

WELLS  
FARGO

SECURITIES

# U.S. Economic Outlook

---

Mark Vitner, Managing Director & Senior Economist

April 10, 2019

Together we'll go far



**Economic Outlook**

- **After a strong Q2 and Q3, economic growth moderated toward the tail end of Q4 and slowed further at the start of 2019. First quarter GDP may be surprisingly soft but the economy appears to be on pace to grow 2.4% in 2019.**

**Fiscal Policy**

- **The short-term boost from tax reform appears to be fading and smaller than expected refunds will weigh on spending this spring. Government spending has ramped up, however, and opportunity zones hold great promise.**

**Monetary Policy**

- **The Fed has once again become data driven as opposed to target driven. The Fed's more patient stance is well suited to the heightened risks from slower global economic growth and lack of visibility on U.S. growth.**

**Trade Policy**

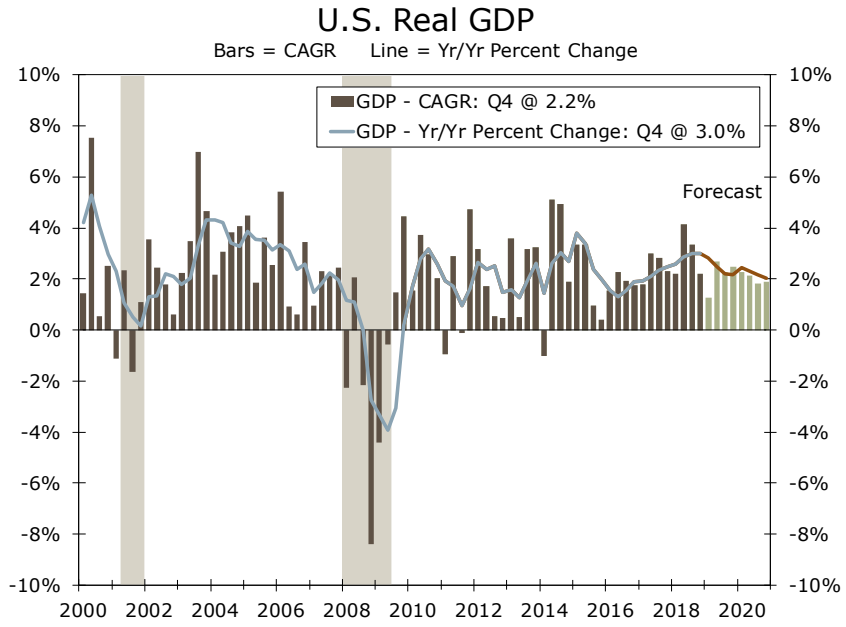
- **The Trump Administration's confrontational negotiating tactics have increased uncertainty but may also bring about needed changes from China. Trade relations are likely to remain contentious until a deal is reached.**

**California**

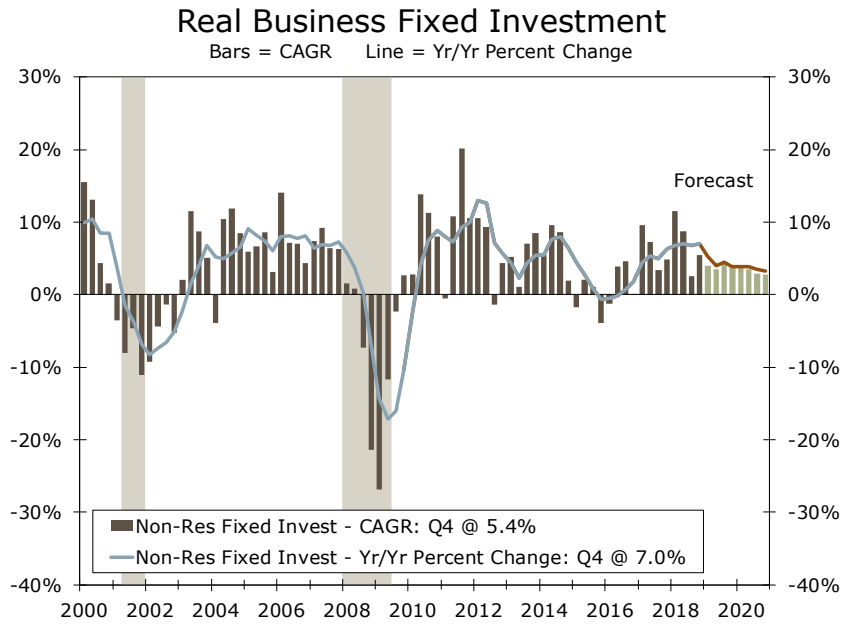
- **Job gains in California have outpaced the nation and hiring has risen solidly in nearly every major industry category, with professional & business services employment leading the way. Affordability is a problem.**

Real GDP growth moderated in Q4. Consumer spending was solid but ended the quarter on a soft note. Business fixed investment strengthened even though factory orders weakened, suggesting capex will slow further. Residential investment remains a drag on growth.

