



Research Seminar in Quantitative Economics
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THE U.S. AND MICHIGAN OUTLOOK FOR 2018-2020

**PREPARED FOR PRESENTATION AT THE
CONSENSUS REVENUE ESTIMATING CONFERENCE**

**LANSING, MICHIGAN
JANUARY 11, 2018**

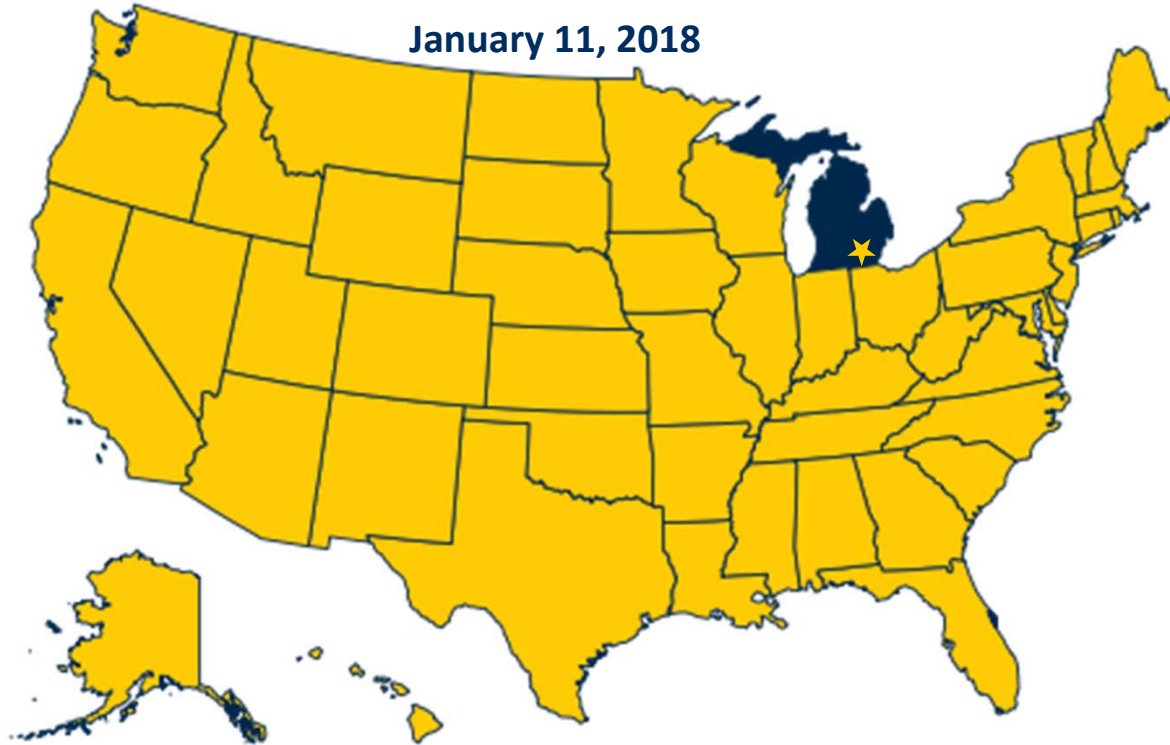
BY

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MICHAEL MCWILLIAMS
ADITI THAPAR**

"The Michigan Model"

