



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

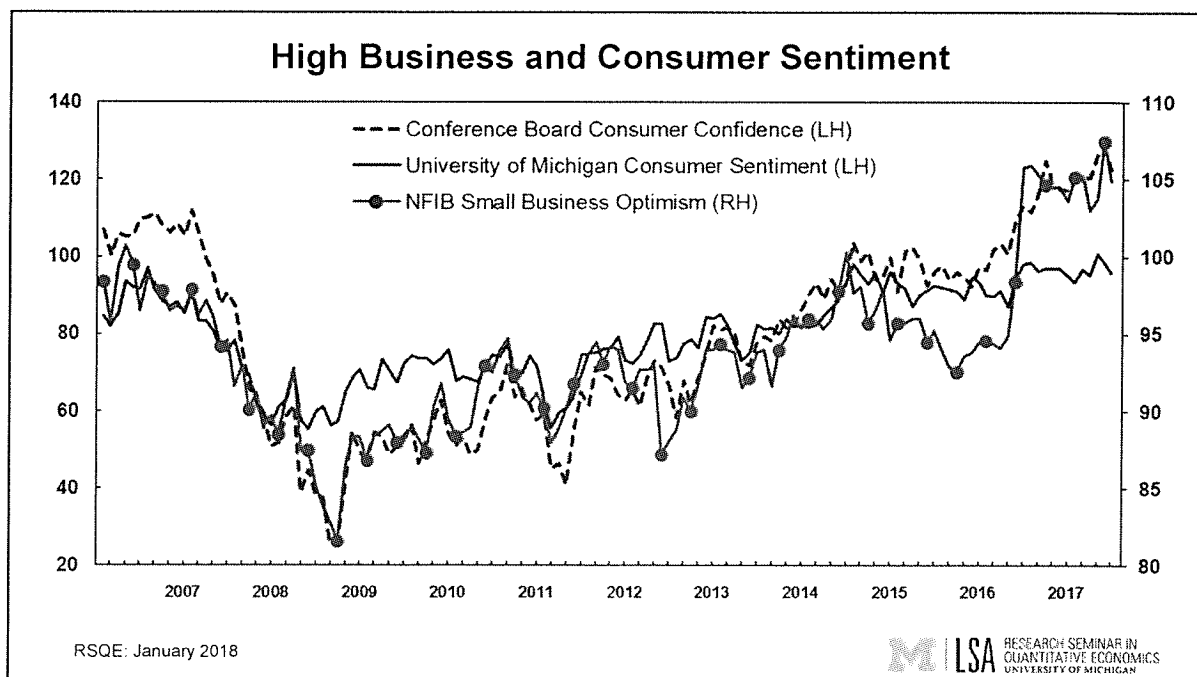
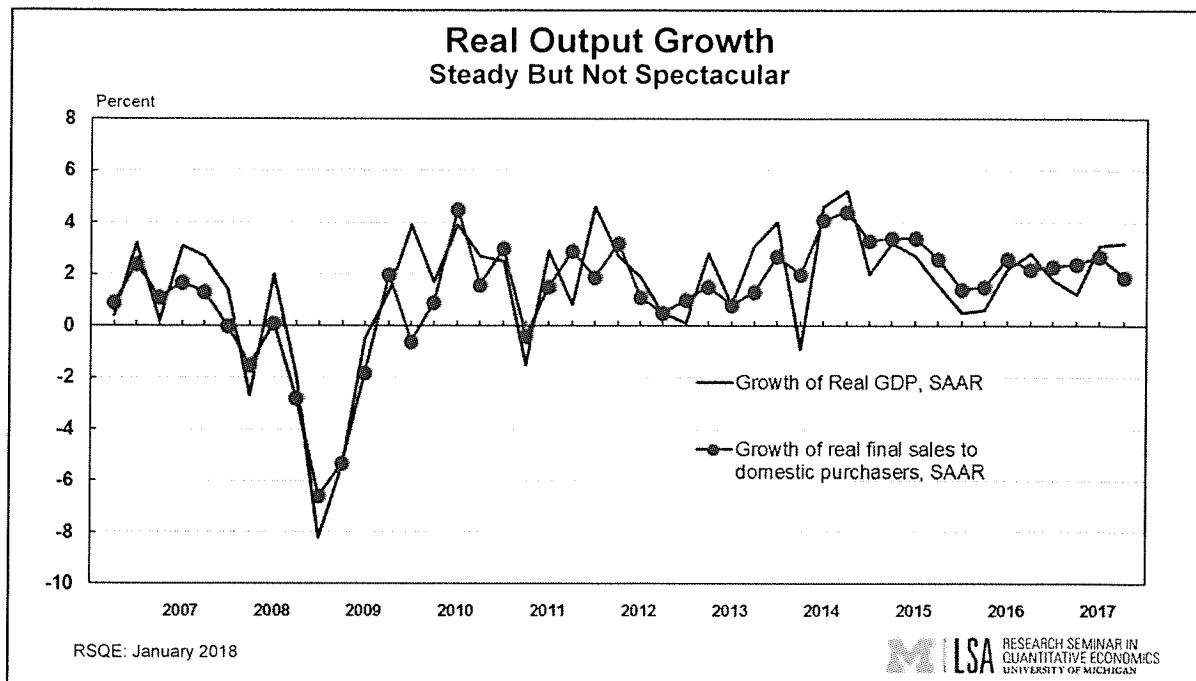
**PREPARED FOR PRESENTATION AT THE
CONSENSUS REVENUE ESTIMATING CONFERENCE**

**LANSING, MICHIGAN
JANUARY 11, 2018**

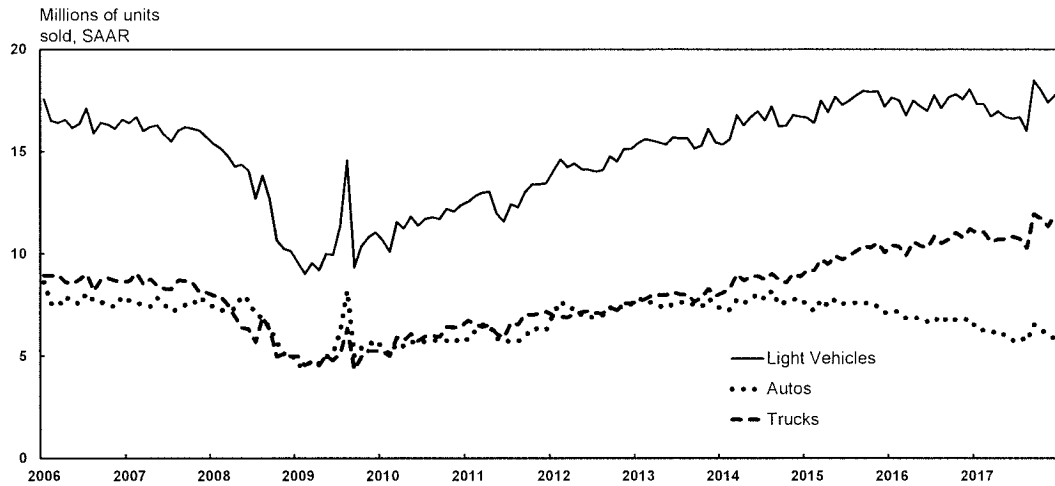
BY

**GABRIEL EHRLICH
GEORGE FULTON
DANIIL MANAENKOV
MICHAEL MCWILLIAMS
ADITI THAPAR**

"The Michigan Model"



