



U, V, L, W???

Understanding the economic consequences of the great virus lockdown

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From February



The Economy has been fine...

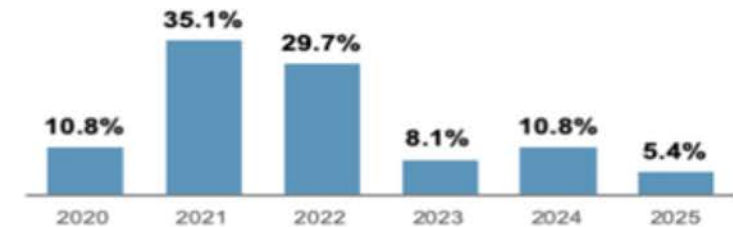


- GDP Growth: Not too hot, not too cold
 - Consumer spending supported by strong fundamentals
 - Housing markets to bounce back solid in 2020
 - Labor markets remain tight, wages on the rise
 - Interest rates down, inflation still constrained
 - Debt markets look very stable
- Reports of the end of of this expansion are highly exaggerated
 - Still a low chance of recession in next 24 months
 - Top risk: Novel Corona virus

WSJ Next Recession Survey Feb 2020

Q&A: Forecasting the Next Downturn

When do you expect the next recession to start?



The easiest forecast: The WSJ Next Recession survey thinks the next recession is one to two years away

The Virus in the Room

- Global Pandemic

- Unprecedented contagiousness, high mortality rate among segments of population
- >2 million afflicted, over 100,000 deaths

- Unprecedented public health actions

- Shelter-in-place rules, closure of large swaths of the economy
- Millions of workers put into unemployment

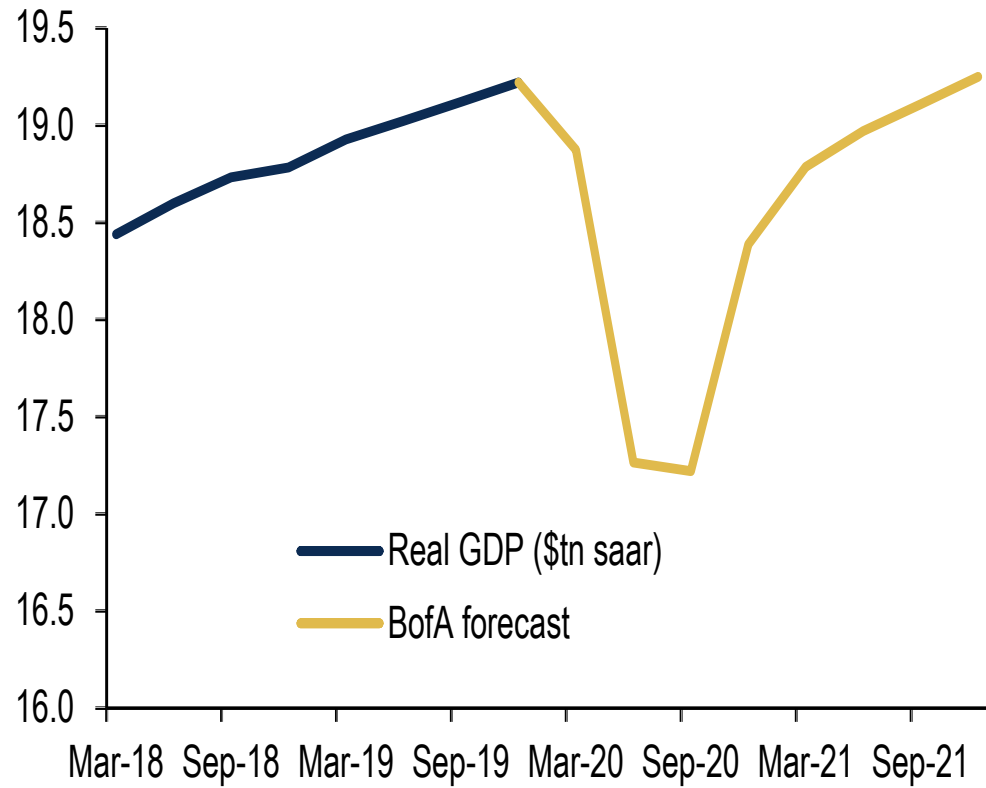
- The question

- How bad will the damage be to the economy?

	2018	2019	2020
	Avg	Avg	Q1
GDP	2.50	2.33	-4.8
Consumption	1.79	1.79	-5.26
Durable goods	0.27	0.41	-1.21
Nondurable goods	0.36	0.41	0.94
Services	1.17	0.97	-4.99
Fixed Inv	0.61	0.02	-0.43
Structures	0.08	-0.19	-0.28
Equipment	0.30	-0.11	-0.91
Intellectual property products	0.40	0.25	0.02
Residential	-0.18	0.07	0.74
Inventories	0.29	-0.35	-0.53
Net exports	-0.43	0.36	1.3
Exports	0.05	0.04	-1.02
Imports	-0.49	0.31	2.32
Government	0.27	0.52	0.13
Federal	0.17	0.28	0.12
State and local	0.09	0.24	0.02

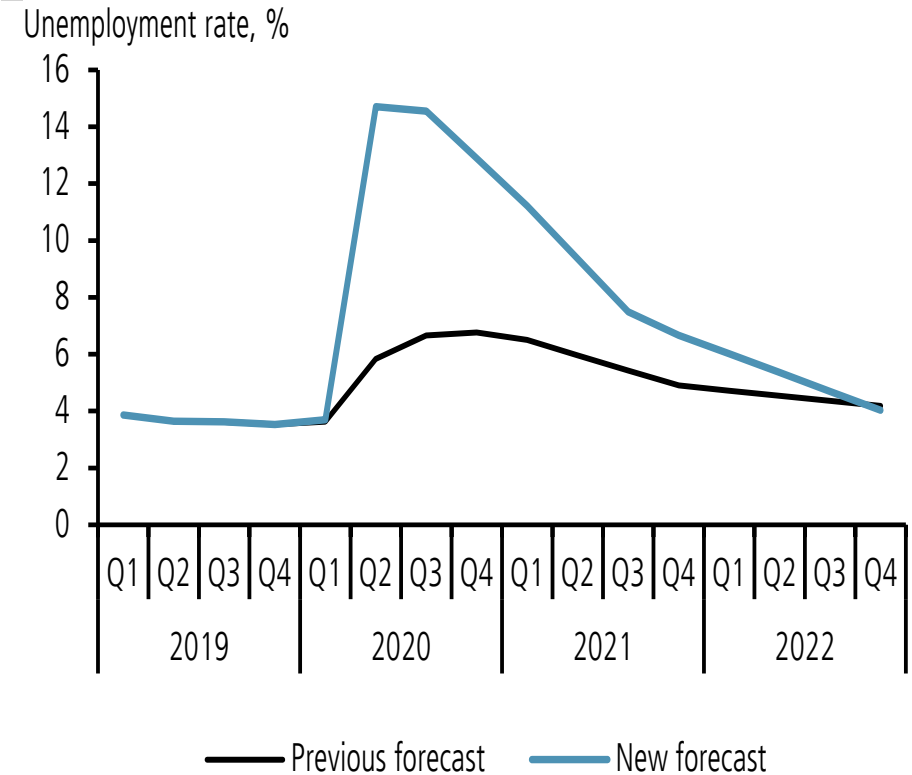
How Bad?

Chart 2: Real GDP trajectory (2012\$ saar, trillions)



Source: BofA Global Research, Bureau of Economic Analysis

Figure 3: Unemployment rate

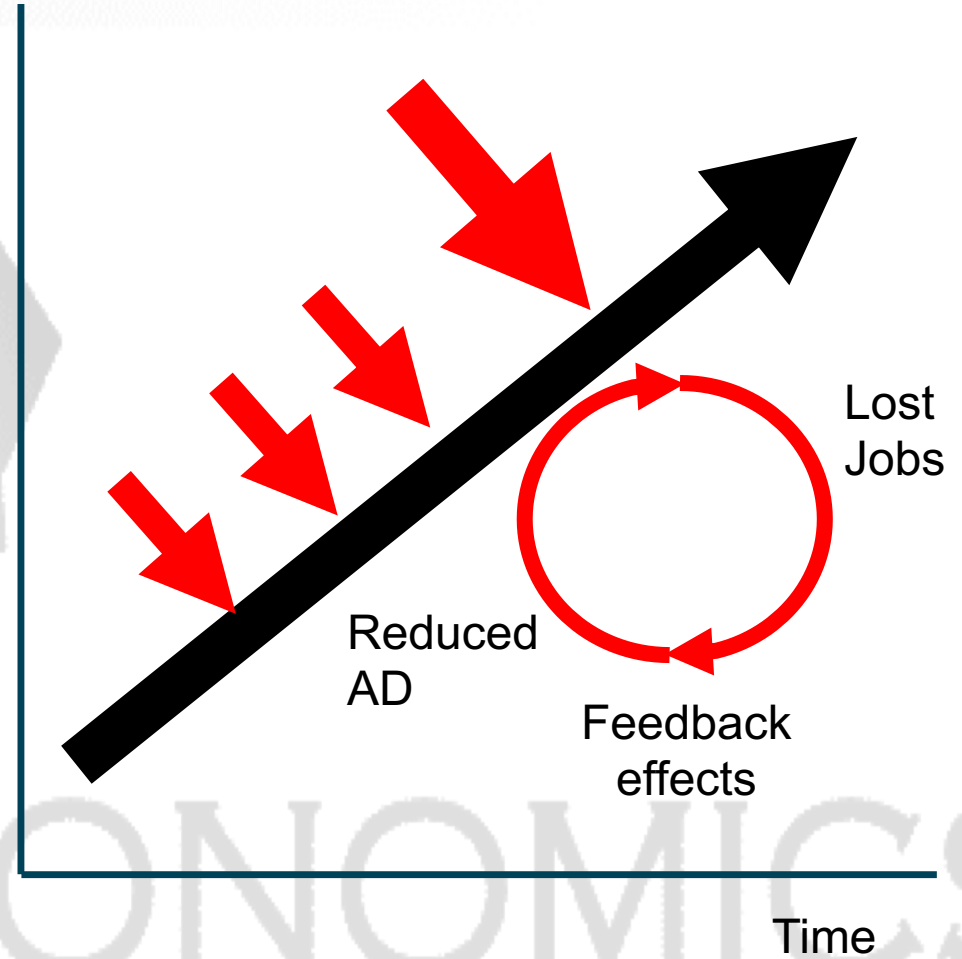


Source: BLS, UBS estimates

What is a Recession?

- Growth is the default
 - Resource accumulation, increases in efficiency
- Recessions are anomalies
 - Always some negative shocks, but not enough to offset growth forces
 - Caused by negative shock to the system that is large, rapid and sustained
 - Compounded by negative feedback loop
 - If there is a major shift in the structure of the economy output can stay below potential for years
 - Employment is a lagging indicator, as hiring and firing is an expensive process

GDP



Roots of the great recession

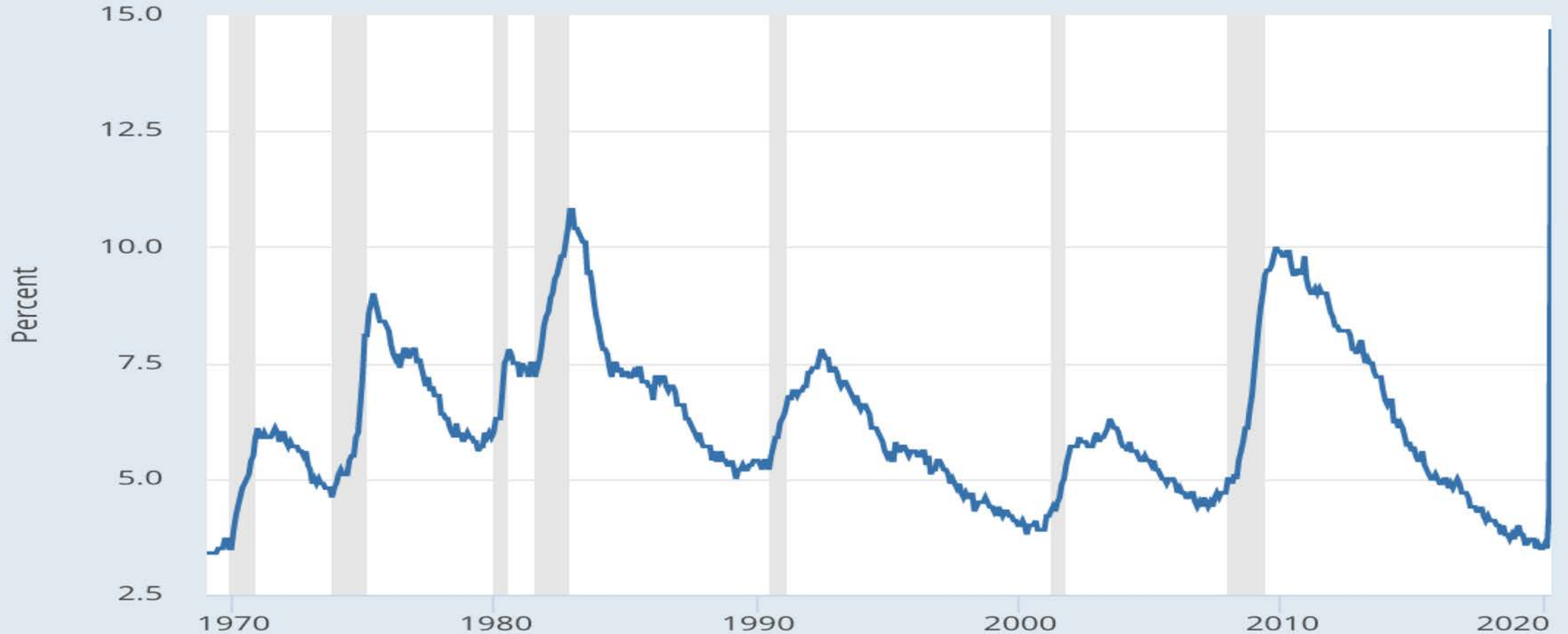


- \$15 trillion in borrowing 01-07
 - Split between consumers and finance
 - Completely collapse of lending standards
- Caused massive imbalances in economy
 - Home production to 2 million plus per year, vacancies grow to record level
 - Home prices / mortgage borrowing peaking at 15% annually
 - Consumer savings falling to 2% of DPI
 - Trade deficit widened to 6% of GDP
- Wheels started falling off train late-06
 - Housing market / mortgage lending start massive deceleration
 - Housing delinquencies started rising early 07
- Great Recession start: Dec 07
 - Millions of jobs lost permanently in construction, real estate, finance, retail
 - Secondary shocks to system broad based, 8 million job losses overall
 - 6 quarter recession 5.5% loss GDP
 - Not back to normal levels of unemployment until 2015

Employment and Recessions



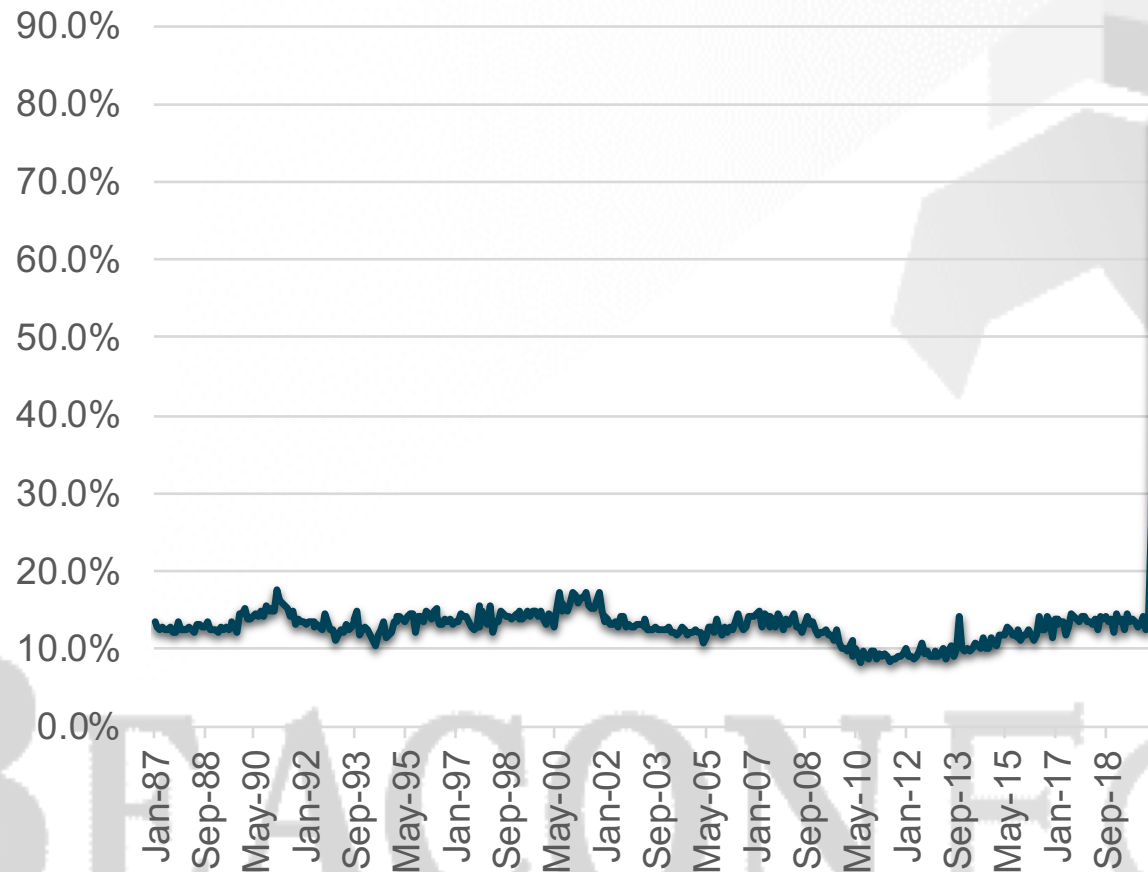
FRED  — Unemployment Rate



Employment and Recessions



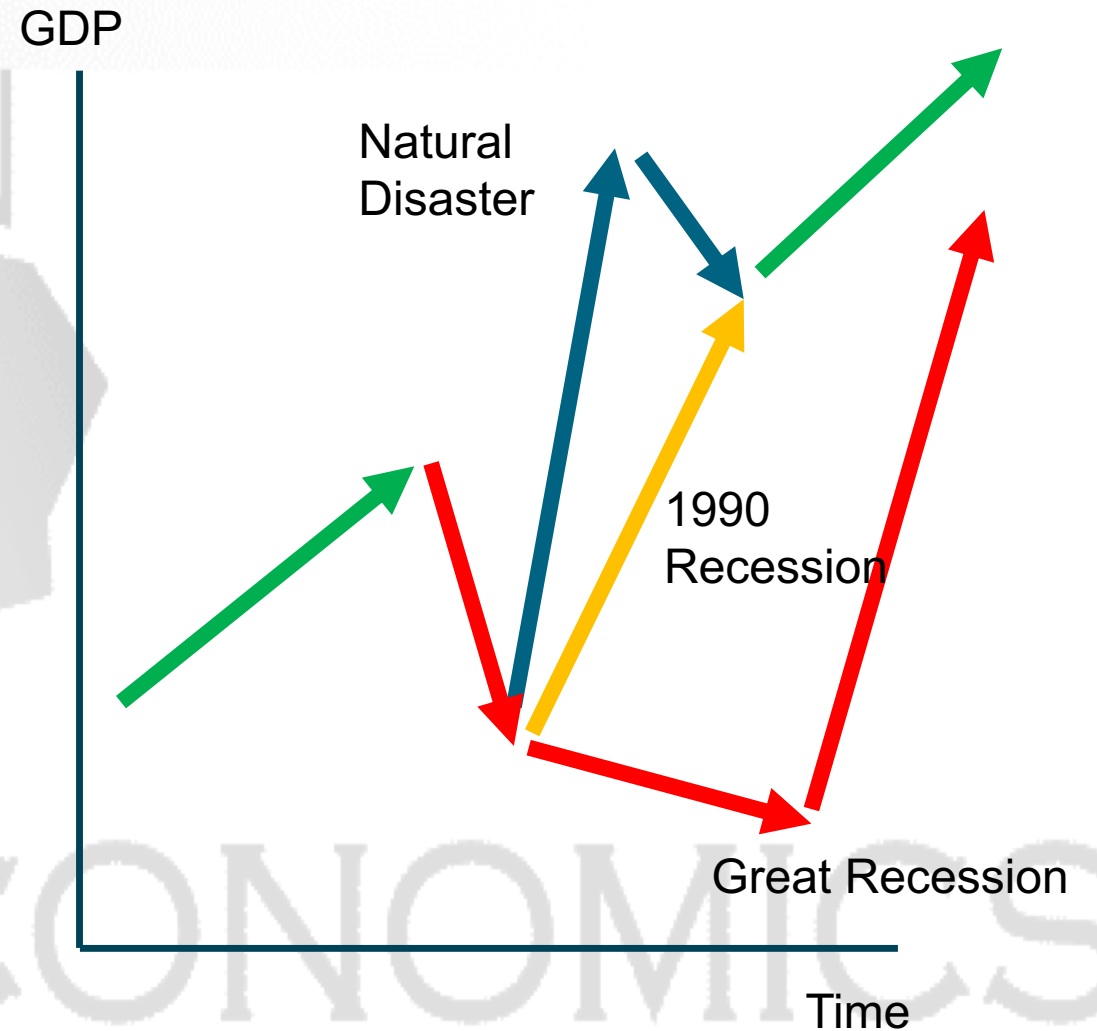
Share of Unemployed on Temporary Layoff



	Apr.	Apr.	
	2019	2020	
NUMBER OF UNEMPLOYED			
Total unemployed	5,387	22,504	17,117
On temporary layoff	574	17,878	17,304
Permanent job losers	1,287	1,951	664
Completed temporary jobs	623	555	-68
Job leavers	685	520	-165
Reentrants	1,761	1,329	-432
New entrants	457	271	-186