**The U.S. and Michigan Outlook for 2018–2020
Consensus Revenue Estimating Conference
Lansing, Michigan**

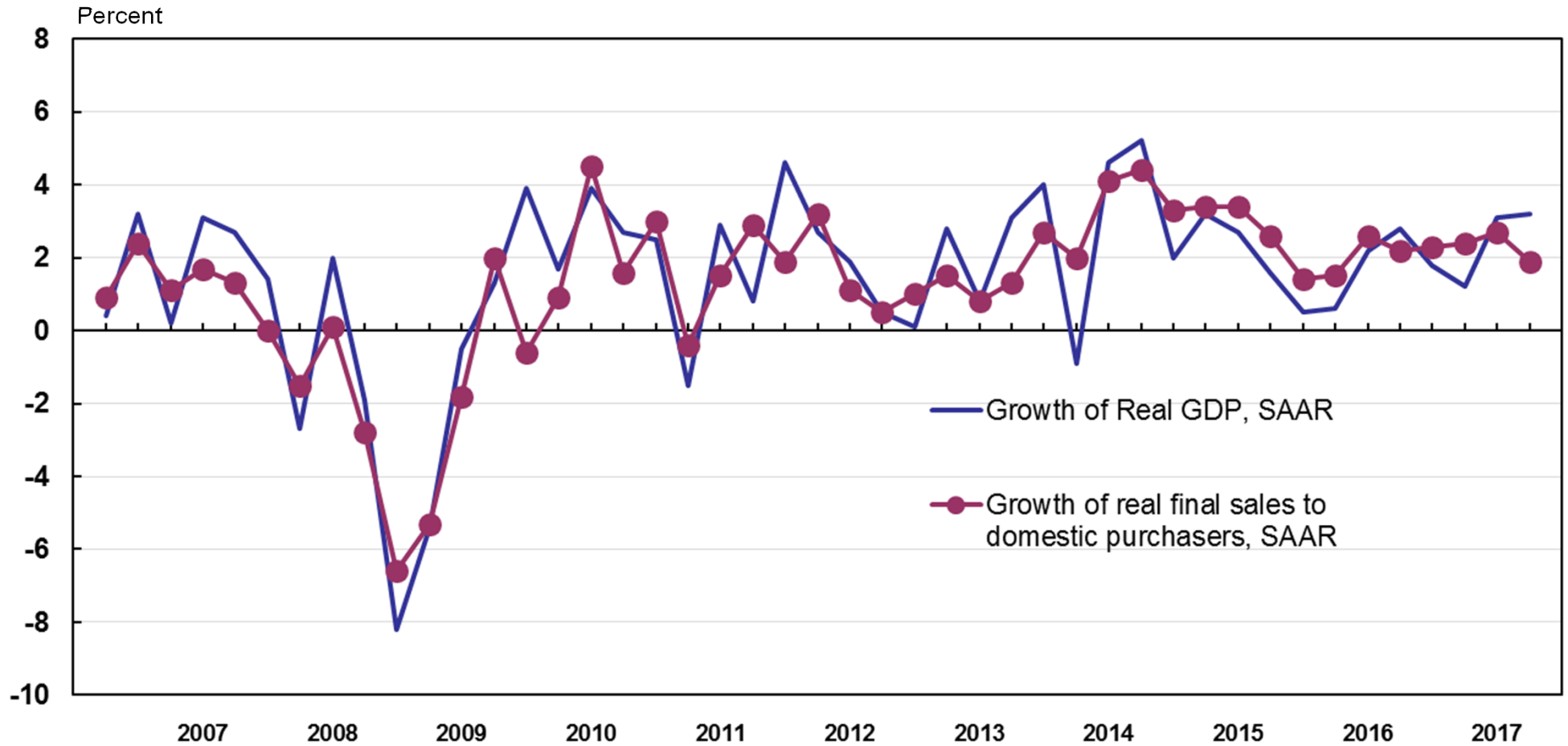
January 11, 2018



Research Seminar in Quantitative Economics

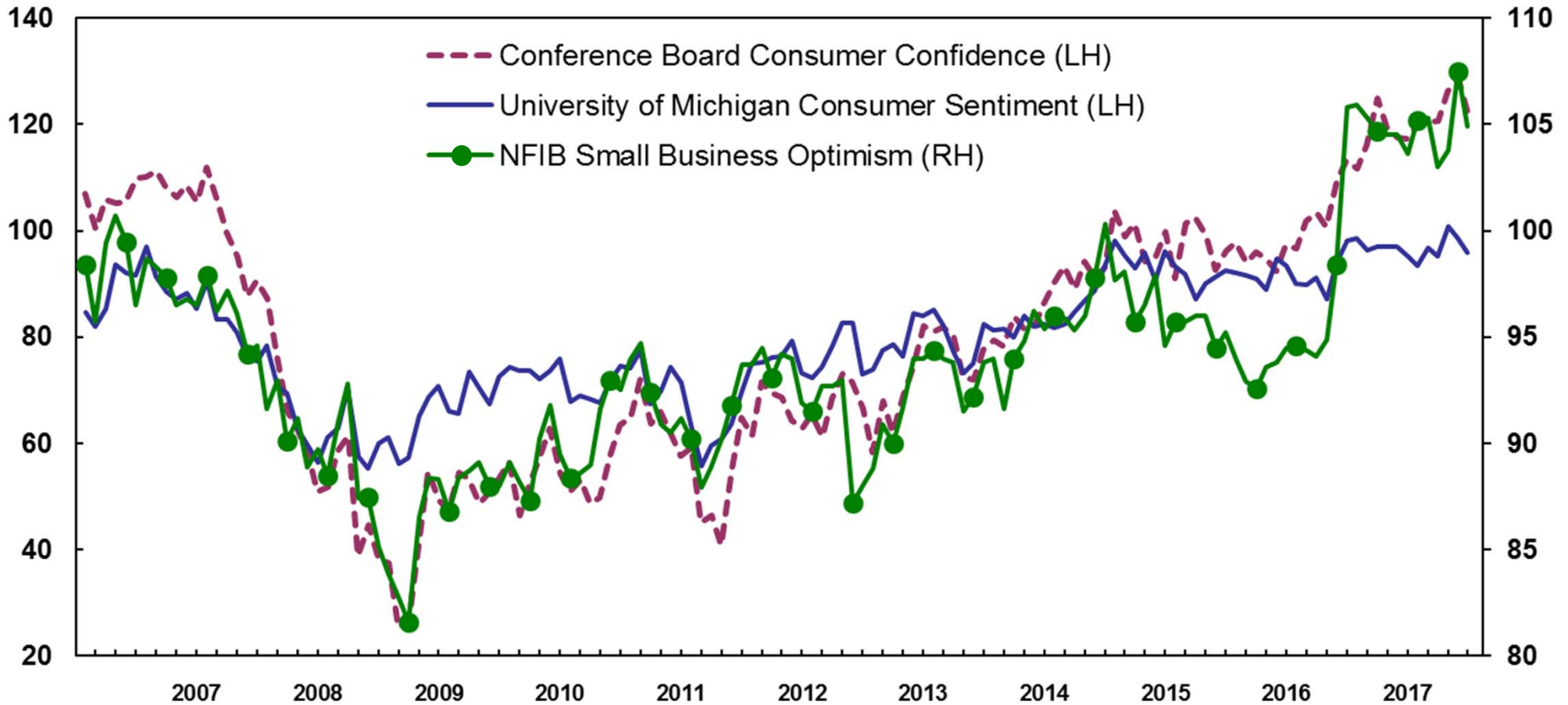
Current State of the Economy

Real Output Growth Steady But Not Spectacular

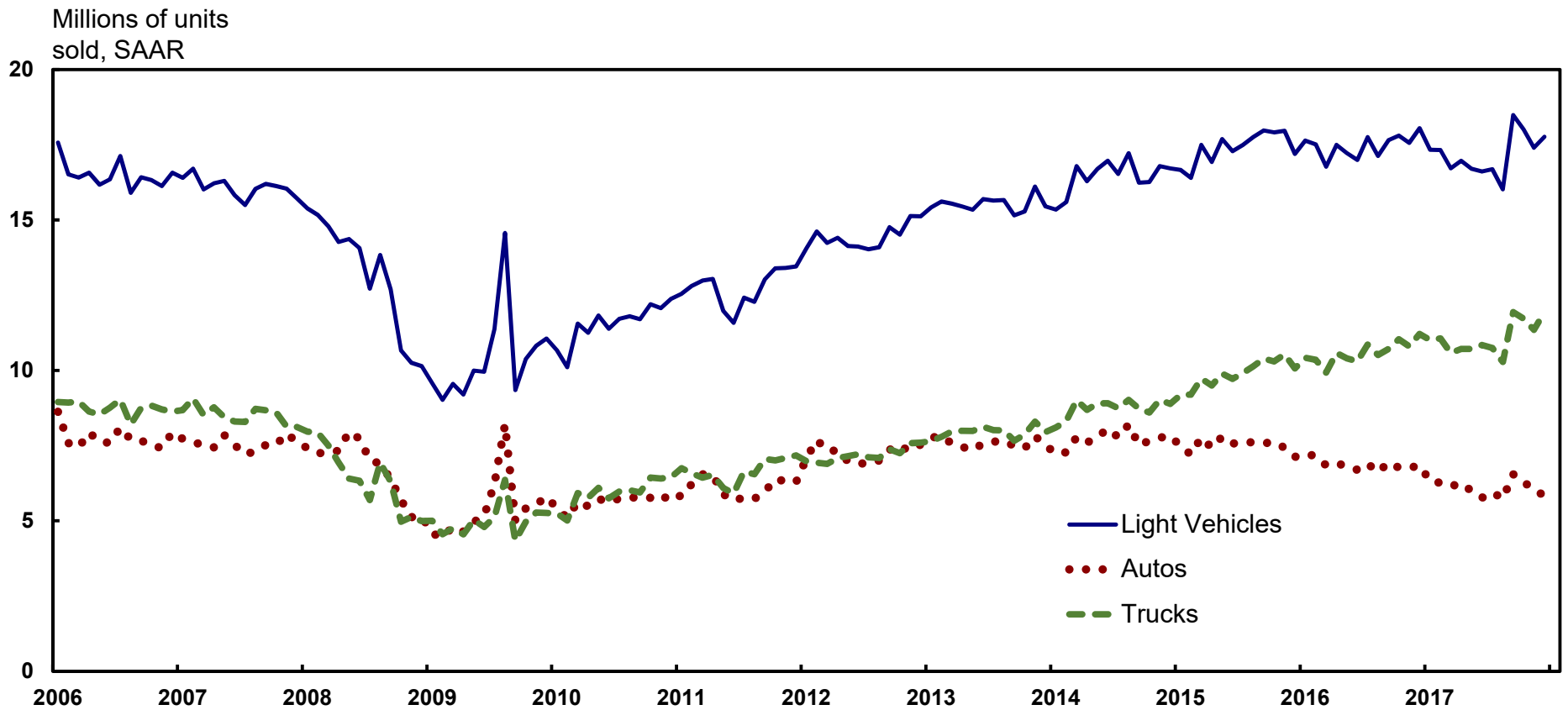


RSQE: January 2018

High Business and Consumer Sentiment

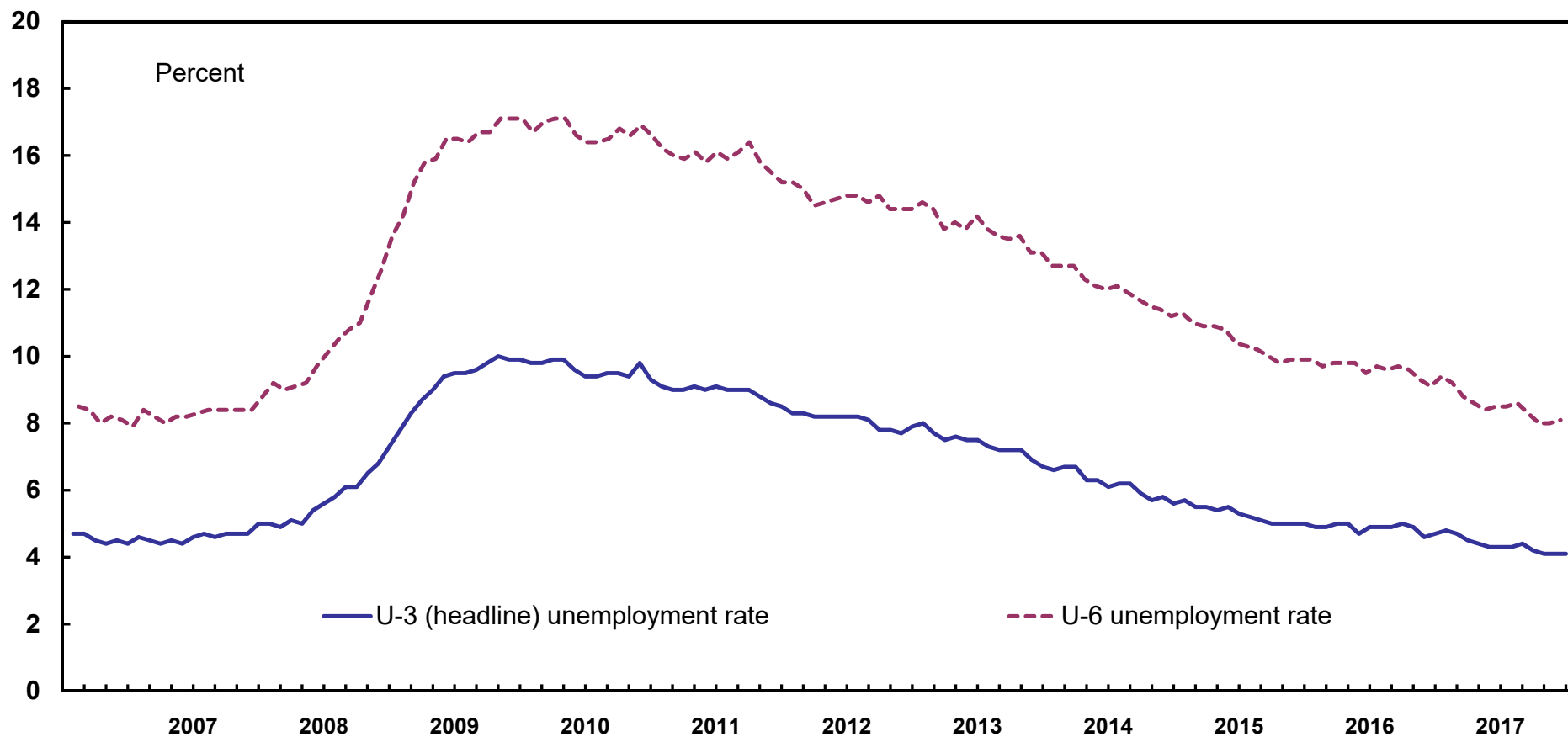


Light Trucks Lead the Way Auto Sales are Weak



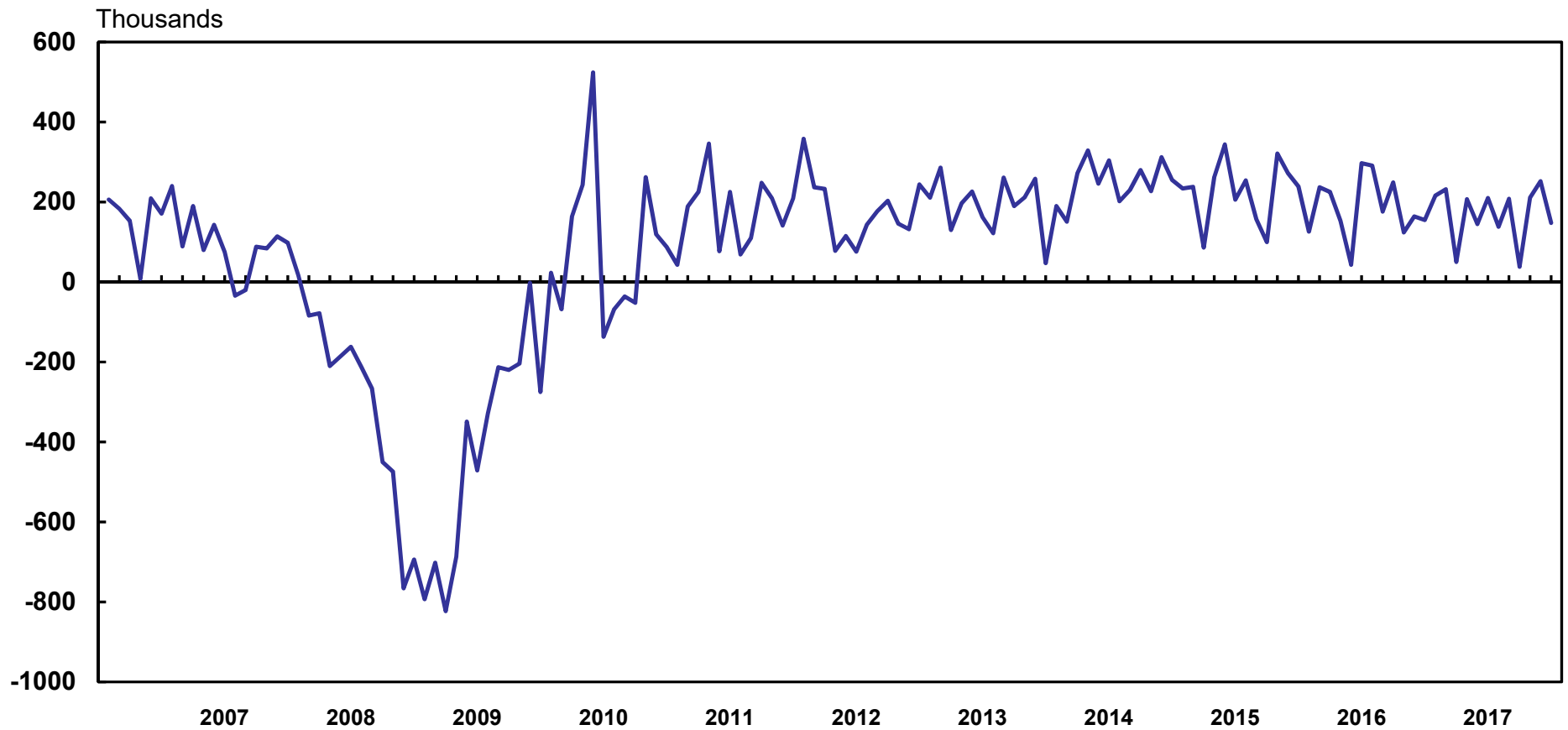
Unemployment Rate

Trending Down Since Around 2010



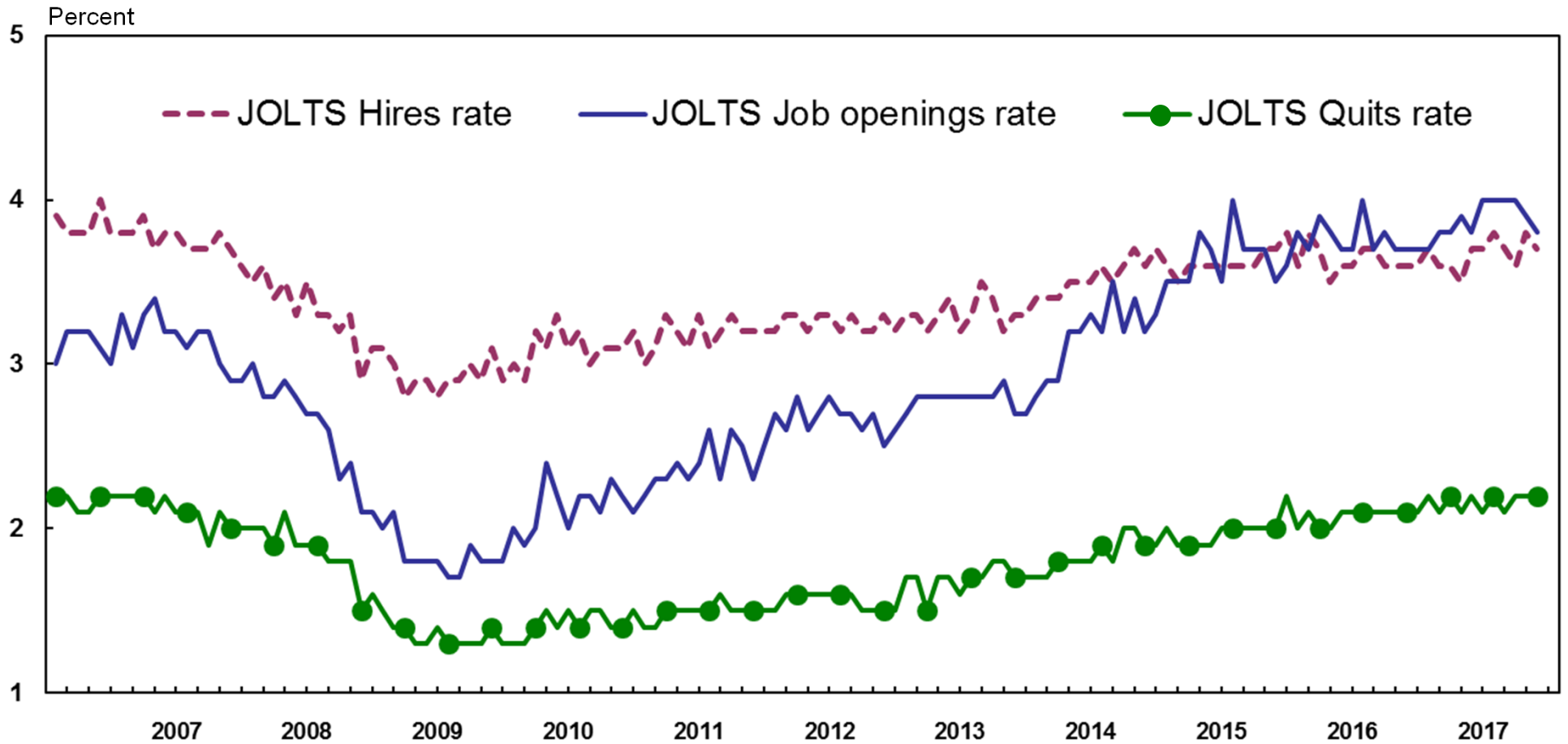
Monthly Payroll Job Gains

Slow Deceleration as Labor Market Tightens

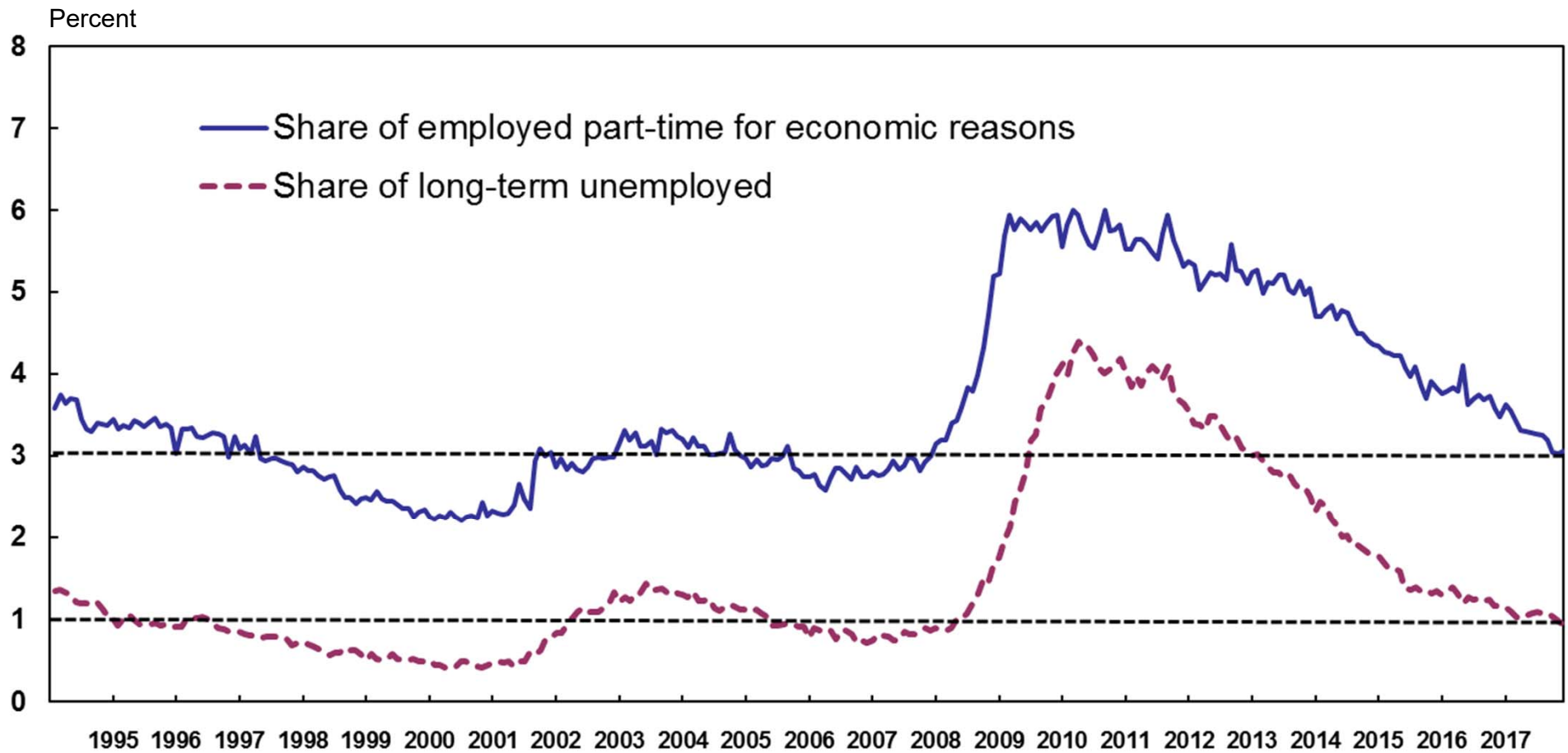


RSQE: January 2018

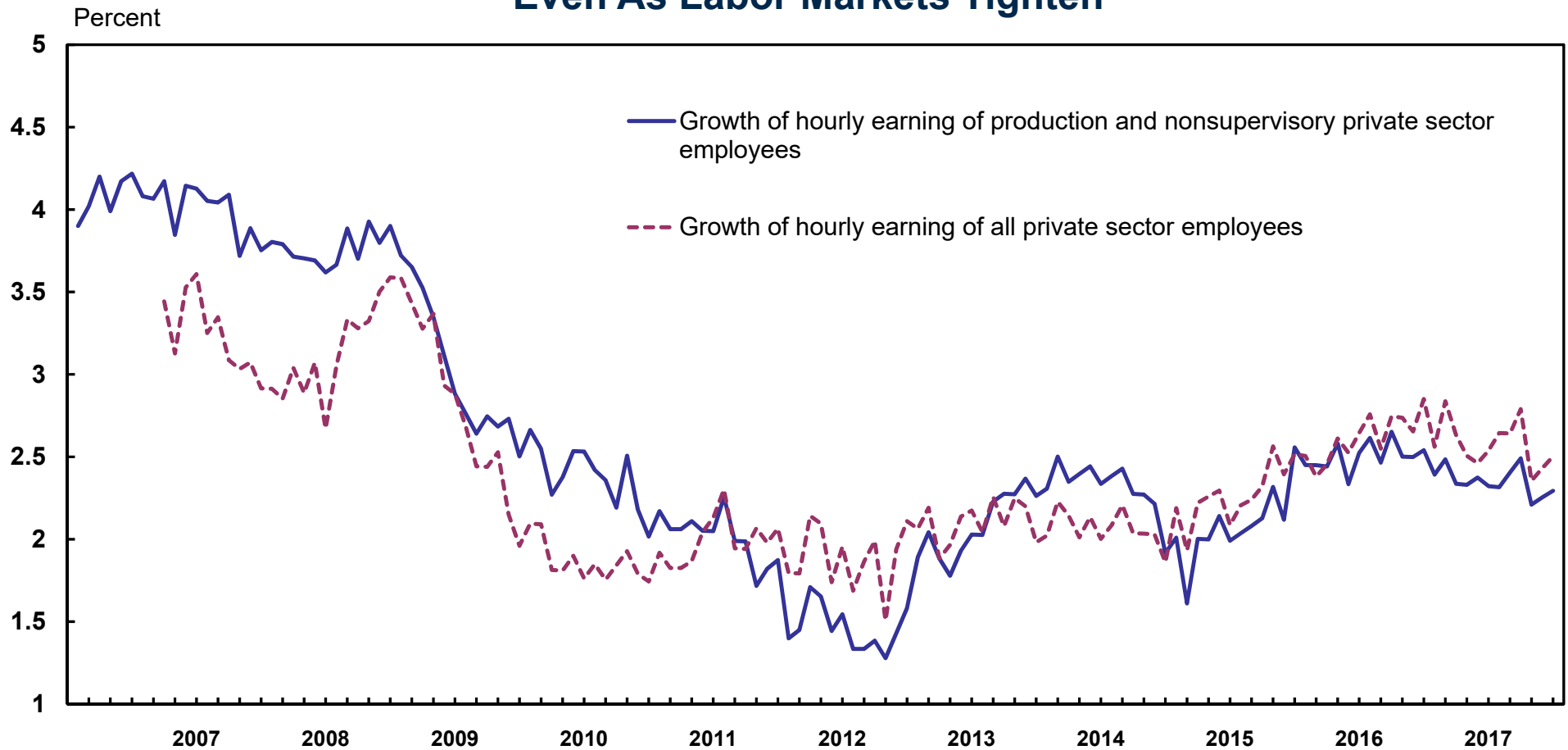
Healthy and Tightening Labor markets



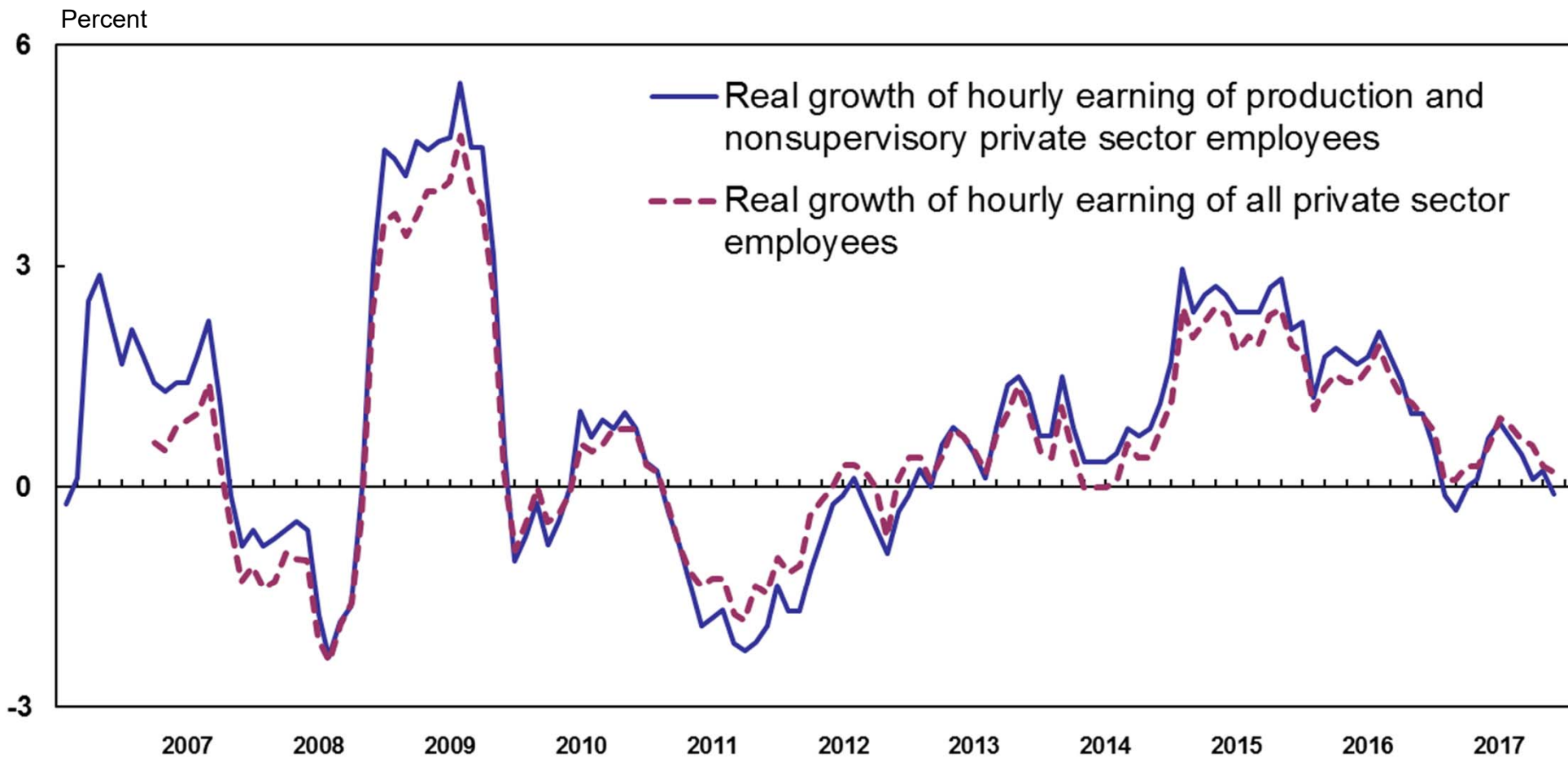
Some Labor Market Slack Remains



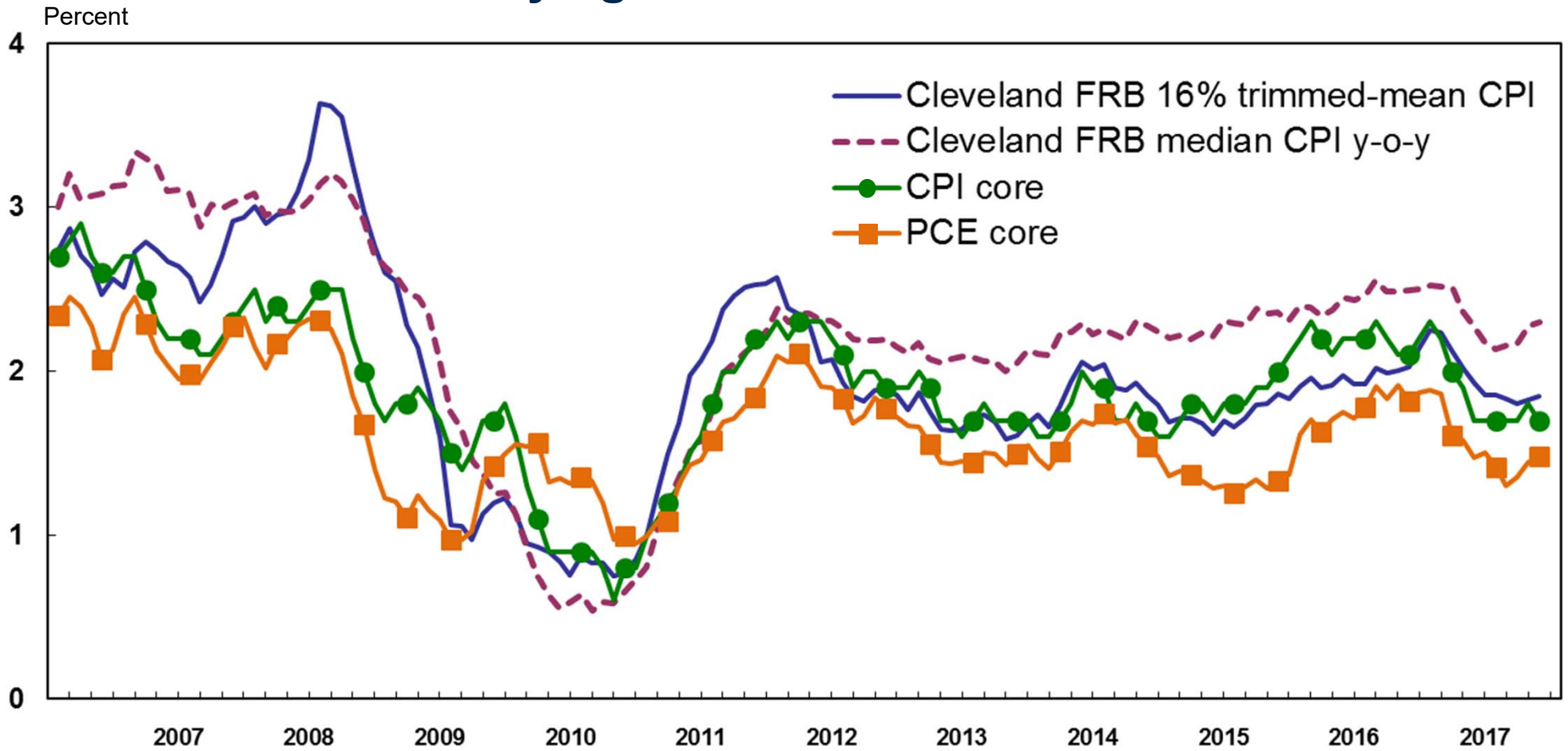
Unspectacular Nominal Earnings Growth Even As Labor Markets Tighten



