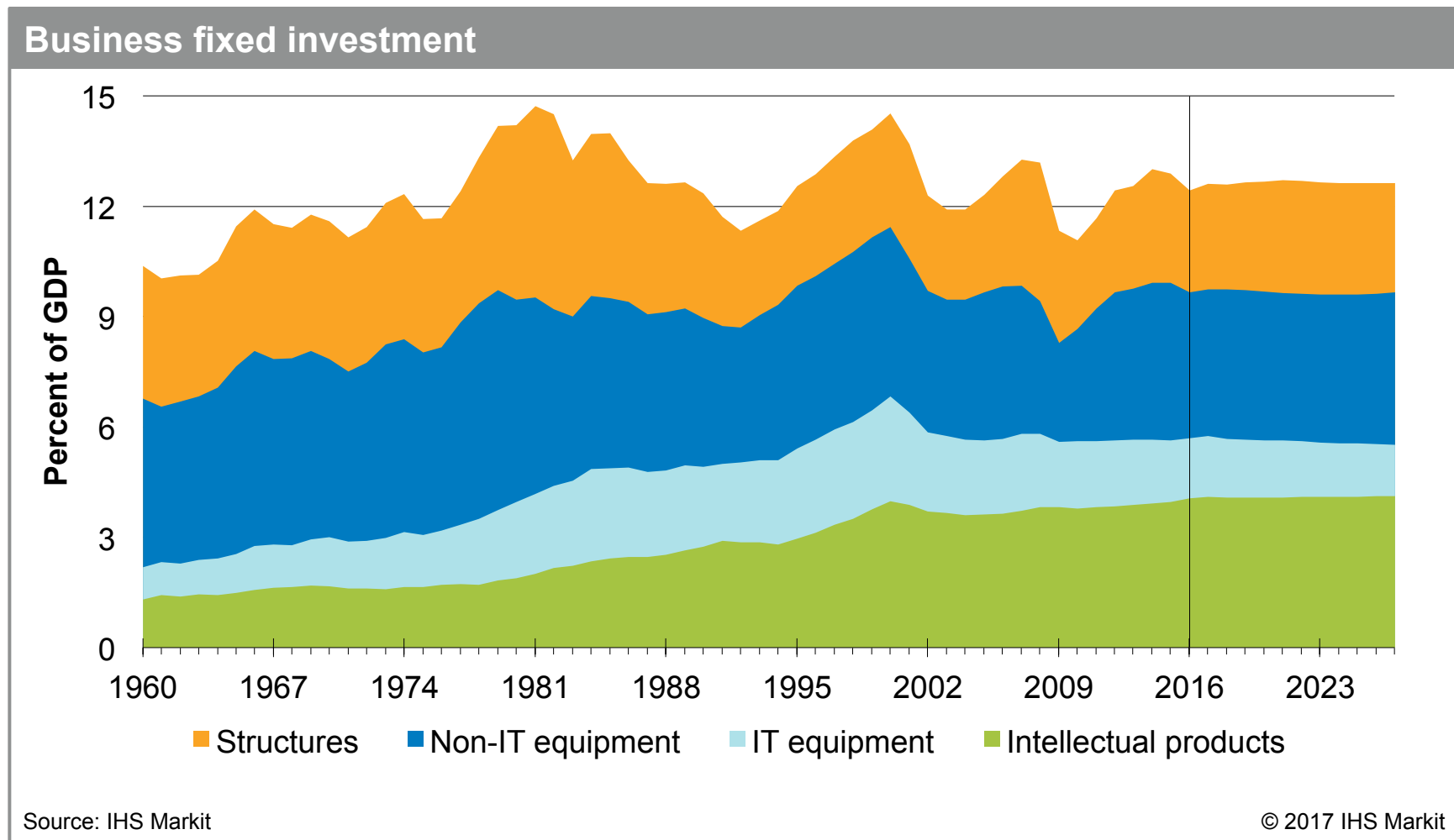
US real construction growth by sector

Real investment in structures				
Percent change	2016	2017	2018	2019
Total construction	1.1	3.5	3.7	3.5
Residential	5.5	2.2	5.4	2.8
Commercial	18.8	7.1	4.2	5.5
Manufacturing	-6.4	-10.0	-0.1	11.3
Mines & wells	-43.2	51.6	-1.8	5.5
Healthcare	-3.9	-3.1	5.3	7.6
Public utilities	2.8	-5.6	-1.8	-1.5
Highways & streets	0.3	-5.9	3.4	5.3
Public education	2.9	-3.1	0.0	6.7

Source: IHS Markit

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Business fixed investment's share of GDP remains below historical peaks