This is not a typical business cycle

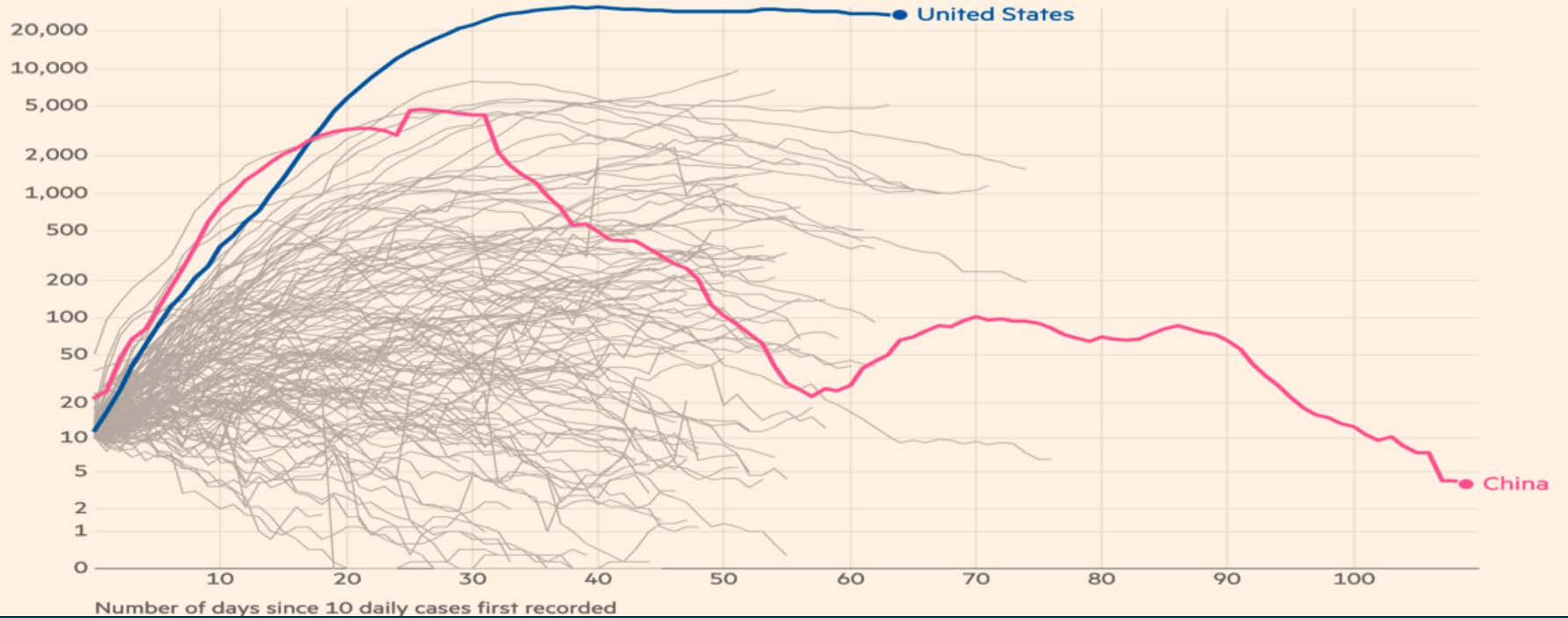
- Shock to system is a function of public health mandates
 - Very large, rapid—but not sustained
 - No reason for major shift in structure of economy
 - Job losses being seen are not (yet) permanent
- The harm to economy is building up now
 - Loss of revenue / incomes
 - Supply chain effects
- Broad range of outcomes
 1. How long will the shutdowns last?
 2. How deep are the closures?
 3. How healthy the economy was prior to the pandemic
 4. What the government does to intervene
 5. Will there be a major shift in post virus spending patterns



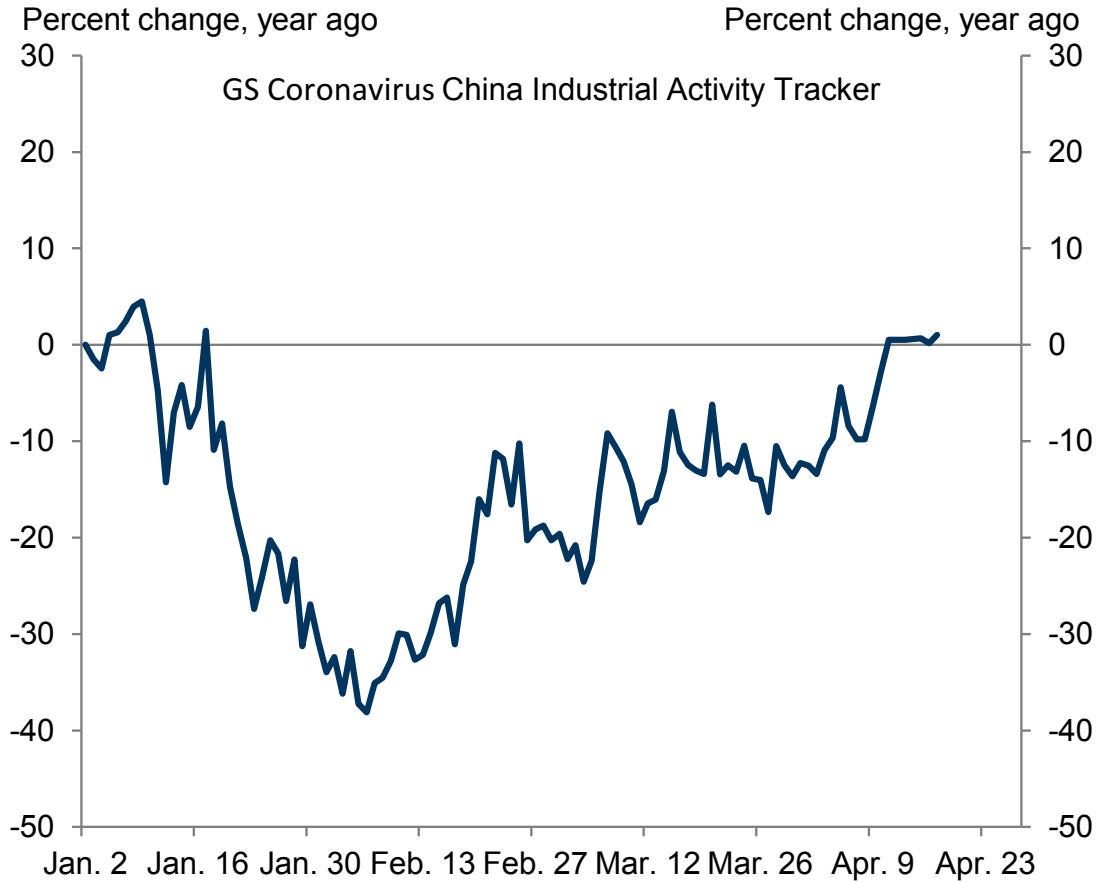
#1: How Long?

New confirmed cases of Covid-19 in United States and China

Seven-day rolling average of new cases, by number of days since 10 average cases first recorded

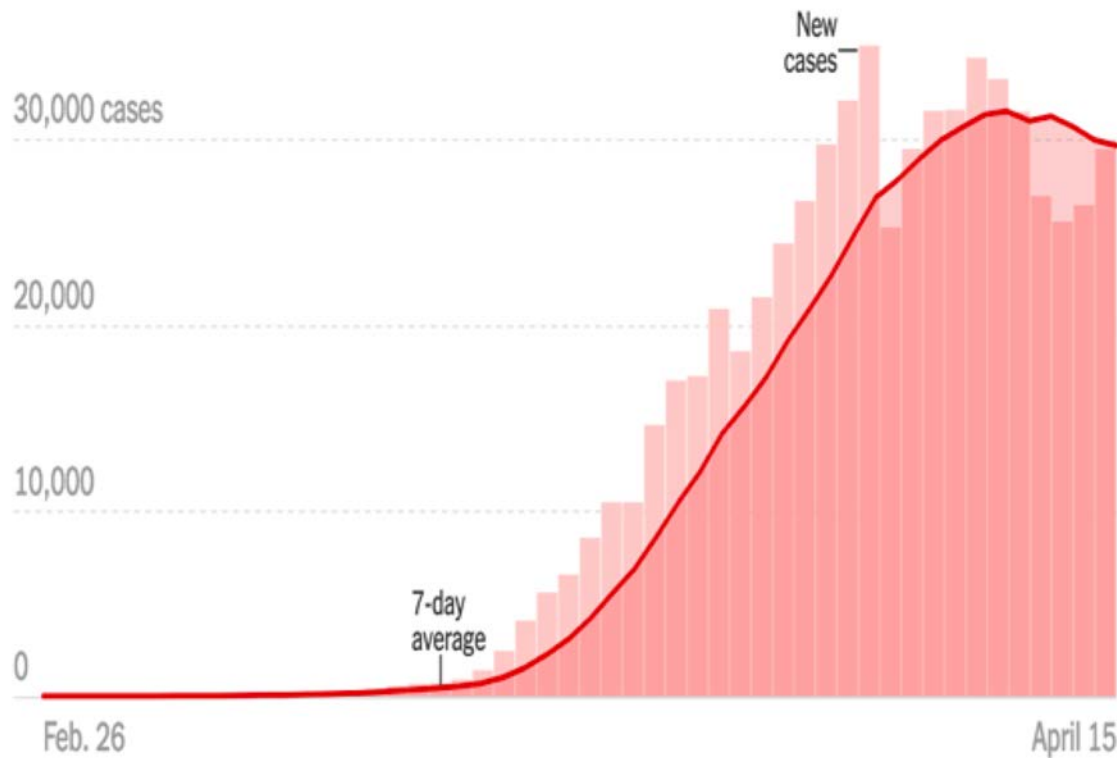


GS High Frequency Data



How long here?

New reported cases by day in the United States

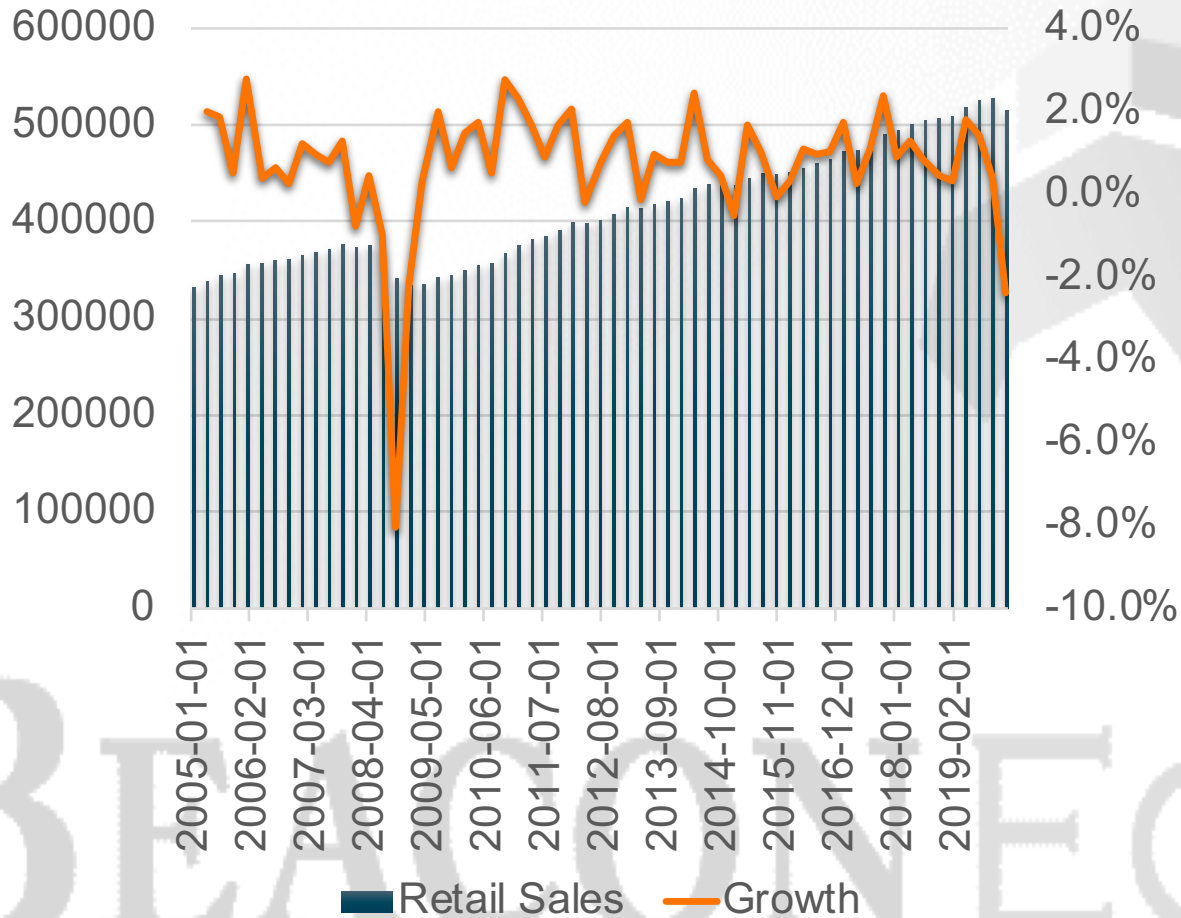


- We are already over the peak of new cases
 - Efforts are paying off
 - Need to see substantial declines
- Mid-May for partial reopening
 - Some activities will be allowed
 - Some controls will be left in place
 - Look for small outbreaks
- Q3 will be largely open for business
 - Some lagging behavioral issues
- Will there be another major resurgence?
 - Running down the learning curve
 - Testing systems in place

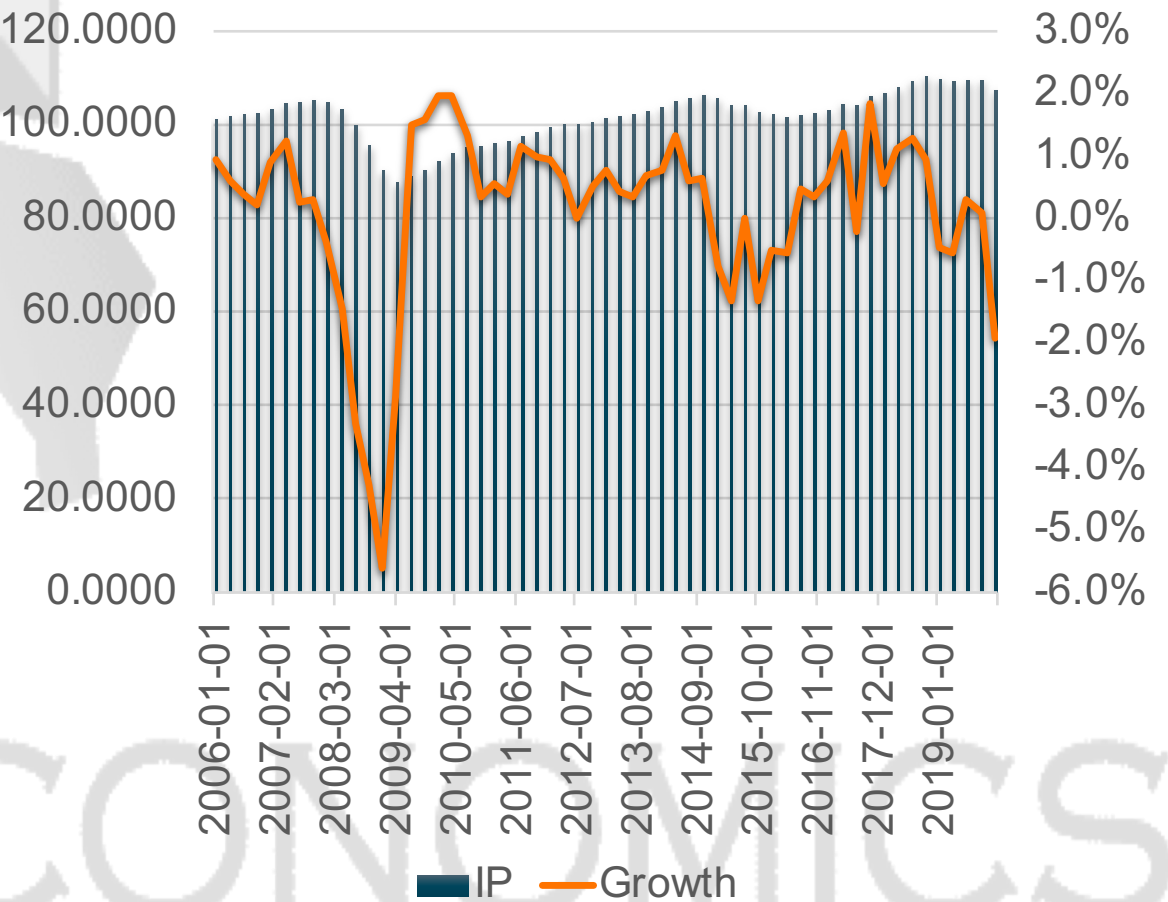
#2: How deep?



Retail Sales to Q1



Industrial Production



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Q2 Growth: -15% to -25% (SAAR)

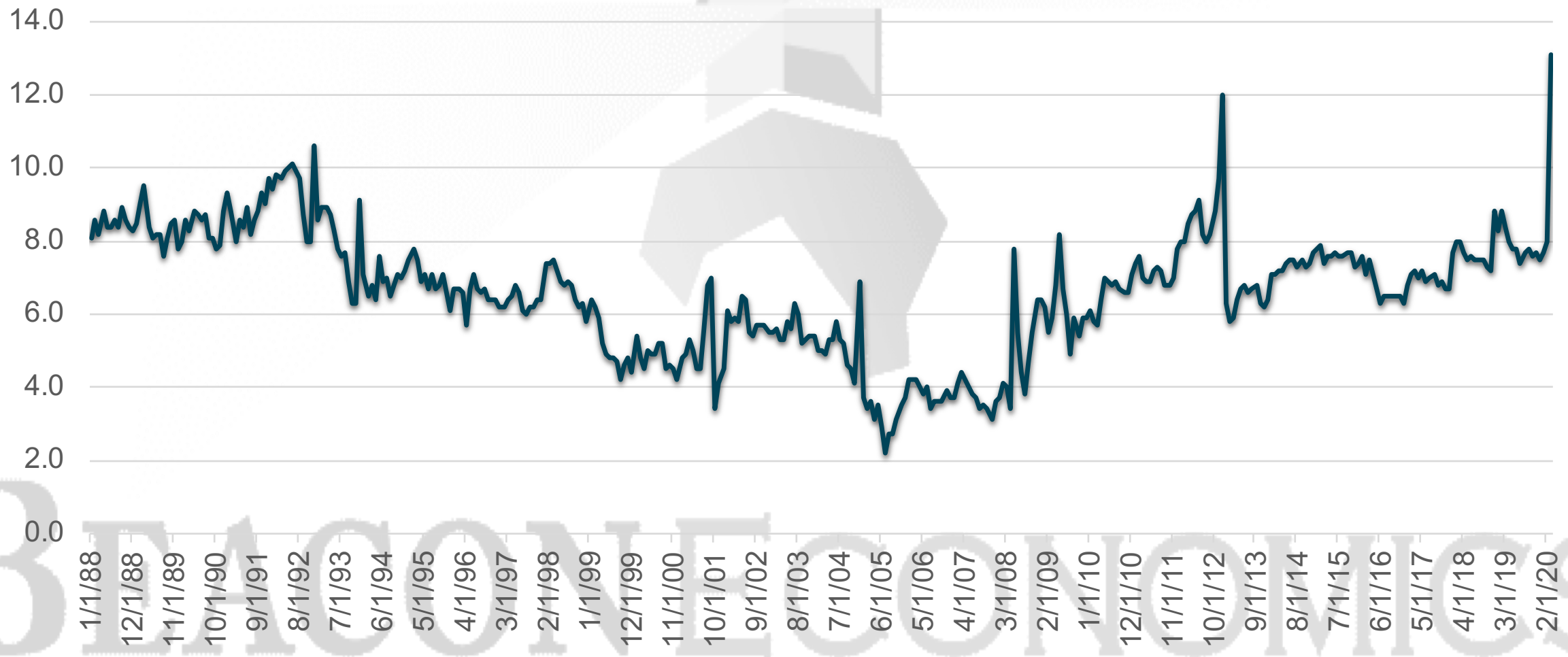


Compensation by Sector	2019:Q3		
Government	2063.7	1.0	2063.7
Health care	1321.2	0.9	1185.4
Manufacturing	1145.0	0.9	1030.5
Professional services	1122.6	1.0	1122.6
Finance and insurance	849.9	0.9	764.9
Retail trade	654.0	0.5	327.0
Construction	588.6	0.9	529.7
Wholesale trade	566.6	0.8	453.2
Administrative	492.8	1.0	492.8
Accommodation and food	422.2	0.5	211.1
Information	407.7	1.0	407.7
Transportation warehousing	396.3	0.9	356.7
Management of companies	367.8	1.0	367.8
Other services	338.0	0.8	253.5
Educational services	207.4	1.0	207.4
Real estate	168.2	0.9	151.4
Arts, entertainment	122.8	0.5	61.4
Mining, quarrying	87.3	0.8	69.8
Total	11322.1		10056.8
Total decline in GDP (no supply chain)			-8%

The Balance between spending and incomes



US Personal Savings Rate



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3: How healthy an economy?