Flat Real Earnings



Underlying Inflation Remains Muted



Key Inputs into the Forecast

Monetary Policy

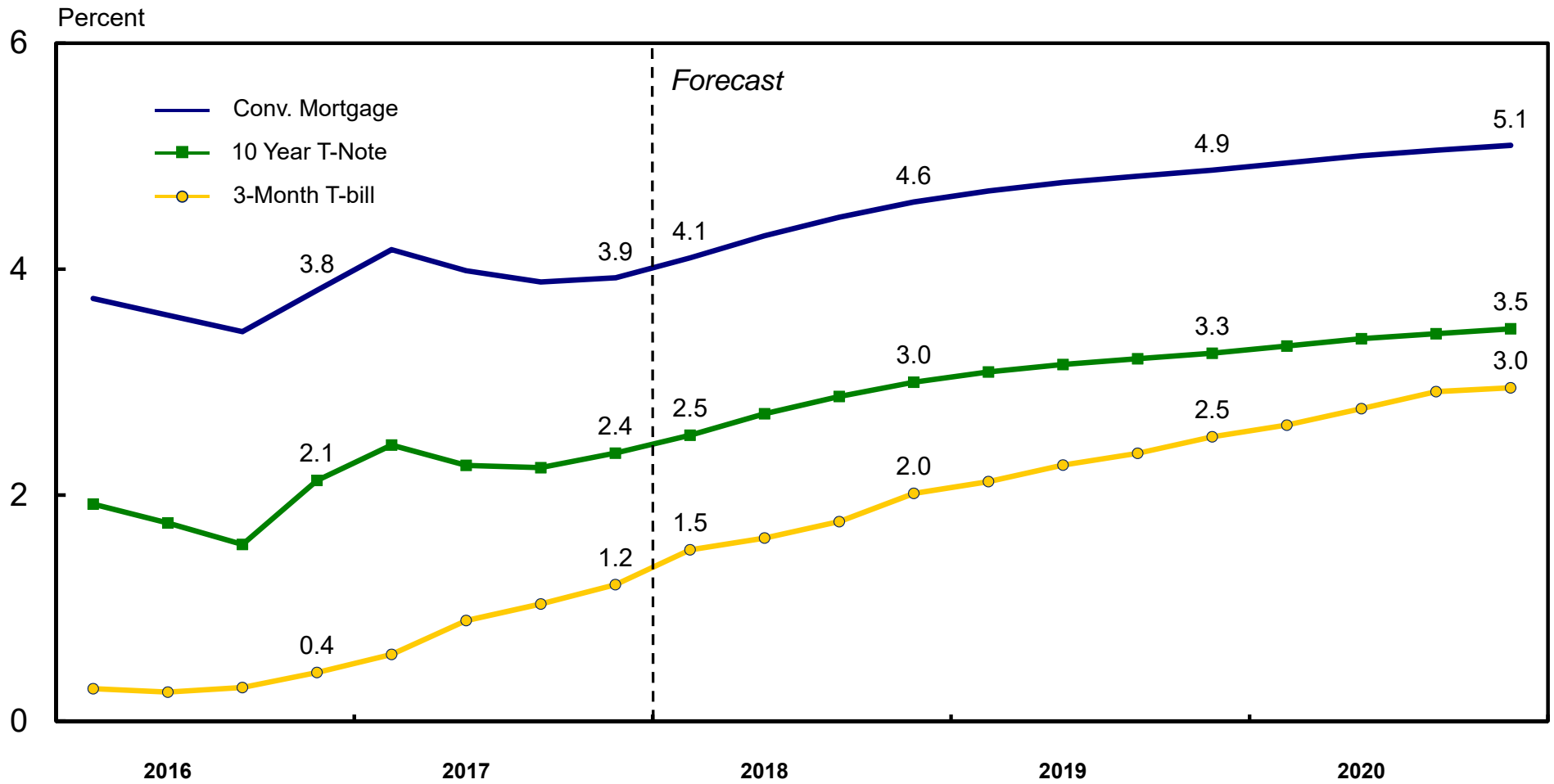
➤ Federal funds rate path

- Latest rate hike in December, 2017
- Three 25 basis point hikes in 2018, two in 2019

➤ New leadership at the Fed in 2017

- Jerome Powell is widely expected to be confirmed by the Senate as the next Fed chair
- We expect continuity in conduct of monetary policy

Market Interest Rates



Fiscal Policy Tax Cuts and Jobs Act (TCJA) Enacted

- Estimated \$1.456 trillion in deficit increases over 2018-27
 - Using a “dynamic” score lowers the cost by about \$385 billion
 - Including extra interest payments adds \$314 billion
 - Growth impact likely front-loaded
- Key business tax provisions, most are permanent:
 - Sharply lower corporate rate: to 21% down from 35%
 - 100% investment expensing for 5 years
 - International tax reform – significant revenue raiser
 - Several common deductions are limited, also raising some revenue