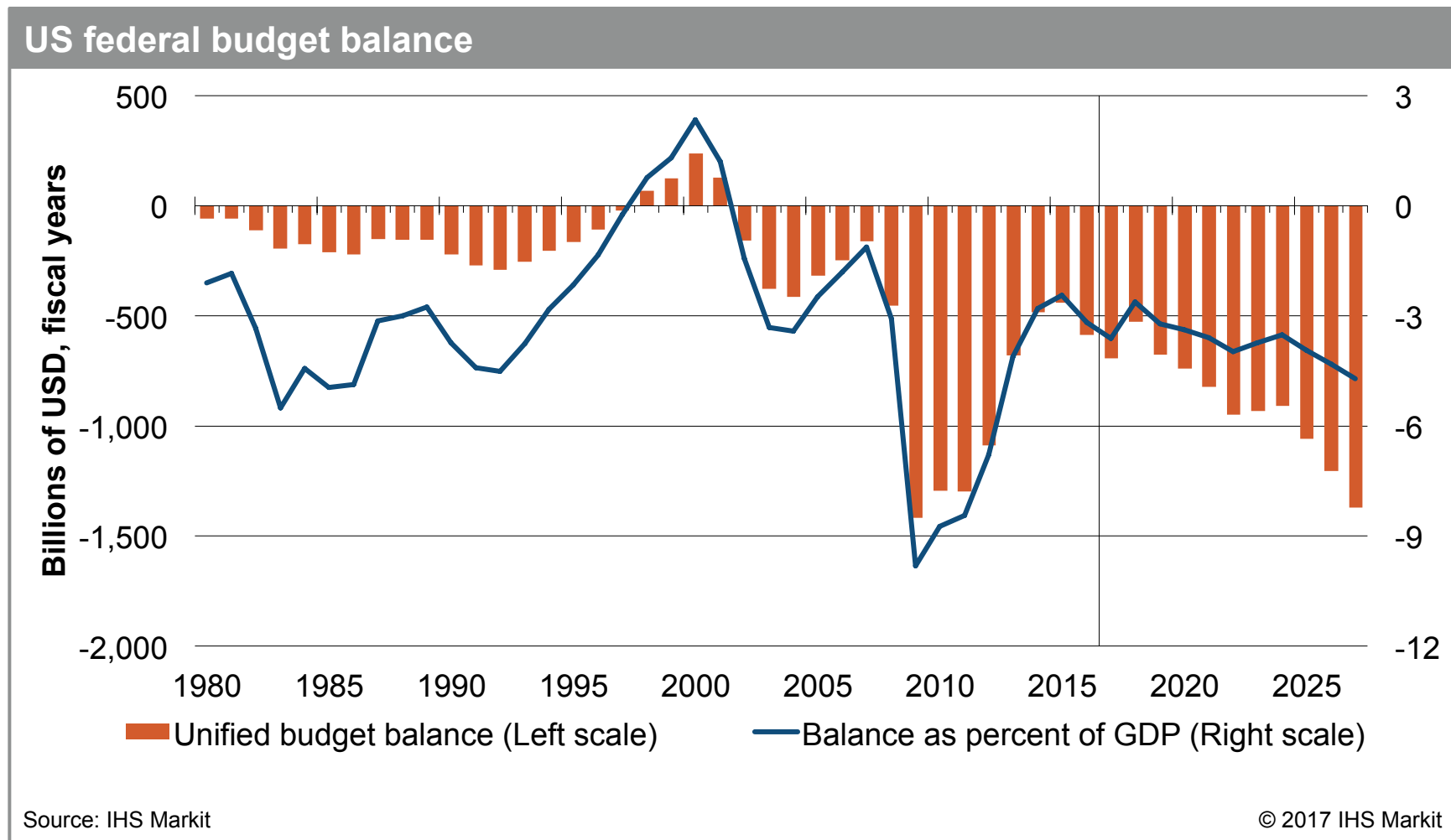


Fiscal policy

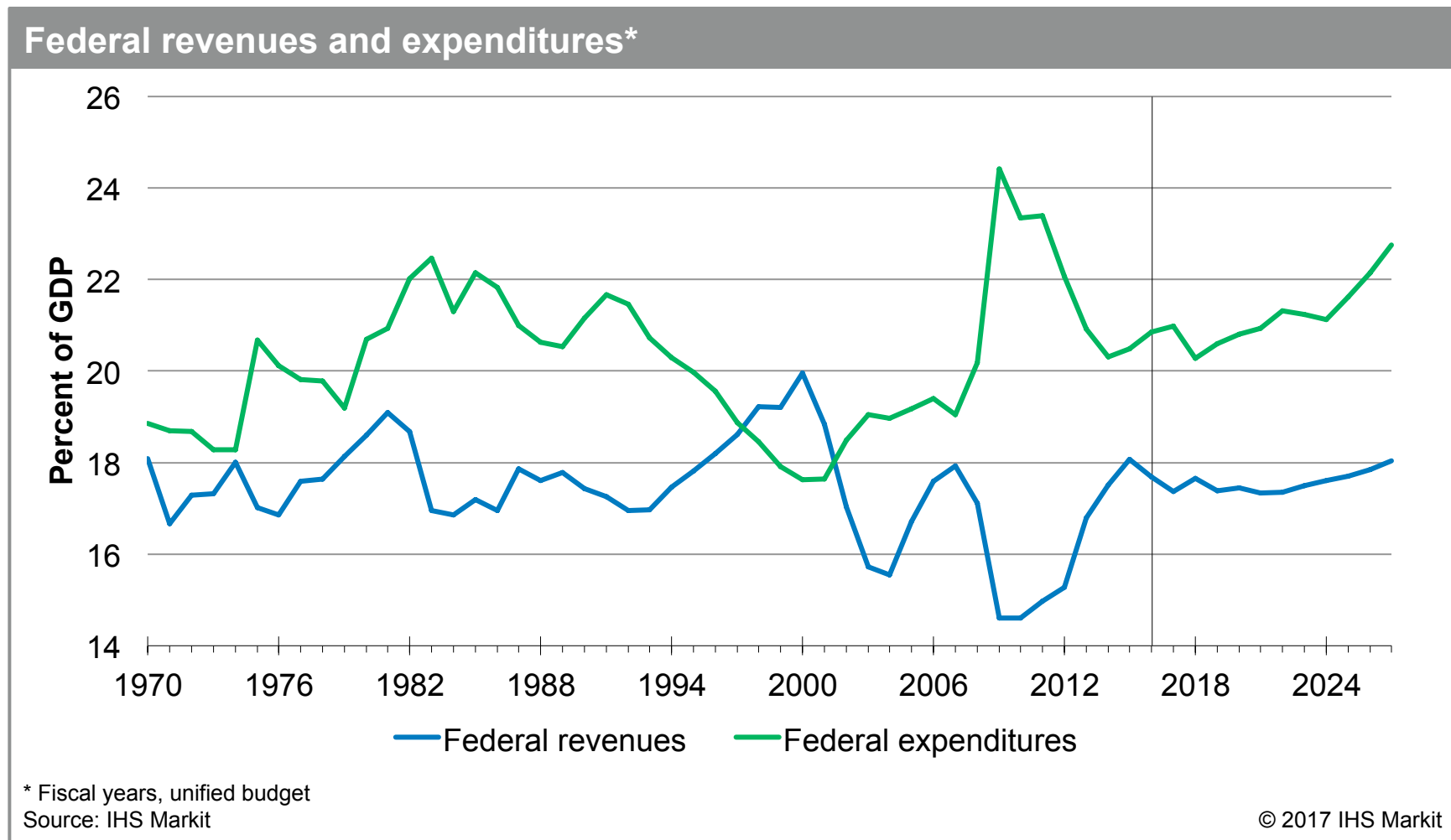
US policy assumptions in the September forecast

- A reduction in the statutory corporate income tax rate from 35% to 25%, partially offset by fewer tax breaks, starting in January 2018
 - No border adjustments
 - No expensing of capital expenditures
- Repatriation of \$800 billion of foreign profits at a reduced tax rate of 10% in 2018
- Personal income tax reforms that lower the average effective federal tax rate from 20.7% to 20.0% in January 2018
- Additional public infrastructure investments totaling \$250 billion over 2019–28
- No major changes in healthcare or international trade policies
- Federal Reserve (Fed) policy rate increases of 75 basis points in 2017, 2018, and 2019, bringing the rate to a long-term equilibrium of 3%
- The Fed begins to reduce its asset holdings later this year

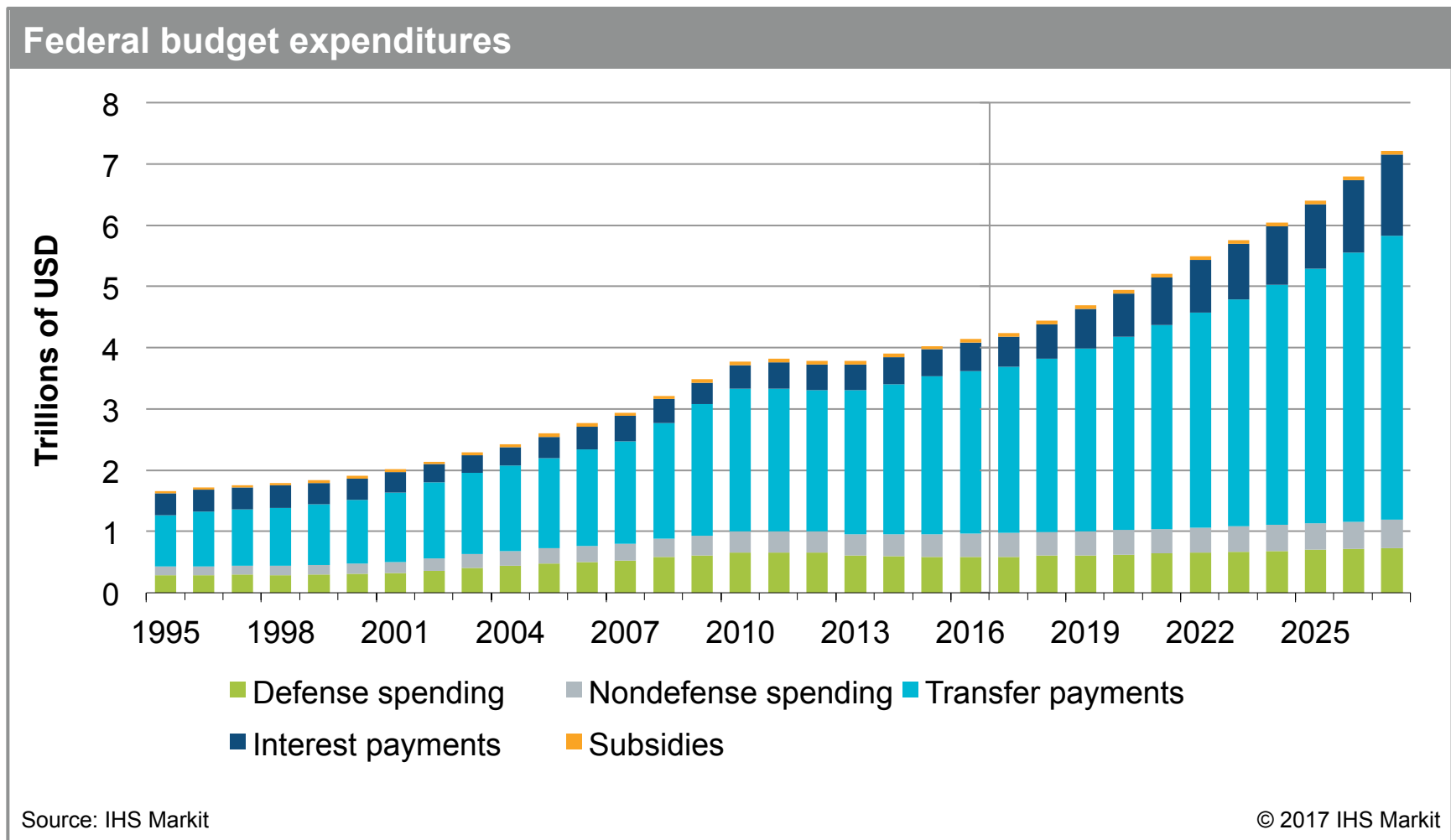
US federal budget deficits will increase after fiscal 2018



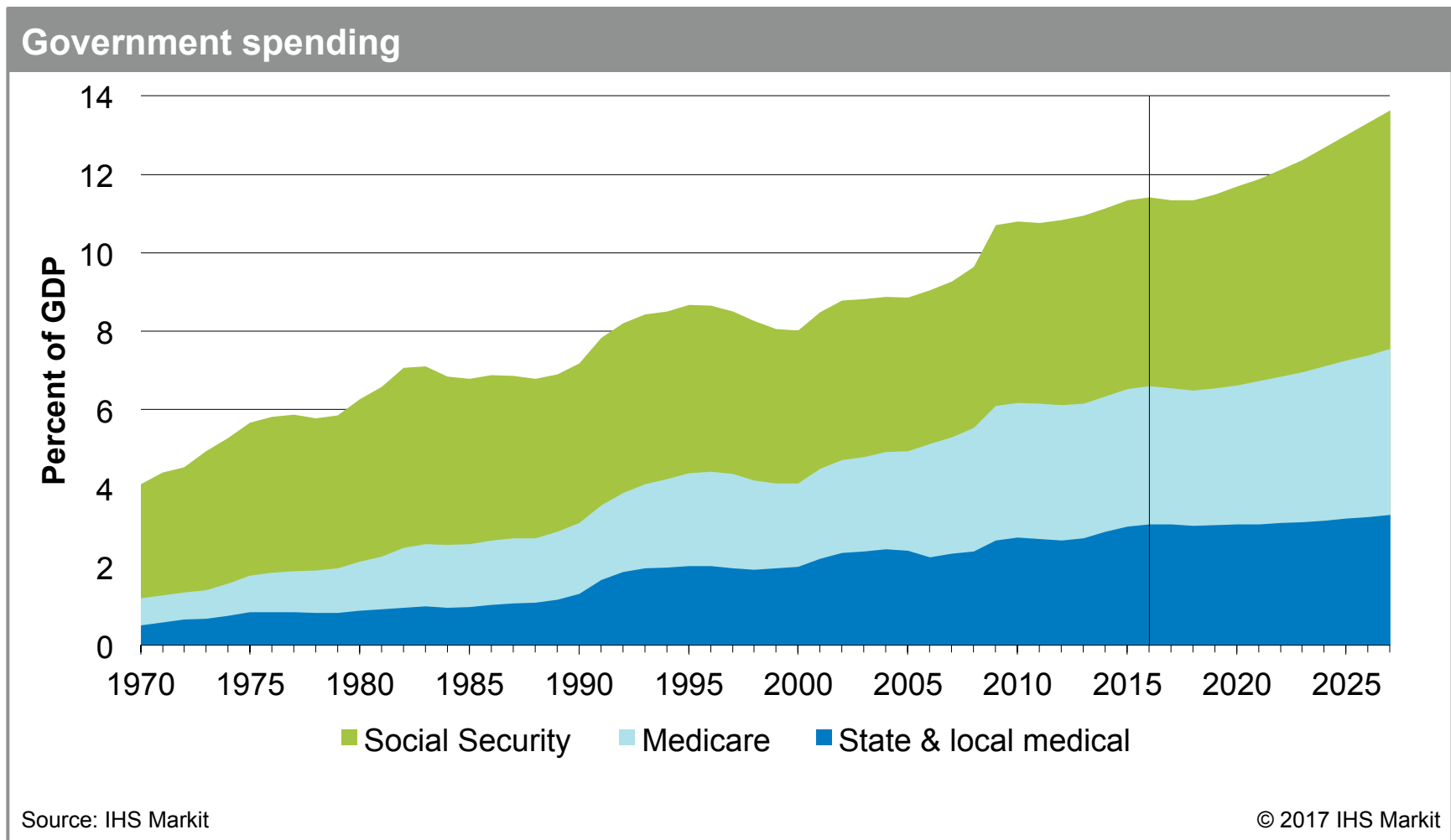
Federal expenditures will continue to exceed revenues