Y-o-Y Growth GDP

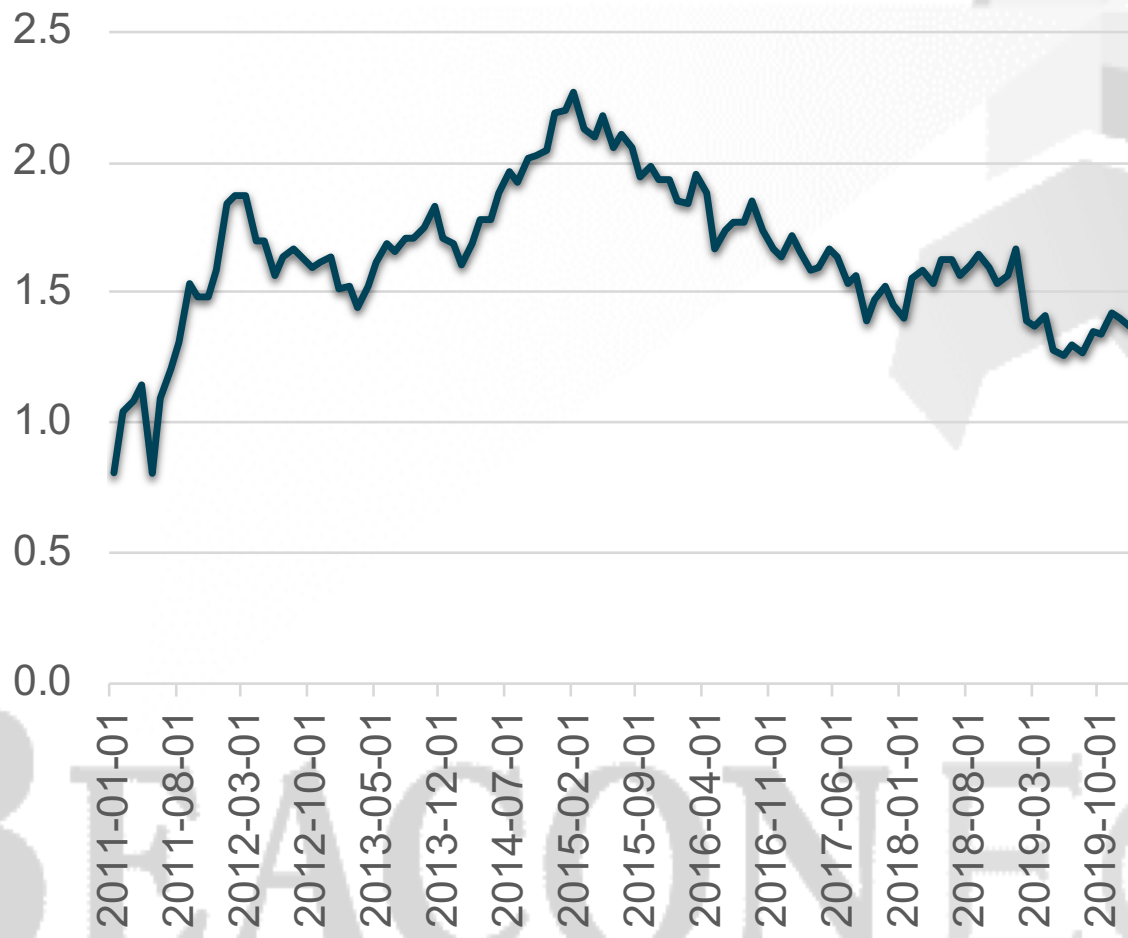


	2017	2018	2019
GDP	2.80	2.50	2.33
Final Demand	3.02	2.65	2.35
Consumption	2.00	1.79	1.78
Goods	1.06	0.62	0.85
Services	0.94	1.17	0.93
Fixed Inv	0.86	0.61	0.05
Structures	0.05	0.08	-0.21
Equipment	0.49	0.30	-0.09
IPP	0.17	0.40	0.29
Residential	0.16	-0.18	0.06
Change inventories	-0.06	0.29	-0.38
Net exports	-0.16	-0.43	0.35
Exports	0.66	0.05	0.02
Imports	-0.82	-0.49	0.33
Government	0.15	0.27	0.52
Federal	0.11	0.17	0.28
State and local	0.04	0.09	0.24

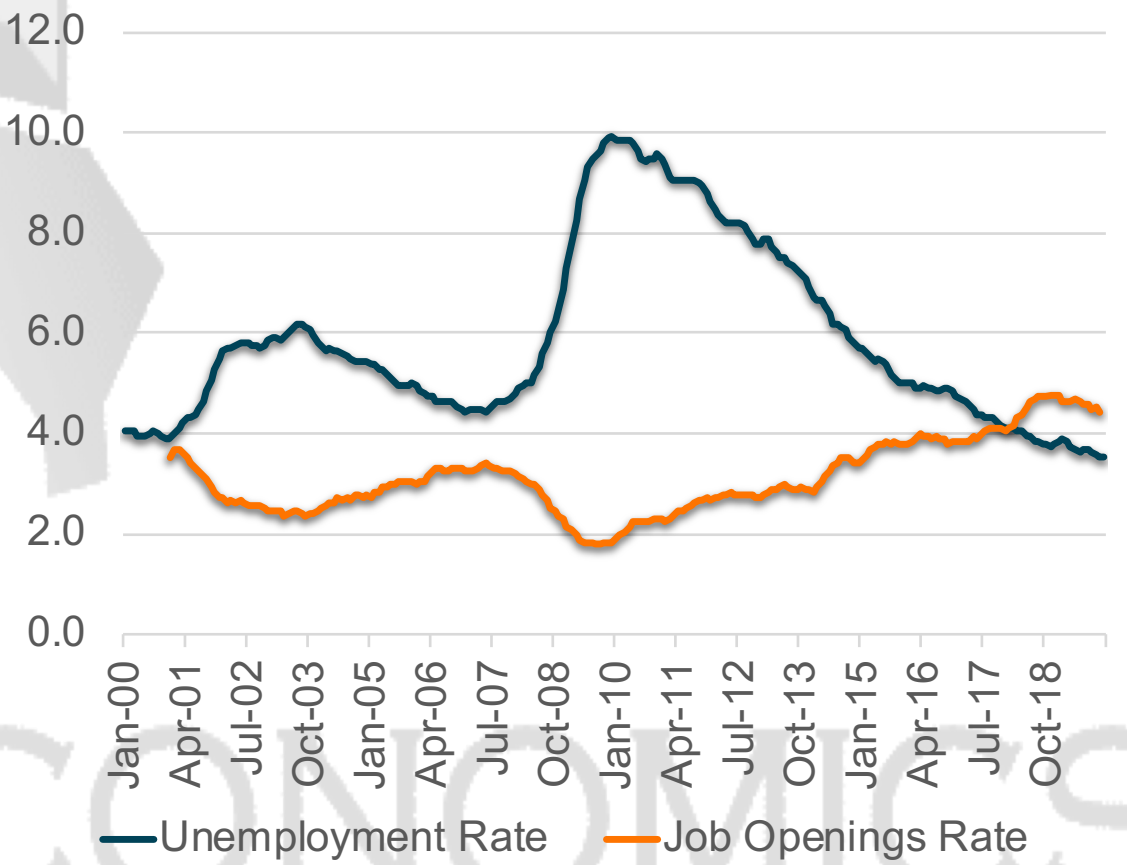
Labor Markets



Payroll Job Growth (Y-o-Y)



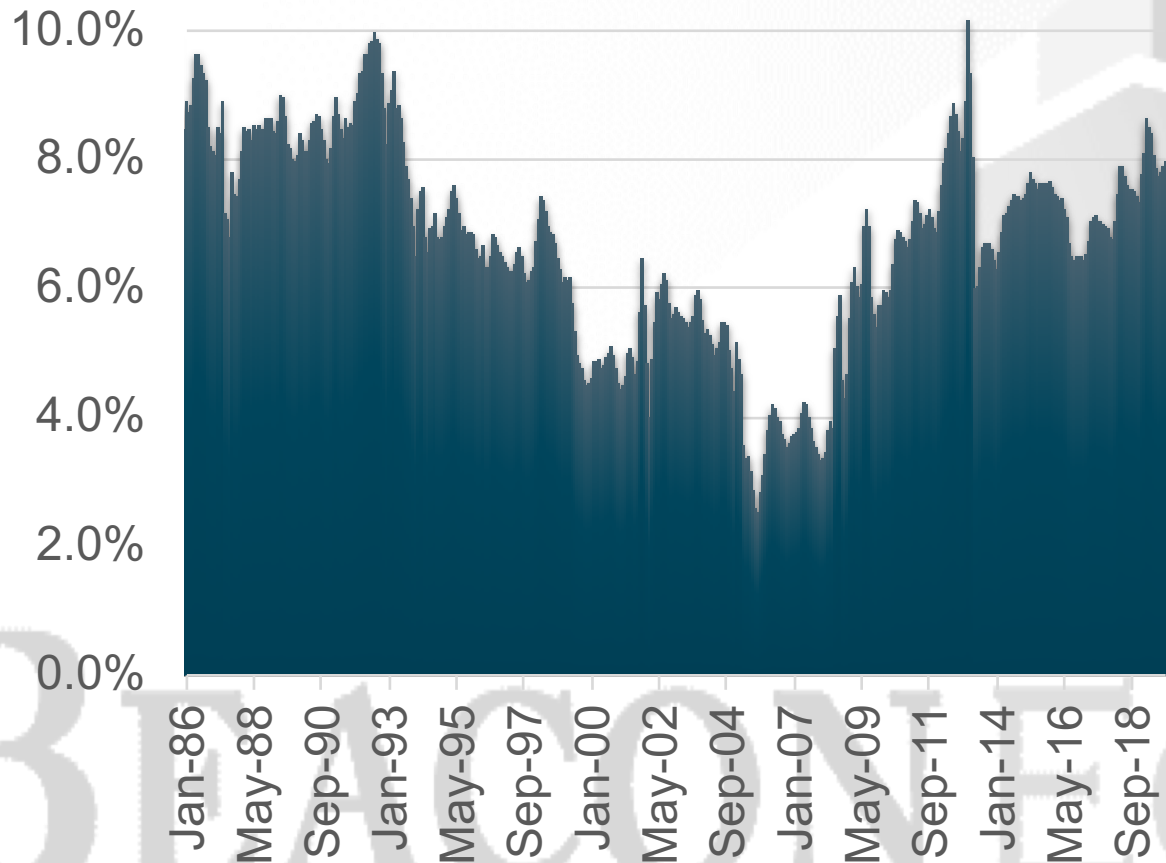
Unemployment and Job Openings (Rates)



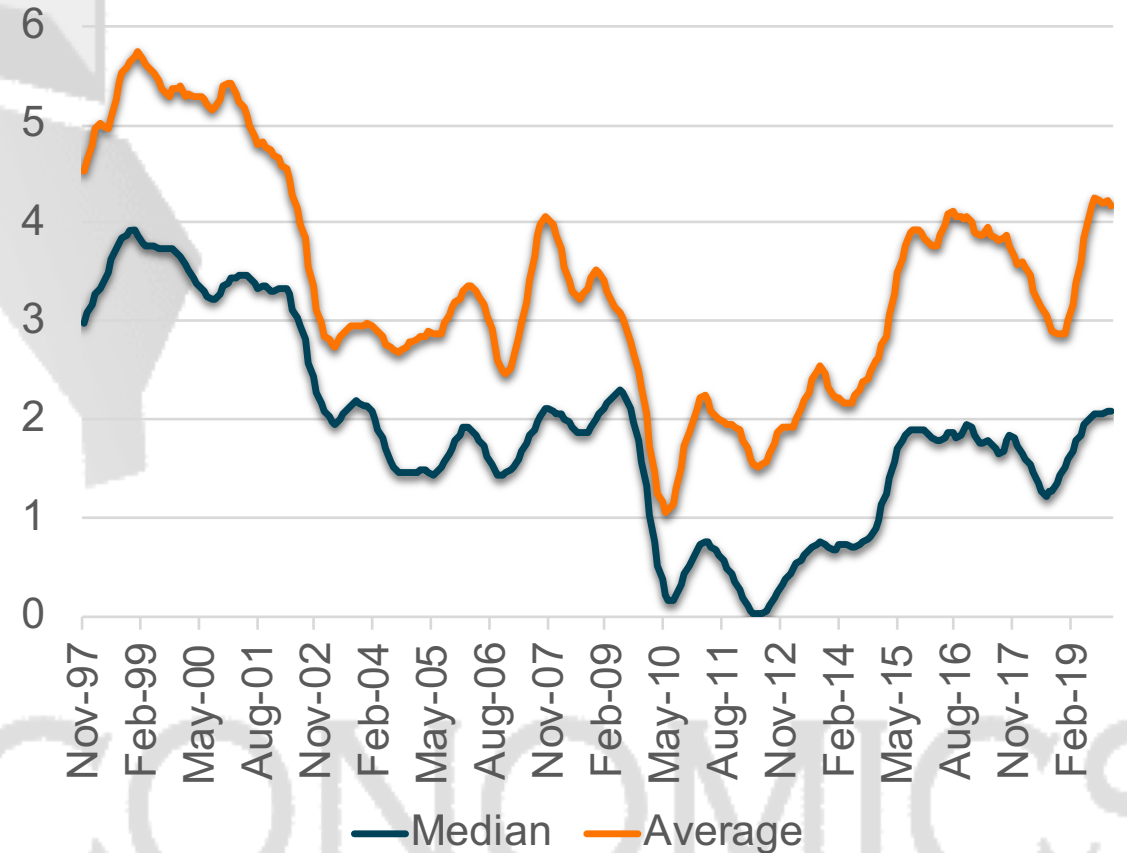
Consumer Balance Sheets



Household Savings Rate



Real Wage Gains for US Workers Atlanta Fed Wage Tracker



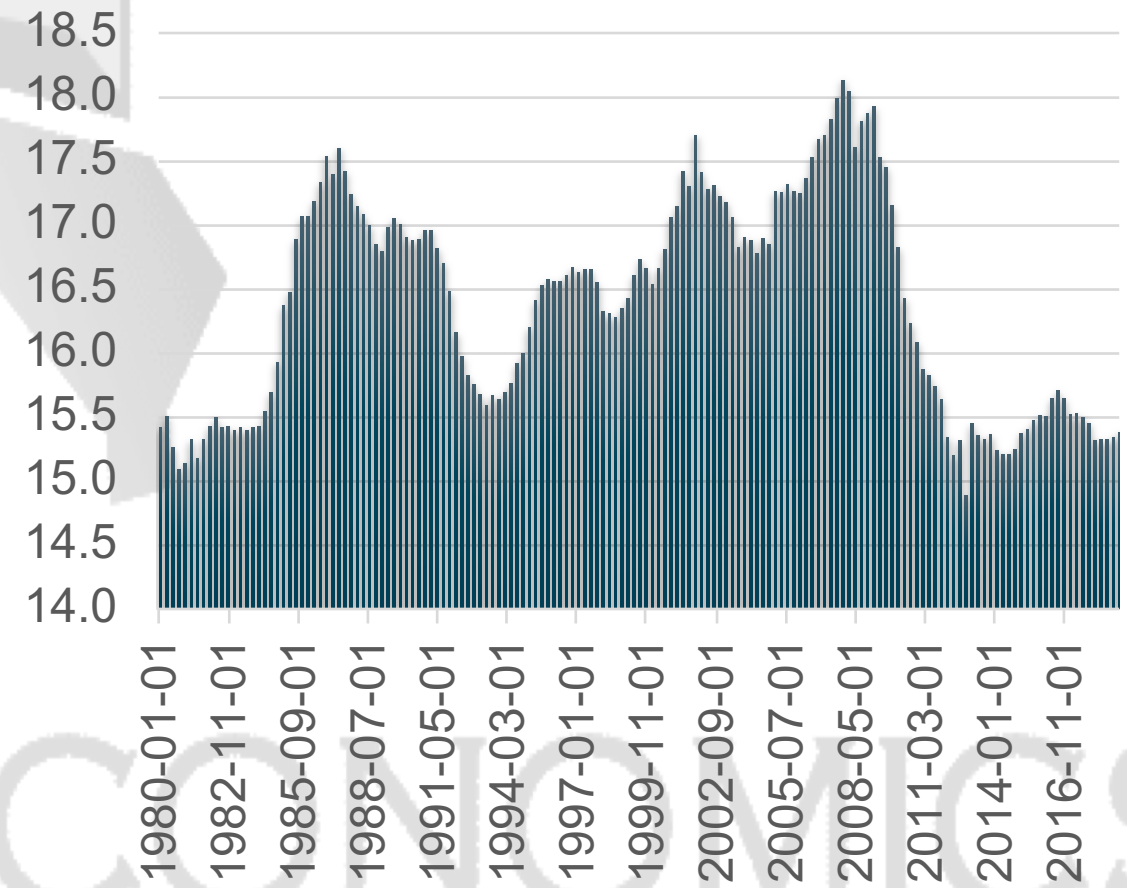
Distributional Aspects



Ratio of debt payments to family income

Family characteristic	Median			Share 40% plus		
	1998	2007	2016	1998	2007	2016
All families	17.9	18.7	14.7	13.6	14.8	9.1
Percentile income						
Less than 20	18.6	19.1	11.9	29.8	26.9	21.6
20–39.9	17.5	17.1	15.6	18.3	19.5	13.3
40–59.9	19.4	20.3	14.4	15.9	14.5	8.3
60–79.9	19.5	21.9	16.1	9.8	12.9	4.2
80–89.9	17.8	19.3	16.3	3.5	8.2	4.2
90–100	13.7	12.5	11.3	2.8	3.8	1.5