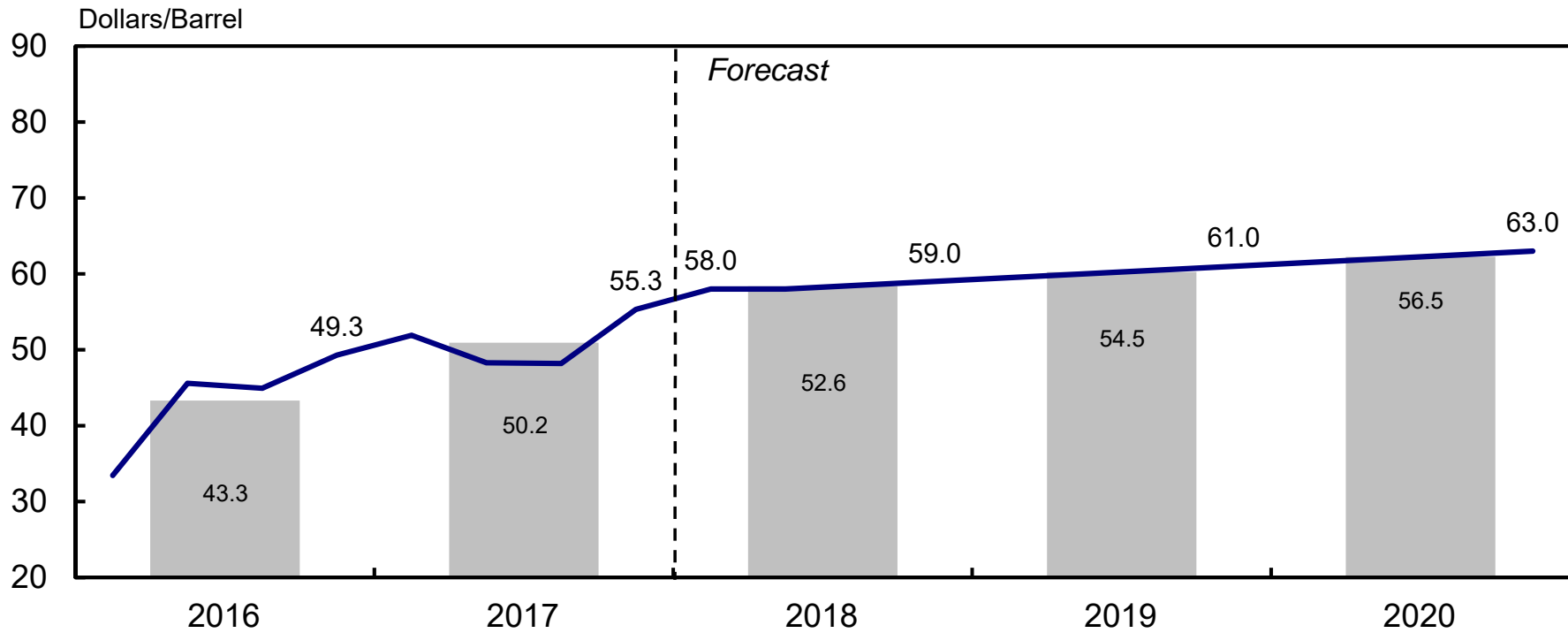
Fiscal Policy Tax Cuts and Jobs Act (TCJA) Enacted

- Personal tax provisions, most sunsetting in 2026:
 - Somewhat lower rates in most income brackets
 - Lower rate on pass-through business income
 - Expanded child tax credit
 - ACA individual mandate penalty set to \$0
- By fiscal year 2019, budget deficit widens by over \$200 billion
- Busy January for Congress. We do not expect a shutdown
- Infrastructure spending deal possible in 2018

Federal Budget, NIPA Basis (Billions of Dollars)

	Forecast				
	<u>FY'16</u>	<u>FY'17</u>	<u>FY'18</u>	<u>FY'19</u>	<u>FY'20</u>
Current receipts	3455.9	3557.3	3592.4	3708.2	3892.8
% change	1.8	2.9	1.0	3.2	5.0
Current expenditures	4116.7	4217.3	4398.0	4593.7	4792.7
% change	3.1	2.4	4.3	4.4	4.3
Consumption	963.9	971.4	992.2	1009.7	1026.6
% change	0.8	0.8	2.1	1.8	1.7
Transfer payments	2630.8	2693.5	2808.2	2920.7	3040.5
% change	3.4	2.4	4.3	4.0	4.1
Surplus (+) or deficit (-)	-660.8	-660.0	-805.6	-885.5	-899.8
Percent of GDP	-3.6	-3.4	-4.0	-4.2	-4.1

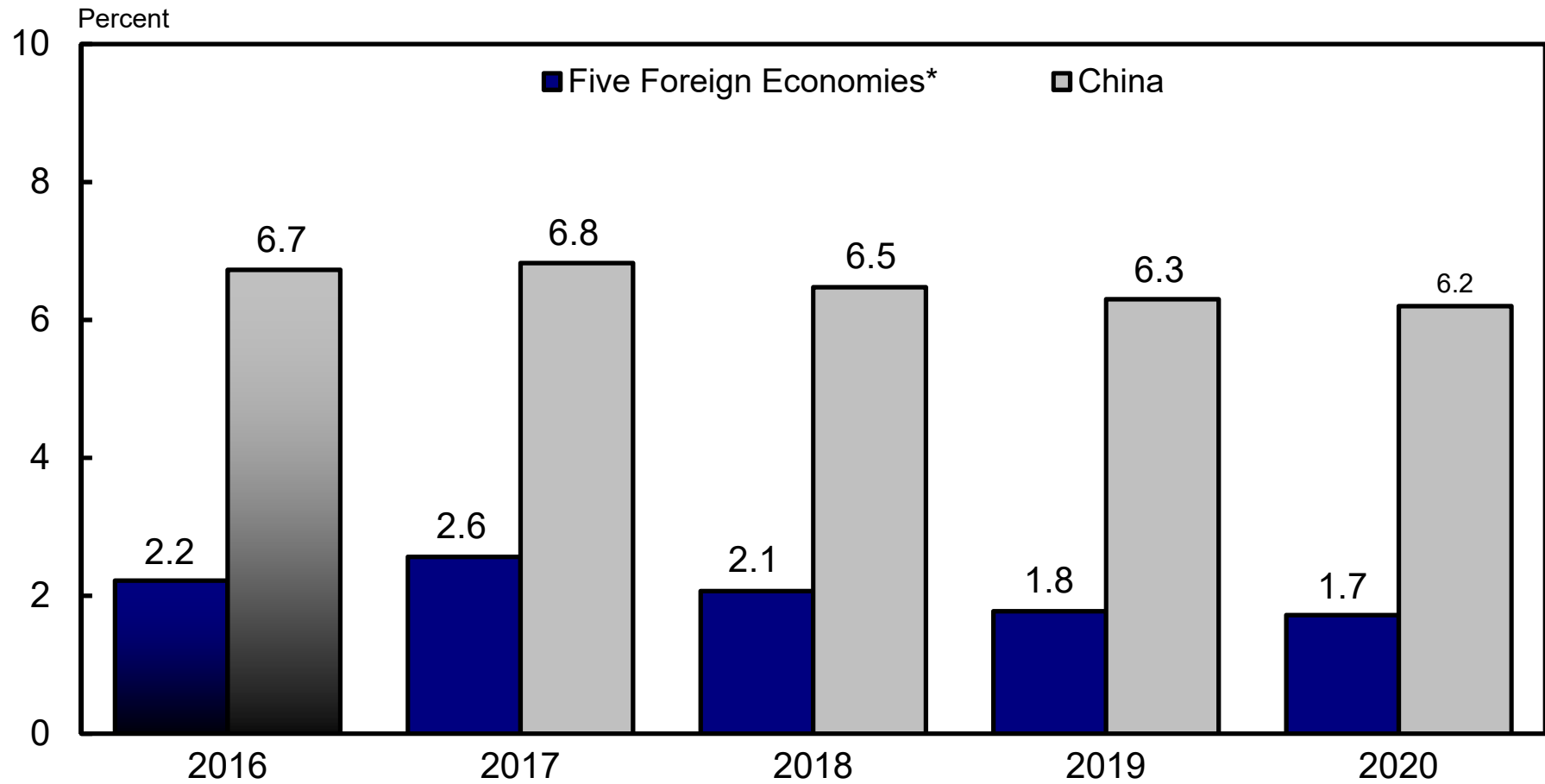
Price of Oil (West Texas Intermediate Crude)



	4 th Quarter to 4 th Quarter % Change				
WTI	16.9	12.2	6.7	3.4	3.3
Imports*	5.1	21.8	12.7	2.0	1.8

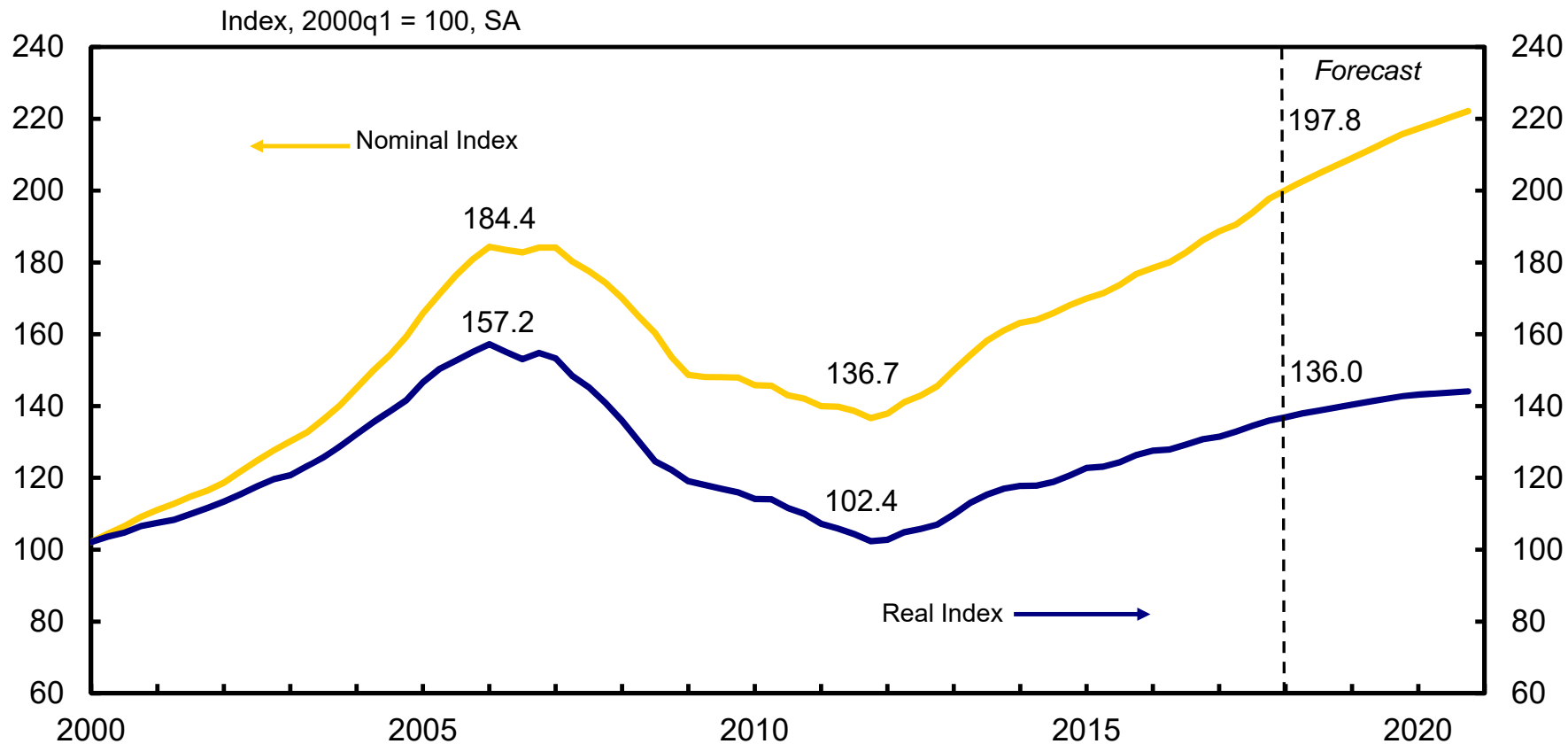
*Implicit deflator for petroleum & products

Foreign GDP Growth Rates



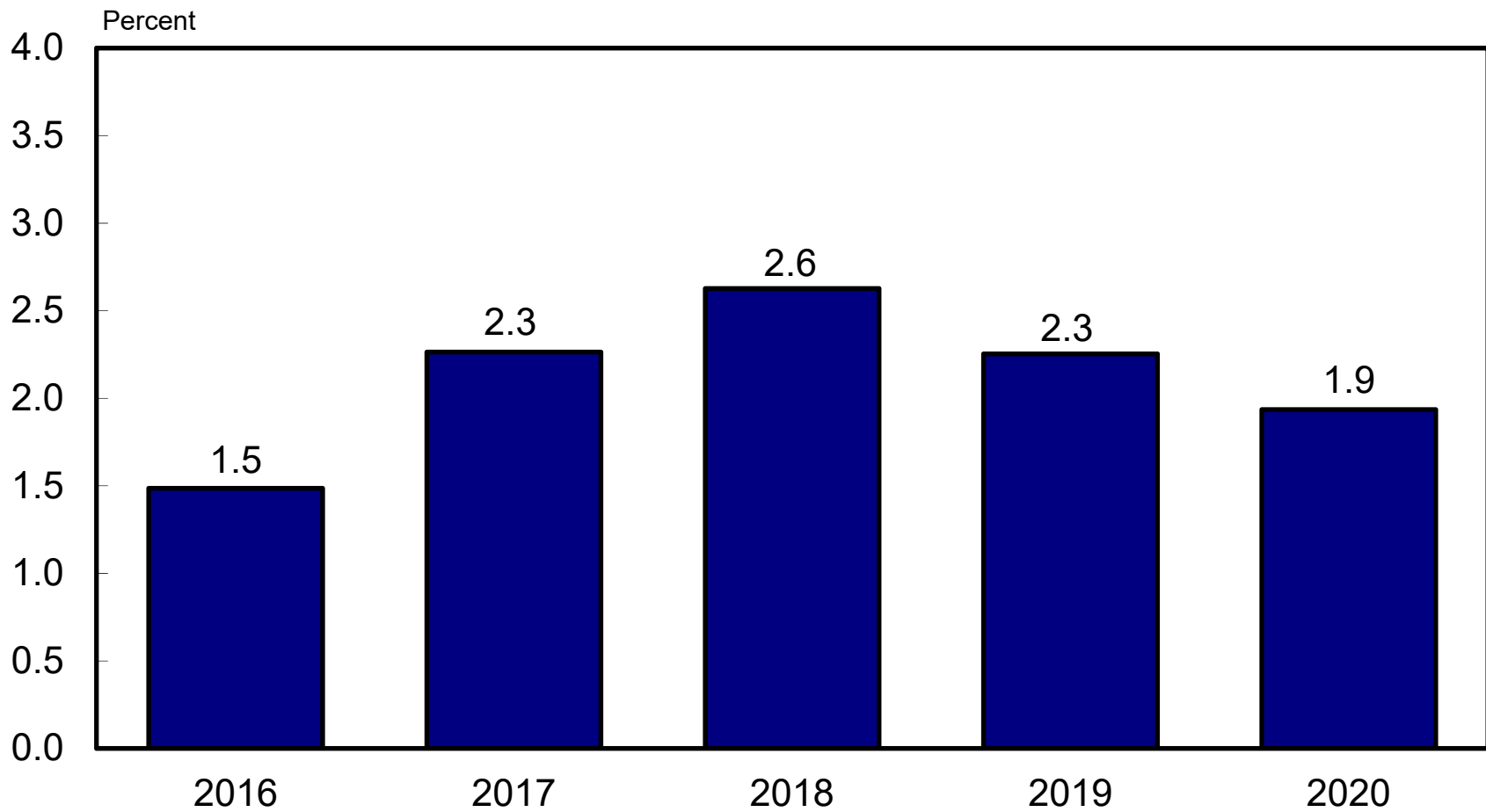
*Weighted Real GDP: Canada, Mexico, Japan, UK, Germany