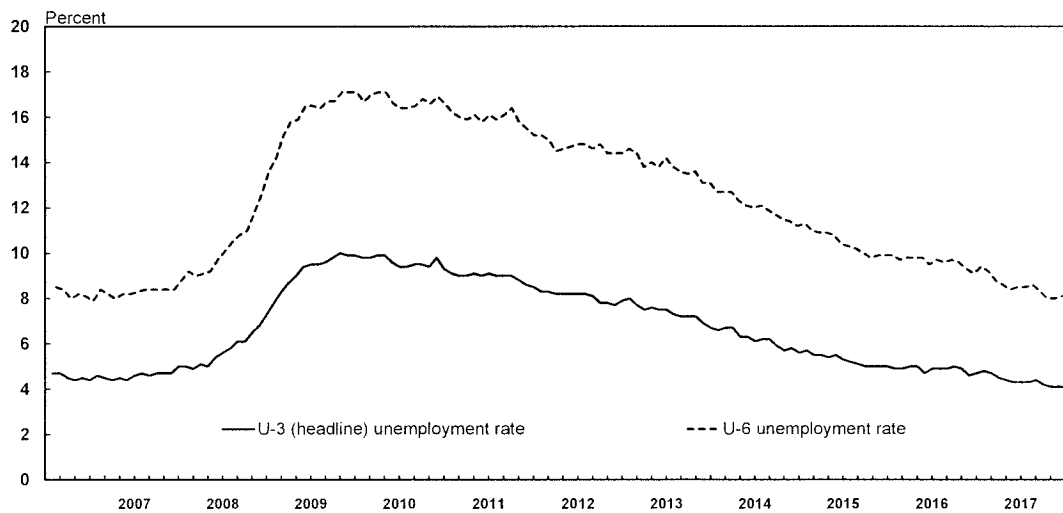
Light Trucks Lead the Way Auto Sales are Weak



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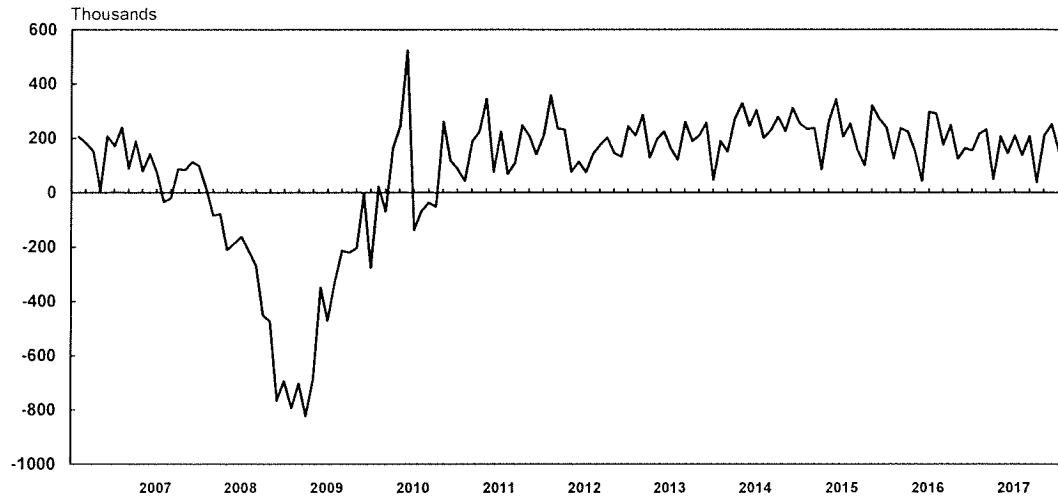
Unemployment Rate Trending Down Since Around 2010



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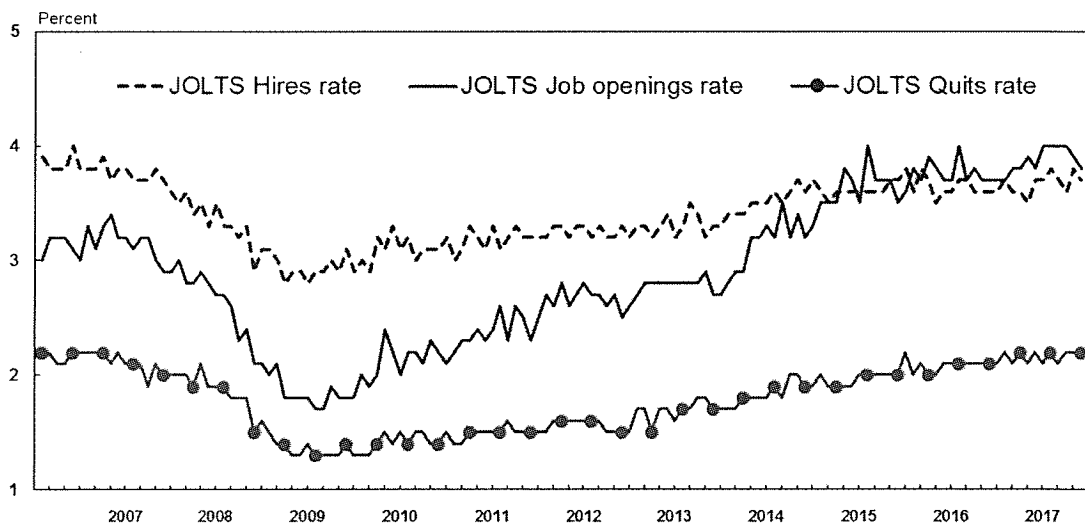
Monthly Payroll Job Gains Slow Deceleration as Labor Market Tightens



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Healthy and Tightening Labor markets



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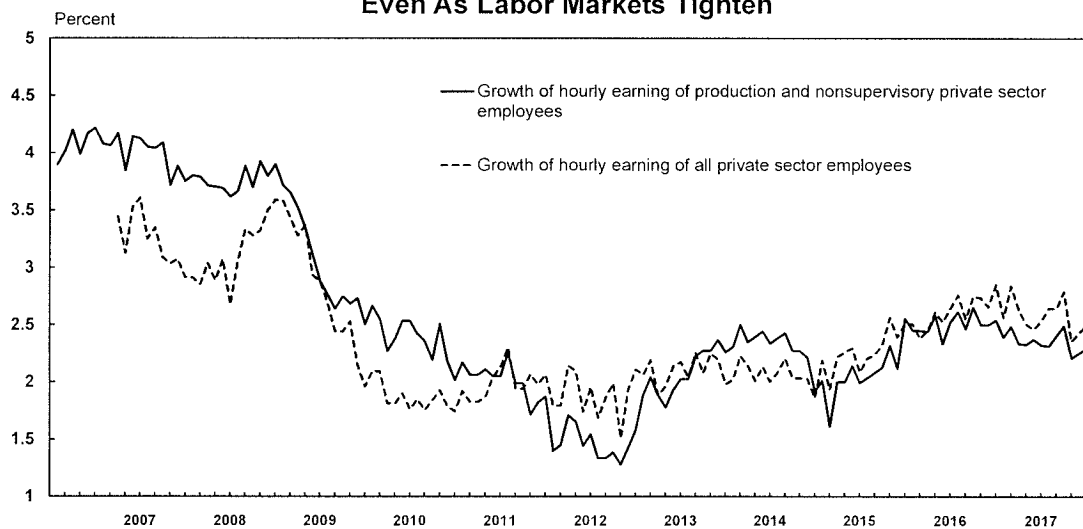
Some Labor Market Slack Remains