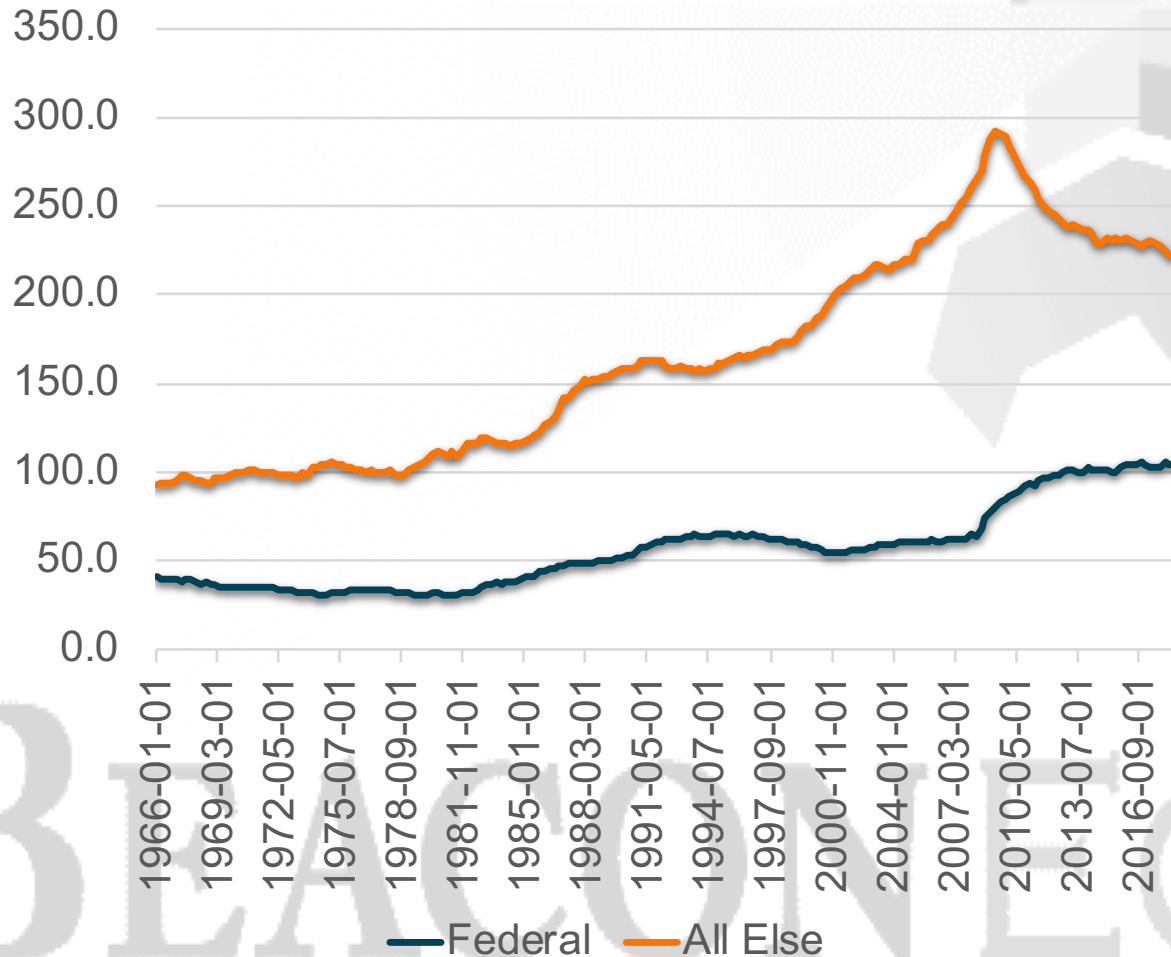
Financial Obligations % DPI



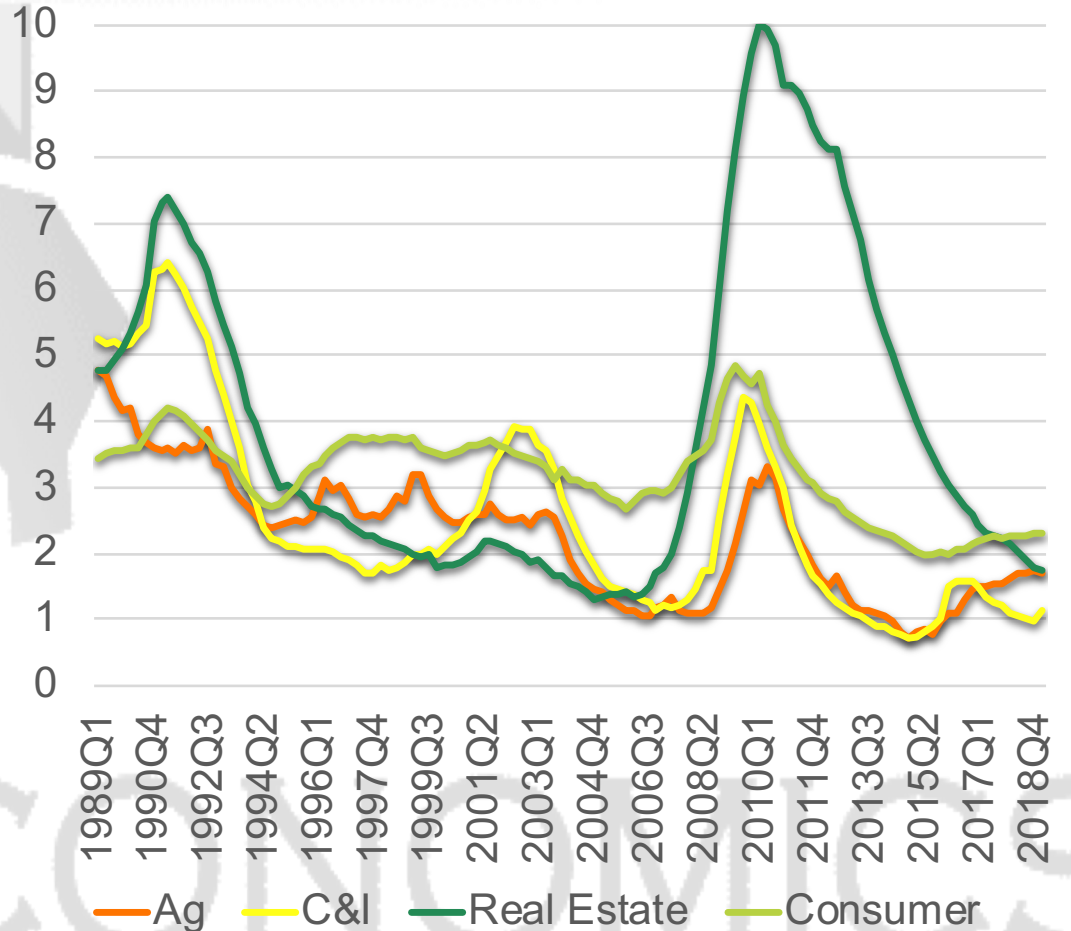
Debt Bubble Trouble?



Debt as Share GDP (Percent)



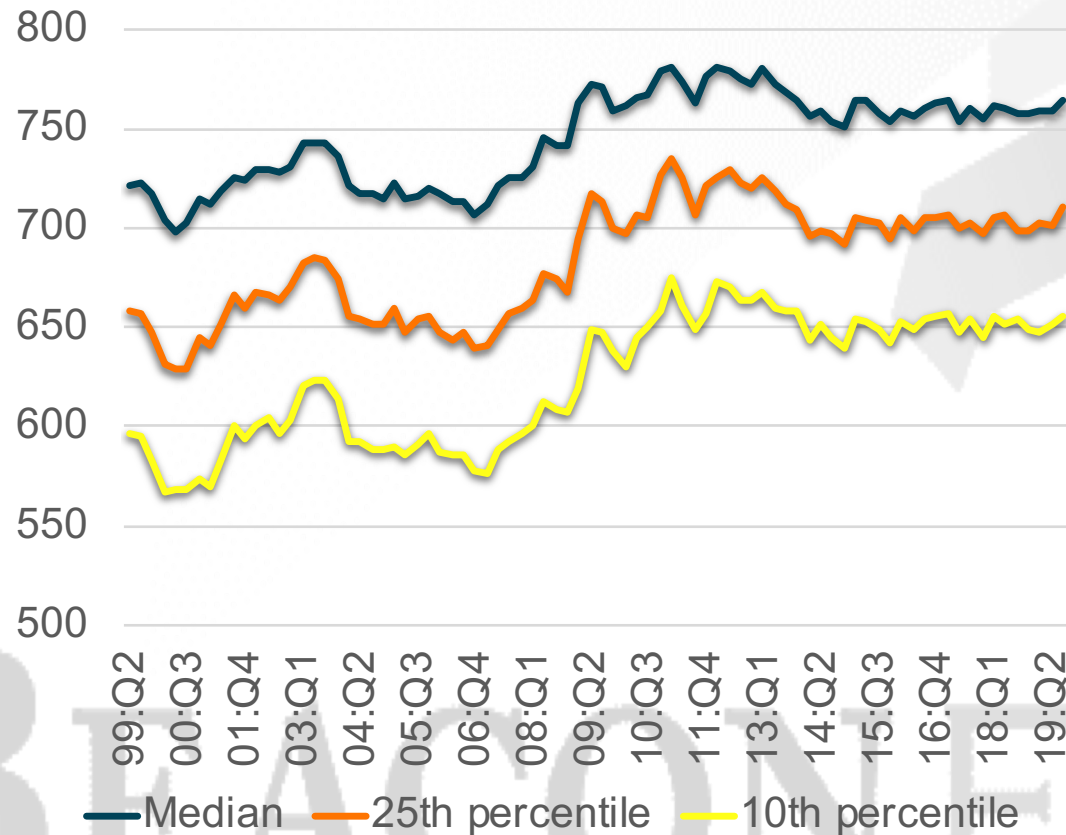
Commercial Bank Delinquencies



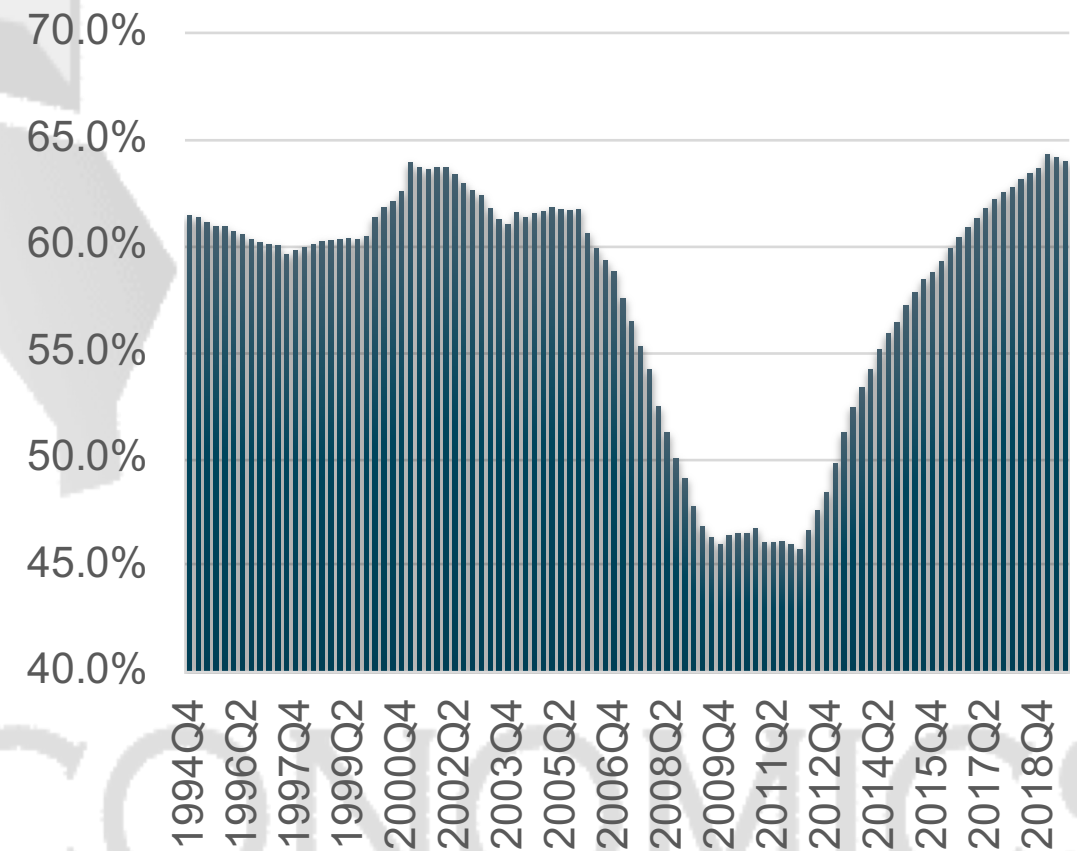
Real Estate Fundamentals



Credit Score for Mortgage Originations



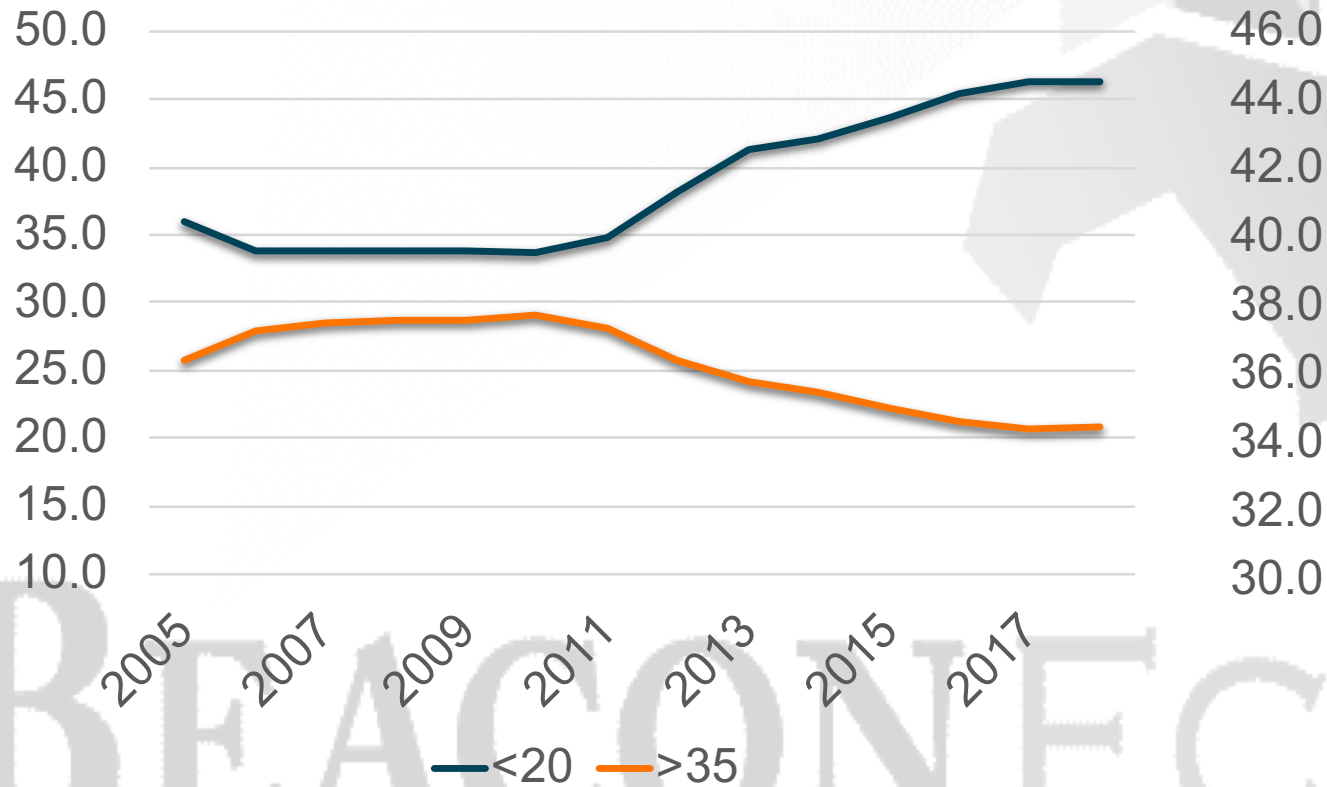
Equity share of Residential Real Estate



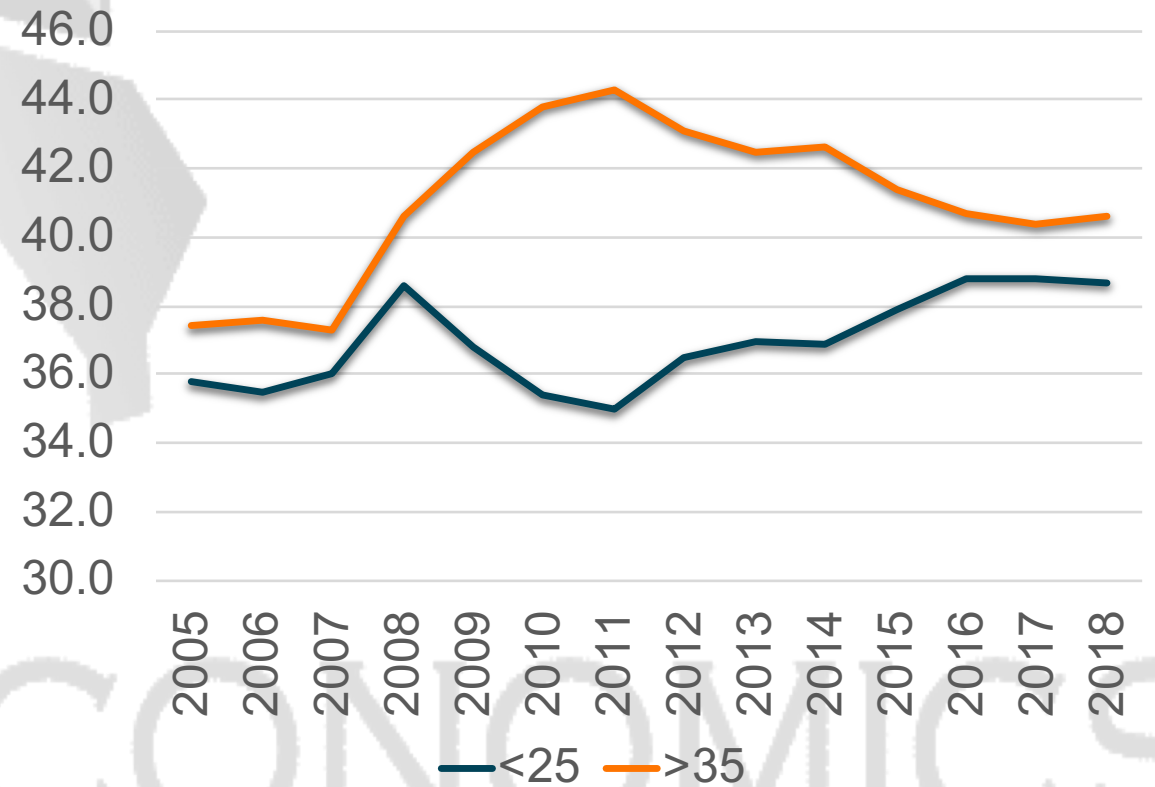
Owner and Renter Costs?



Share of Owners by Housing Cost as % of Income w Mortgage



Share of Renters by Housing Cost as % of Income



Manufacturing Recession?



Growth in Industrial Production (YoY)



Contribution to Real Investment Growth

	2017	2018	2019
Private fixed investment	5.15	3.53	0.28
Structures	0.30	0.47	-1.23
Mining exploration, shafts, and wells	1.15	0.51	-0.63
Other structures	0.02	0.10	-0.31
Commercial and health care	-0.12	-0.14	-0.25
Manufacturing	-0.34	-0.04	-0.03
Power and communication	-0.42	0.04	-0.01
Equipment	2.89	1.72	-0.50
Transportation equipment	0.14	0.62	-0.37
Other equipment	0.89	0.23	-0.18
Industrial equipment	0.55	0.24	-0.16
Information processing equipment	1.32	0.64	0.20
Intellectual property products	1.04	2.33	1.65
Entertainment, literary, and artistic	0.05	0.14	0.05
Research and development	0.17	1.02	0.48
Software	0.82	1.17	1.12

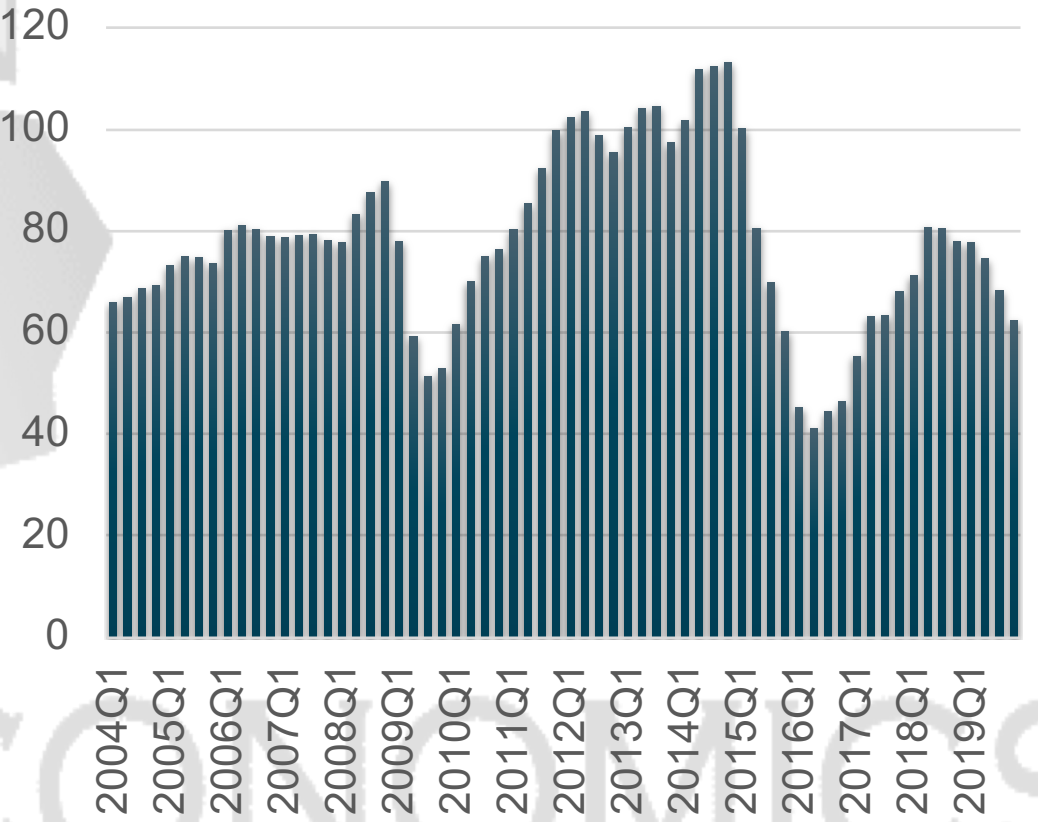
The Oil Situation



Oil Prices



Mining exploration, shafts, and wells



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4: Policy (Over)reaction



CARES Act: \$2.5 trillion in a \$5.5 trillion quarter

- Households
 - \$300 billion direct payments
 - \$250 billion unemployment expansion
 - Potential benefits = median weekly income
- Business
 - \$400-600 billion small business loans
 - \$500 billion economic stabilization for airlines, national security important industries etc
- Local government support
 - \$350 billion, direct payments to governments, hospitals, airports, transit
- The Fed
 - Rate cuts
 - Full QE efforts
- Other Efforts
 - IRS, states: delaying tax payments
 - Local government moratorium on evictions
 - Large landlords providing rent deferral
 - Large public mortgage holders allowing owners to defer mortgages
 - Food programs expanding

5: Consumer / Business Behavior



Consumer Behavior

- This is not a “new normal”
 - Polio, smallpox, plague, etc
 - Spanish flu, MERS, SARS
 - Terrorism episodes
 - No permanent change in consumer behavior seen
- Financial outcomes
 - Solid fundamentals a cushion
 - Some households hurt by lost income albeit offset by UI / payments
 - Other households building savings / pent up demand

Business Behavior

- Shakeout in stressed sectors
 - Oversupply of restaurants
 - Retail shifting to online
- Slowdown in investment second half of year possible
 - Working to rebuild sales
 - Investing more in ‘safe’ workplace needs
 - Pause in some hiring
- Perhaps a good lesson?
 - More flexibility for remote work
 - Some long run impact on business travel

Economic Risks: Now vs Then?