Single-Family Home Prices (National Case-Shiller Index)

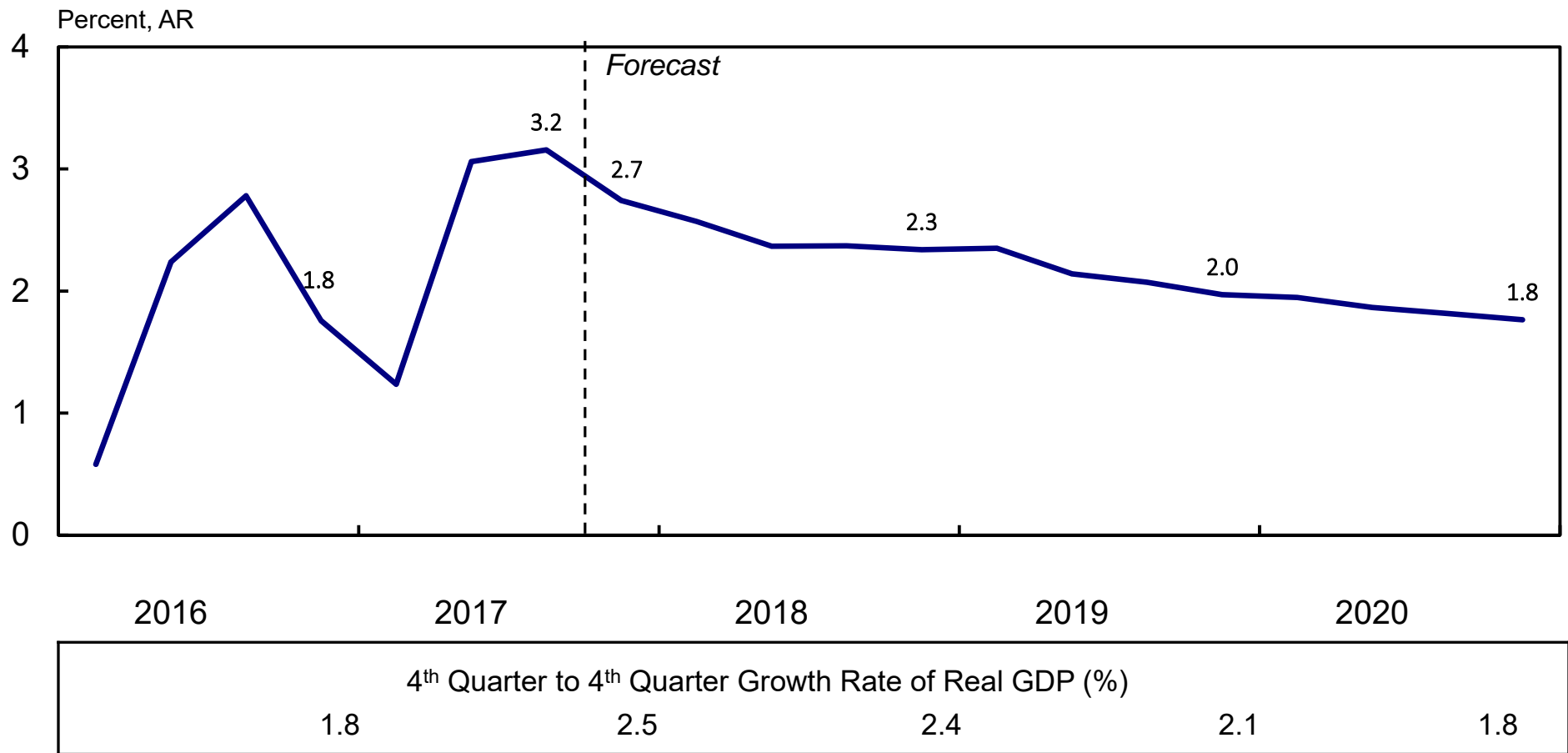


RSQE U.S. Forecast for 2018-20

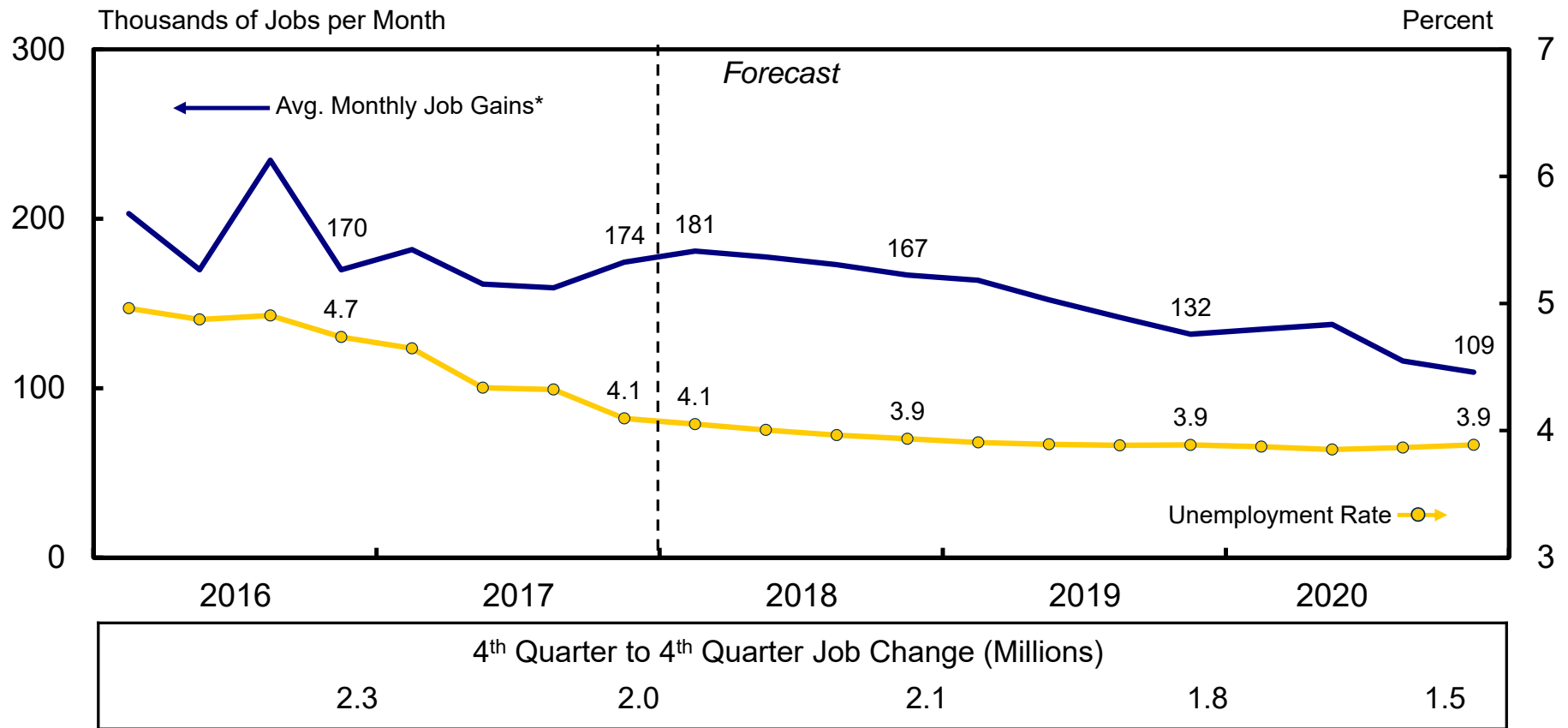
Annual Real GDP Growth



Quarterly Real GDP Growth

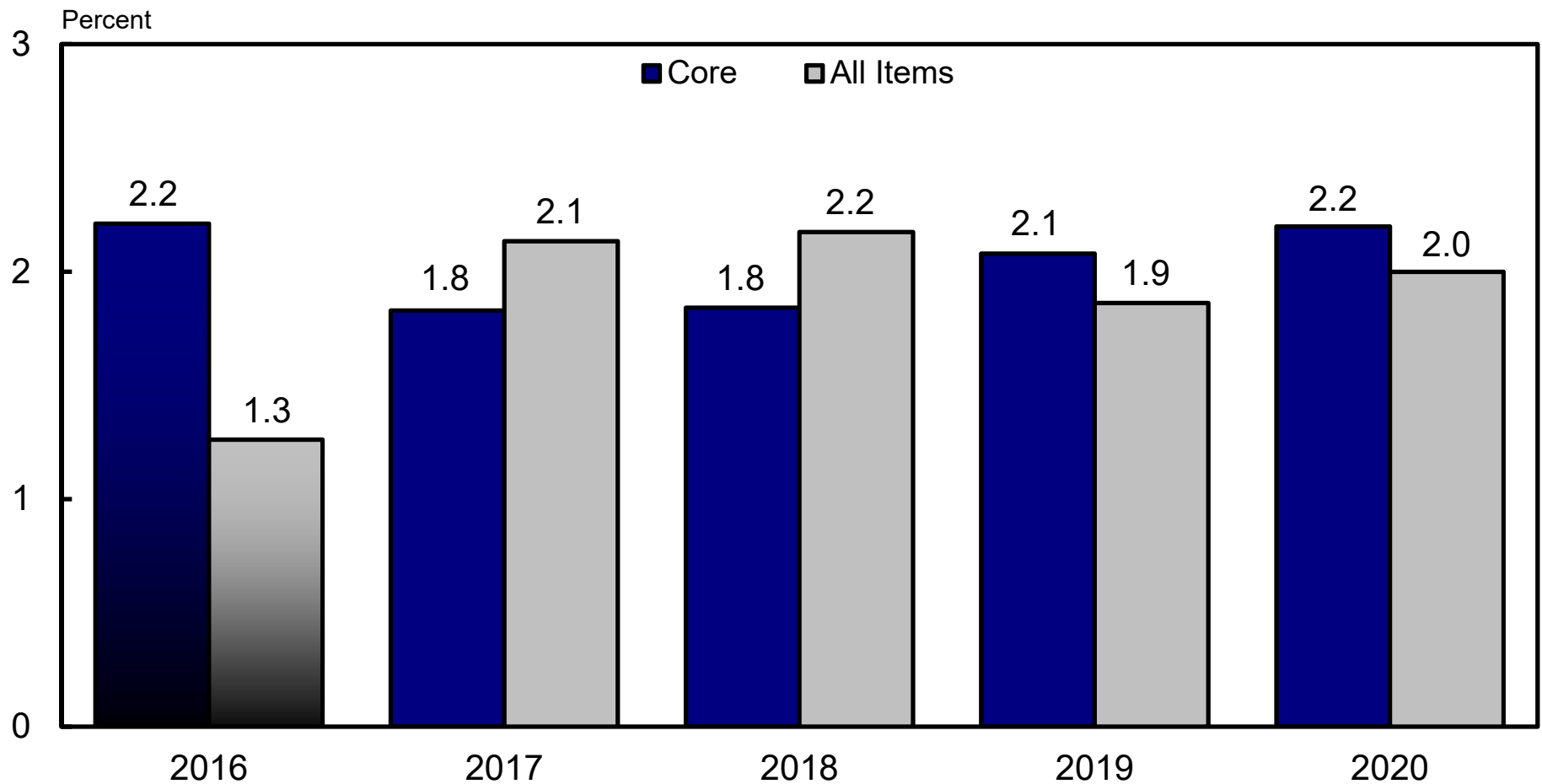


Nonfarm Payroll Employment Gains and Unemployment Rate



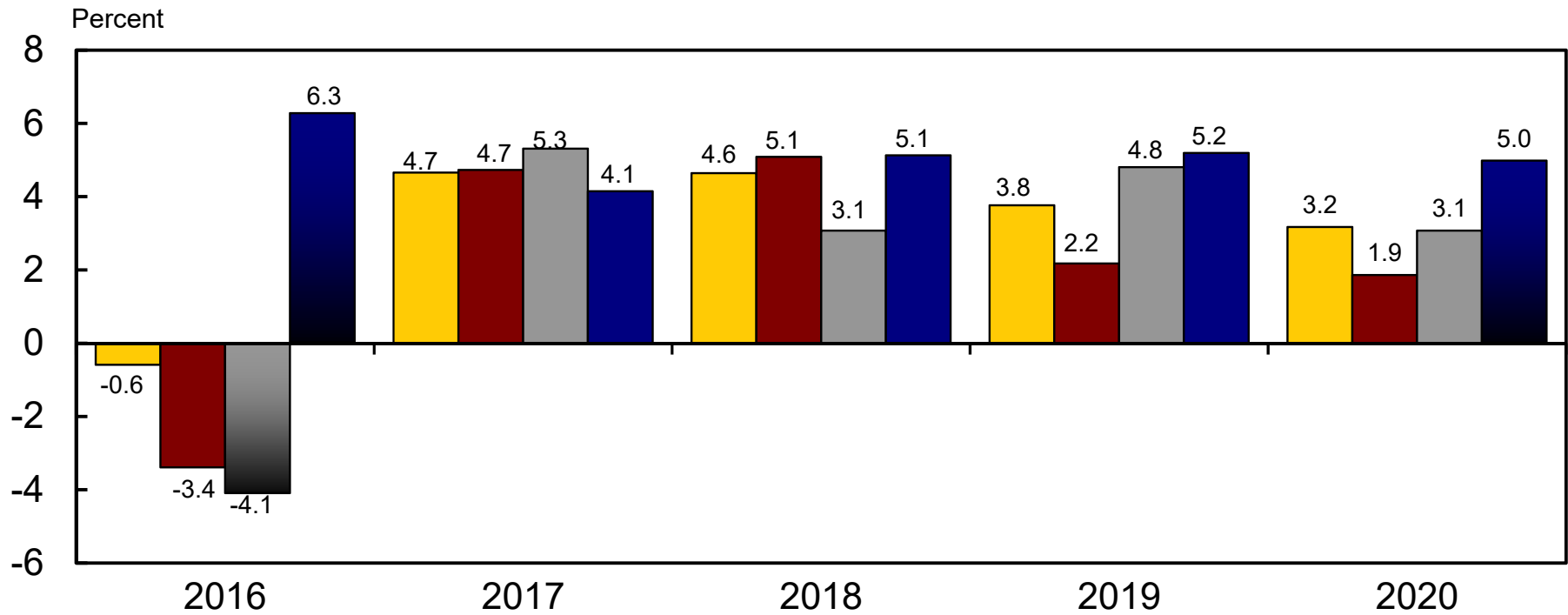
* 1/3 the change in quarterly value

Consumer Price Inflation (CPI-U)