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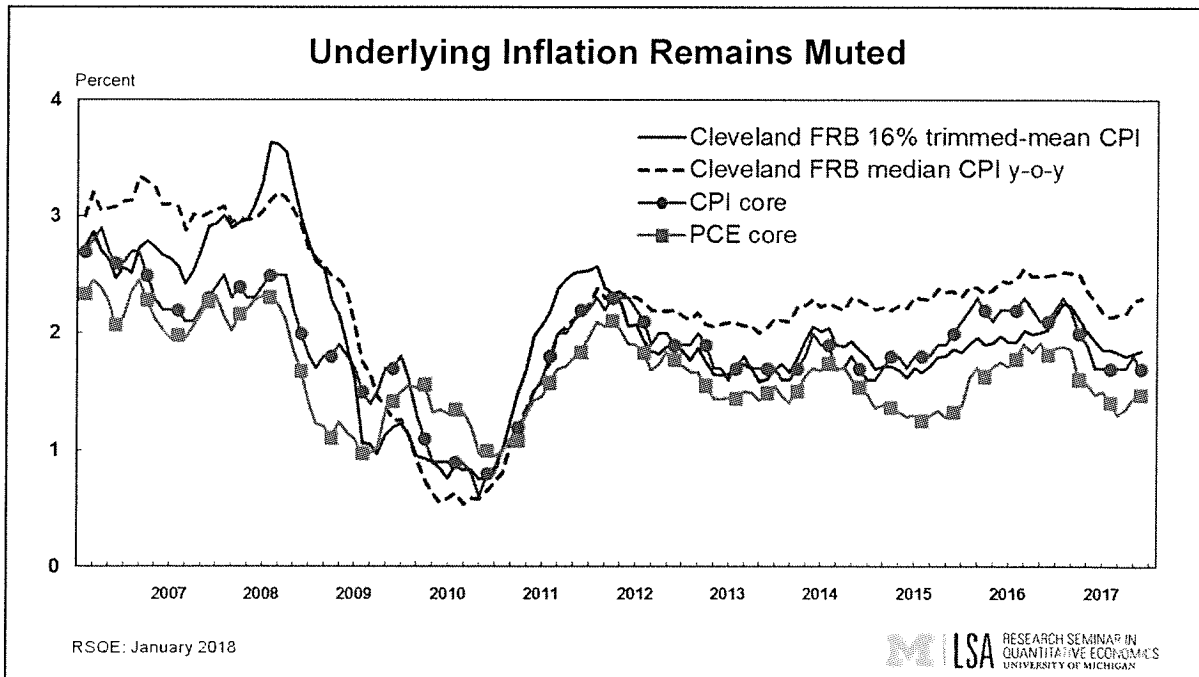
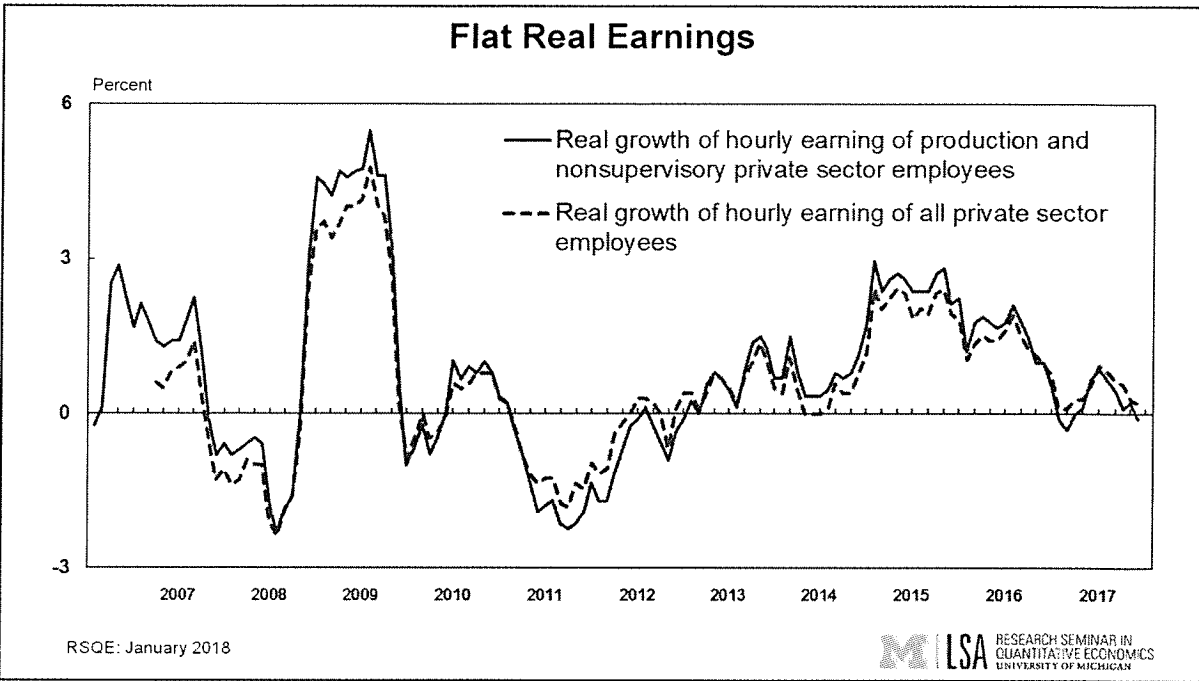
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Unspectacular Nominal Earnings Growth Even As Labor Markets Tighten



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Monetary Policy

➤ Federal funds rate path

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

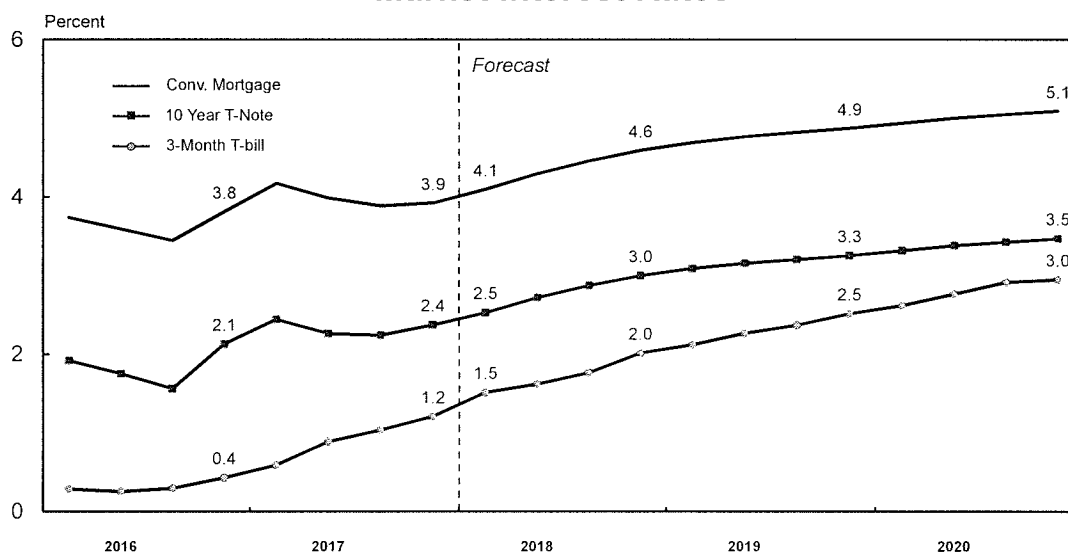
➤ New leadership at the Fed in 2017

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

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Market Interest Rates



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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

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Fiscal Policy Tax Cuts and Jobs Act (TCJA) Enacted

➤ Personal tax provisions, most sunseting 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