## Real GDP



## Business Fixed Investment

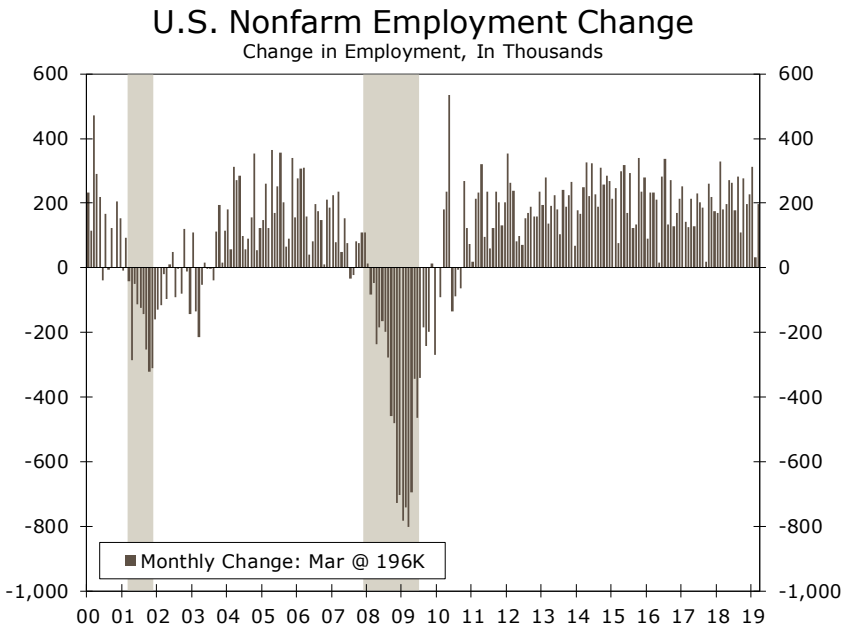


Source: U.S. Department of Commerce and Wells Fargo Securities

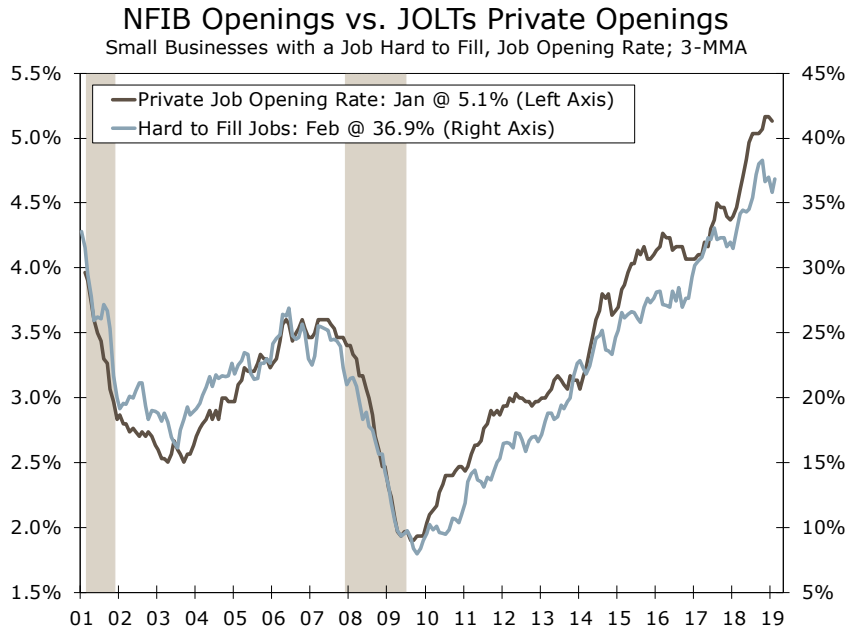
# Employment Situation: Broadening Growth

February's small gain in nonfarm jobs likely reflects some payback from stronger gains in prior months. Hiring appears set to slow, however, as businesses are growing more cautious. Wage gains have rebounded but remain modest relative to prior periods when the labor market was this tight. Labor demand remains fairly strong and is a good leading indicator of job growth.