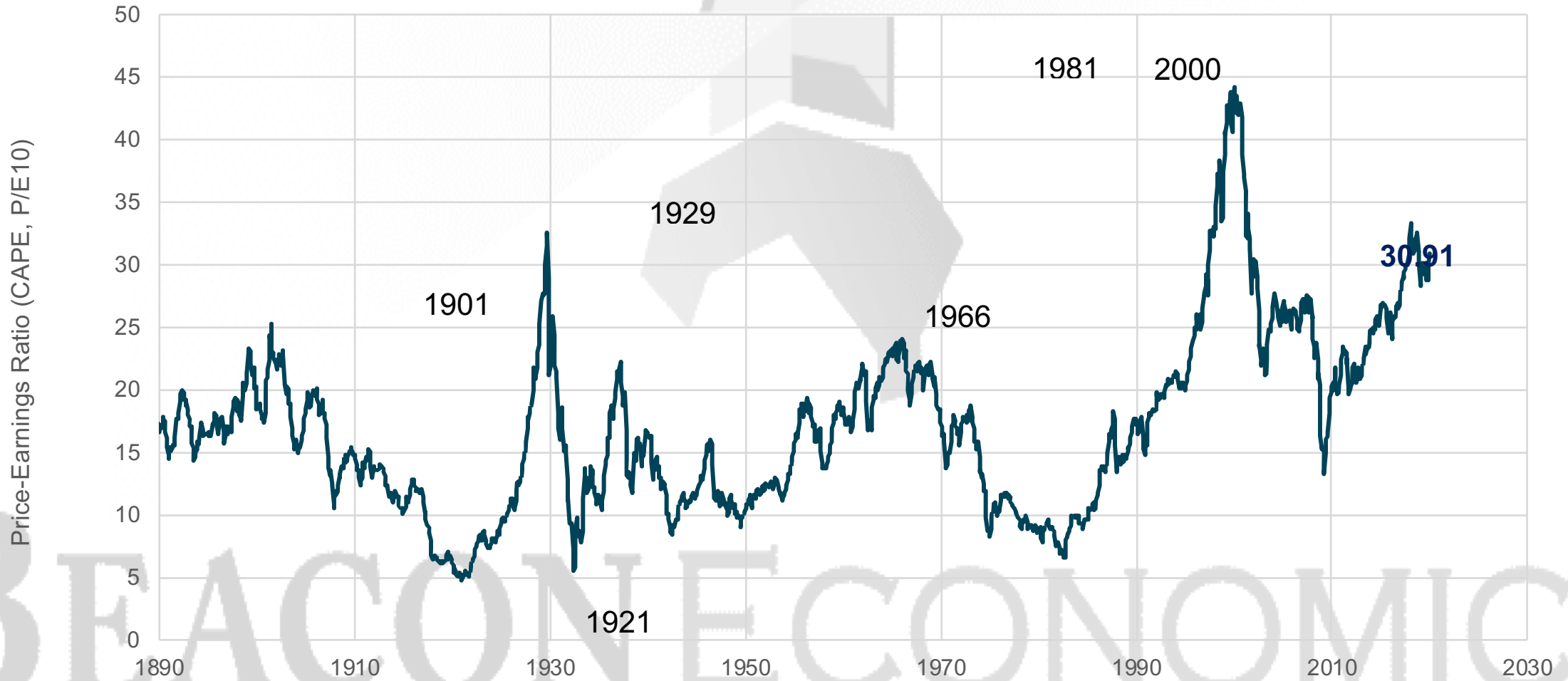
- Then
 - Millions of jobs in real estate / construction / finance permanently lost
 - Financial system pushed to edge by loan losses
- Now: Job Furloughs
 - 3 months to get virus under control
 - 10 weeks without work will be a big problem for a small subset of workers
 - Unemployment insurance, direct payments will help a lot
- Then: Huge changes little help
 - Economy highly distorted
 - Government policy—late to the game
- Now: Few changes too much help
 - Economy was is solid shape
 - Massive government involvement
 - Expand short term job supports

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So what's up with the markets?



CAPE Price E10 Ratio

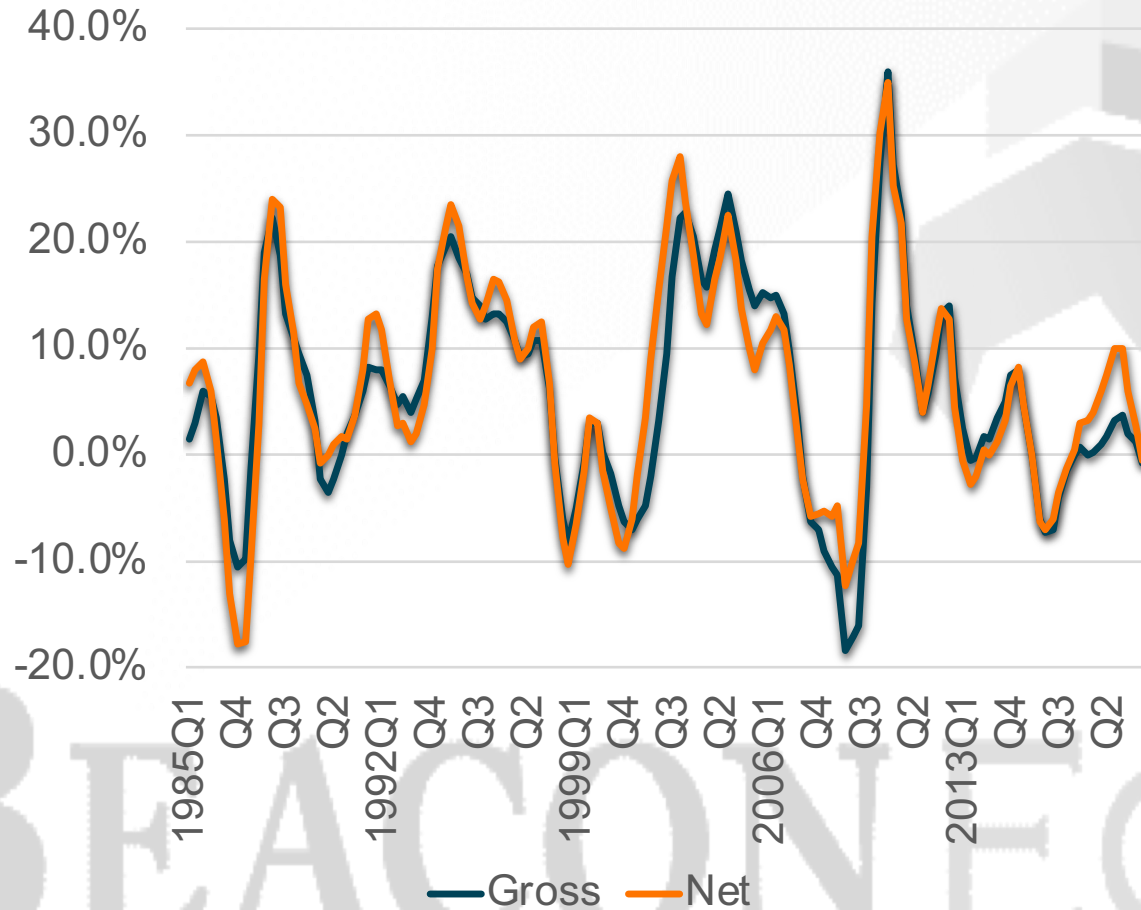


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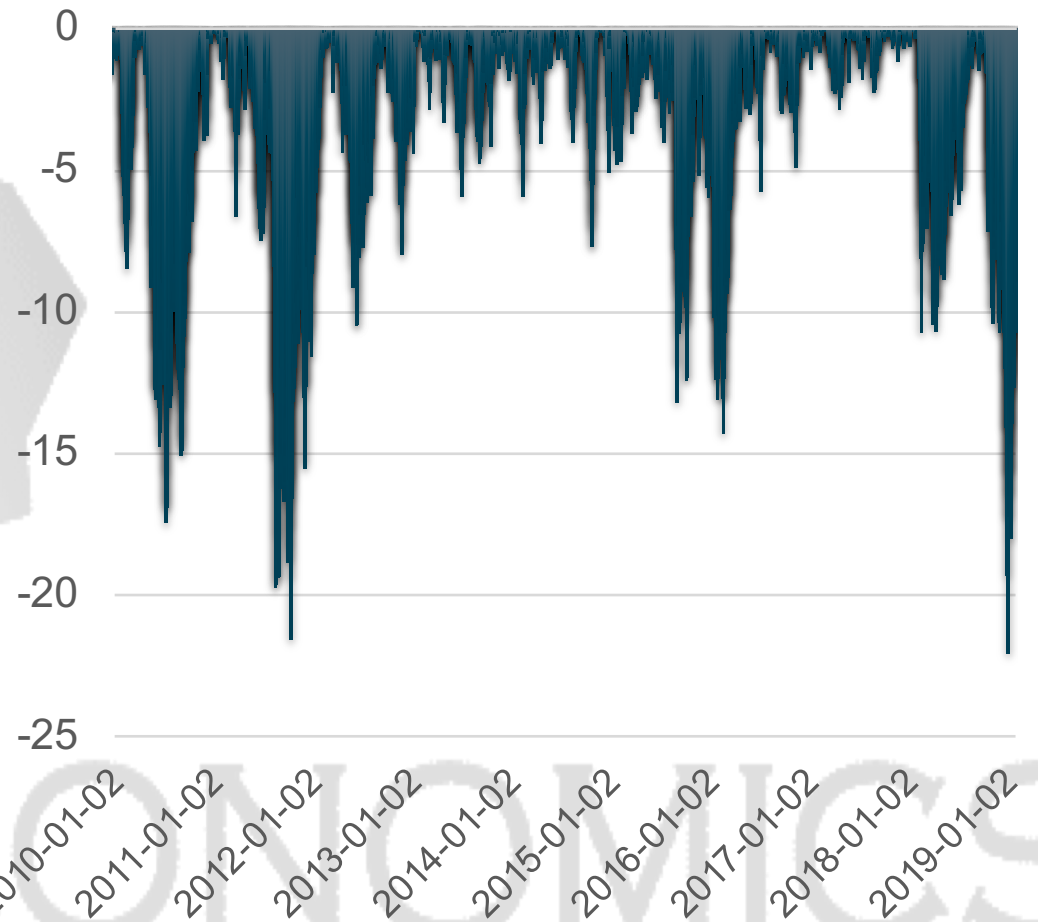
So what's up with the markets?



Corporate Profit Growth



Market Selloffs Current Expansion

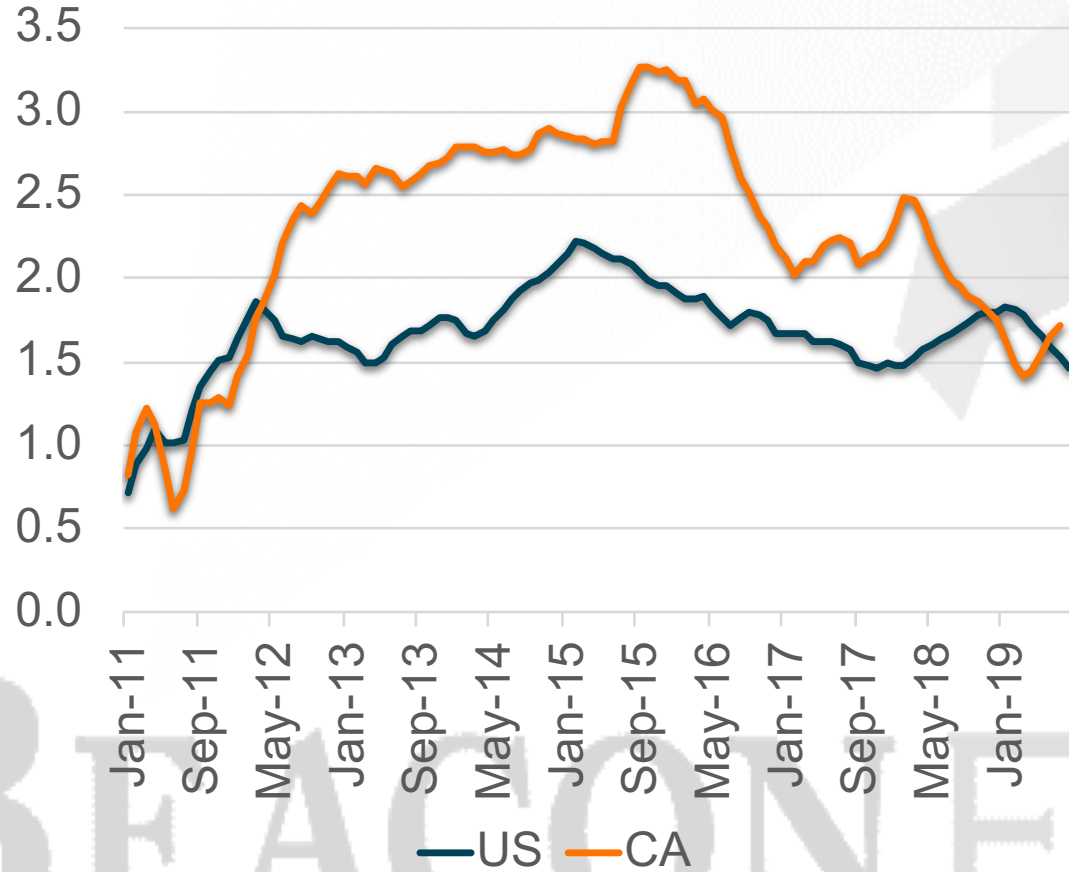


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California Slowing Job Growth



Payroll Job Growth



Unemployment Rates

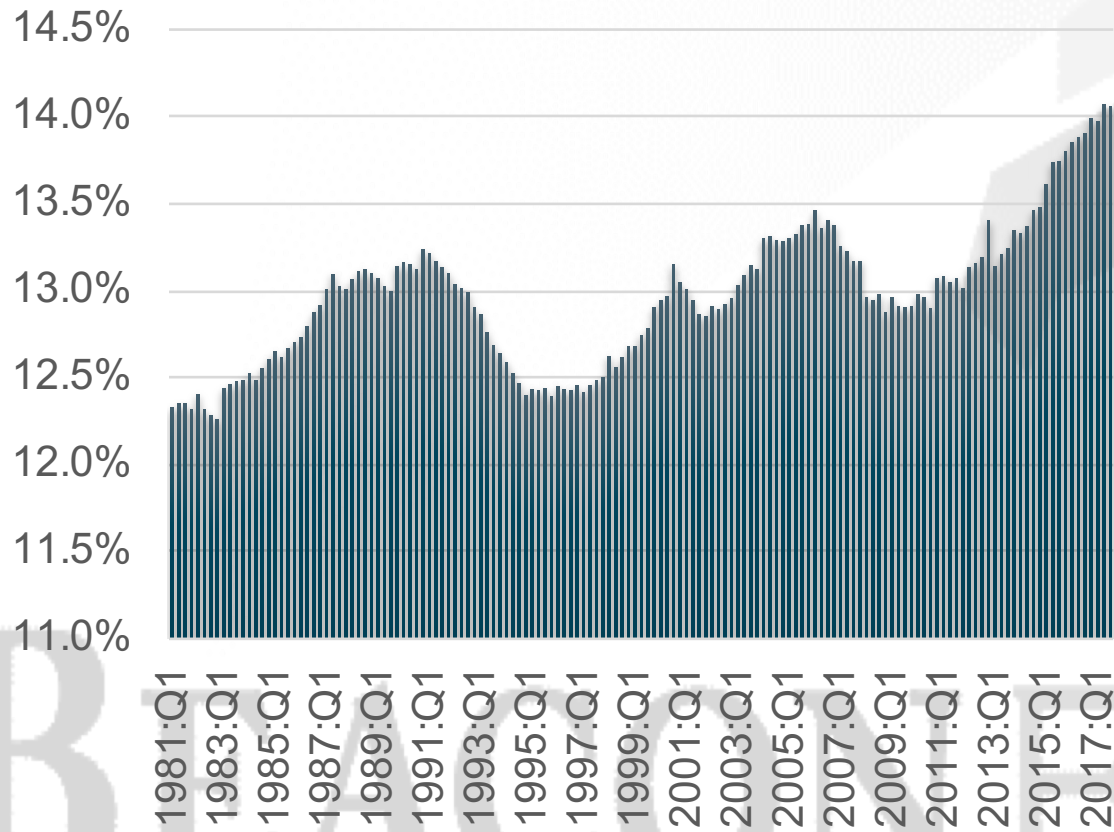
	Curr	Low 90-15		Curr	Low 90-15
Modesto	6.2	7.4	Hanford	7.8	8
Yuba	6.9	8.1	Sacramento	3.6	3.8
Redding	4.6	5.7	San Francisco	2.1	2.3
Chico	4.9	5.7	Fresno	7.3	7.4
Inland Empire	4.0	4.8	Oakland	2.9	3.0
Stockton	6.0	6.7	San Jose	2.5	2.6
Ventura	3.5	4.2	Napa	2.7	2.7
California	4.1	4.7	SLO	2.8	2.8
Merced	8.2	8.7	Santa Barbara	3.5	3.5
Salinas	5.9	6.4	Santa Cruz	4.6	4.6
Los Angeles	4.4	4.7	Orange Cnty	2.7	2.6
Vallejo	3.8	4.1	Santa Rosa	2.6	2.5