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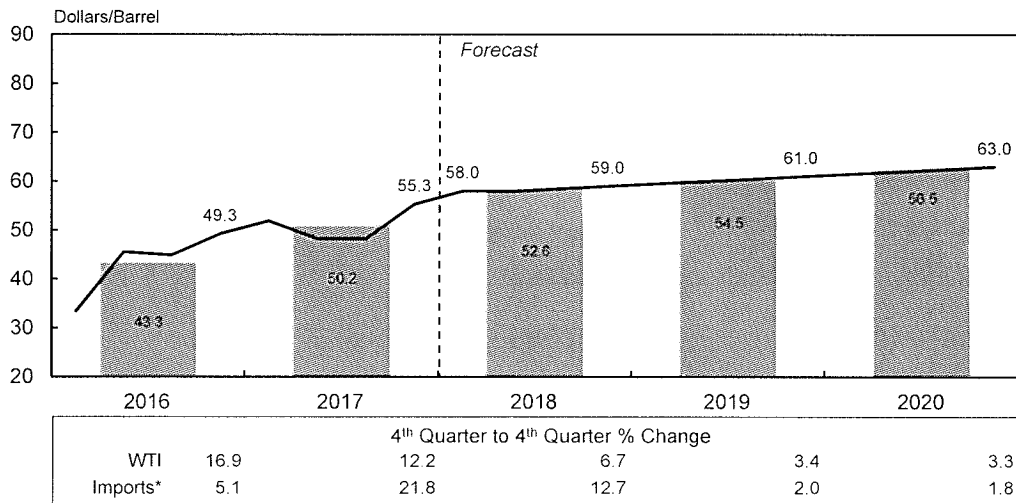
Federal Budget, NIPA Basis (Billions of Dollars)

	FY'16	FY'17	Forecast		
			FY'18	FY'19	FY'20
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

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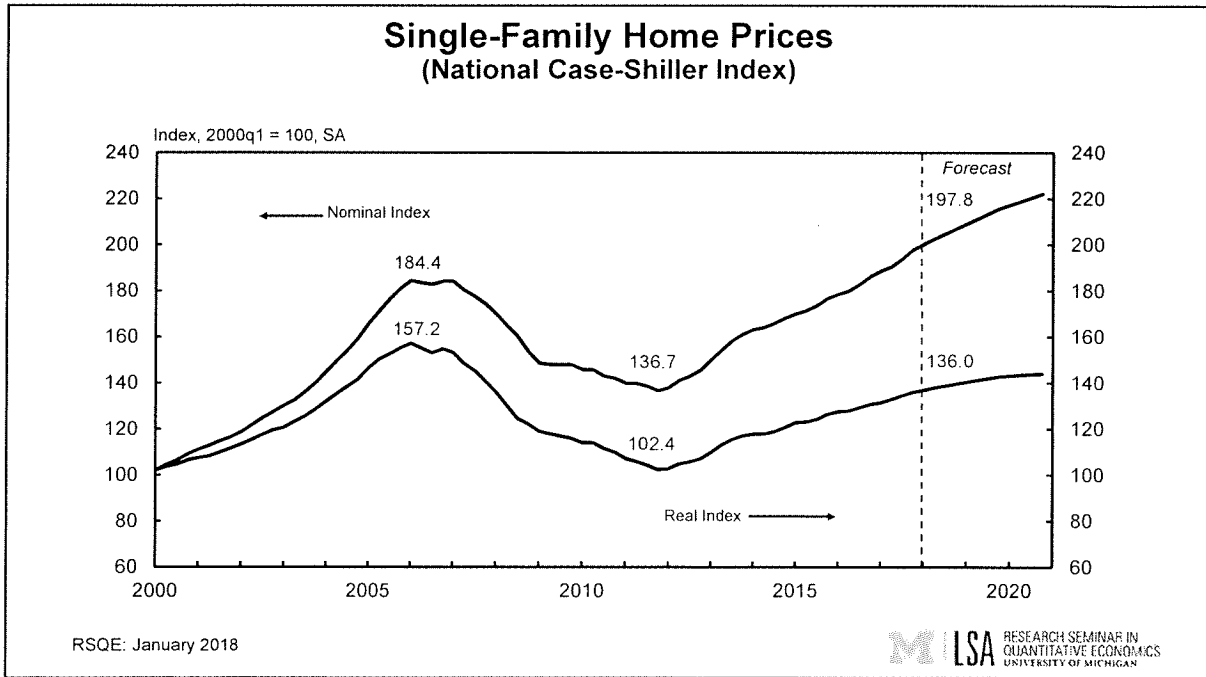
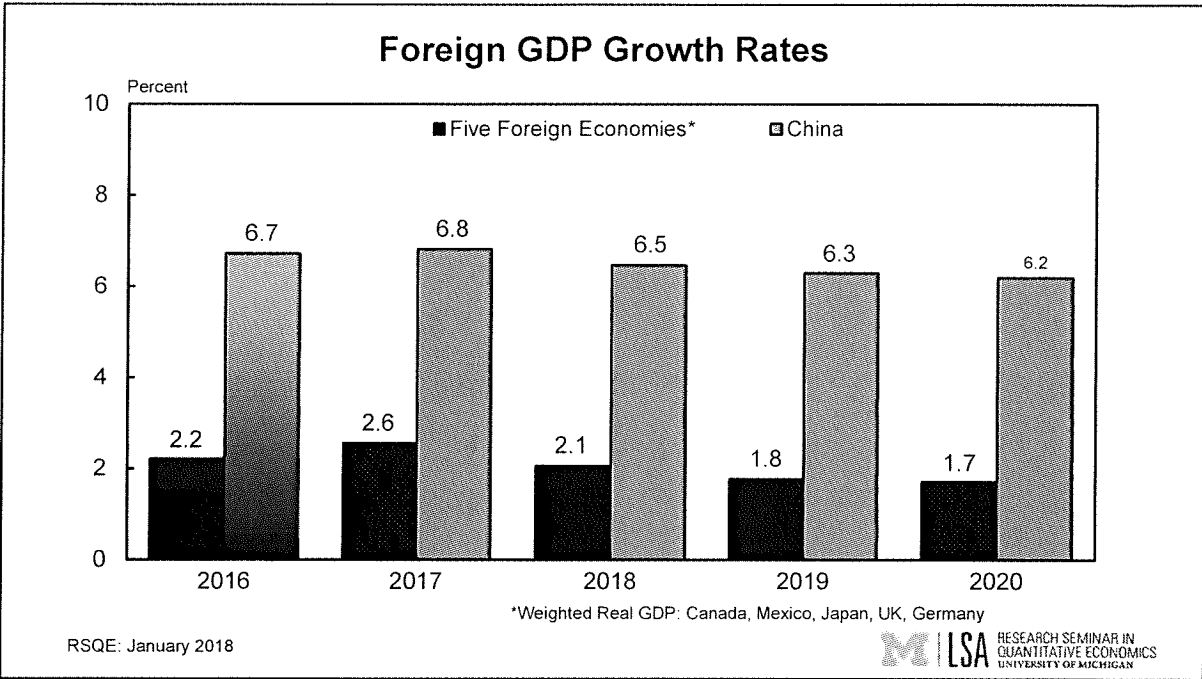
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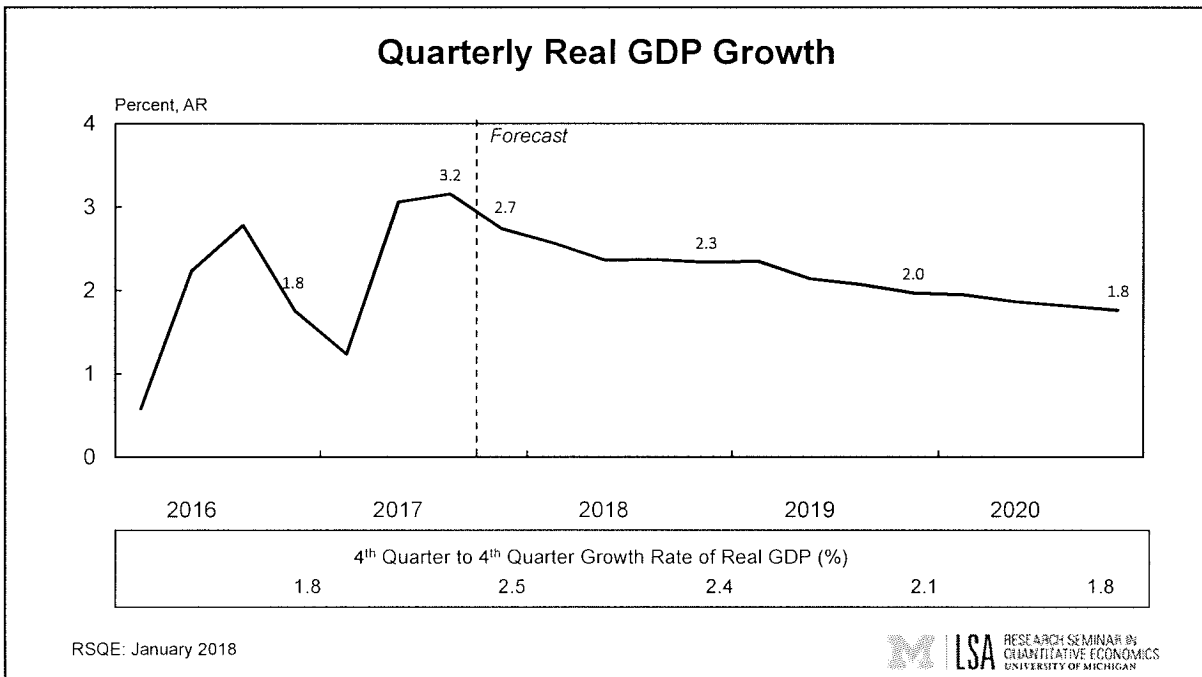
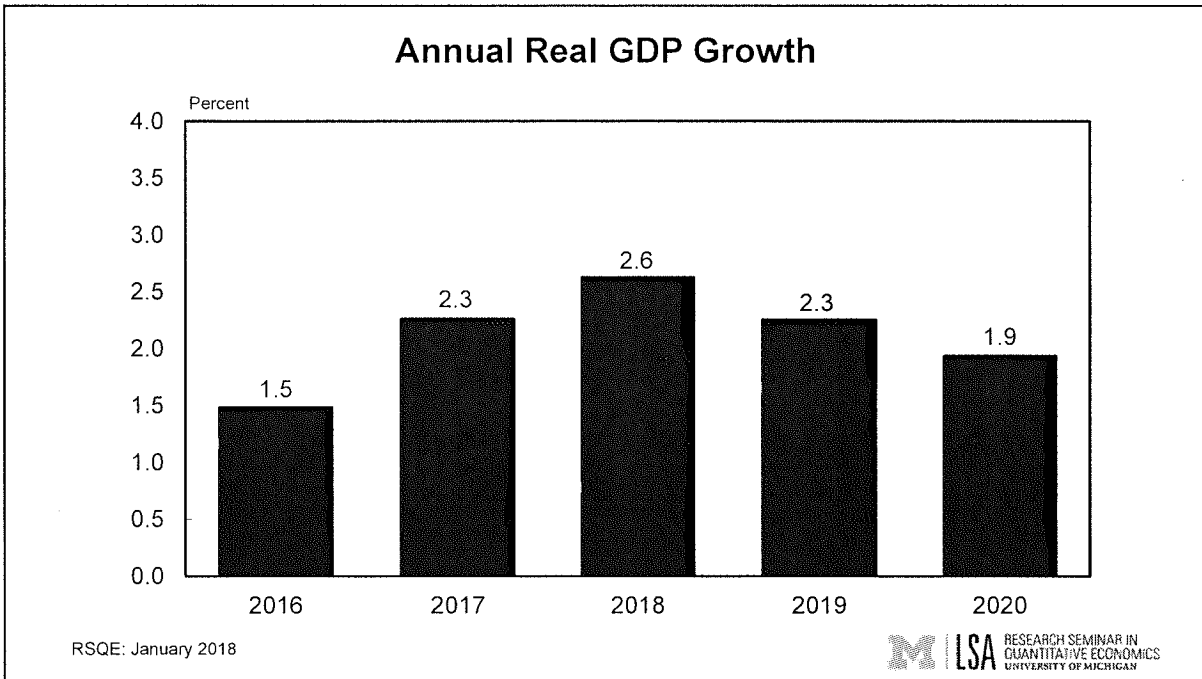
Price of Oil (West Texas Intermediate Crude)