## Nonfarm Employment



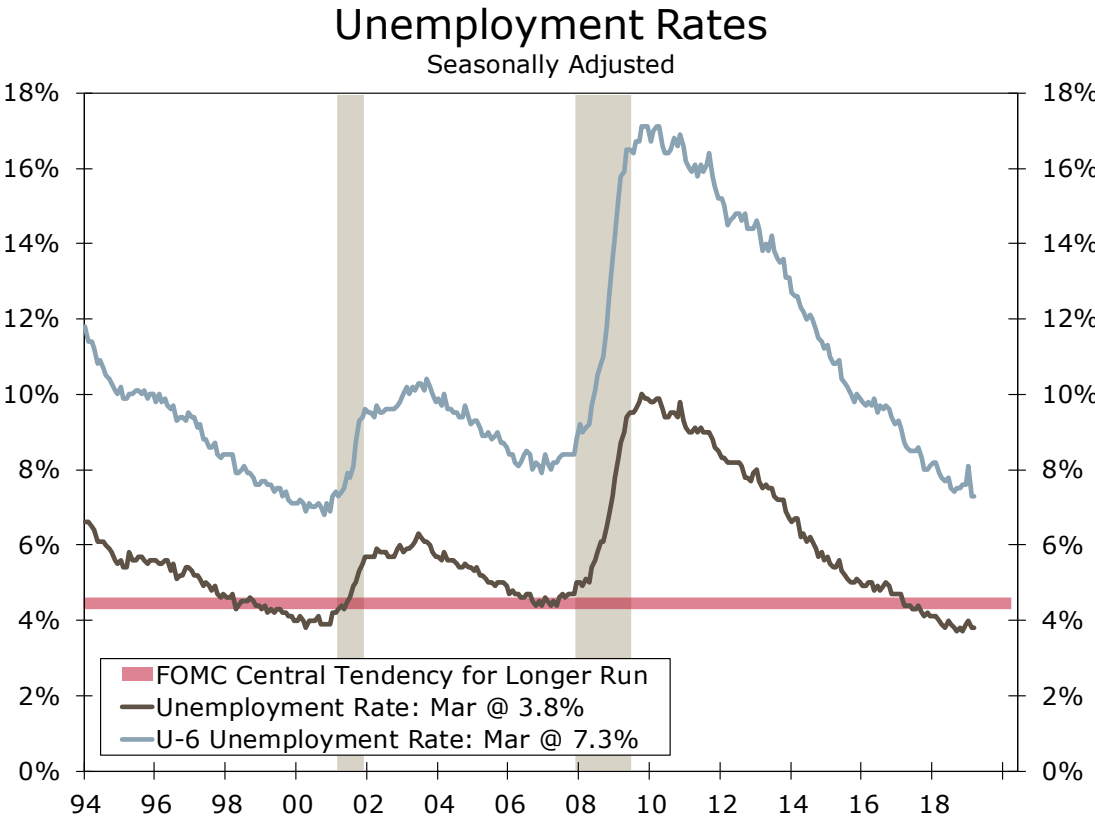
## Job Openings



Source: U.S. Department of Labor, National Federation of Independent Business and Wells Fargo Securities

The labor market has tightened substantially, with the unemployment rate at 3.8%.

While the criteria for determining the unemployment rate have not changed, growth in the Gig economy, particularly LinkedIn and the proliferation of online job search platforms, have likely changed the way workers engage in the labor market. As result, the economy can maintain relatively low inflation even with historically low unemployment.