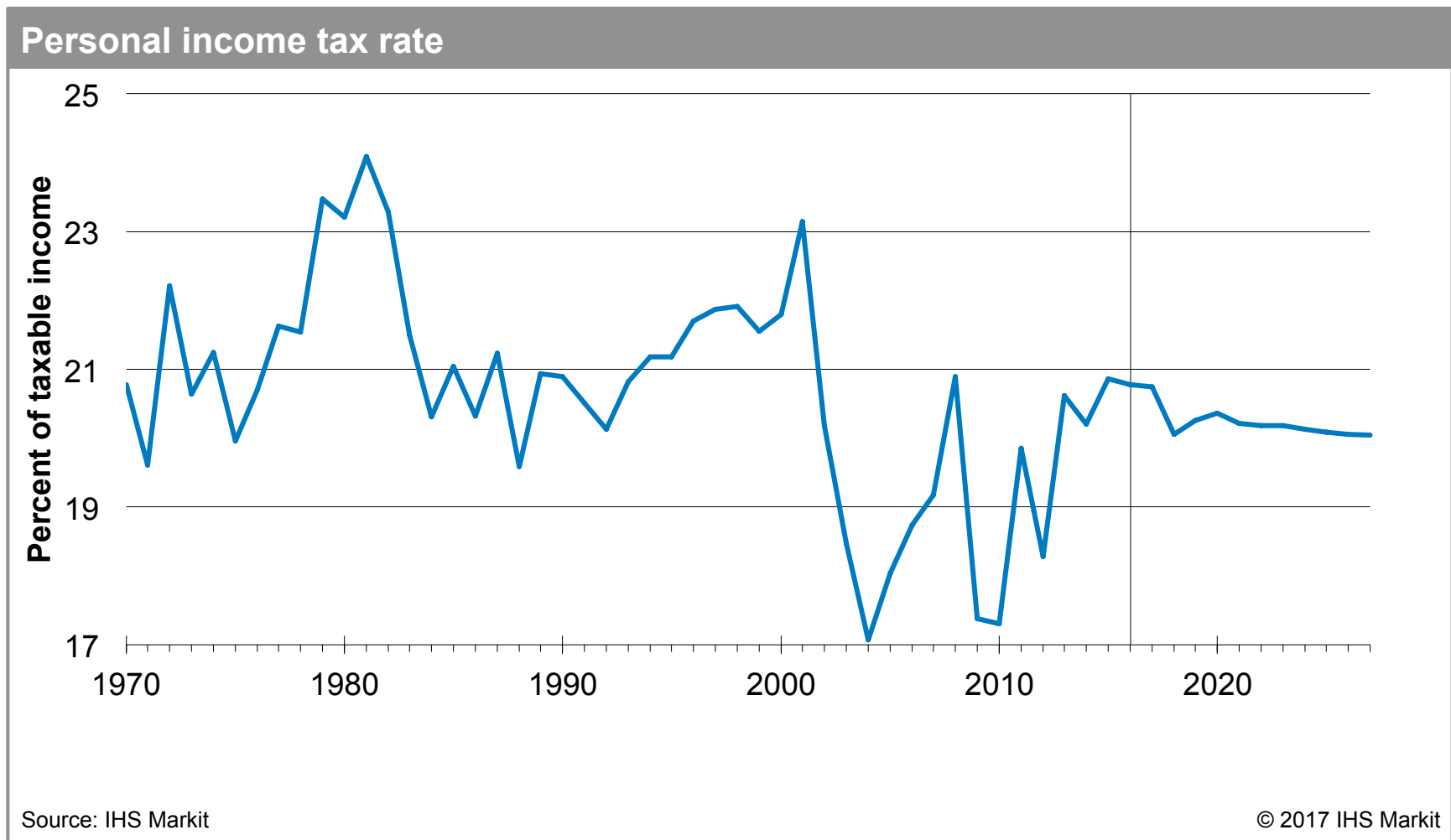
Federal spending will keep rising as transfer payments and interest payments surge



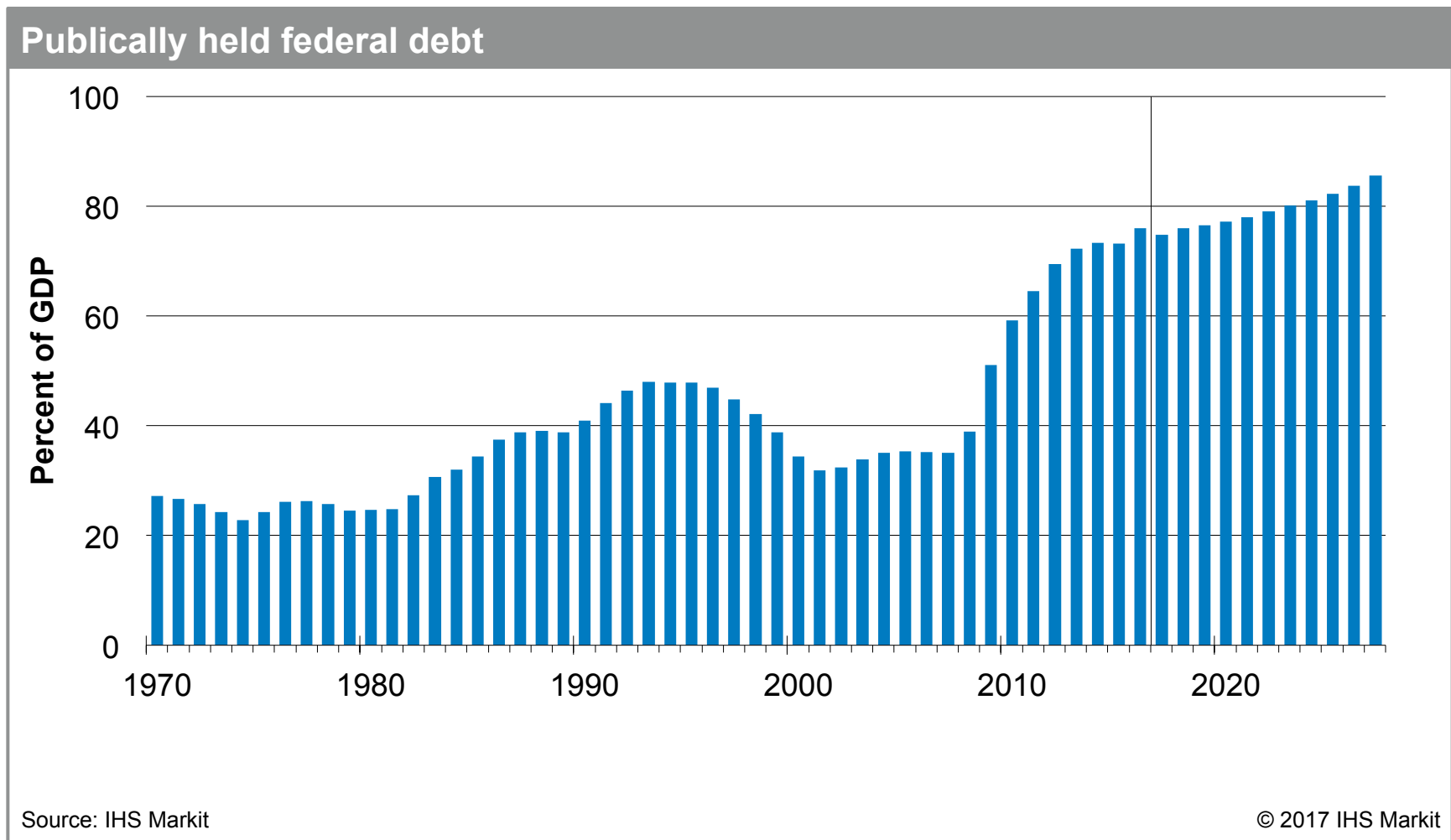
Government spending on Social Security and healthcare will increase as the population ages