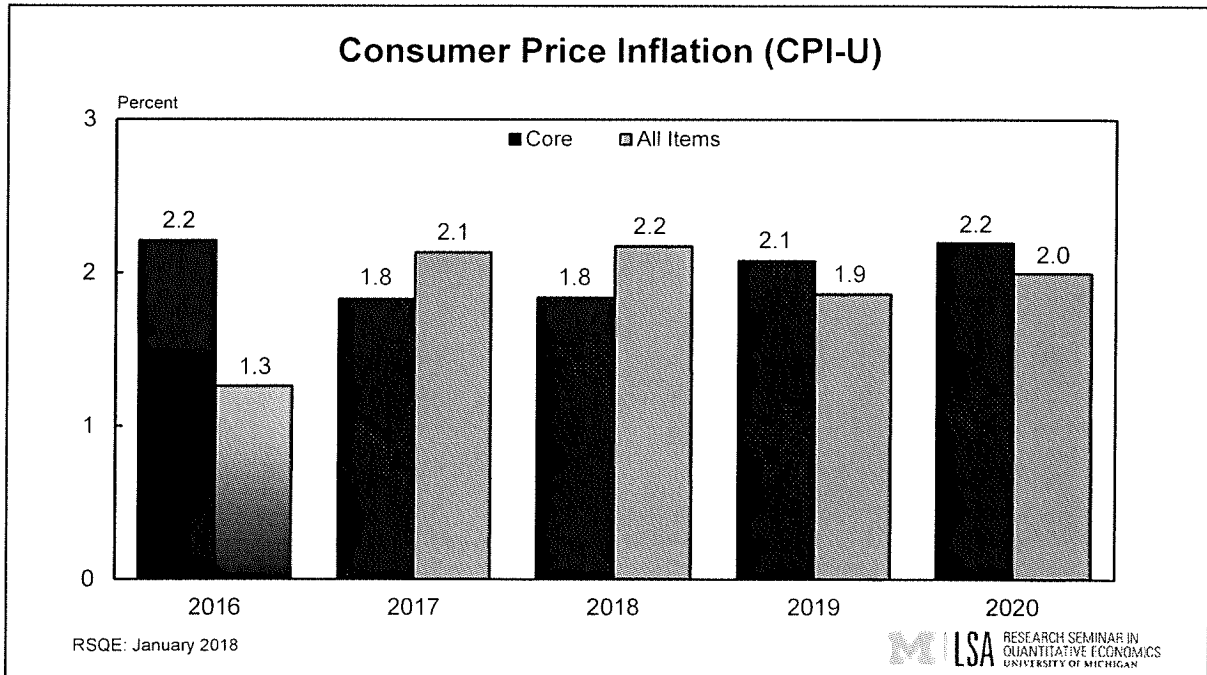
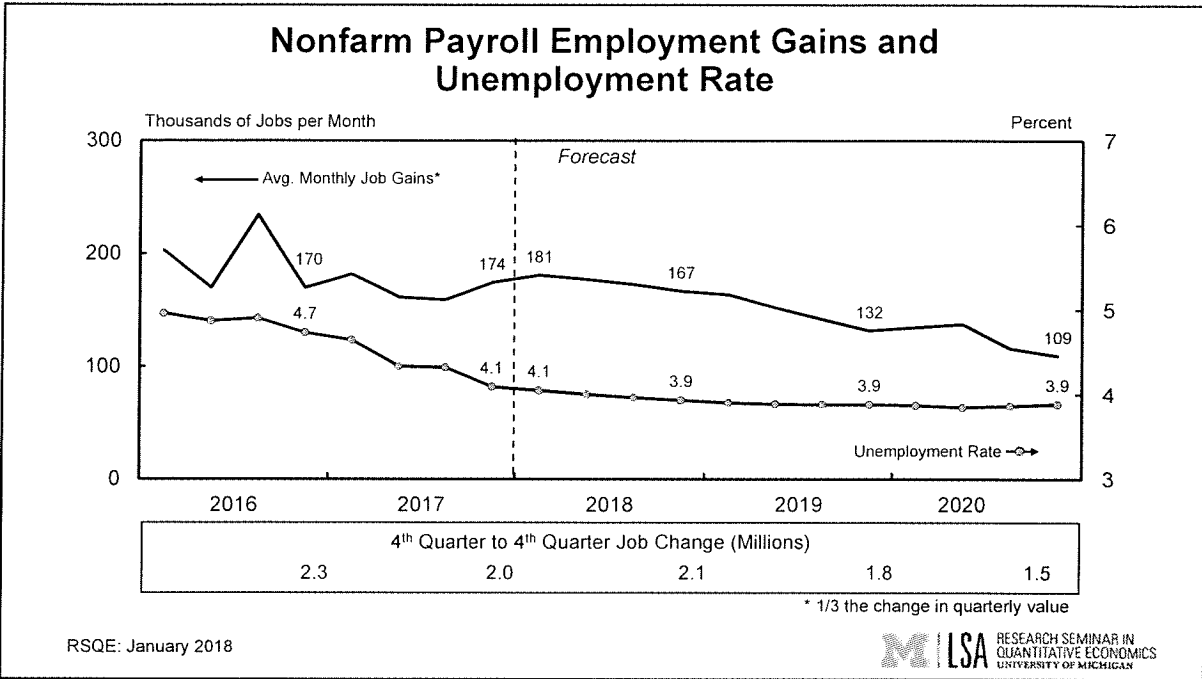