RSQE: January 2018

Growth of Nonresidential Fixed Investment

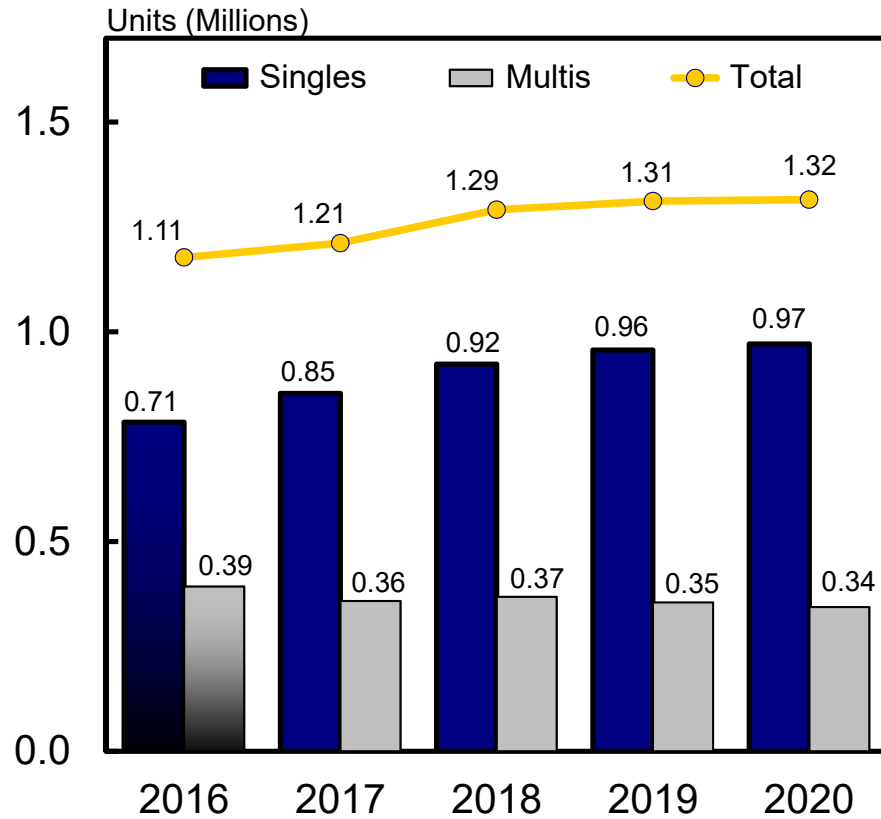


Level in 2016 (billions of chained 2009 dollars)

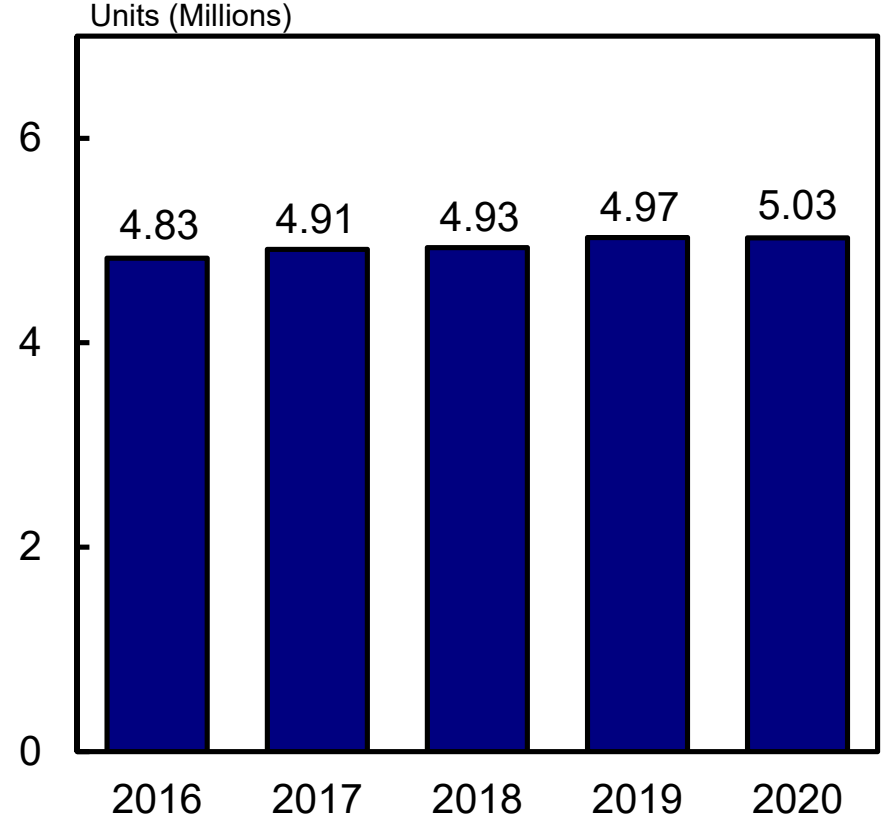
Category	Level in 2016 (billions of chained 2009 dollars)
Total	2210.4
Equipment	1047.8
Structures	446.4
Intellectual Property	720.4

Housing Market

A. Housing Starts

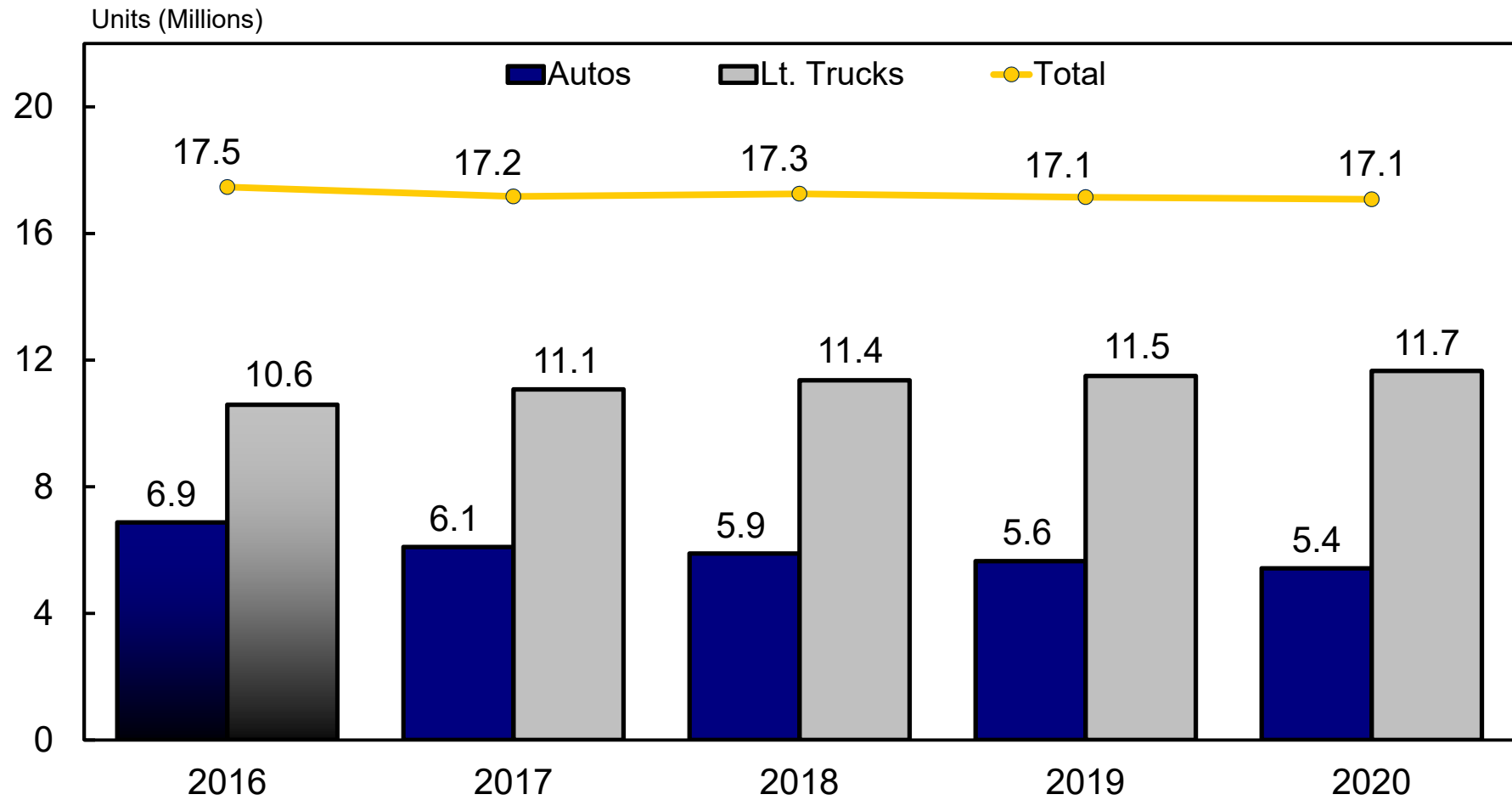


B. Existing Home Sales*



*Single-family homes

Light Vehicle Sales



Risks to Our Outlook

- Oil Prices and Geopolitical Risks
- Fiscal Policy
- Monetary Policy
- Trade Policy
- Abnormal weather

The Michigan Economic Outlook For 2018–20



Consensus Revenue Estimating Conference

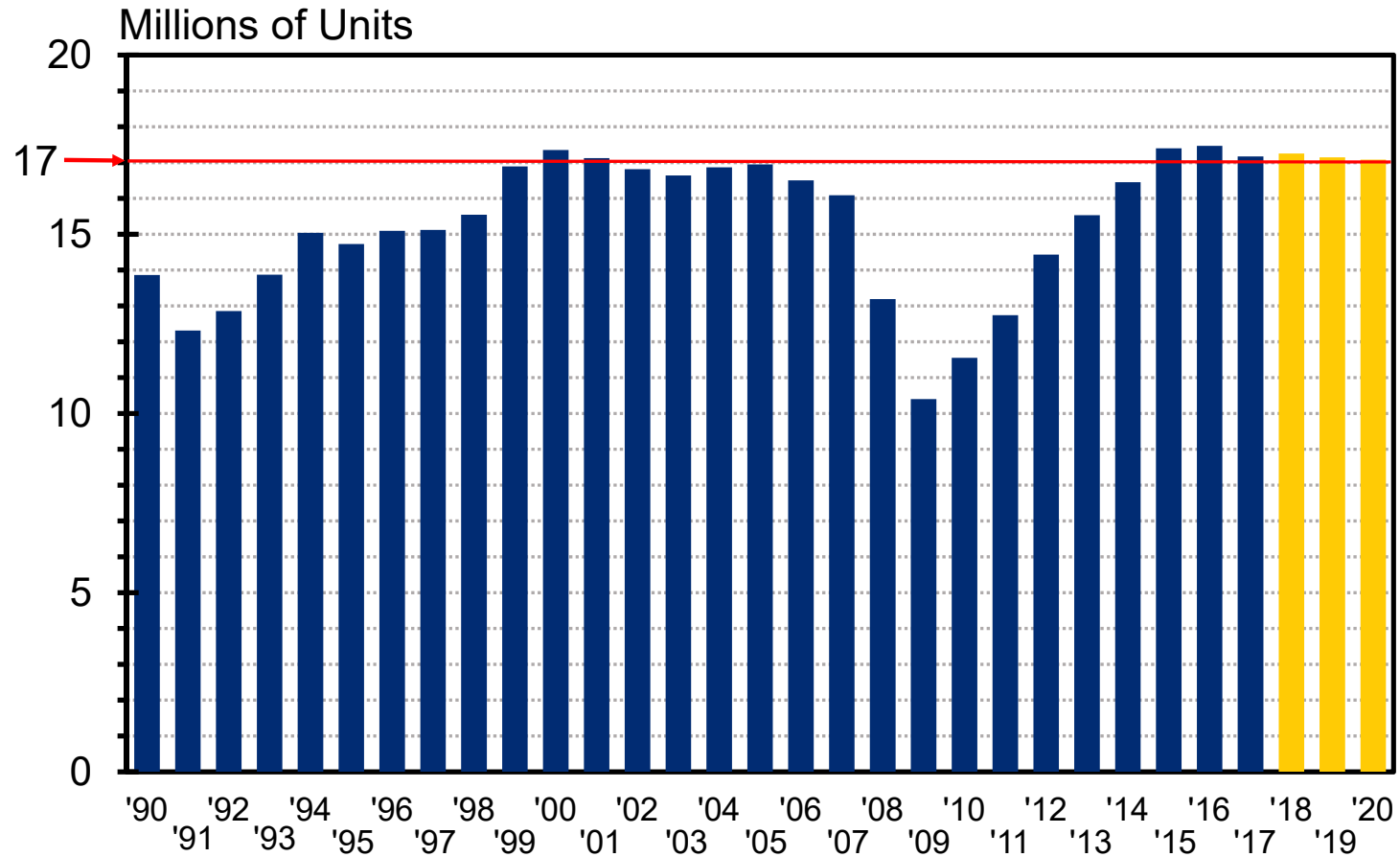
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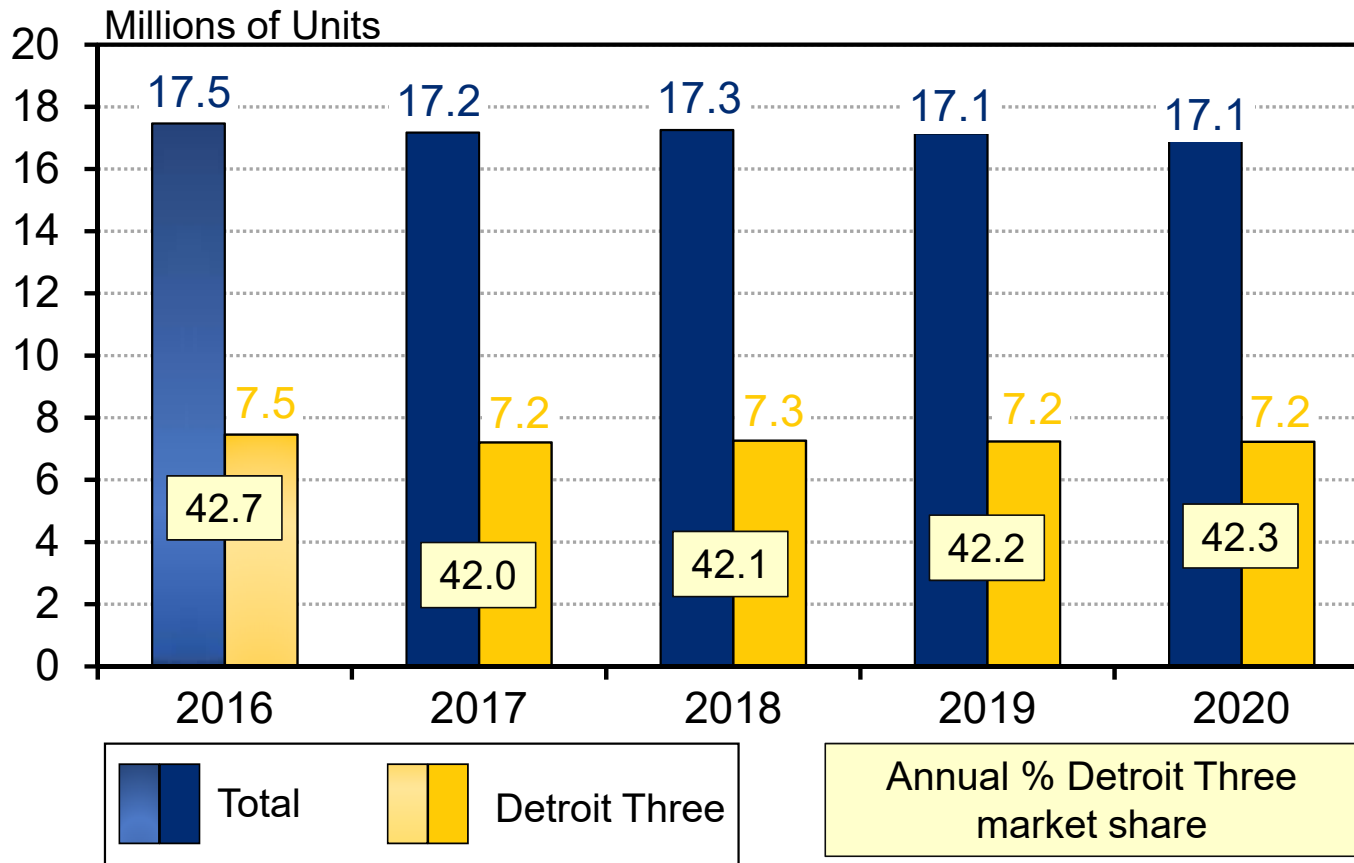
Motor Vehicle Industry Revisited