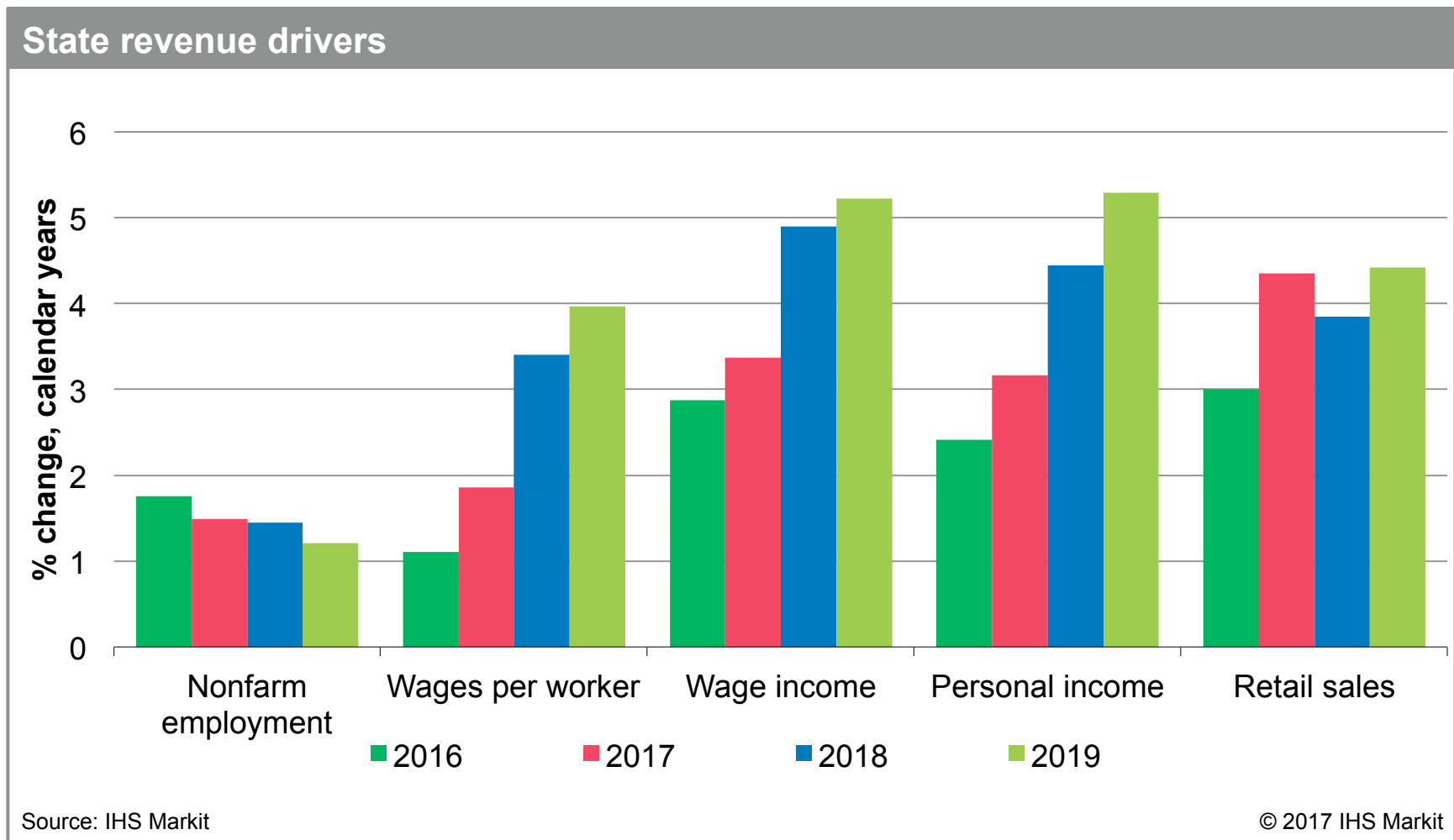
The effective federal personal income tax rate will decrease in 2018



Federal government debt remains high relative to GDP



Forces driving state government revenues

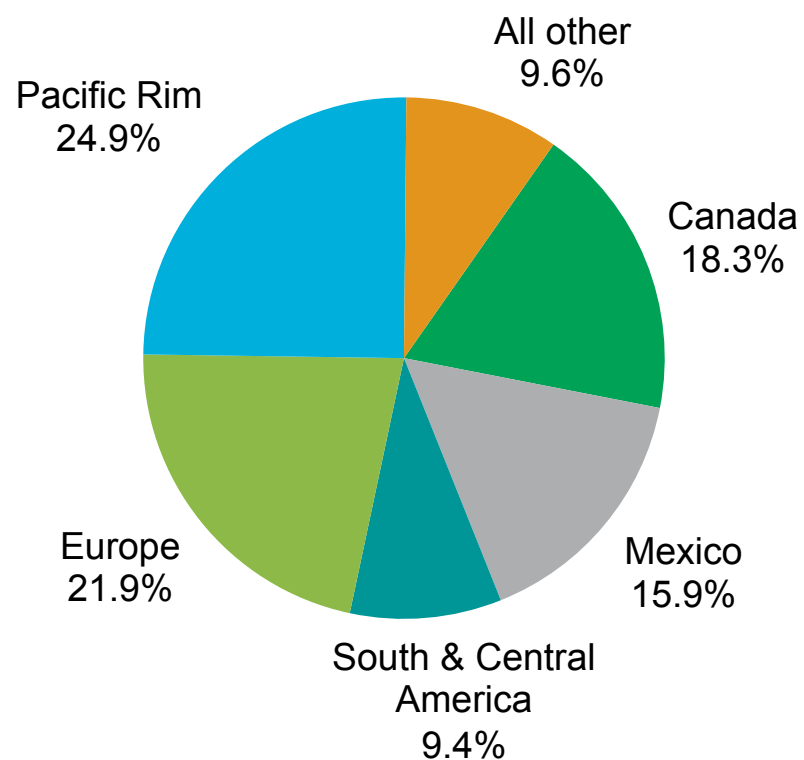


Foreign trade

Destinations of US exports of goods, 2016

Percent of total goods exports

China	7.7%
Japan	4.2%
ASEAN	5.0%

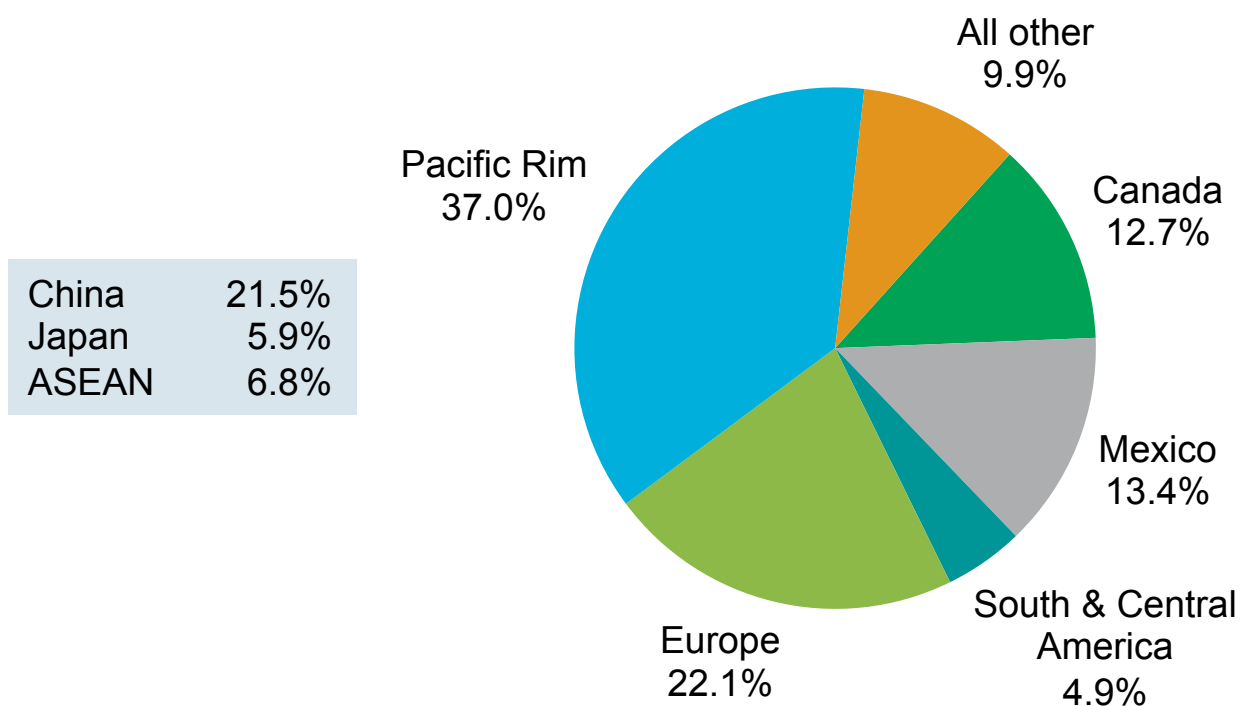


Source: IHS Markit

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Sources of US imports of goods, 2016