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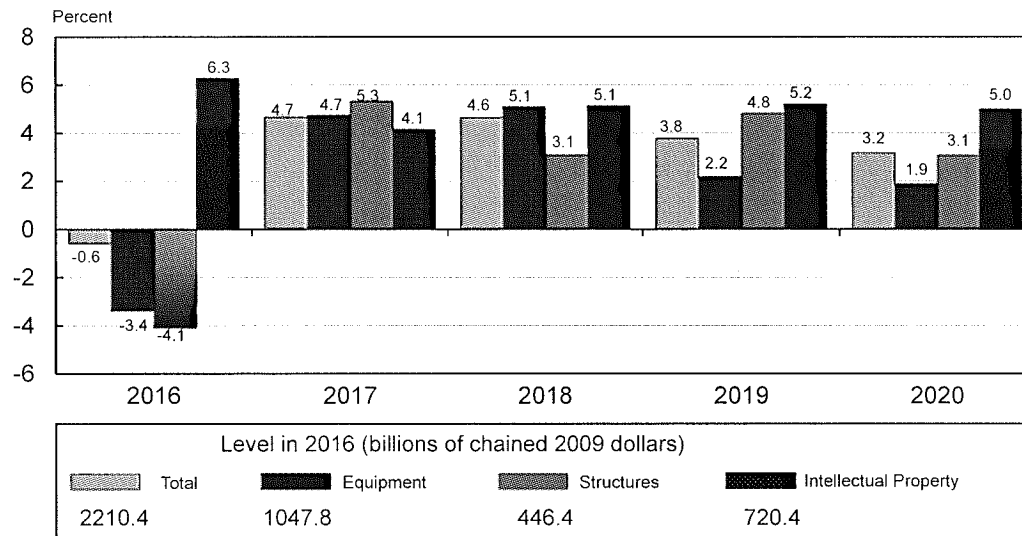
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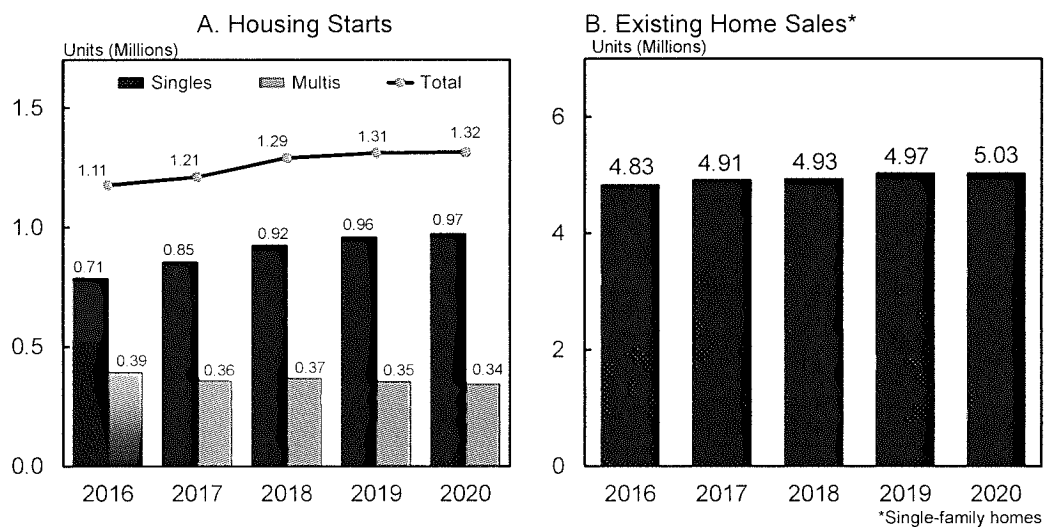
Growth of Nonresidential Fixed Investment



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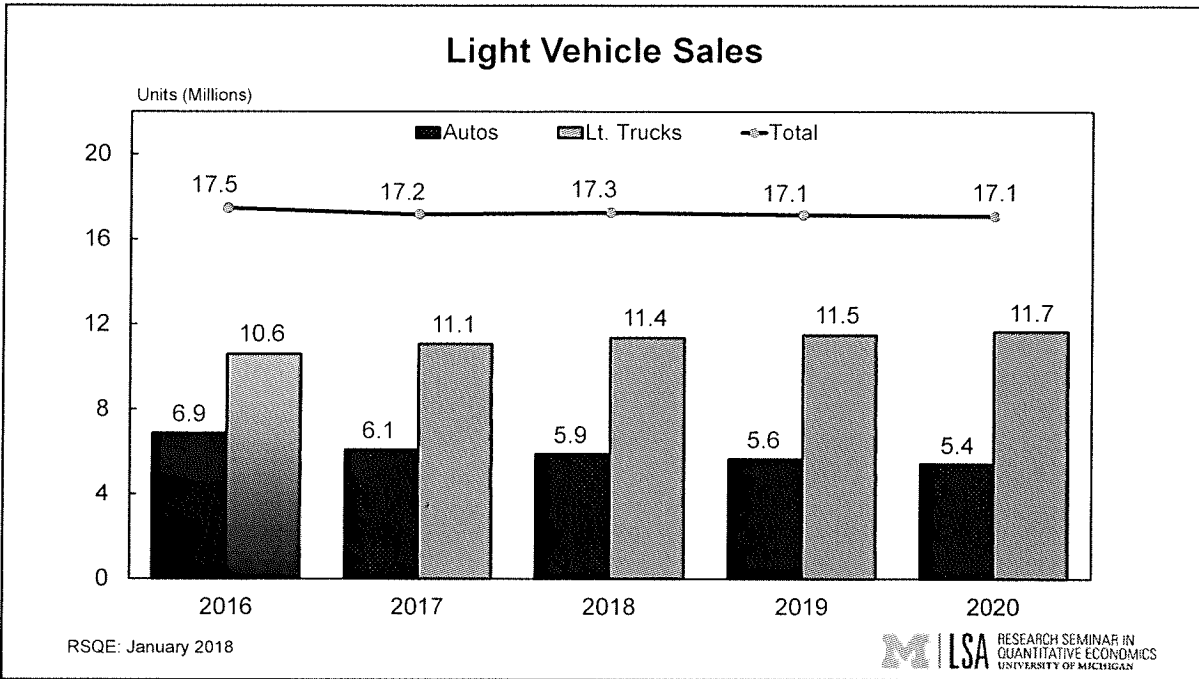
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Housing Market