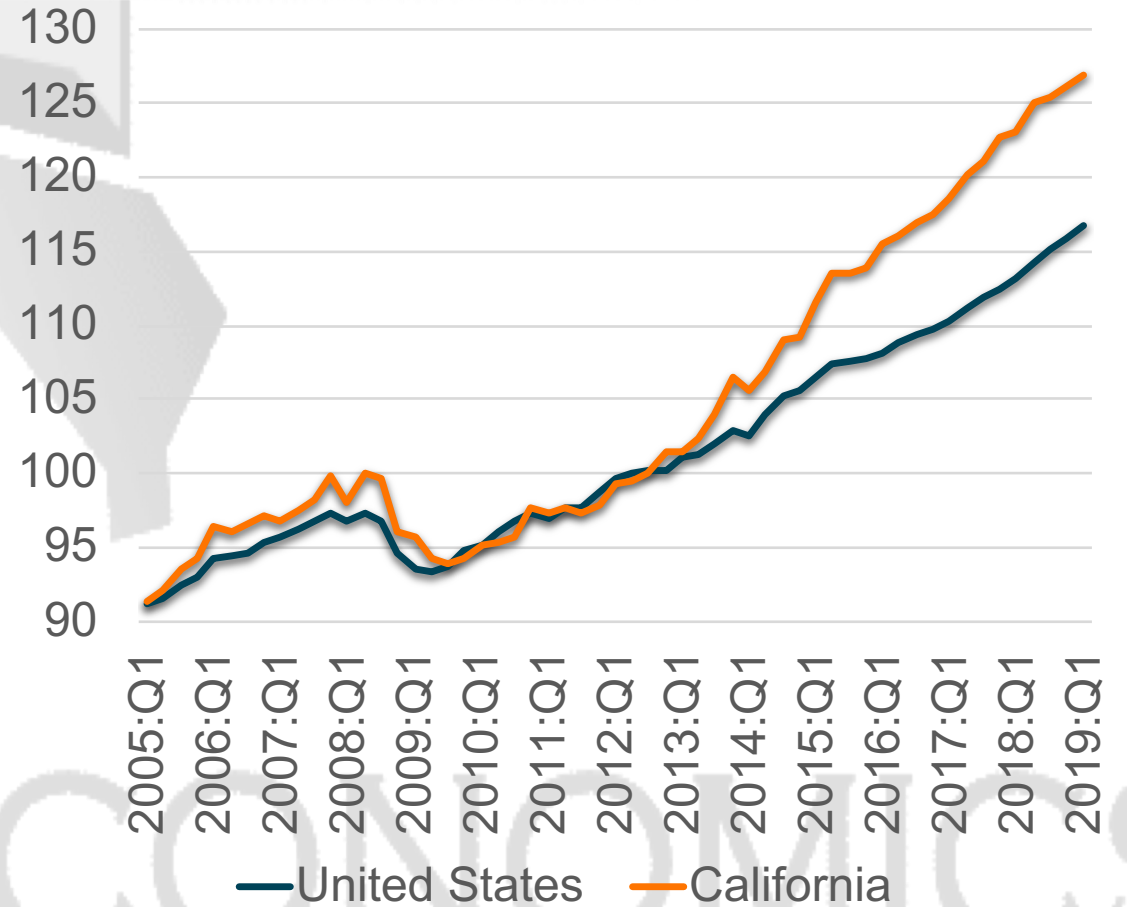
State Rankings



California Share National Personal Income



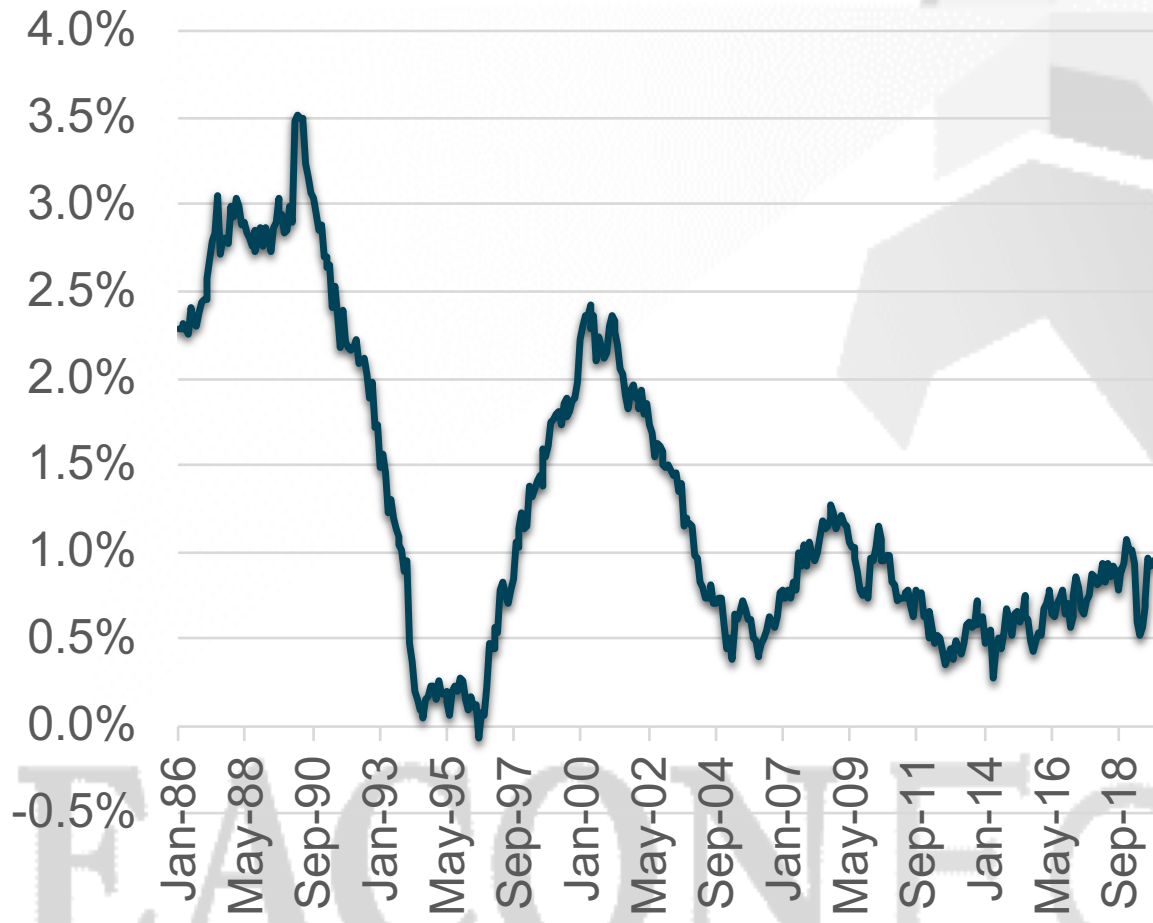
Index of Real GDP



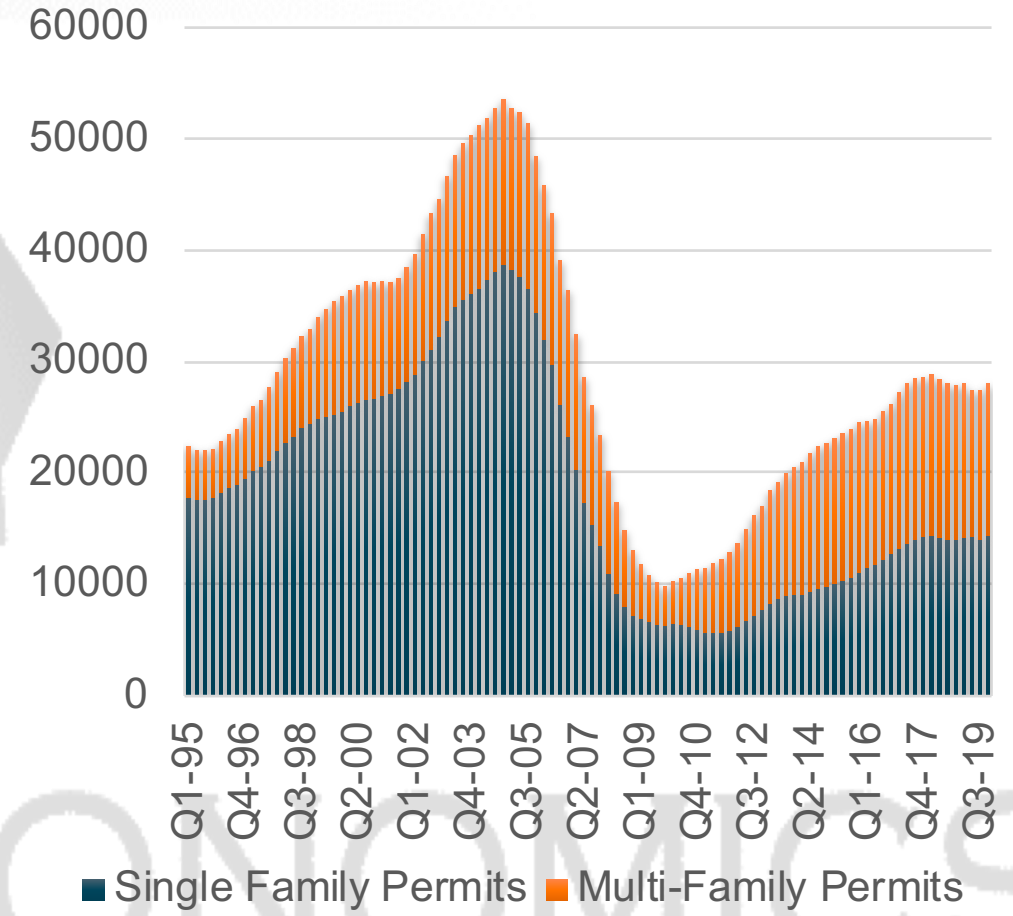
Labor Constraints



State Labor Force Growth



CA Housing Permits

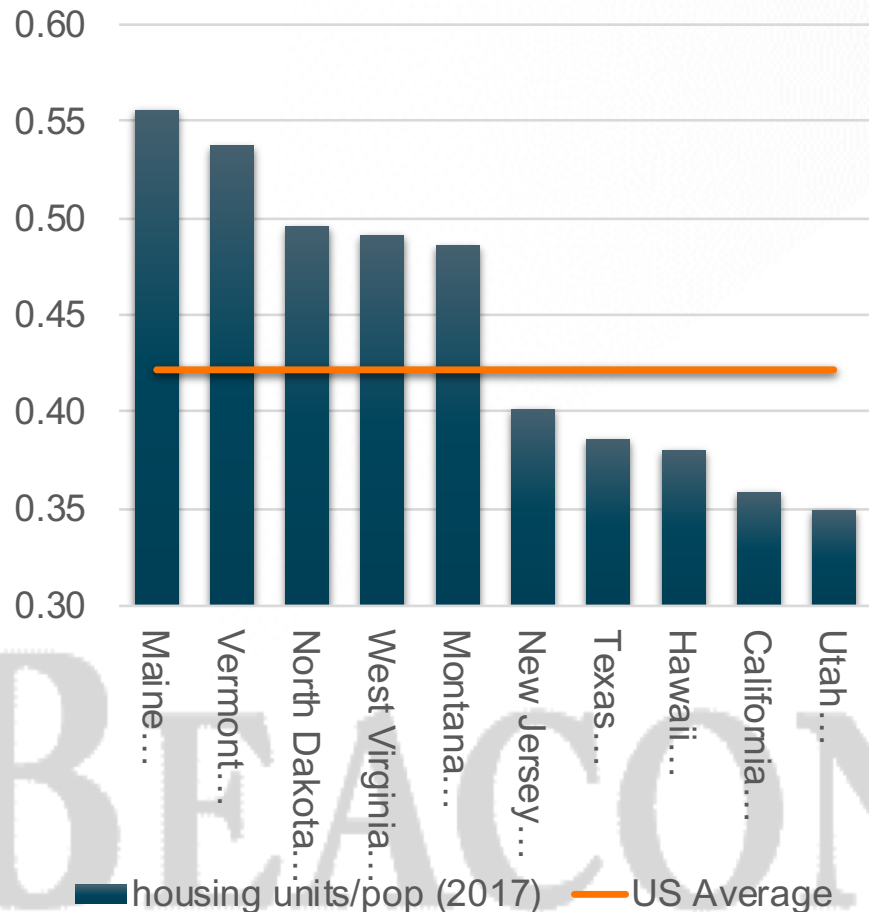


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California SUPPLY Problems



Housing Units per Capita (2017) - Top 5 and Bottom 5 States



2018 Share Overcrowded Housing

	Own	Rent
California	2.2%	13.4%
Hawaii	3.7%	11.9%
Alaska	3.3%	9.5%
New York	1.3%	8.4%
Utah	1.4%	8.2%
Arizona	1.6%	8.2%
Texas	1.9%	7.4%
New Jersey	0.8%	6.7%
Nevada	1.4%	6.2%
Washington	1.2%	6.1%
Oregon	1.5%	5.8%
Florida	1.1%	5.7%

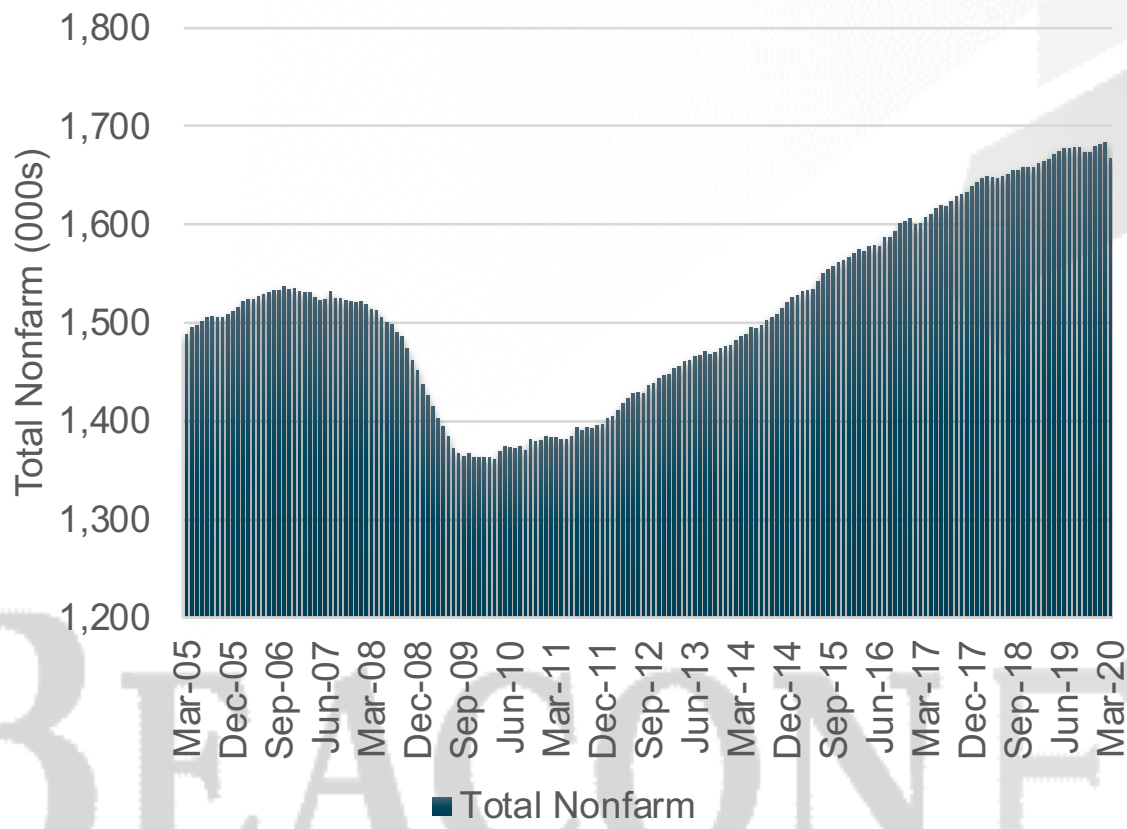
2018 Housing Vacancy

51	California	8.3%
50	Washington	8.5%
49	Oregon	9.3%
48	Maryland	9.9%
47	Nebraska	9.9%
46	Mass	10.0%
45	Utah	10.1%
44	Ohio	10.3%
43	Colorado	10.3%
42	Connecticut	10.6%
41	DC	10.6%
40	New Jersey	11.0%

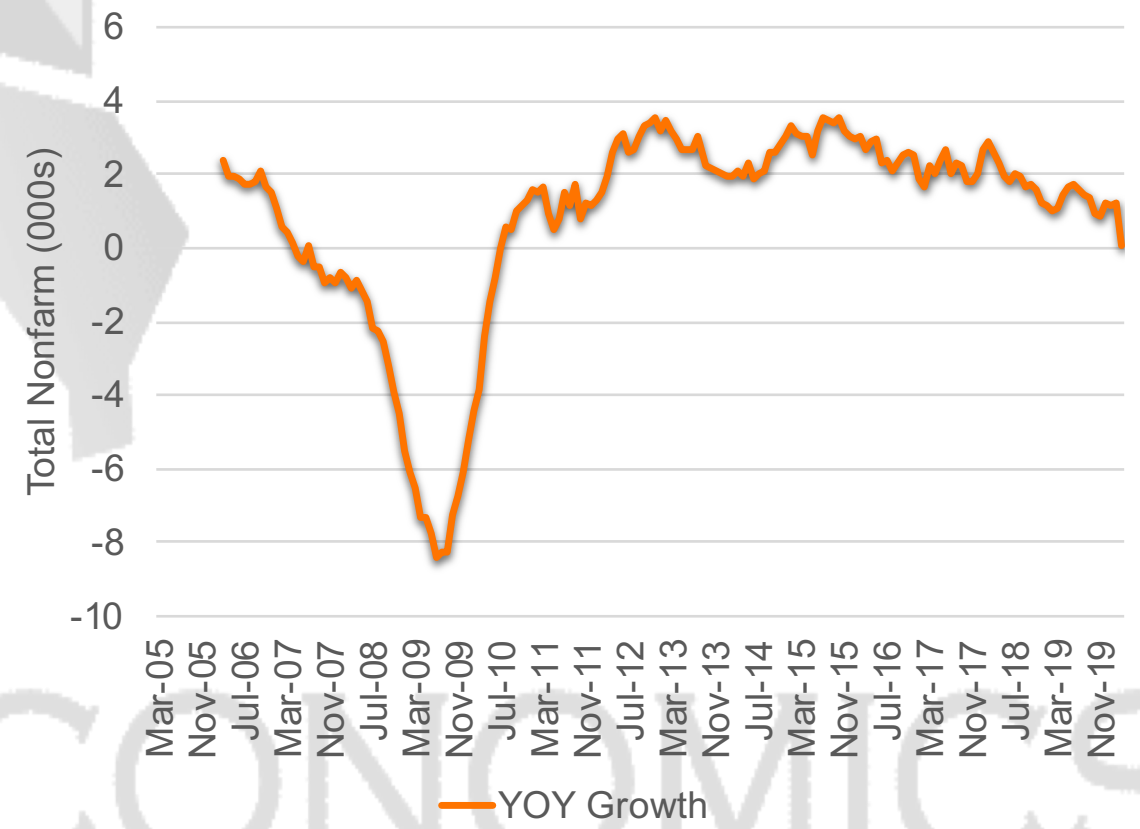
Employment Situation



**Total Nonfarm Employment
Orange County**



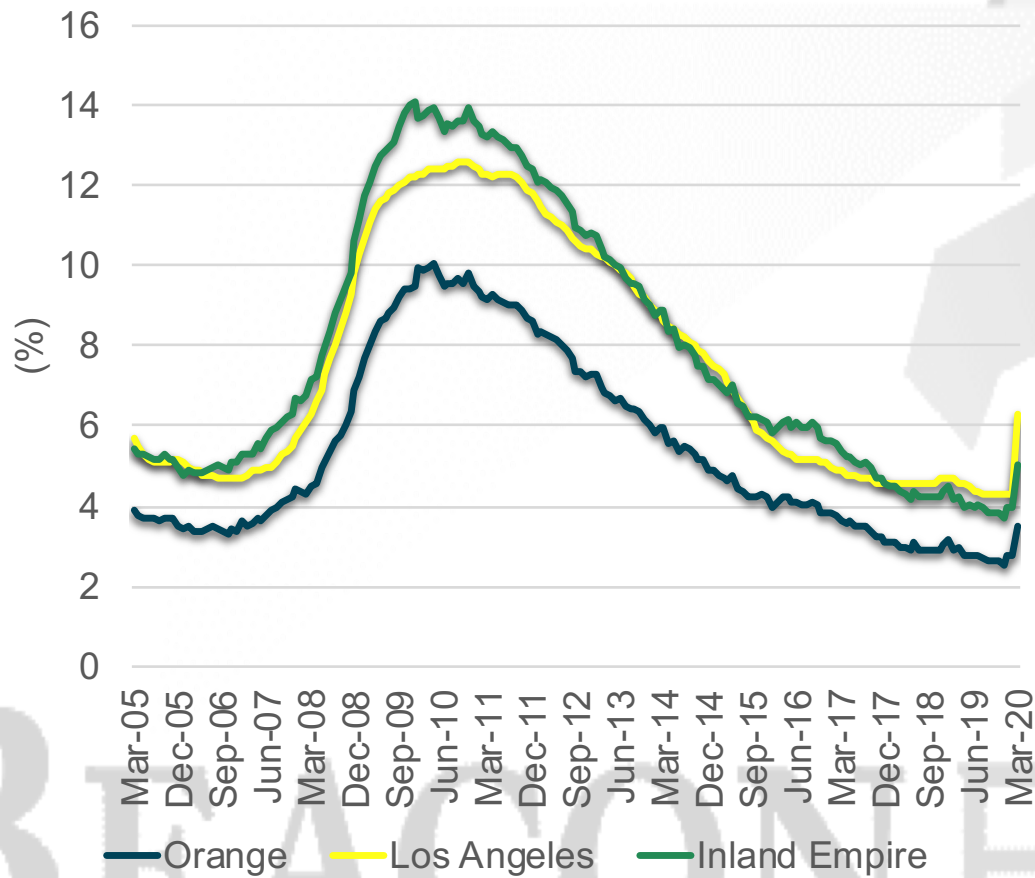
**Total Nonfarm Employment
Orange County**



Employment Situation



Unemployment Rate



Industry	Orange County		California	
	Mar-20 (000s)	1-Yr % Growth	Mar-20 (000s)	1-Yr % Growth
Total Nonfarm	1,668	0.1	17,505	0.9
Financial Activities	122	4.5	856	2.2
Logistics	30	2.0	719	4.7
Government	165	1.8	2,637	1.5
Education/Health	233	1.4	2,855	2.8
Retail Trade	151	-0.3	1,652	-0.7
Hospitality	226	-0.6	1,988	-1.9
Business	324	-0.6	2,735	0.9
Information	26	-1.3	591	5.8
Wholesale Trade	78	-1.3	689	-1.2
Other Services	51	-1.5	566	-1.5
Manufacturing	158	-1.7	1,310	-1.3
Construction	105	-1.8	885	1.1
Admin Support	151	-3.2	1,134	0.2