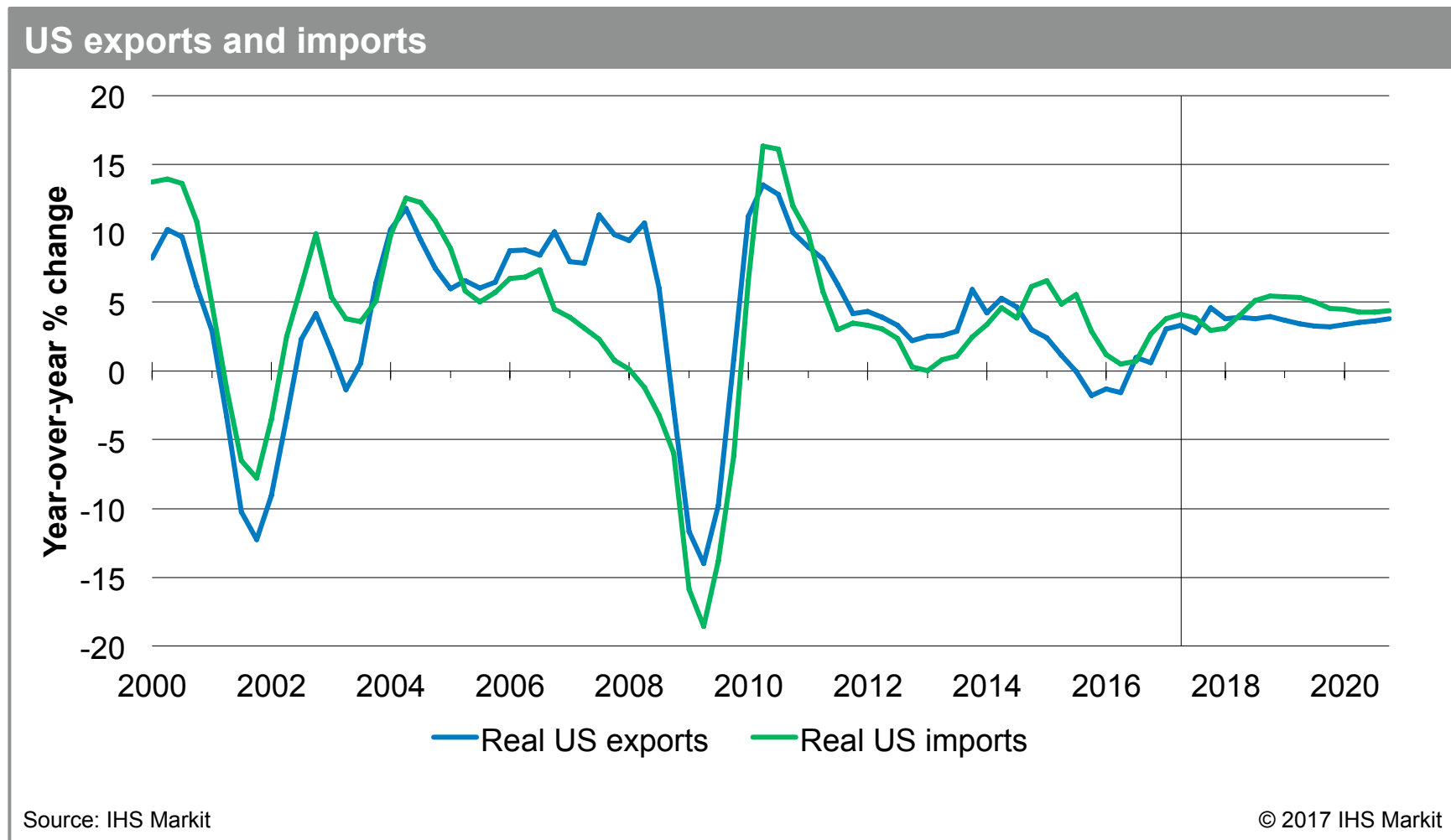
Percent of total goods imports, customs basis



Source: US Census Bureau, IHS Markit

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Real US exports and imports are rising

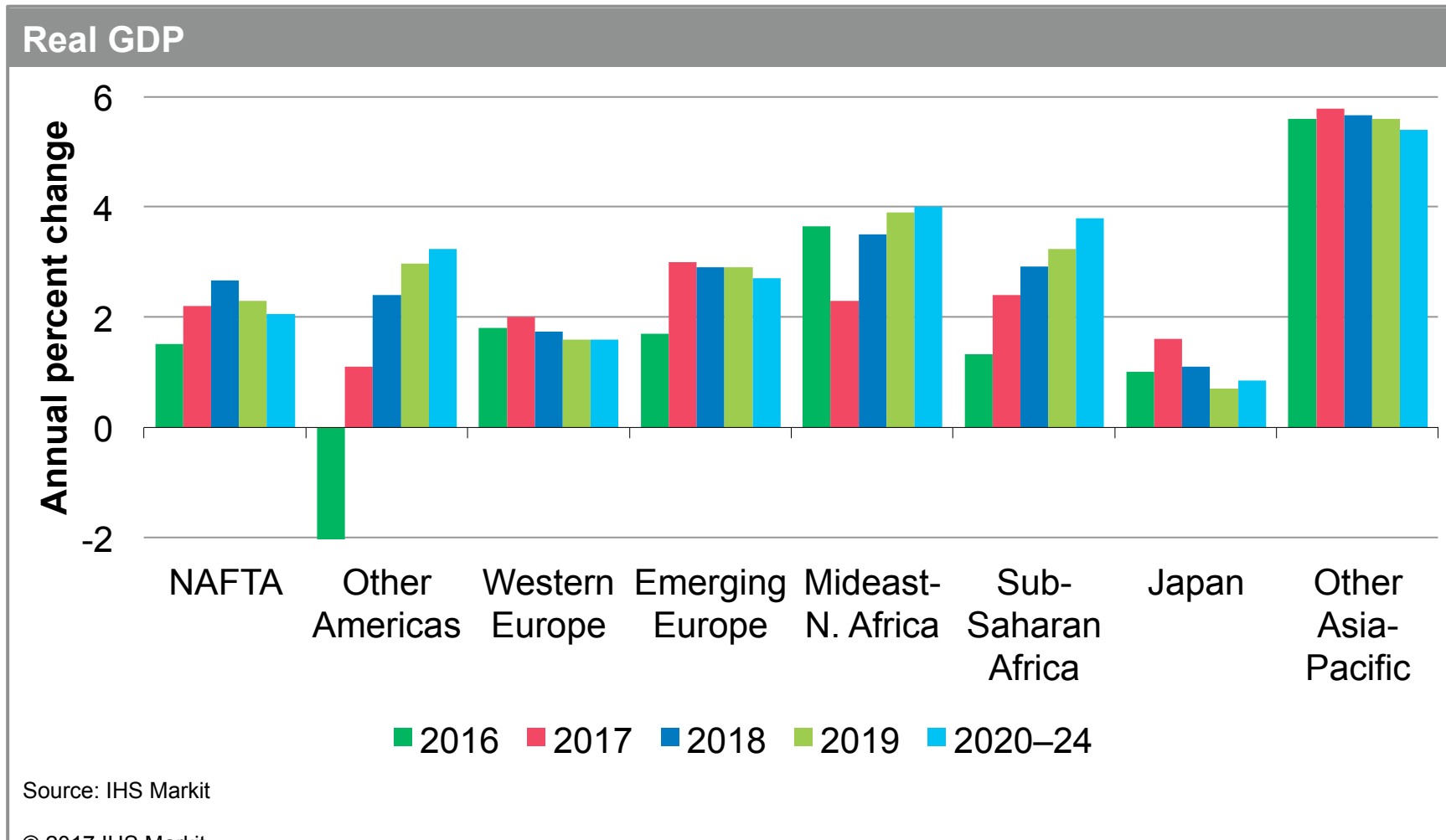


Global economic growth will strengthen

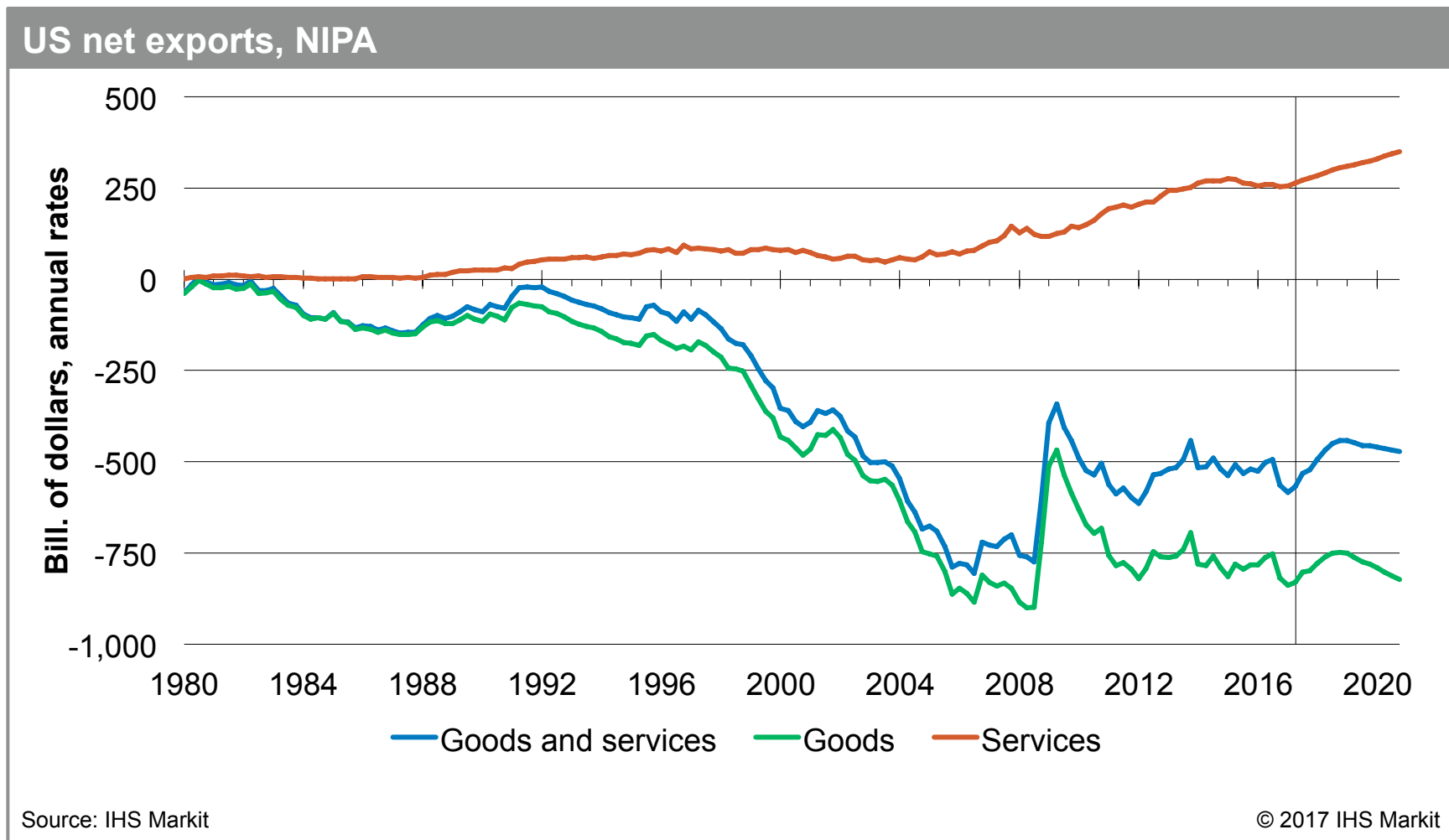
- Global growth will pick up from 2.5% in 2016 to 3.1% in 2017 and 3.2% in 2018, led by the United States and emerging markets.
- Eurozone growth will be steady, but UK growth is expected to slow through 2018 as Brexit-related uncertainty delays investment.
- After a good start to 2017, China's economic growth will slow because of persistent imbalances in credit, housing, and industrial markets.
- The Asia-Pacific region will make the strongest contribution to global in the decade ahead, despite slightly slower growth in China.
- Risks abound, including potential trade wars, financial-market turbulence, China's rising debt, conflicts in the Middle East and Africa, and Eurozone banking problems.