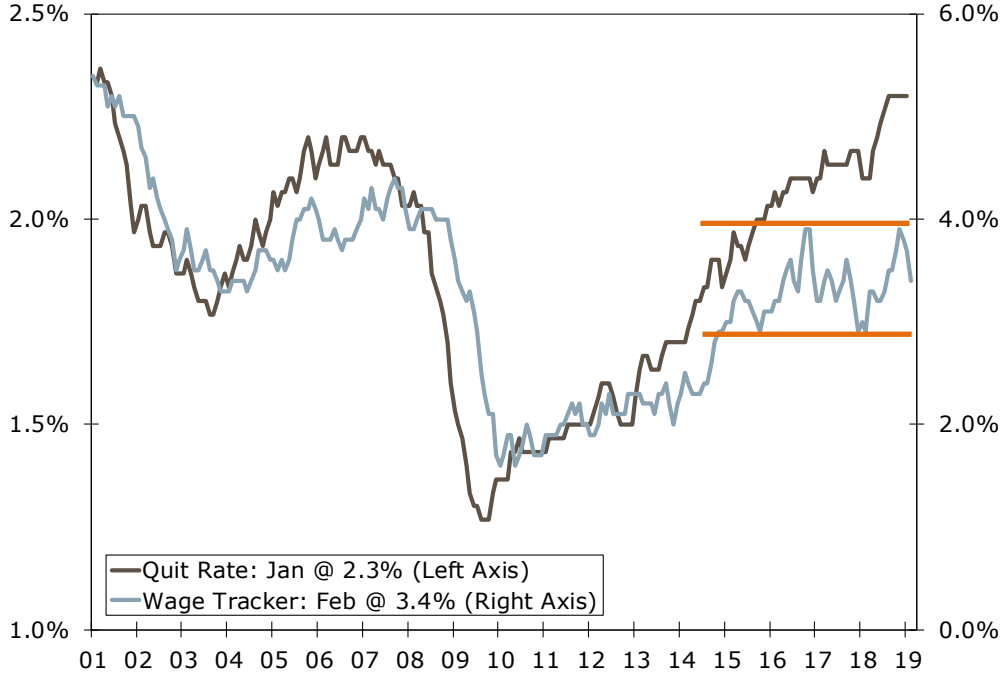
Source: U.S. Department of Labor and Wells Fargo Securities

The improvement in the labor market has led to a surge in voluntary quits, yet wage increases have not yet accelerated.

One plausible explanation is that workers are becoming ‘more fully employed’ by migrating away from temporary jobs to permanent positions more closely aligned with their career goals. There is some evidence of this in markets with exceptionally high labor force participation rates, like Minnesota, which is seeing much stronger GDP growth relative to job growth.