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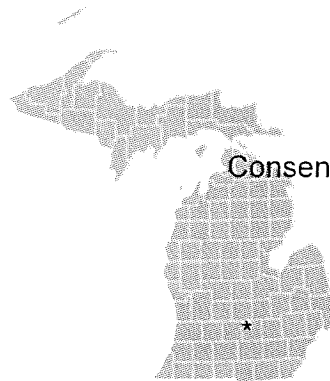
Risks to Our Outlook

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

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The Michigan Economic Outlook For 2018–20

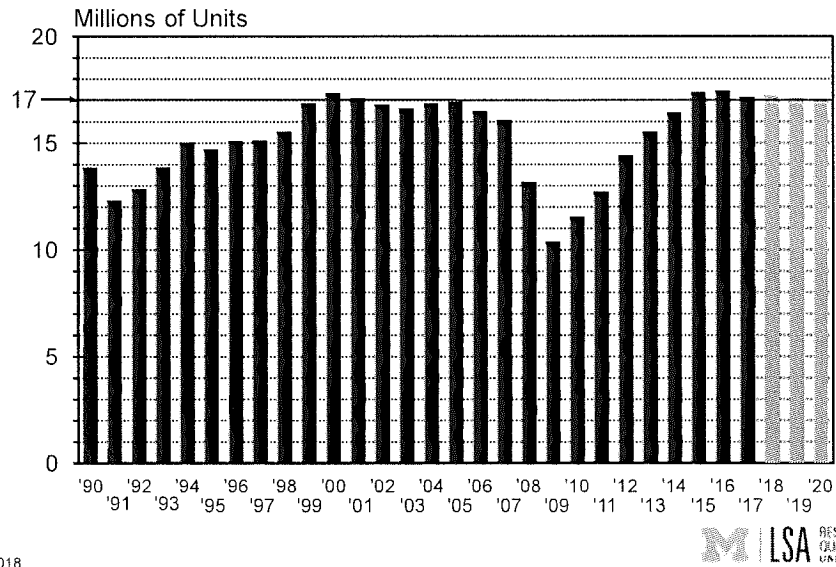


Consensus Revenue Estimating Conference

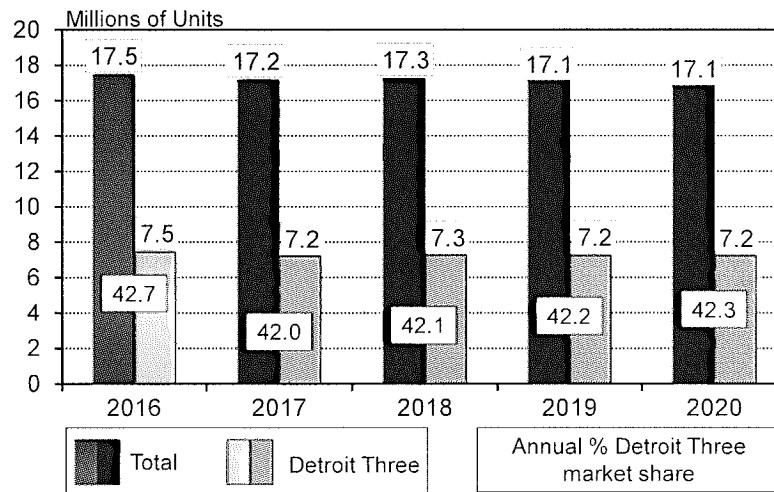
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U.S. Light Vehicle Sales, 1990–2020



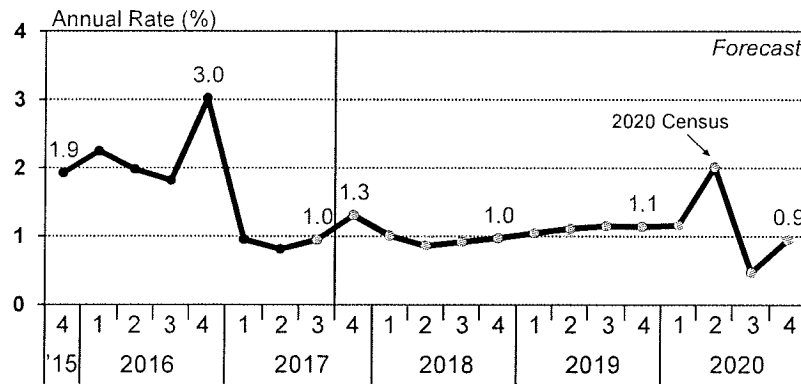
U.S. Light Vehicle Sales Total vs. Detroit Three, 2016–20



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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

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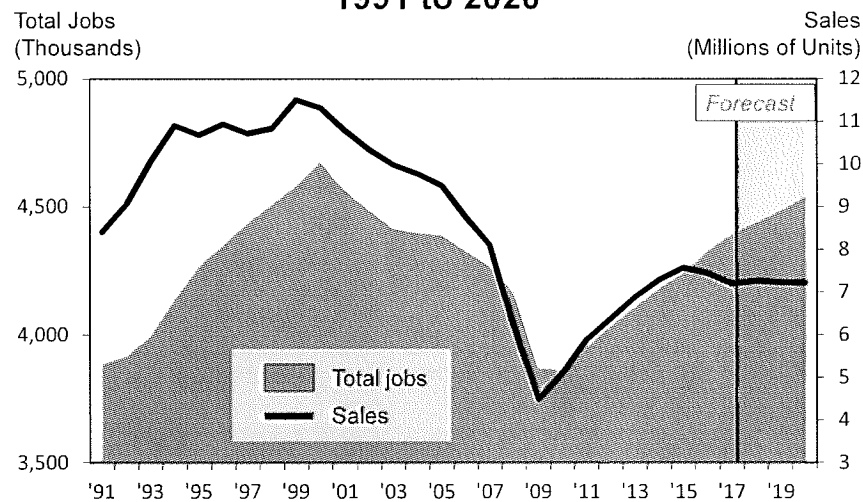
Change in Payroll Employment by Industry Sector (Thousands of jobs)

	2015q4– 2016q4	2016q4– 2017q4	2017q4– 2018q4	2018q4– 2019q4	2019q4– 2020q4
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

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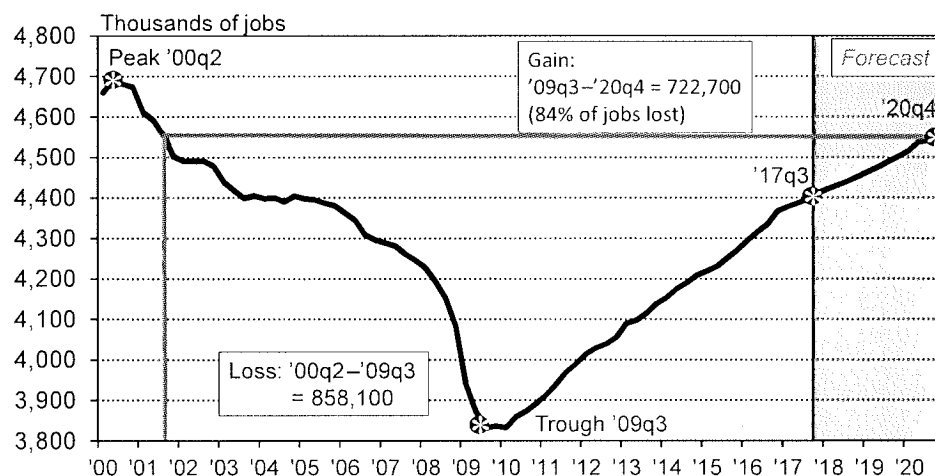
Michigan Total Jobs and Detroit Three Sales of Light Vehicles 1991 to 2020