Local Demographics



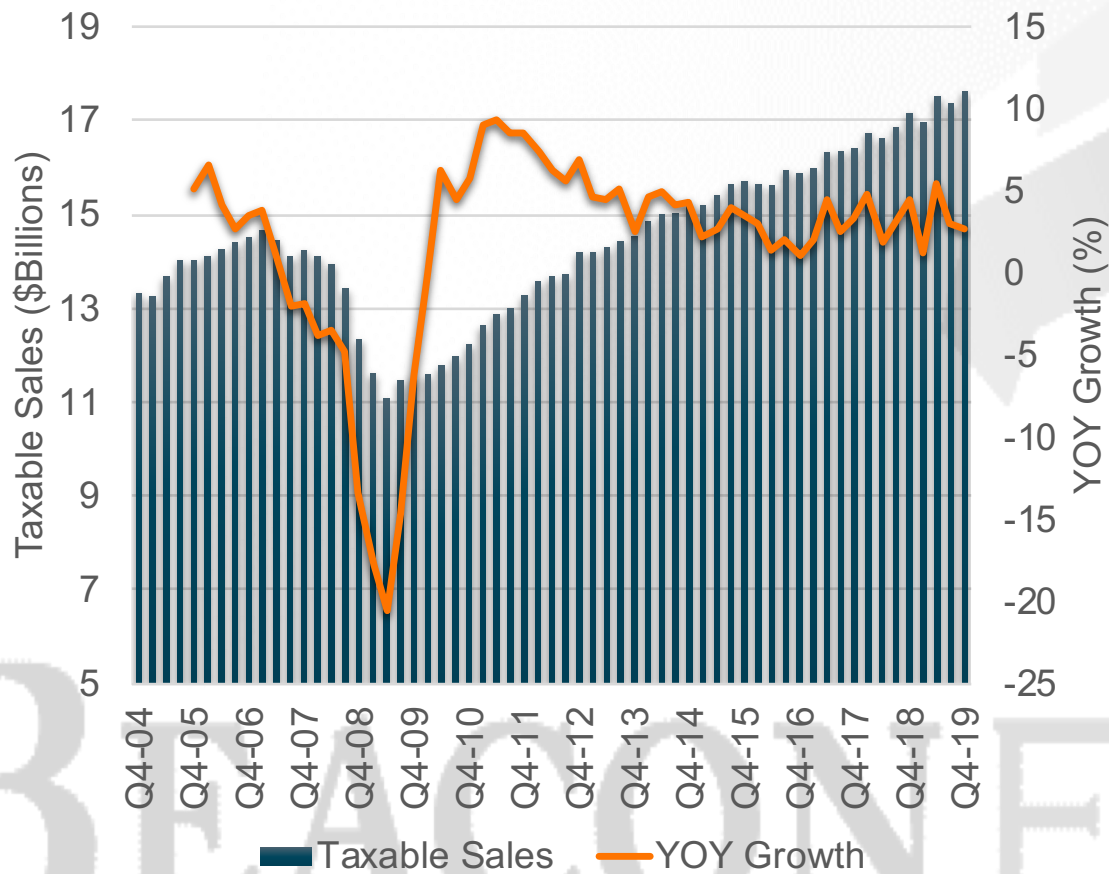
Education	Orange County		California	
	2018	5-Yr Chg	2018	5-Yr Chg
Pop > 25 (000s)	2,195	5.9%	26,816	6.6%
Less than HS	13.9	-1.9	16.2	-2.1
HS	17.2	-0.8	20.7	-0.1
Some College	27.9	-1.1	28.8	-1.1
Bachelors	26.4	2.3	21.3	1.8
Graduate	14.7	1.7	12.9	1.4

Location	Owner Households Median Income	Renter Households Median Income
	2018 (000s)	2018 (000s)
California	99.2	52.3
Los Angeles	99.0	50.3
Riverside	80.1	44.0
Orange	115.9	64.5
San Bernardino	81.4	44.5
San Diego	105.1	55.2

Business Activity



Orange County MD Taxable Sales



Tax Receipts Category	Orange County MD			CA 1-Yr % Growth
	2019 (\$Millions)	1-Yr % Growth	Share of CA	
Total	556.0	3.0	7.8	2.5
Fuel/Service	46.4	7.4	7.4	-1.2
Restaurants/Hotels	75.3	1.8	7.9	2.7
Transportation	94.3	1.8	8.7	-0.9
Food/Drugs	22.2	0.5	6.2	1.8
Business/Industry	67.1	0.0	6.6	2.6
Consumer Goods	118.3	-1.7	8.6	-1.4
Construction	36.0	-4.1	6.0	1.3

Nonresidential Rents & Vacancy



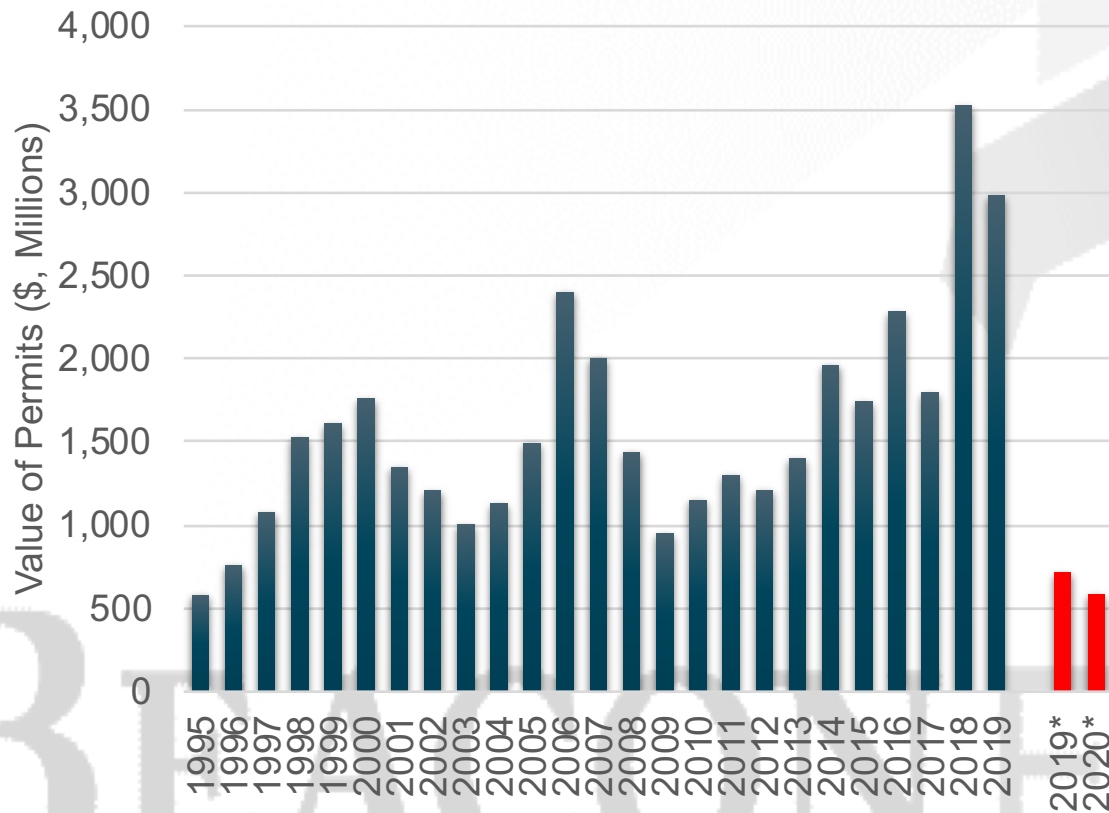
Property	Orange County		Los Angeles		San Diego		Inland Empire	
	Rent (\$) Q3-19	3-Yr % Growth	Rent (\$) Q3-19	3-Yr % Growth	Rent (\$) Q3-19	3-Yr % Growth	Rent (\$) Q3-19	3-Yr % Growth
Office	35.1	10.8	40.6	10.6	34.2	8.9	23.3	5.9
Flex	12.2	9.2	13.2	9.7	14.3	11.2	8.8	10.3
Warehouse	7.6	8.4	7.9	12.2	9.2	10.9	5.8	14.5
Retail	34.5	4.5	34.0	6.1	32.6	4.6	23.3	5.5

Property	Orange County		Los Angeles		San Diego		Inland Empire	
	Vacancy (%) Q3-19	3-Yr Change	Vacancy (%) Q3-19	3-Yr Change	Vacancy (%) Q3-19	3-Yr Change	Vacancy (%) Q3-19	3-Yr Change
Office	16.6	1.2	14.2	-0.3	16.0	1.3	16.7	-0.6
Warehouse	7.5	1.0	5.6	0.4	8.7	0.1	9.6	2.5
Retail	5.6	0.2	7.2	1.0	6.0	-0.2	9.8	0.3
Flex	4.7	-0.1	3.5	0.4	11.4	-1.3	4.8	-2.0

Nonresidential Real Estate



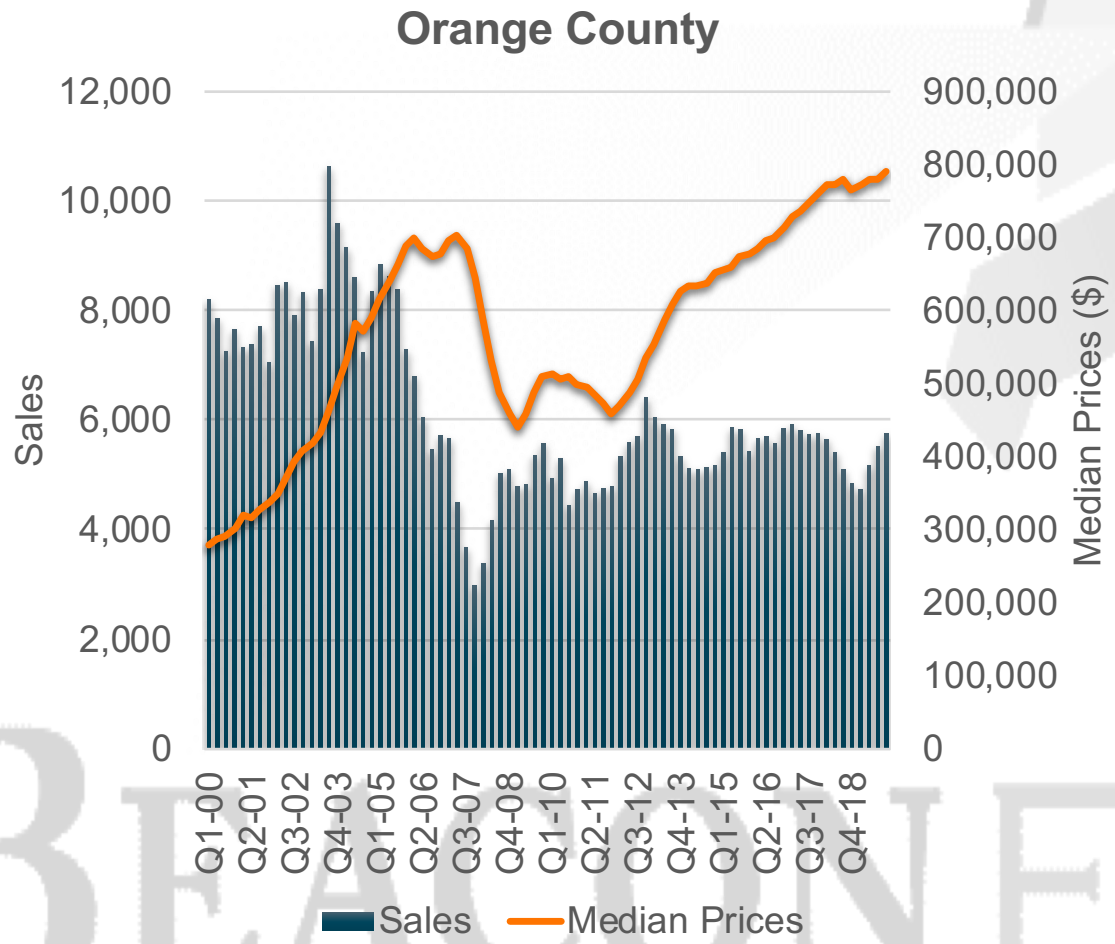
**Nonresidential Construction
Orange County**



*Year-to-date through Q1

Property	Orange County		SoCal	
	Q1-20 (\$Millions)	1-Yr % Growth	Q1-20 (\$Millions)	1-Yr % Growth
Total Nonres	584	-134	2711	-76
Office	52	38	89	-27
Retail	48	34	571	324
Industrial	0	0	170	-148
Alterations	331	-55	1175	-283
Hotel	0	-140	82	-99

Orange County Housing Market

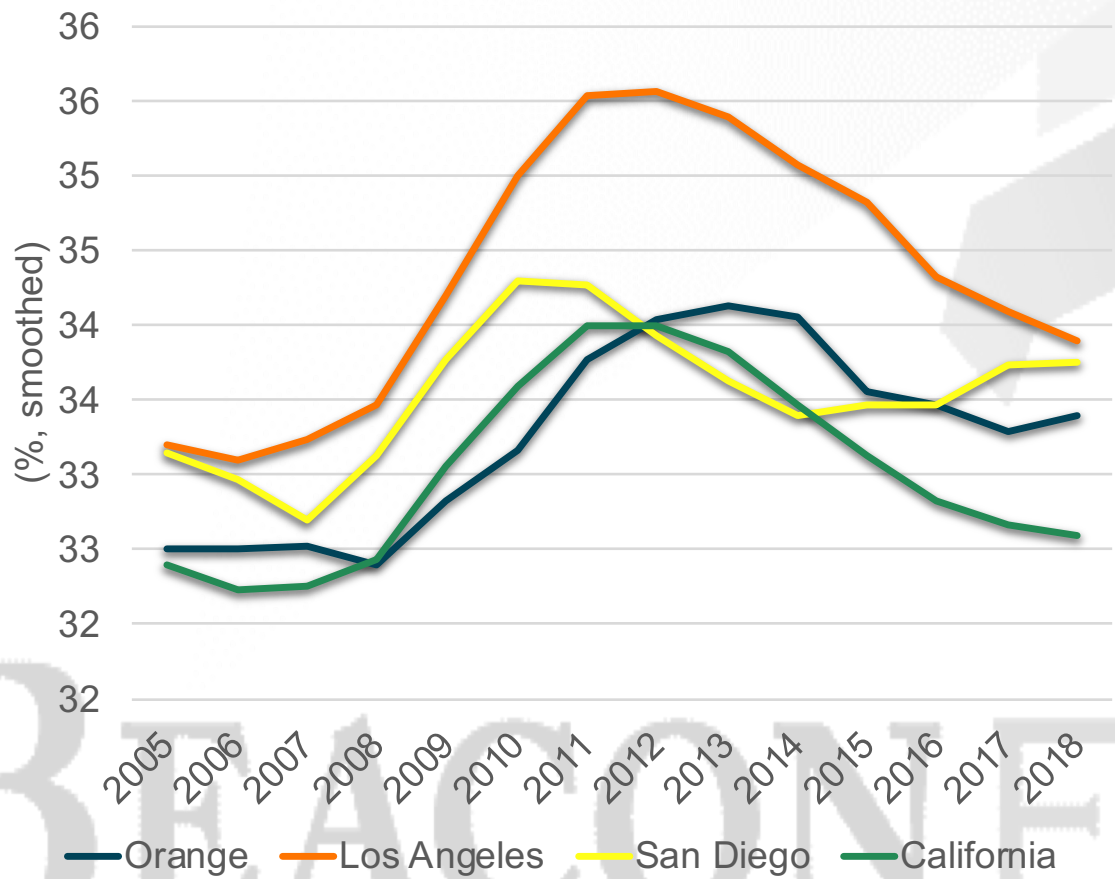


Location	Median Prices		Sales	
	Q4-19 (000s)	1-Yr % Growth	Q4-19 (000s)	1-Yr % Growth
Total SoCal	582,248	3.4	43,056	12.1
San Bernardino	331,180	6.5	6,438	8.7
Los Angeles	659,504	5.7	13,643	11.4
Riverside	407,631	4.9	7,964	11.2
San Diego	634,672	4.5	6,492	11.4
Orange	790,854	3.3	5,754	18.7

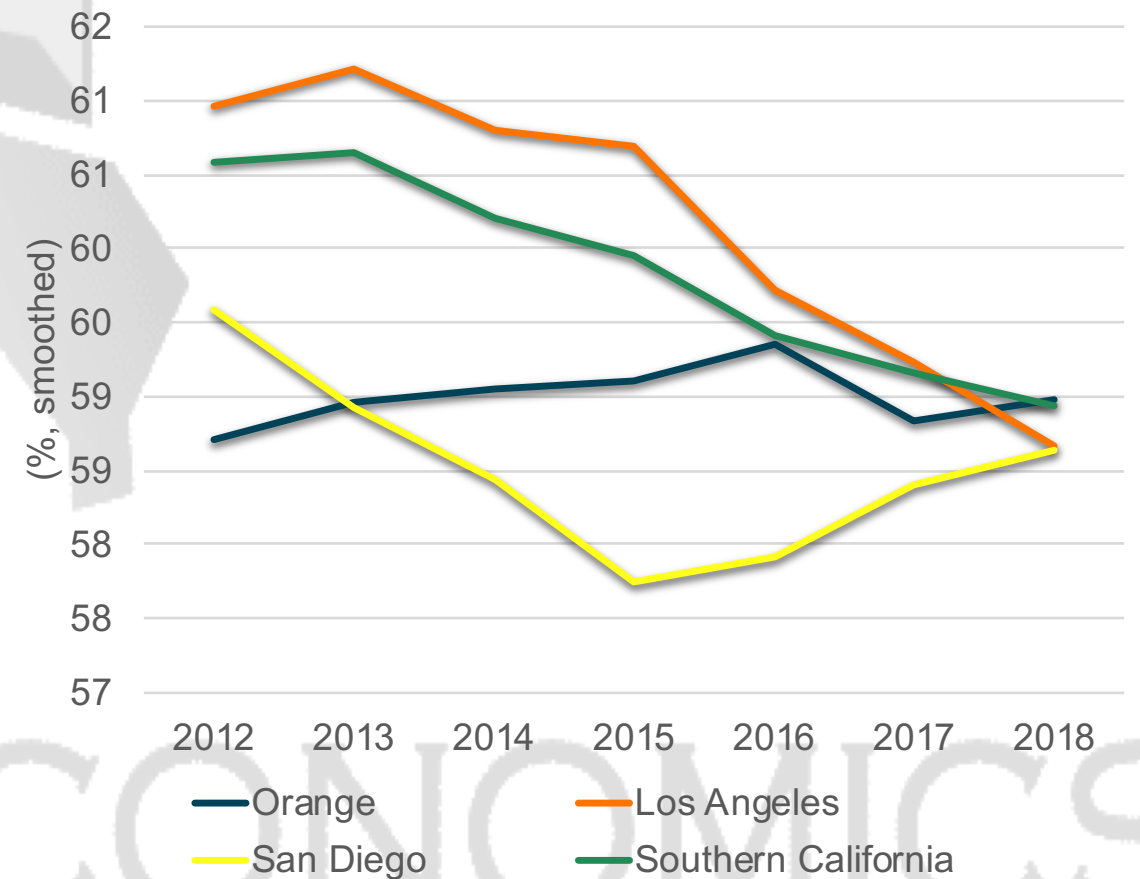
Housing Affordability



Median Rent as a % of Household Income



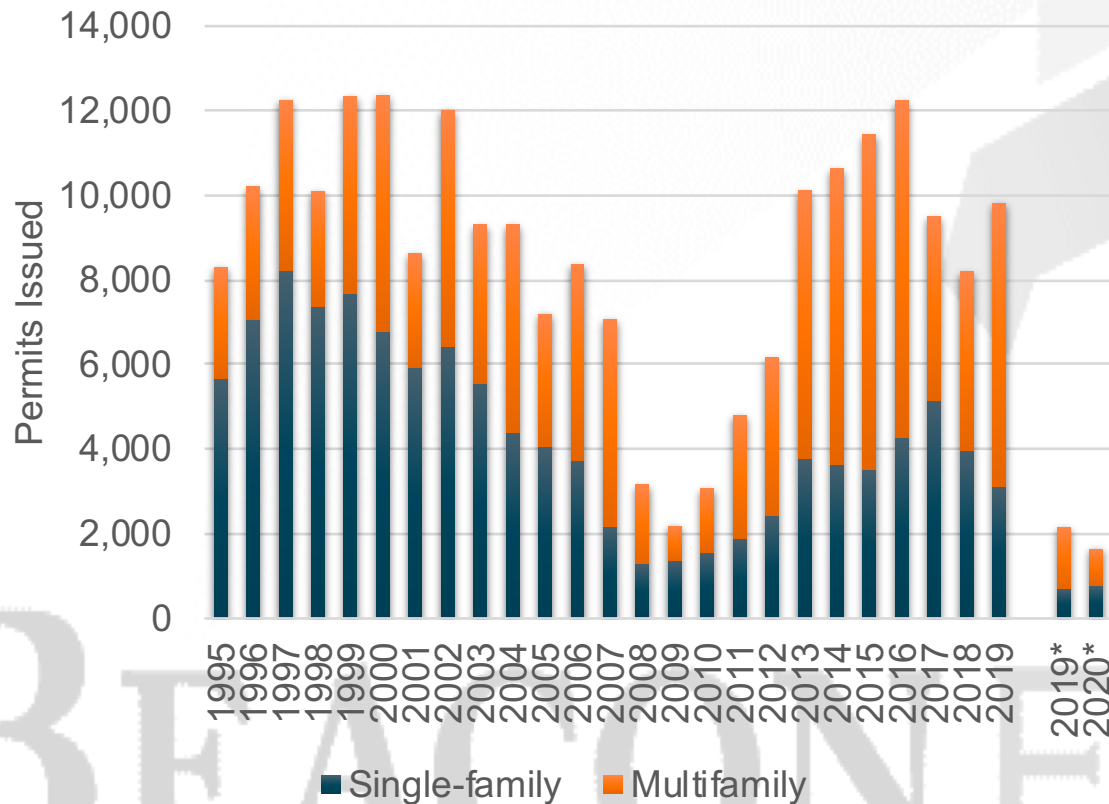
Share of Rent Burdened Households



Residential Construction



Residential Permits
Orange County



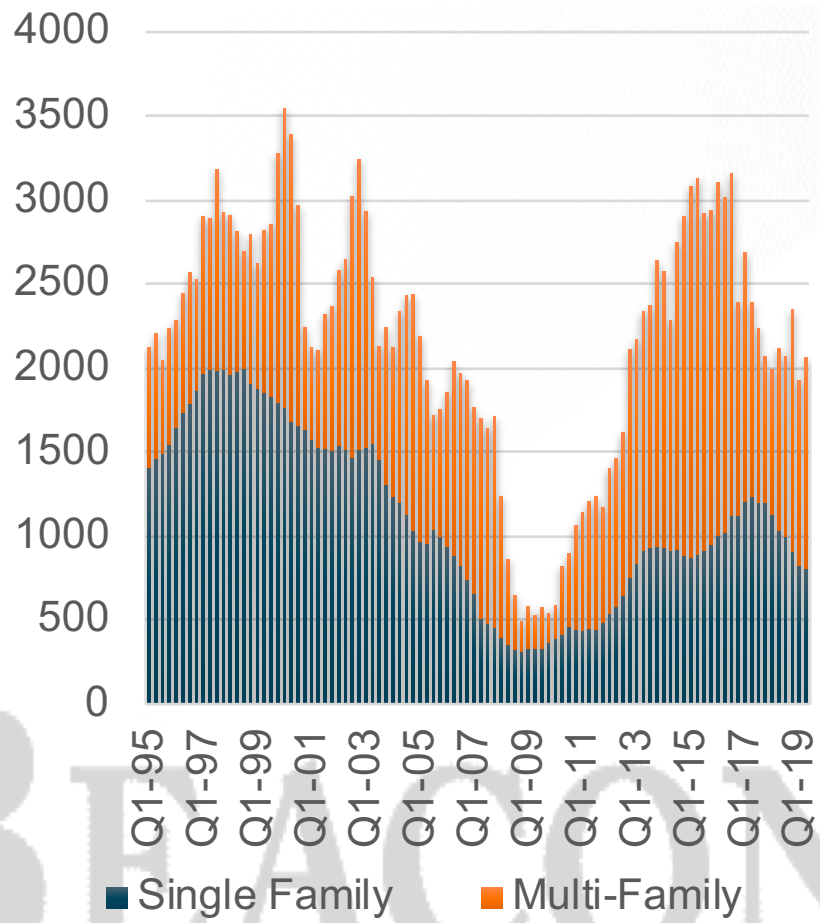
Location	Single-family		Multifamily	
	Q1-20	1-Yr Change	Q1-20	1-Yr Change
San Diego	1,154	530	1,159	603
Los Angeles	1,632	380	4,561	591
San Bernardino	827	134	215	-109
Riverside	2,243	859	36	-539
Orange	789	86	869	-605