### Quit Rate vs Atlanta Fed Wage Tracker

Seasonally Adjusted, 3-MMA

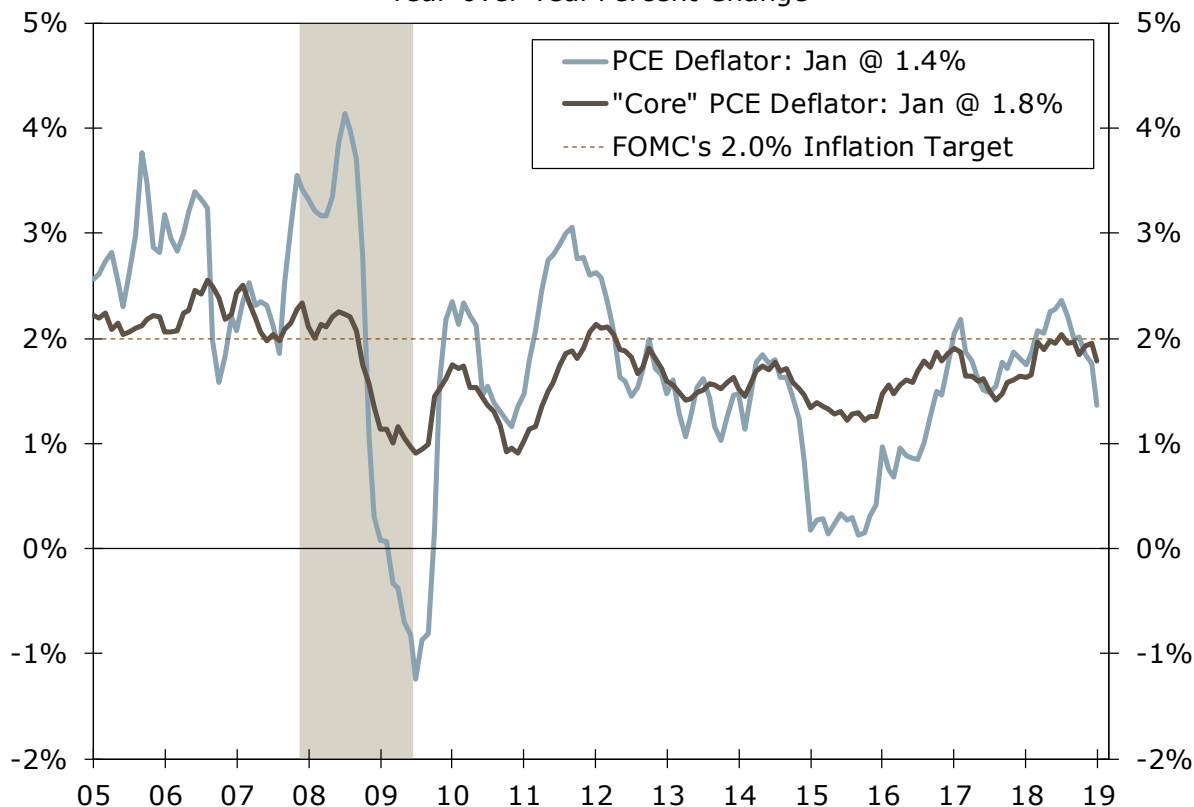


Source: U.S. Department of Labor, Federal Reserve Bank of Atlanta and Wells Fargo Securities

The Fed's preferred measure of inflation—the core PCE deflator—finally reached its 2% target before dipping again. With growth cooling off, pipeline inflationary pressures appear to be lessening, and inflation expectations have fallen in recent weeks.

## PCE Deflator vs. Core PCE Deflator

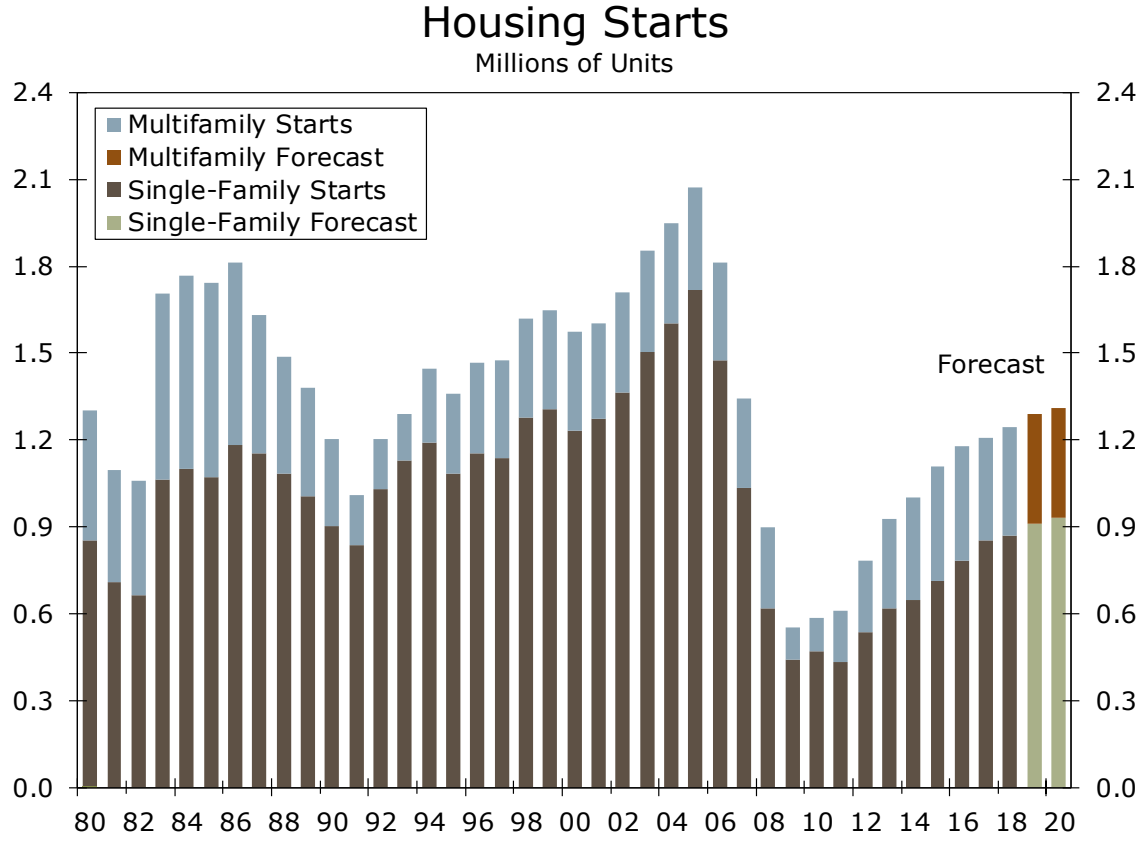
Year-over-Year Percent Change



Source: U.S. Department of Commerce and Wells Fargo Securities

Affordability concerns will continue to keep a low ceiling on home sales and new home construction.