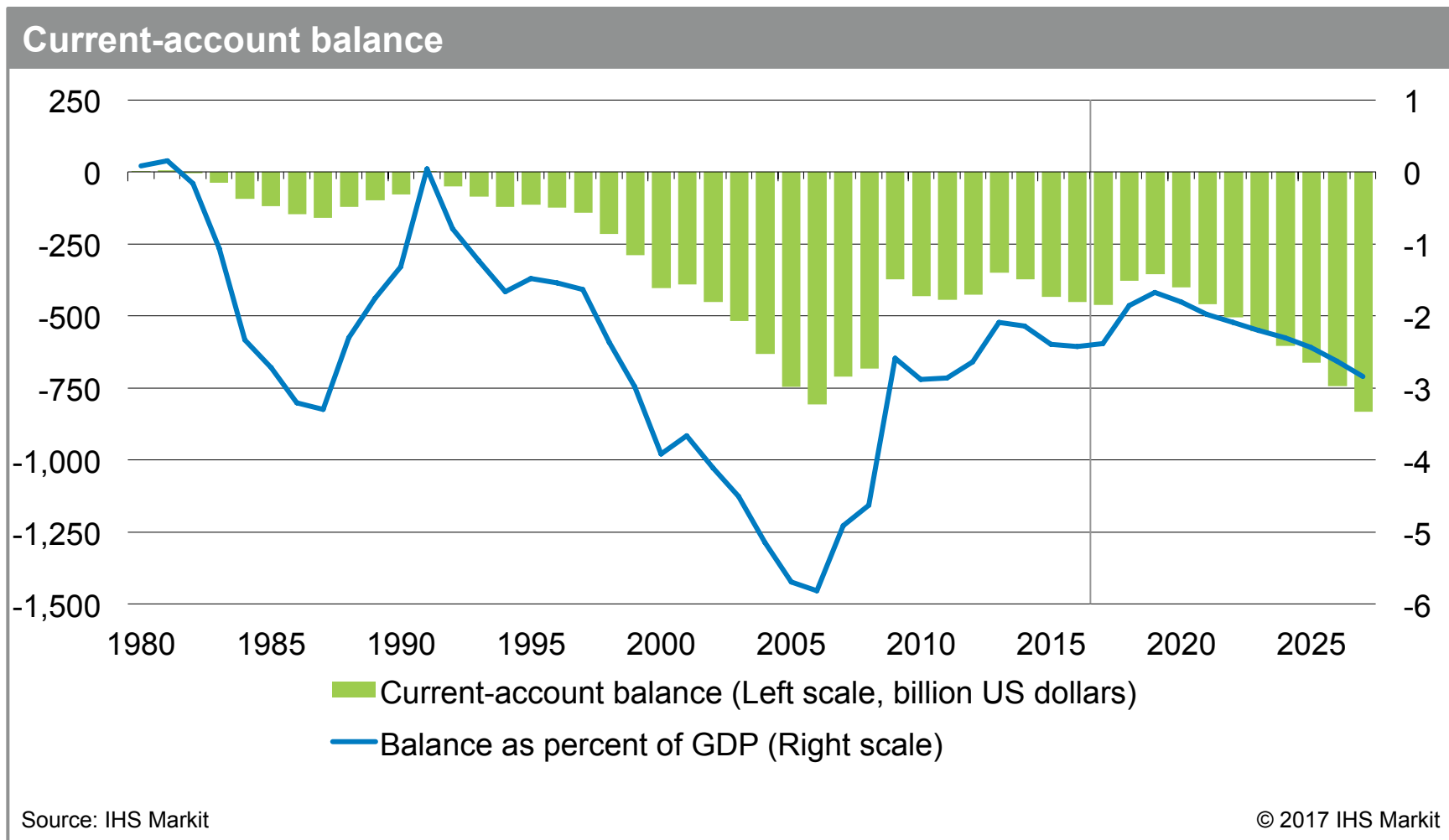
Asia-Pacific (excluding Japan) will achieve the fastest growth in real GDP



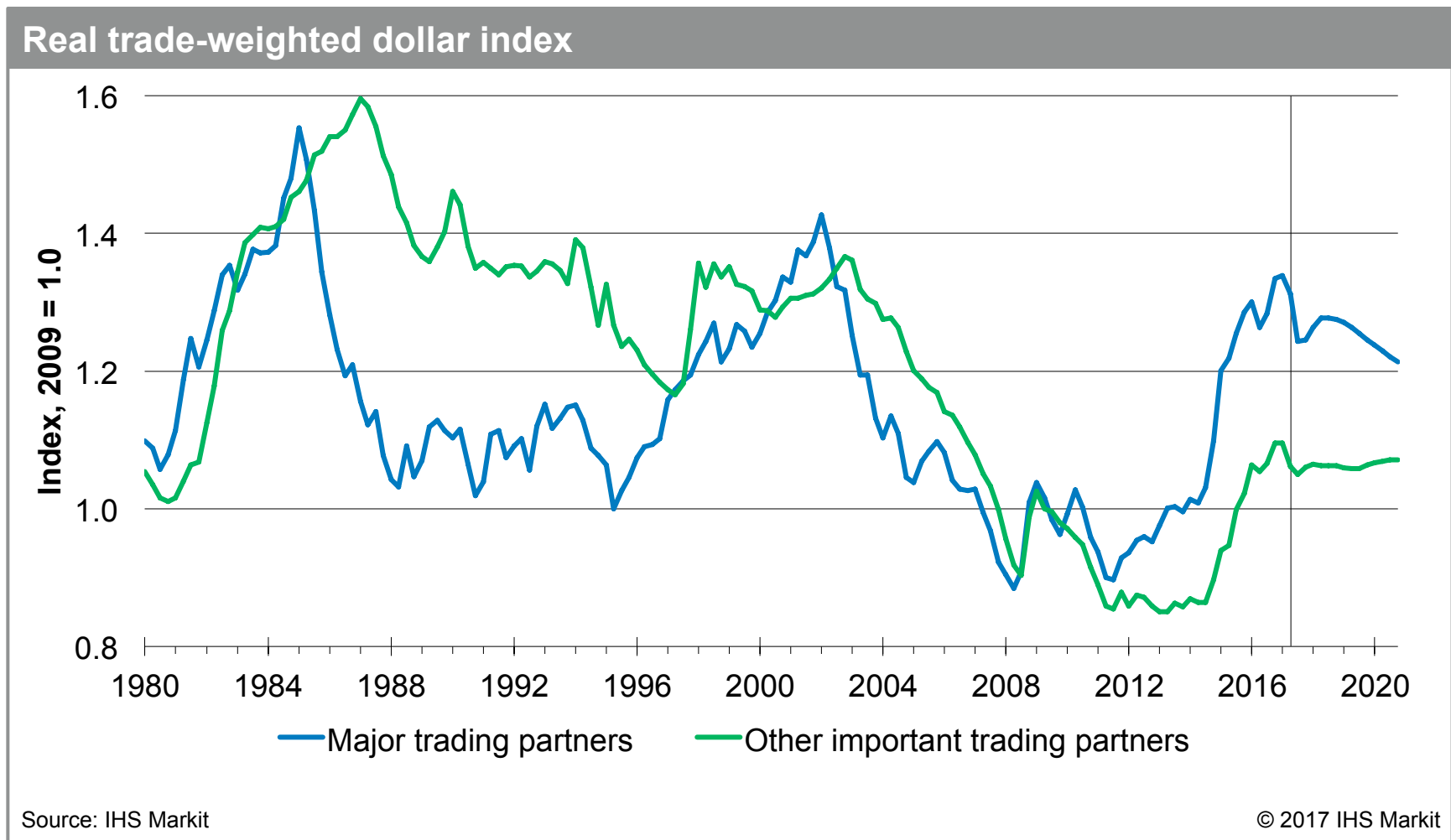
The US surplus in services trade partially offsets the deficit in merchandise trade