U.S. Light Vehicle Sales, 1990–2020



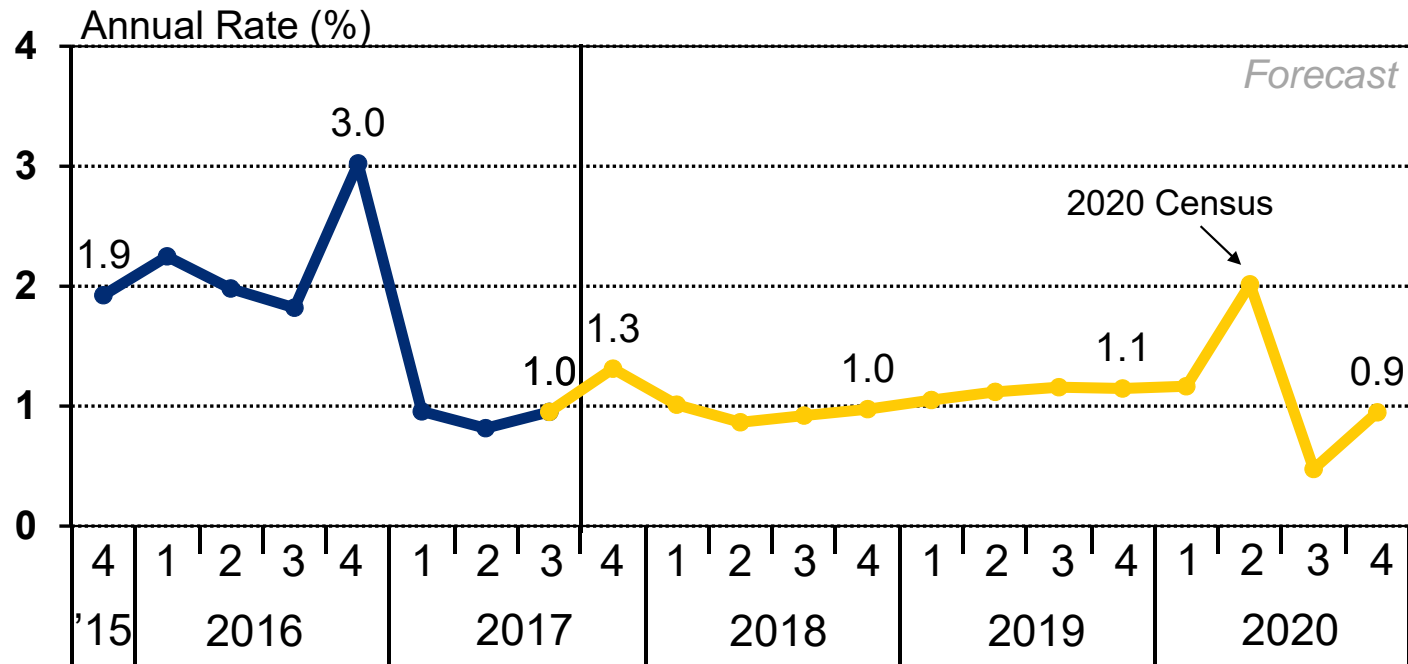
U.S. Light Vehicle Sales Total vs. Detroit Three, 2016–20



Michigan Outlook



Michigan Wage and Salary Employment Growth

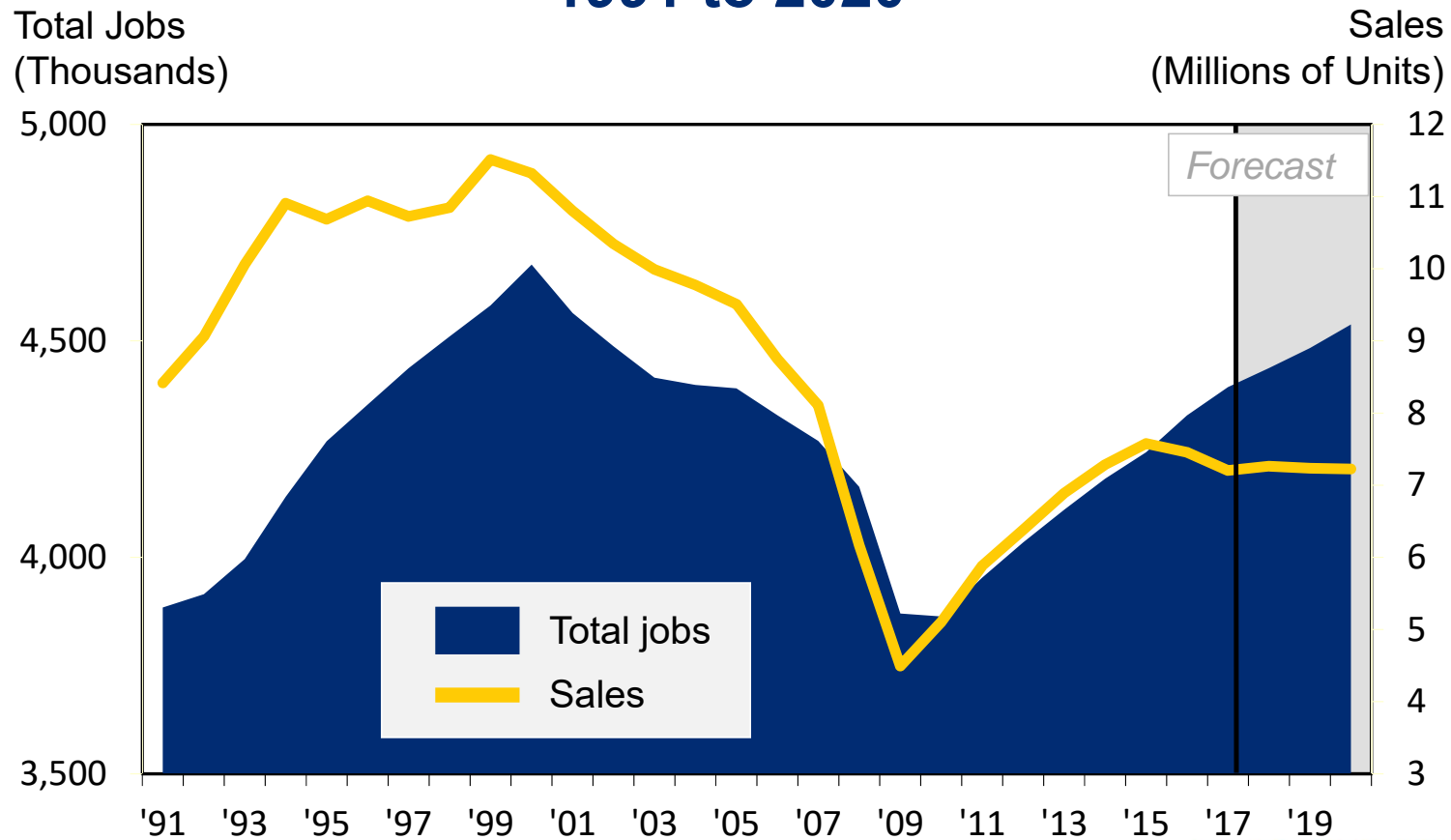


4th Quarter to 4th Quarter Growth Rate (%)					
1.5	2.3	1.0	0.9	1.1	1.1
4th Quarter to 4th Quarter Change (Thousands)					
62.1	96.8	44.1	41.6	49.8	51.7

Change in Payroll Employment by Industry Sector (Thousands of jobs)

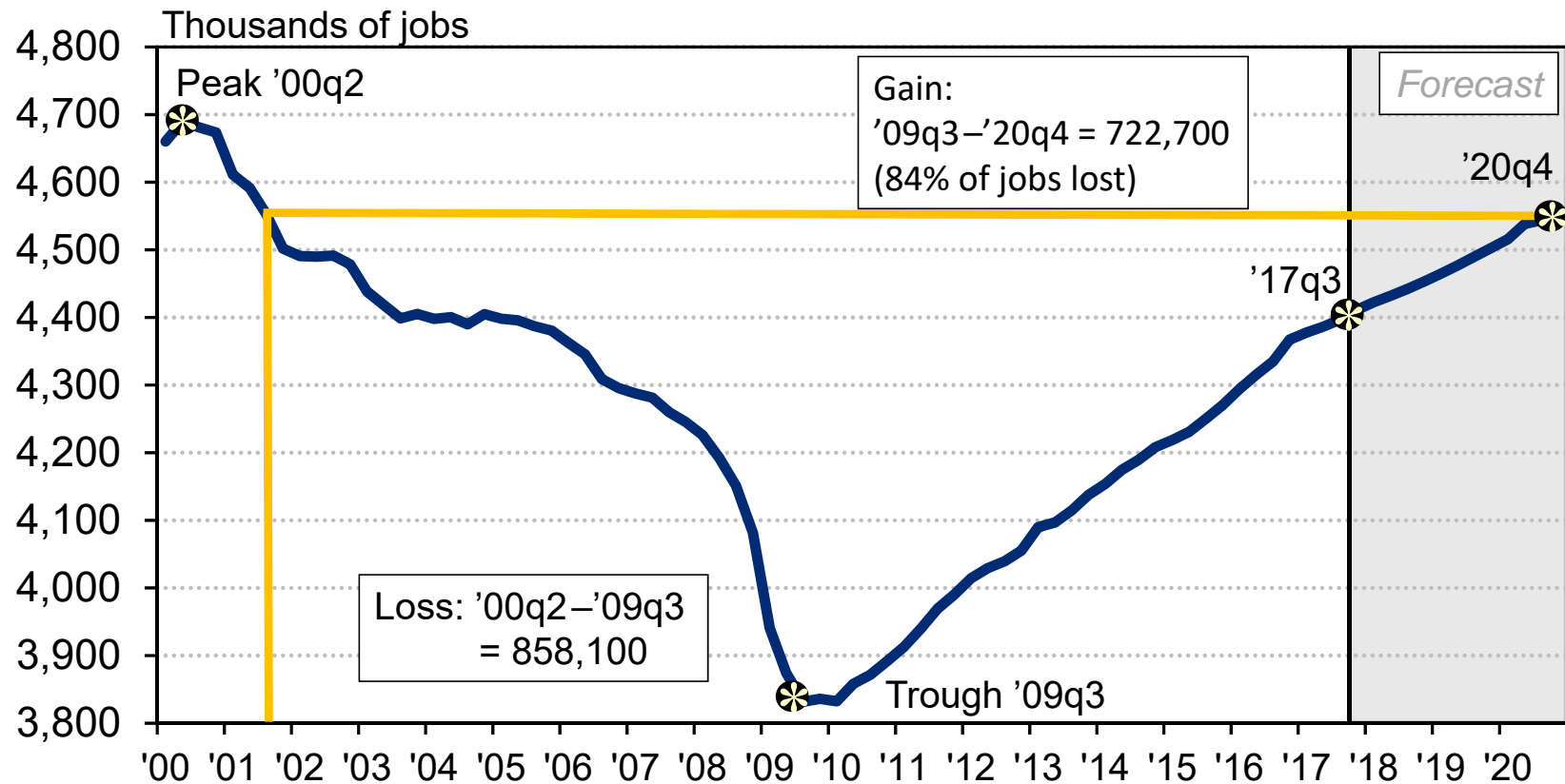
	<u>2015q4– 2016q4</u>	<u>2016q4– 2017q4</u>	<u>2017q4– 2018q4</u>	<u>2018q4– 2019q4</u>	<u>2019q4– 2020q4</u>
Total jobs	97	44	42	50	52
Manufacturing	9	2	-5	-2	-1
Construction	8	5	6	6	6
Professional & business svcs.	22	14	18	18	18
Trade, transportation, utilities	8	1	4	8	9
Private educ. & health svcs.	9	5	6	5	4
Leisure & hospitality	16	6	5	7	9
Government	15	5	3	3	3