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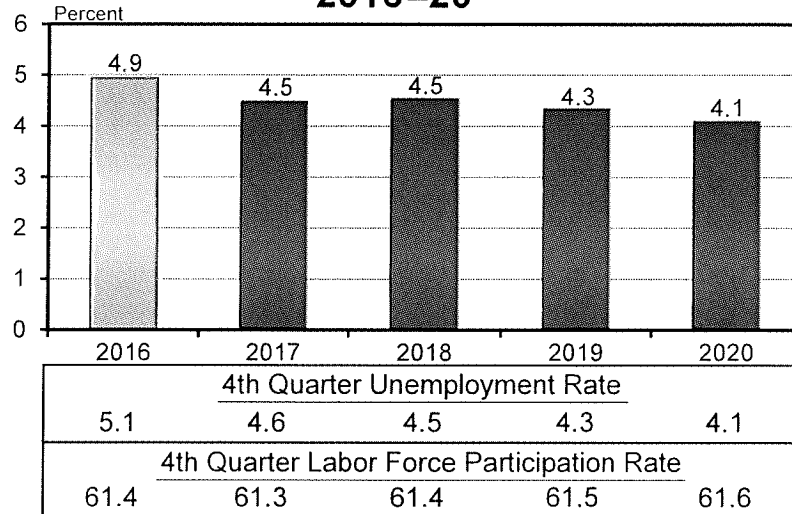
Michigan Wage and Salary Employment First Quarter of 2000 to Fourth Quarter of 2020



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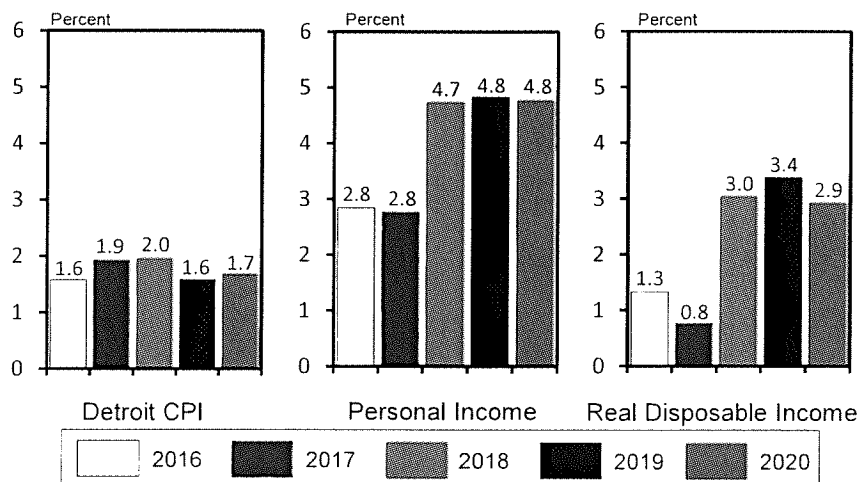
Michigan Unemployment Rate 2016–20



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Michigan Inflation and Income Growth



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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

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Risks to the Forecast

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

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Simulating the Effects of Potential NAFTA Withdrawal



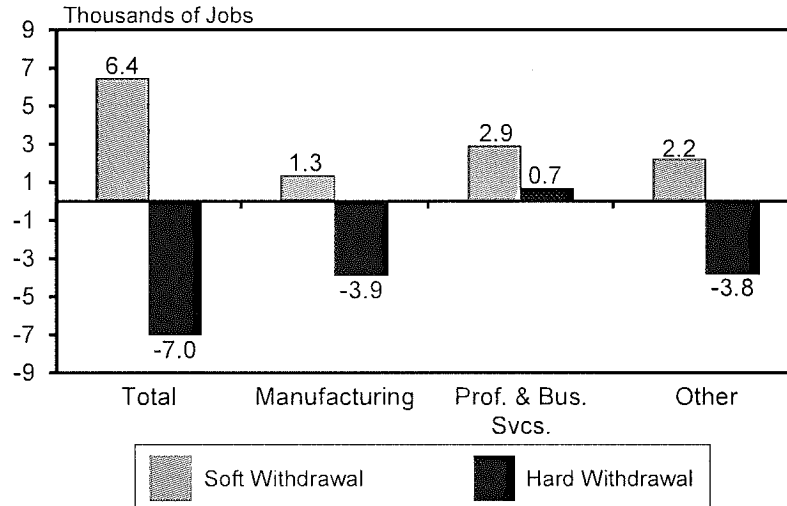
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NAFTA Withdrawal Assumptions

- 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

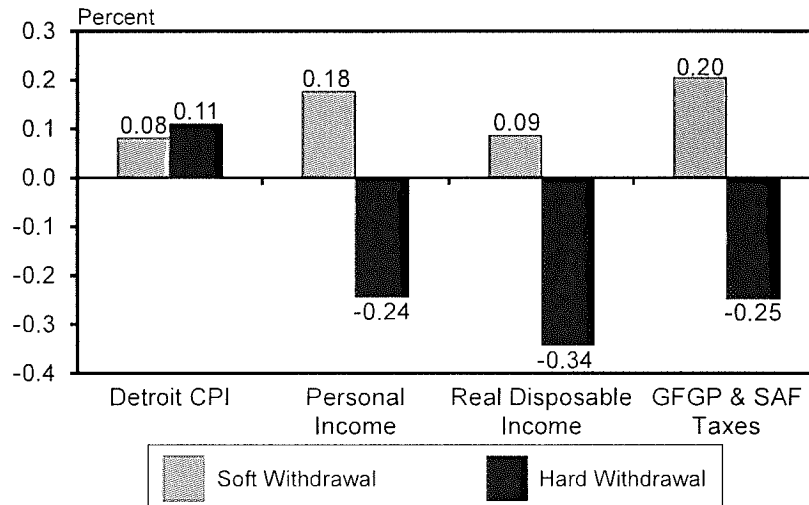
Michigan Payroll Employment Effects of NAFTA Withdrawal Scenarios – 2020



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



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State Revenues by Fiscal Year
(Millions of dollars, except as noted)

	Actual	RSQE Forecast		
	2017 ^P	2018	2019	2020
<u>General Fund General Purpose</u>				
Personal income tax	6765	7176	7191	7341
(% change)	(0.9)	(6.1)	(0.2)	(2.1)
Consumption taxes	2178	2140	2239	2283
(% change)	(-7.9)	(-1.7)	(4.6)	(2.0)
Sales	1271	1260	1301	1345
Use	614	589	650	650
Other consumption	294	290	288	288
Business taxes	814	689	779	762
(% change)	(106.9)	(-15.4)	(13.2)	(-2.3)
MBT/GBT/Corporate income	420	252	337	310
Other business	394	436	442	452
Other GFGP taxes	87	98	104	110
GFGP tax revenue	9844	10103	10313	10496
(% change)	(3.0)	(2.6)	(2.1)	(1.8)
Nontax revenue	453	375	364	354
GFGP revenue	10296	10478	10677	10850
(% change)	(2.8)	(1.8)	(1.9)	(1.6)
<u>School Aid Fund</u>				
SAF taxes	11751	12178	12608	13035
(% change)	(4.6)	(3.6)	(3.5)	(3.4)
Lottery transfer	924	938	955	966
(% change)	(4.0)	(1.5)	(1.9)	(1.2)
Earmarked state SAF revenue	12675	13116	13563	14001
(% change)	(4.6)	(3.5)	(3.4)	(3.2)
<u>Addendum</u>				
Gross sales and use taxes	9324	9538	9908	10215
(% change)	(5.8)	(2.3)	(3.9)	(3.1)

^P Preliminary

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