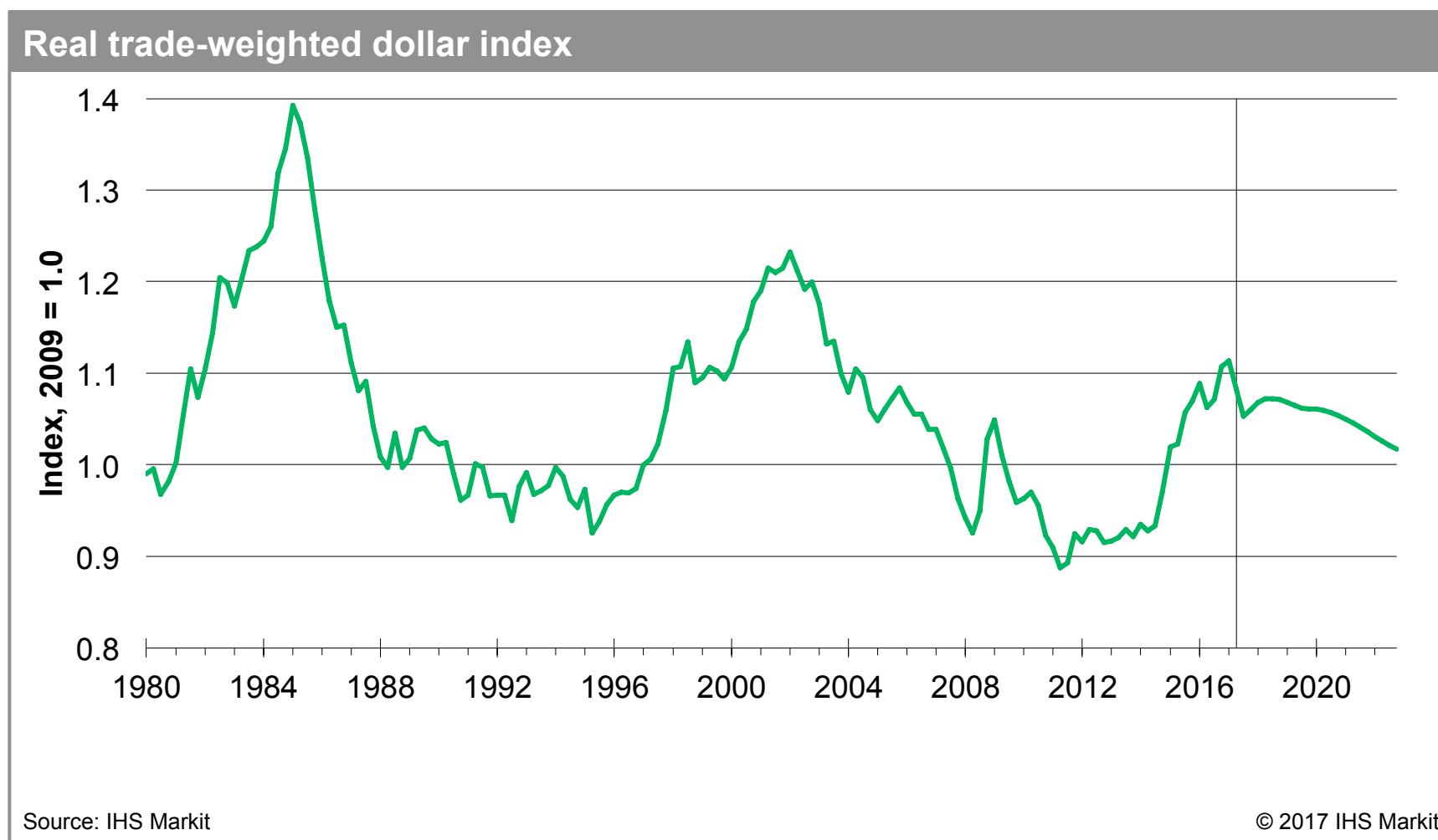
The US current account will remain in deficit



The dollar's real exchange value will depreciate against major currencies in the medium term



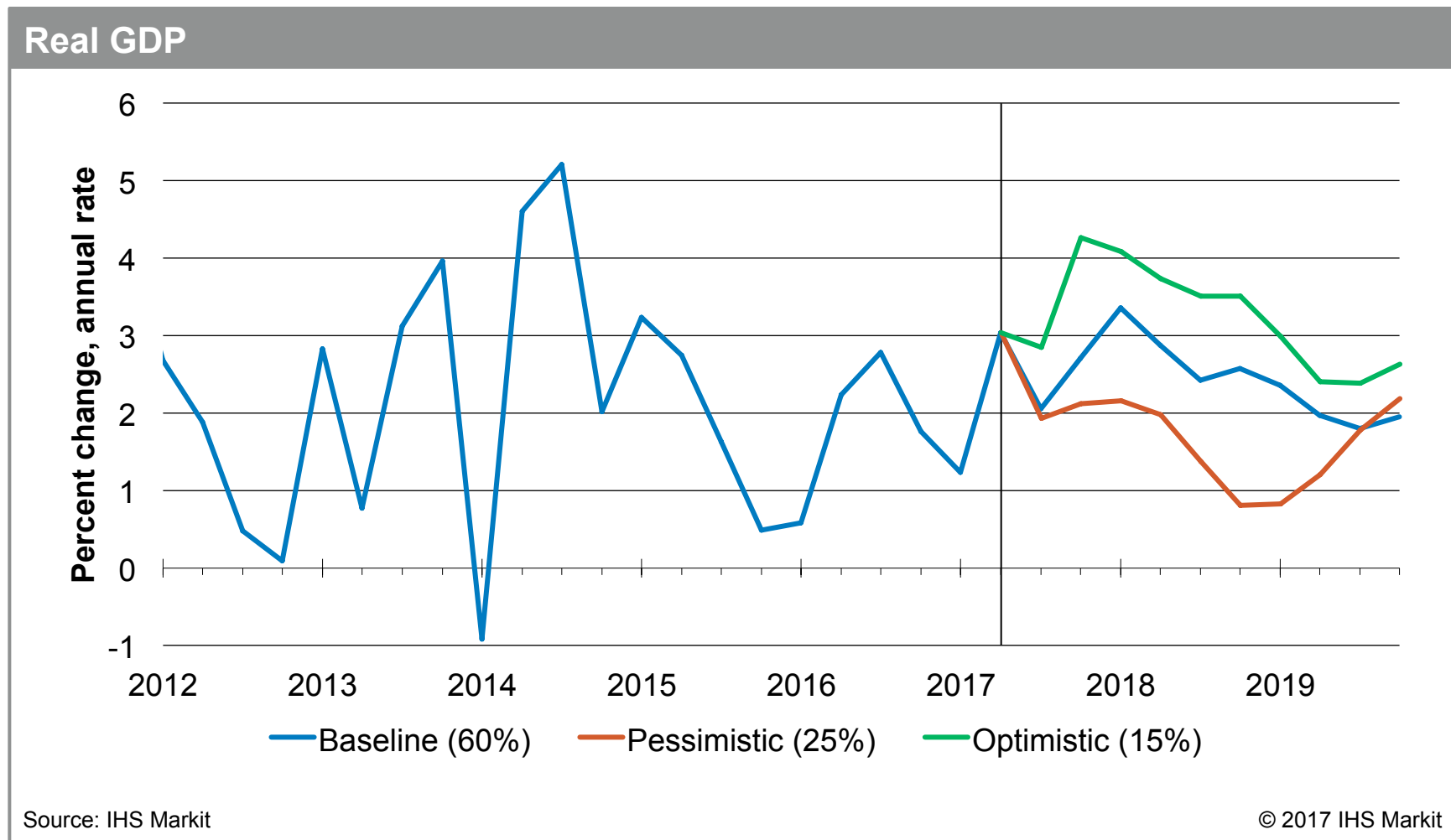
The dollar's real exchange value will depreciate in the medium term



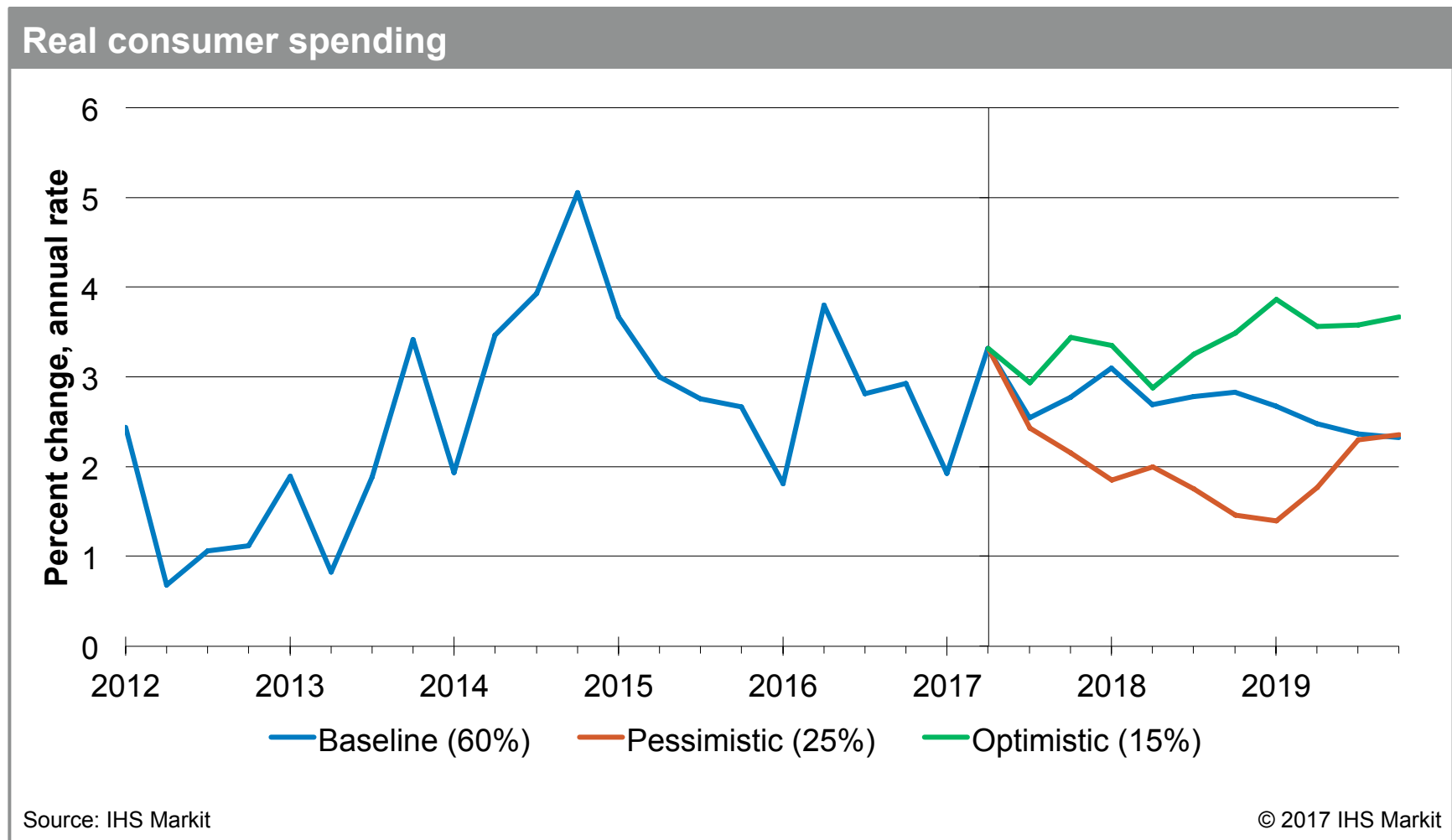
Risks to the US forecast

Scenario	Characteristics
Crisis of confidence damages economic growth (Probability = 25%)	<ul style="list-style-type: none"> • Congress fails to enact tax reforms or new infrastructure spending. Policy uncertainty undermines confidence, leading to a stock market correction. • Consumers and businesses delay spending. • US economic growth slows through late 2018.
Lower taxes and fewer regulations (Probability = 15%)	<ul style="list-style-type: none"> • A rollback of regulations and lower corporate taxes result in higher capital spending and productivity growth. • Consumer and housing markets benefit from higher incomes, milder inflation, and lower interest rates. • Stronger global economic growth helps exports.
Baseline forecast (Probability = 60%)	<ul style="list-style-type: none"> • The Fed gradually raises interest rates through 2019. • Personal and corporate income tax rates are cut in 2018. • Consumer spending, homebuilding, and business fixed investment post moderate growth. • Global economic growth picks up in 2017–18.