*Year-to-date through Q1

OC Housing Permits



Housing Permits OC



OC 2.5% Job Growth: 33,000

Worker / Unit = 1.25

26,400 Units per year

30,000 Permits

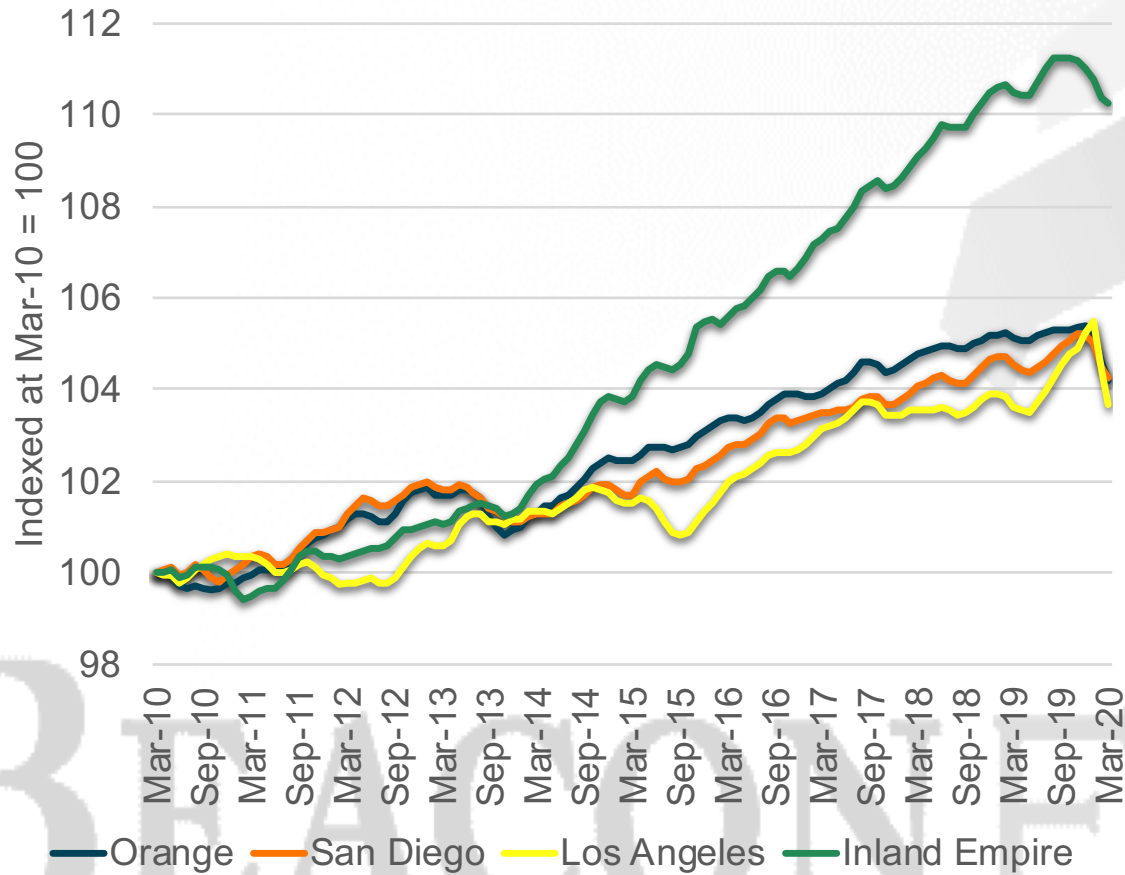
Last 4 quarters: 8,400

Age	Orange County	
	2018	5-Yr Chg
Total Pop (000s)	3,186	2.3%
Under 25	31.1	-10.2
25 to 34	14.4	0.7
35 to 44	13.0	-1.6
45 to 54	14.0	7.6
55 to 64	12.7	0.5
65 and over	14.8	7.4

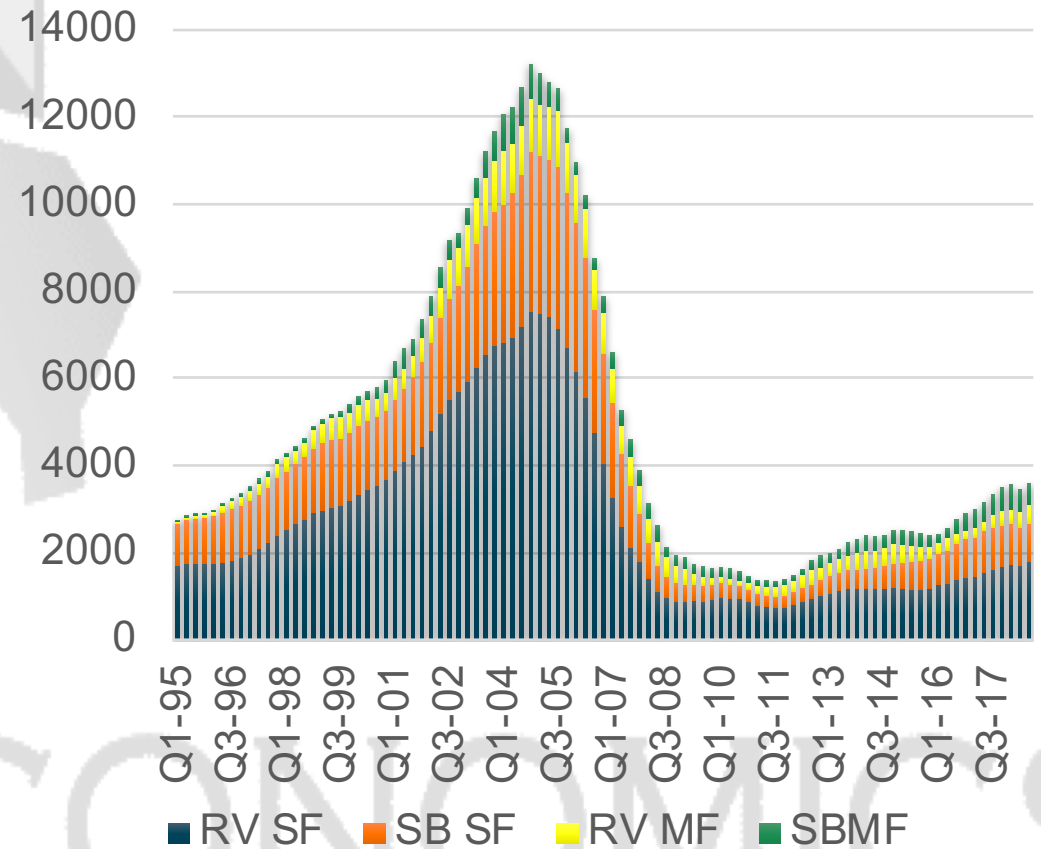
Labor Market



Labor Force

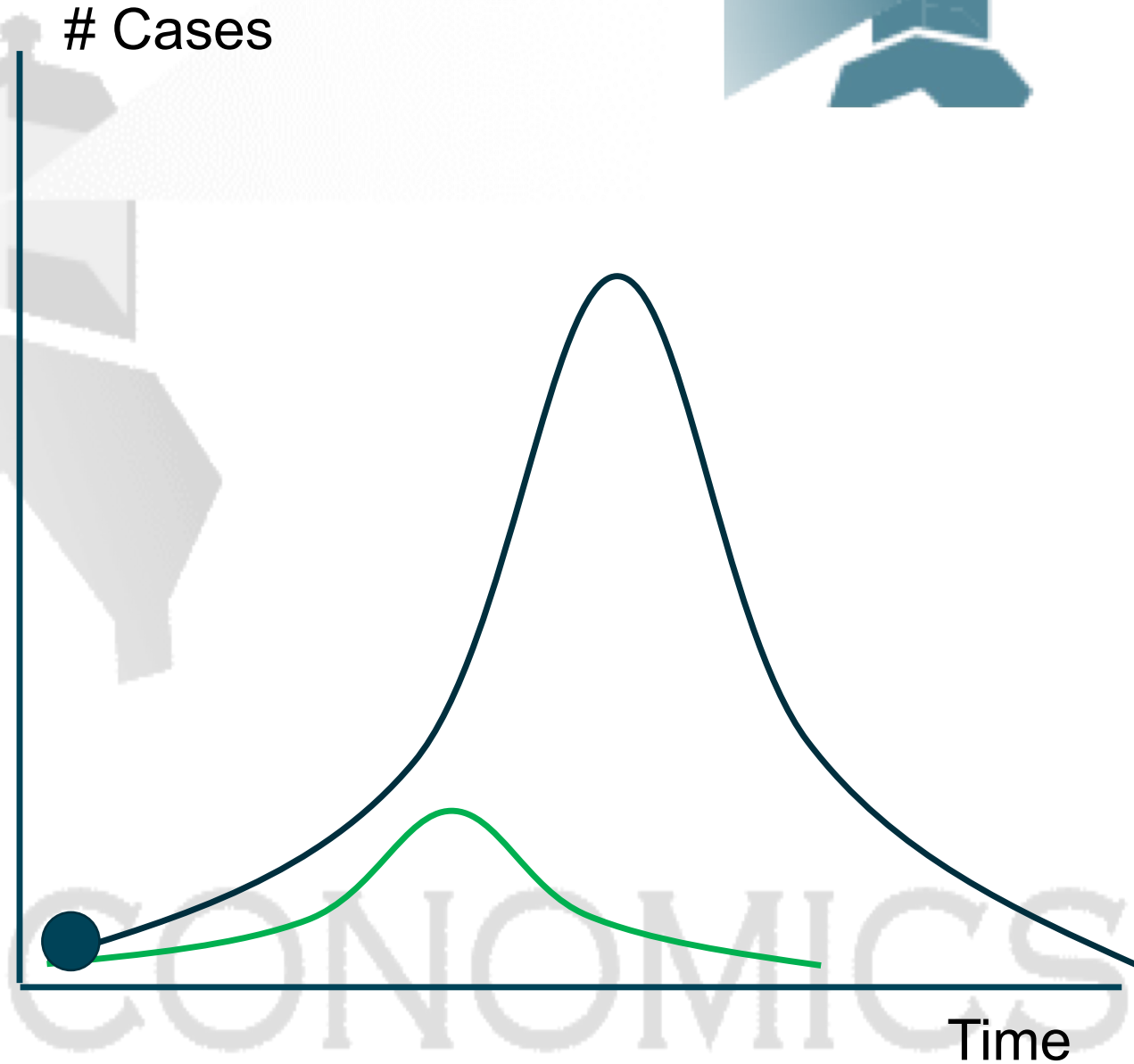


IE Housing Permits



Policy Thoughts

- Don't be pennywise and pound-foolish
 - A little panic is good
 - Policy makers should accept inevitability of some demand shock
 - Efforts to flatten the curve: cancel events, shut down large gatherings, close schools in effected areas
 - The quick cases are under control the less this will mean in the end

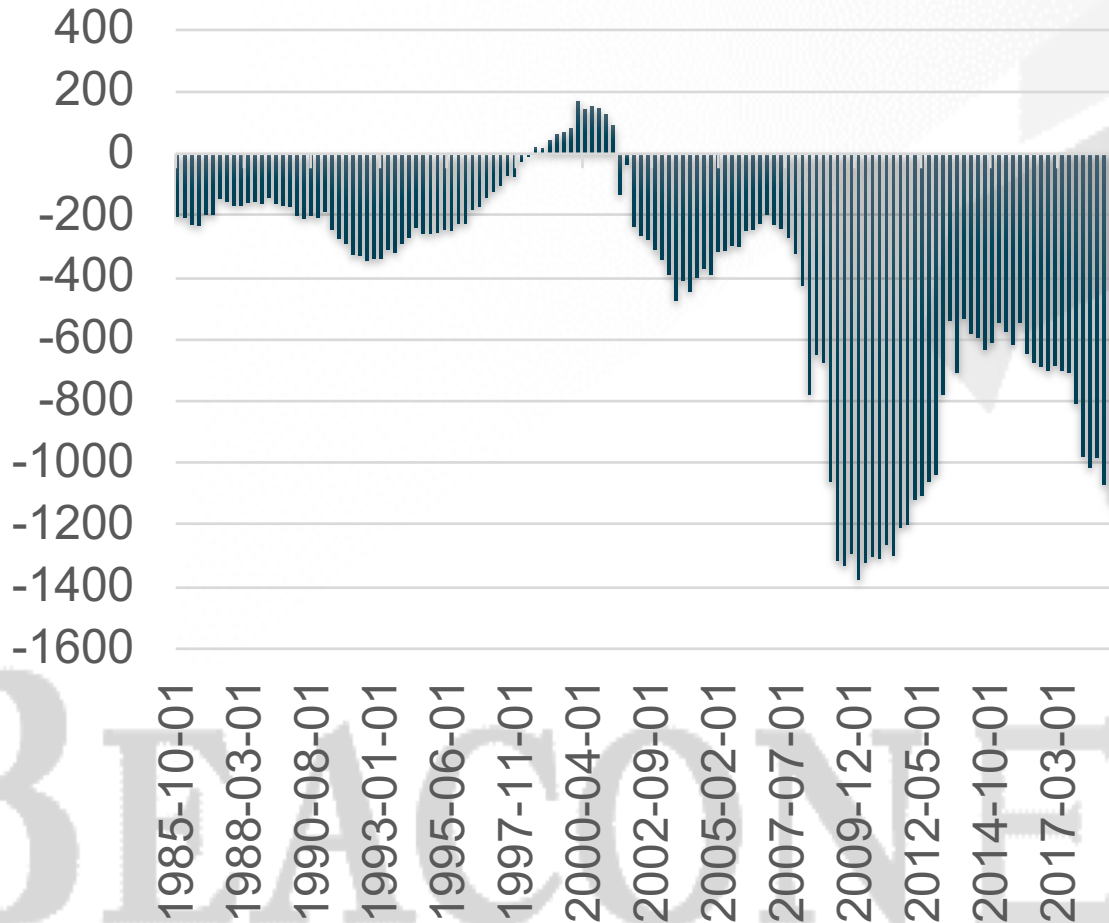


The Real Debt Crisis

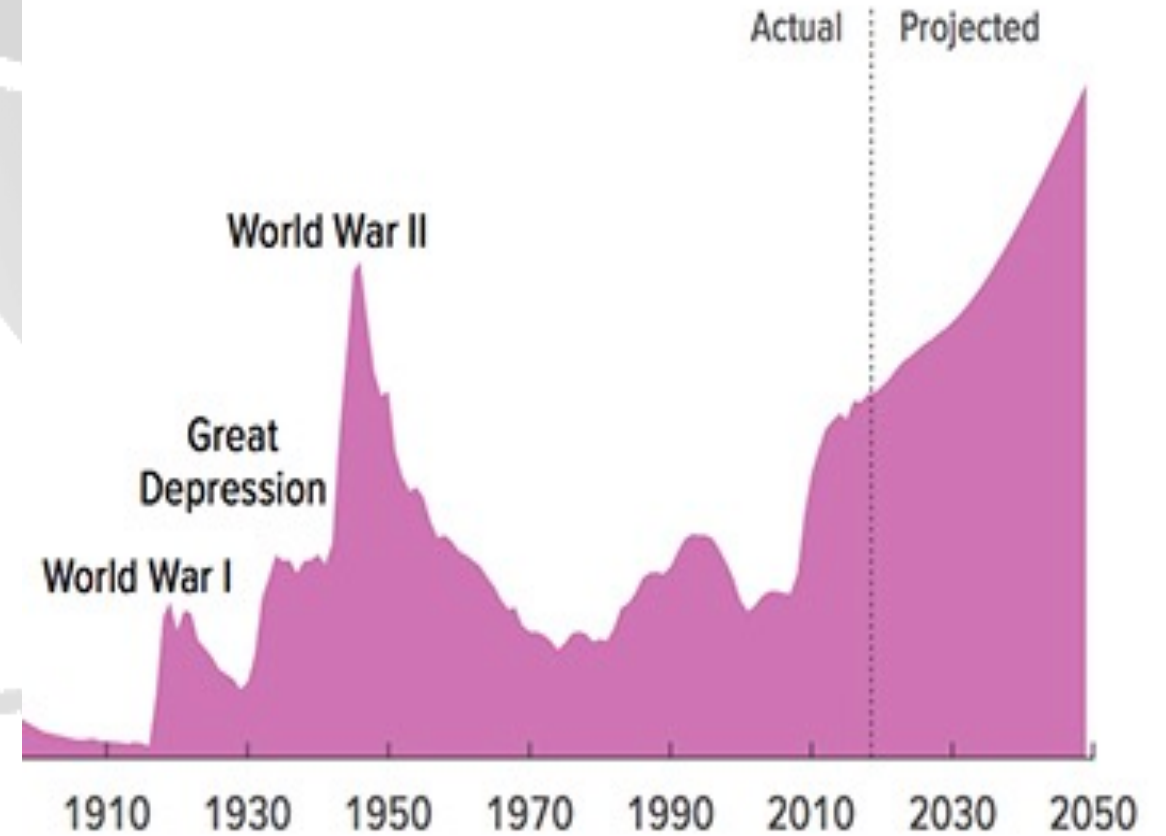
Net Federal Debt per person: > \$50,000
Federal Government will borrow ~\$3,000 more per person in 2020 alone.



Federal Budget Deficit



Net Federal Debt as % of GDP



2020: The Long Run Still Matters



■ Baseline Forecast

- -4.8% Q1, -20%Q2, 20% Q3, 5% Q4
- Is that a recession?
- Unemployment back to or below 5% by year end
- Moderate upticks in debt distress
- Stock market—who knows
- Little impact on real estate
- Fundamentals of the OC are hit / miss when it comes to the economic crisis

■ Wildcards

- Second round of outbreaks / economic shutdowns
- Global situation
- Retail / restaurants already distressed
- Can financial chaos create its own crisis?
- How long until entertainment / travel gets going
- Local and federal government budgets

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Contact **Dr. Chris Thornberg** directly at chris@beaconecon.com or **310.571.3399**

Let's discuss your goals and needs.

Beacon has **6 Practice Areas** covering a range of services and products.

Our 6 Practice Areas



Housing, Land Use, & Real Estate Advisory



Sustainable Growth and Development



Economic & Revenue Forecasting



Economic, Fiscal and Social Impact Analysis



Regional and Sub-Regional Analysis



Litigation and Testimony

Portfolio Spotlight



Regional and Sub-Regional Analysis

Beacon conducts analysis at an international, national, state, county, and city level -- and even down to the zip code, pending data availability. We analyze data on **Employment, Industry, Real Estate, and Consumption**.

Past Clients:

- City and County of Los Angeles
- City and County of Riverside
- East Bay Economic Dev. Agency



Impact (Economic, Fiscal, Social) & EB5 Analysis

Beacon has evaluated the impact of entities **like universities, music festivals, infrastructure projects, and real estate development projects**. Beacon has also conducted impact analyses that combine more than one of the above like that of **L.A's Olympic bid**.

Past Clients:

- University of Southern California
- Metropolitan Water District
- LA 2024 Olympic Bid Committee



Sustainable Growth & Development

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Past Clients:

- California Apartment Association
- Long Beach Downtown Dev. Corp.
- Santa Cruz Workforce Dev. Board



Housing, Land Use, & Real Estate Advisory



Economic & revenue forecasting



Litigation and testimony



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Thank You