Michigan Total Jobs and Detroit Three Sales of Light Vehicles 1991 to 2020

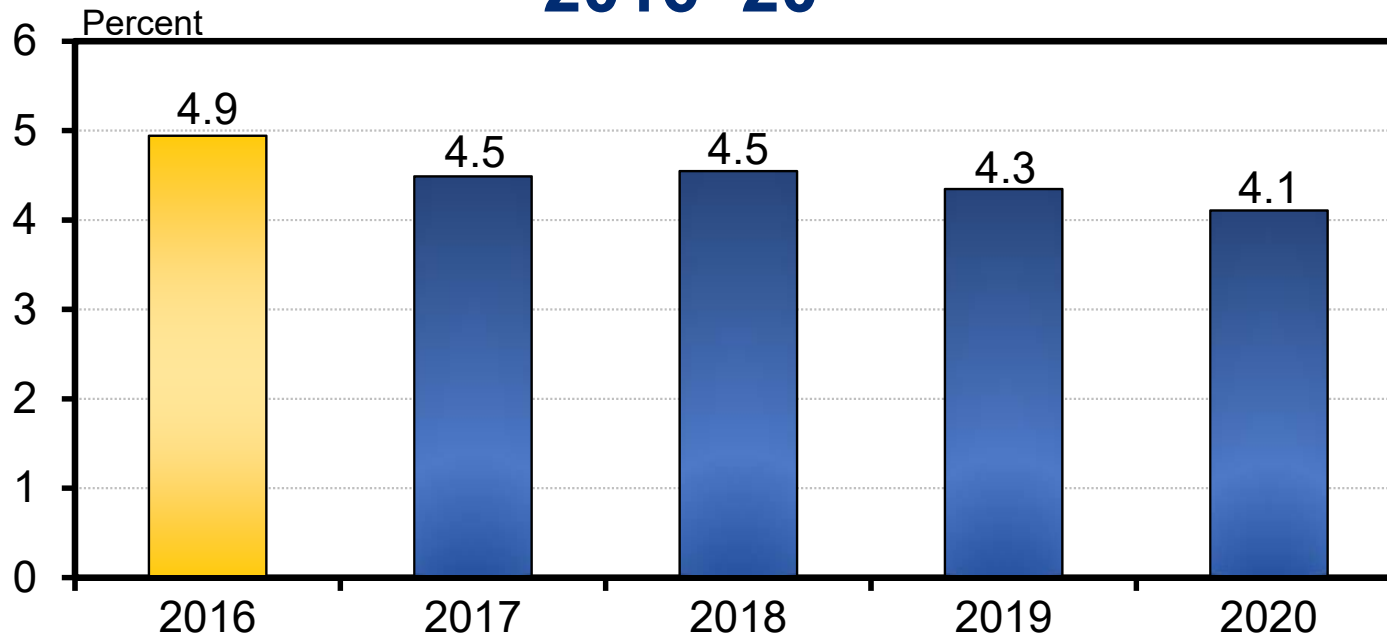


Michigan Wage and Salary Employment

First Quarter of 2000 to Fourth Quarter of 2020

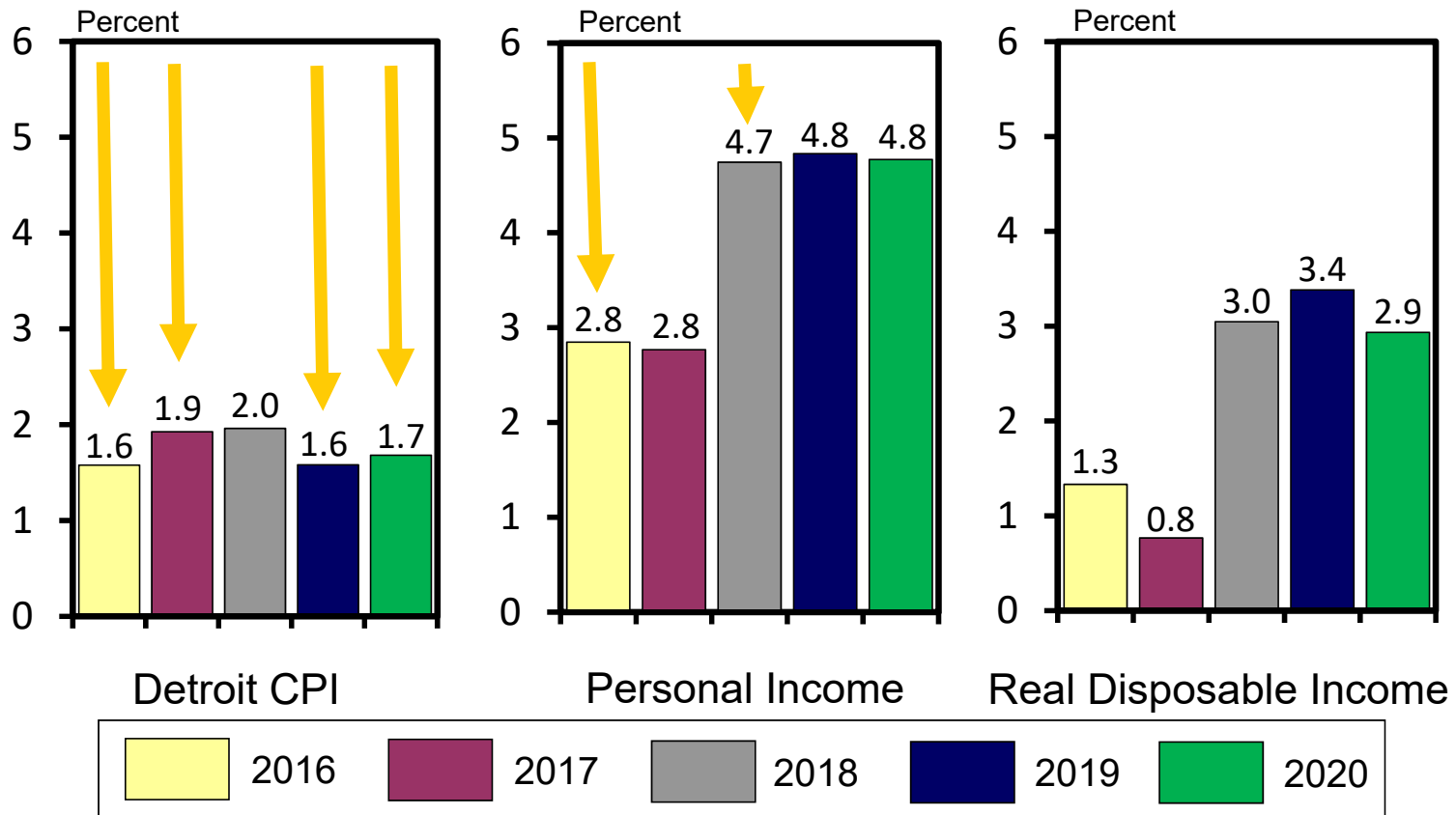


Michigan Unemployment Rate 2016–20



4th Quarter Unemployment Rate				
5.1	4.6	4.5	4.3	4.1
4th Quarter Labor Force Participation Rate				
61.4	61.3	61.4	61.5	61.6

Michigan Inflation and Income Growth



State Revenue Outlook



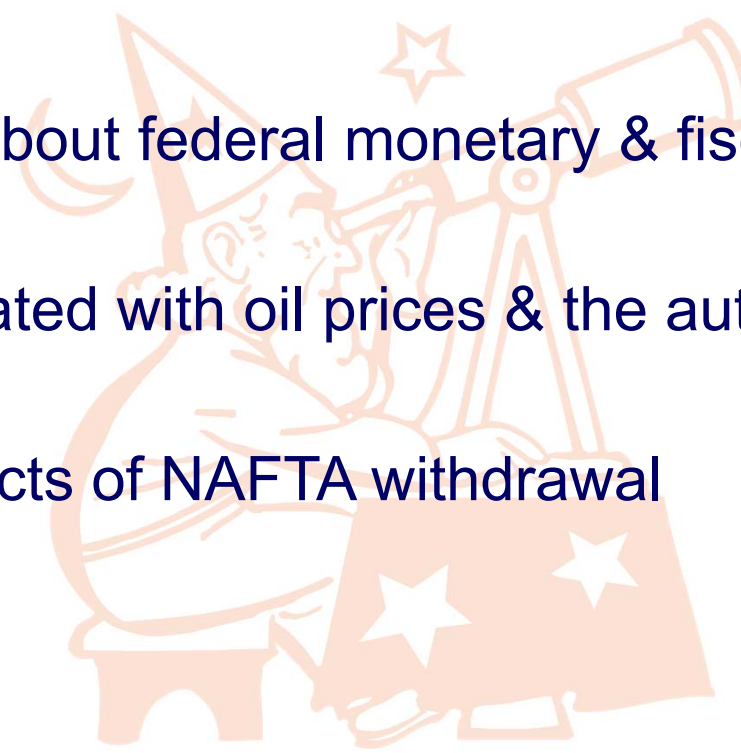
RSQE Forecast – State Revenues by Fiscal Year (Millions of dollars)

	Actual	Forecast		
	2017 ^P	2018	2019	2020
GFGP revenue	10,296	10,478	10,677	10,850
(% change)	(2.8)	(1.8)	(1.9)	(1.6)
Earmarked state SAF revenue	12,675	13,116	13,563	14,001
(% change)	(4.6)	(3.5)	(3.4)	(3.2)

^PPreliminary

Risks to the Forecast

- Uncertainty about federal monetary & fiscal policy
- Risks associated with oil prices & the auto industry
- Potential effects of NAFTA withdrawal



Simulating the Effects of Potential NAFTA Withdrawal

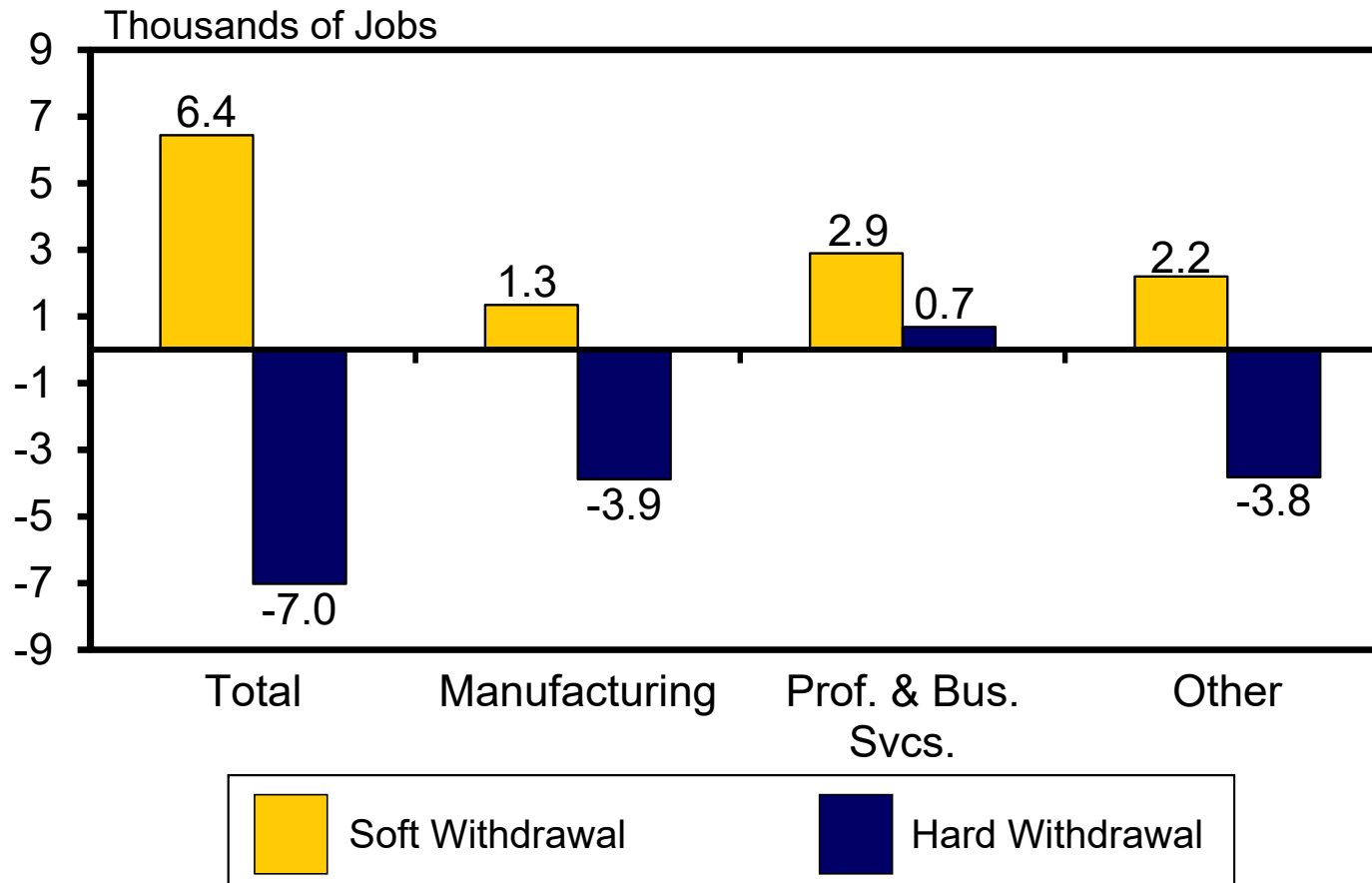


NAFTA Withdrawal Assumptions

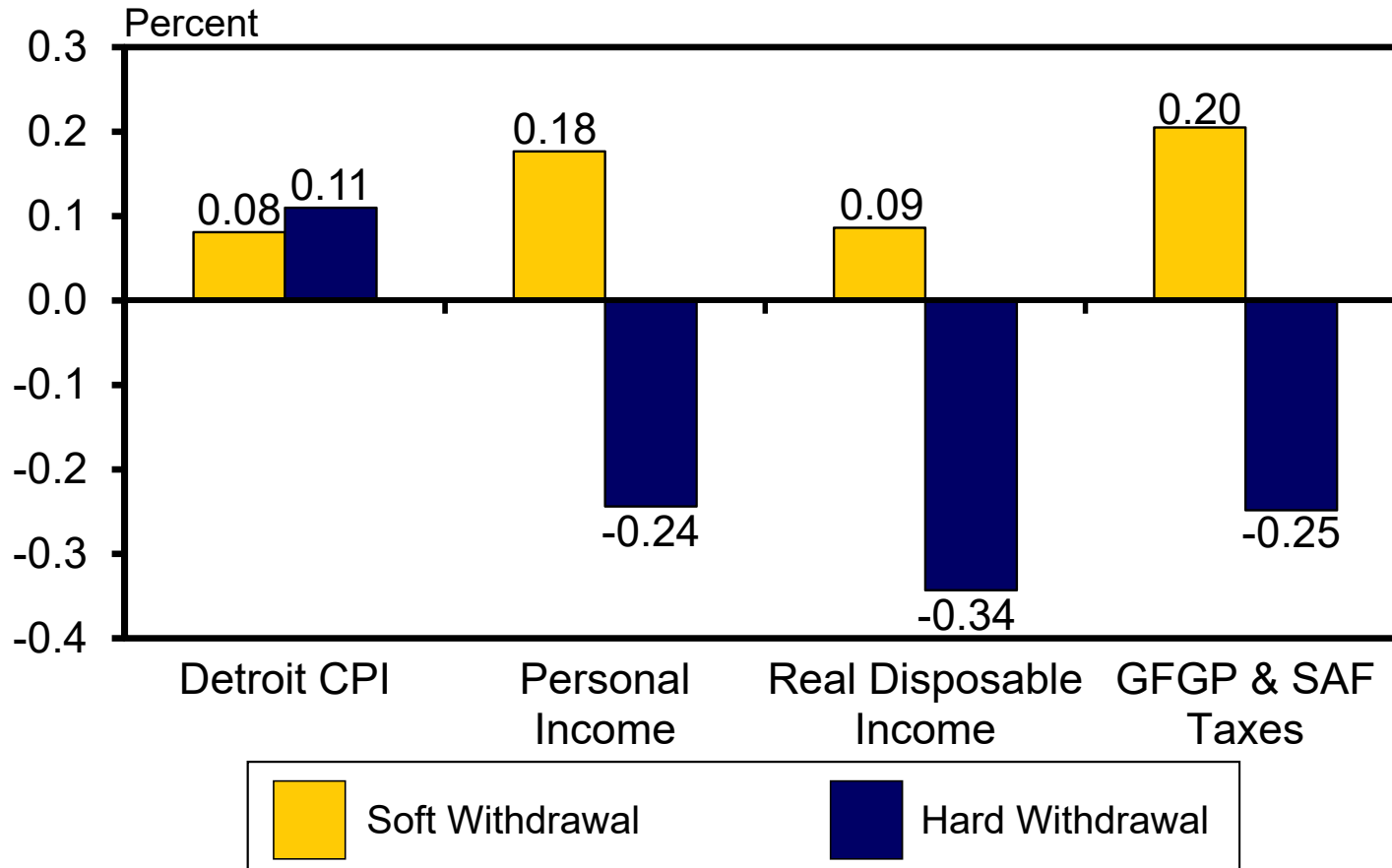
- Two scenarios: “soft” withdrawal and “hard” withdrawal

	Soft	Hard
Tariffs	Mexican and U.S. tariffs on each other’s imports go to MFN levels	Retaliatory tariffs of 25% on imports of automobiles and parts; 15% tariff on all other US exports
Effect on assemblies	520,000 light truck assemblies leave Mexico	600,000 light truck and 900,000-1,000,000 auto assemblies leave Mexico
Peso	Depreciates by 4%	Depreciates by 10%
Detroit Three Share	Falls 0.6 percentage points	Falls 1.8 percentage points

Michigan Payroll Employment Effects of NAFTA Withdrawal Scenarios – 2020



Michigan Price, Income, and Tax Effects of NAFTA Withdrawal Scenarios – 2020





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