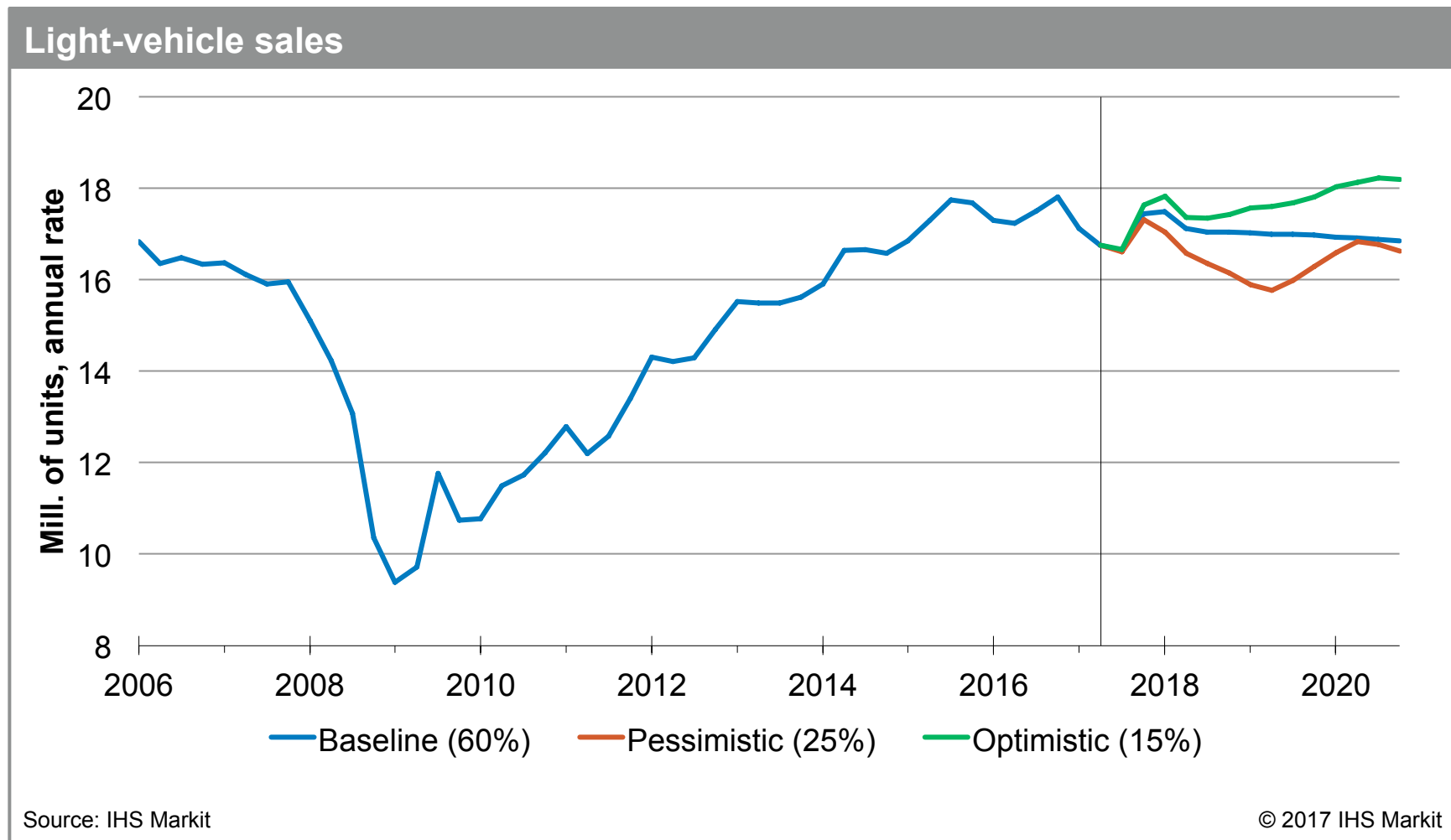
Real GDP growth in alternative scenarios



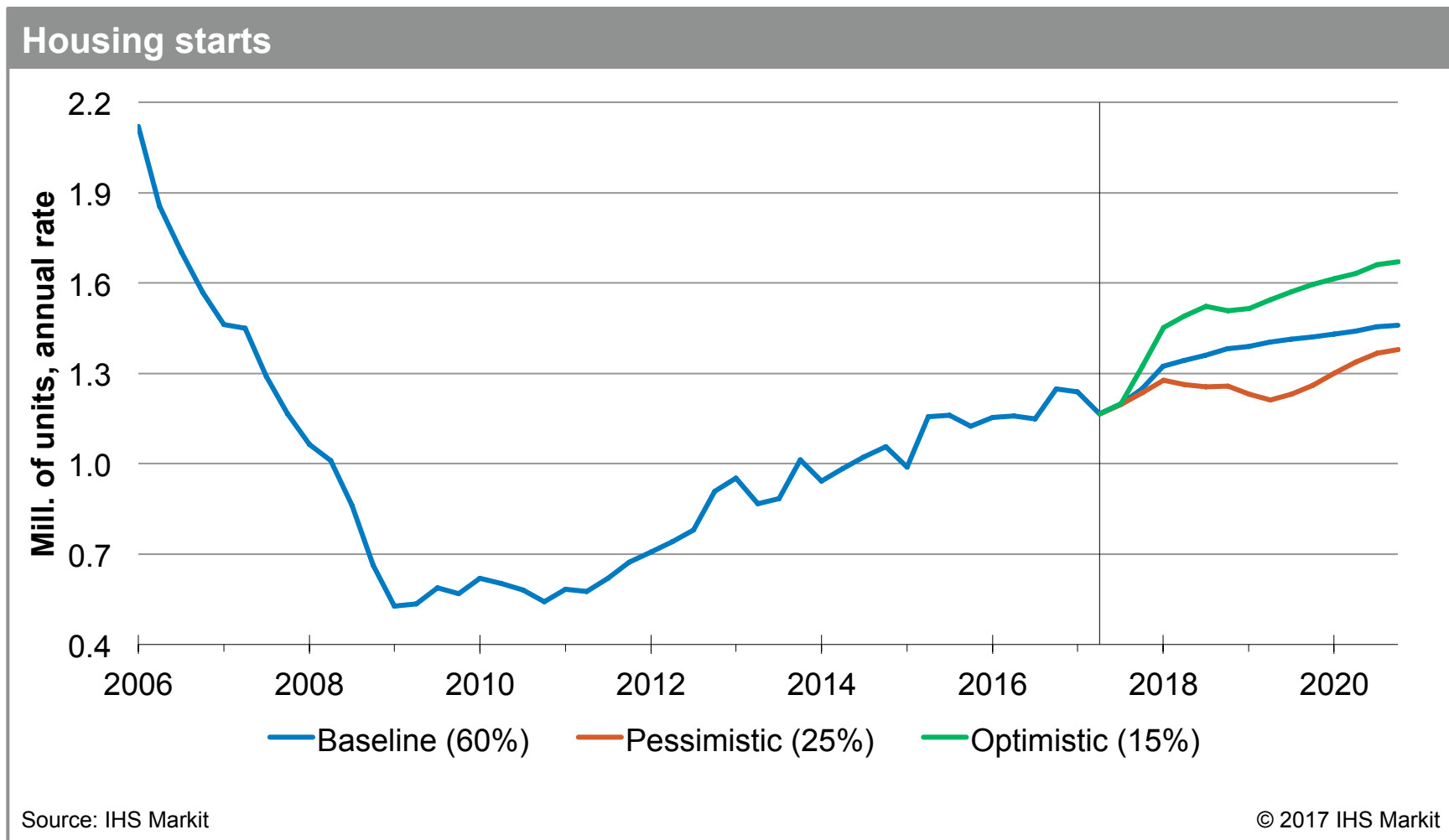
Real consumer spending growth in alternative scenarios



Light-vehicle sales in alternative scenarios



Housing starts in alternative scenarios



Bottom line for the US economy

- Real GDP growth is projected to pick up from 1.5% in 2016 to 2.1% in 2017 and 2.7% in 2018, before settling back to 2.3% in 2019.
- Consumer spending will be supported by solid gains in employment, real disposable incomes, and household net worth.
- Business fixed investment will benefit from stronger growth in global markets, along with an improving tax and regulatory environment.
- Due to supply constraints, the recovery in residential construction will remain on a slow track.
- Wage and benefit costs will accelerate as labor markets tighten.
- The Fed will gradually raise the federal funds rate to an equilibrium level of 3% by the end of 2019.

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