Overall homebuilding is still lagging household formation and there are too few homes available in markets where population and employment are growing rapidly. Apartment construction is pivoting toward more affordable units.



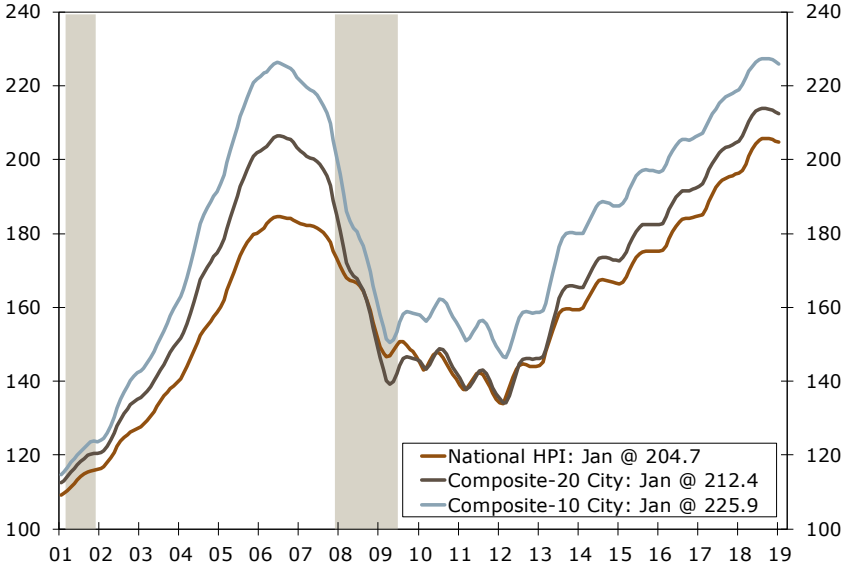
Source: U.S. Department of Commerce and Wells Fargo Securities



The recovery in home prices varies considerably throughout the country. Prices have risen fastest in rapidly growing tech-driven markets, mostly in the West. Several large East Coast markets have slowed, reflecting less foreign buying and possibly the impact of tax reform.

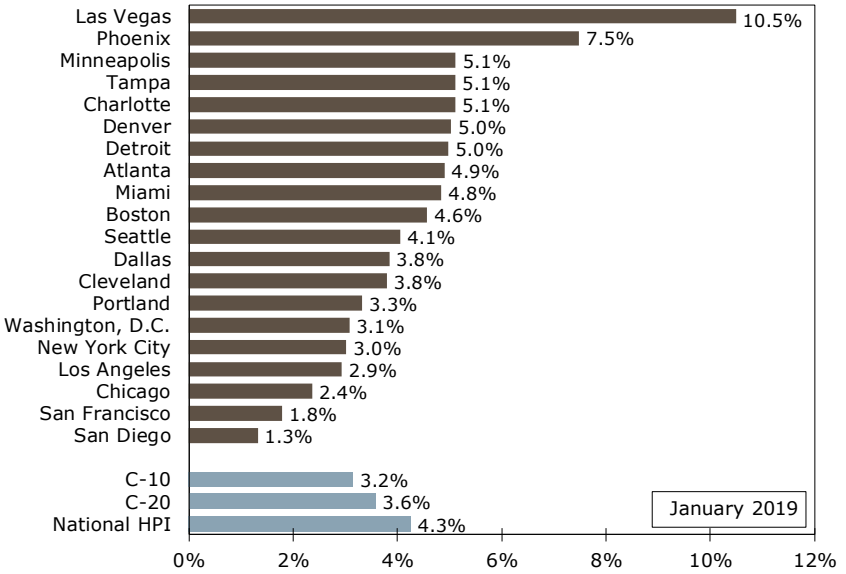
## Home Prices

S&P CoreLogic CS Home Price Index  
Index, January 2000=100



## Regional

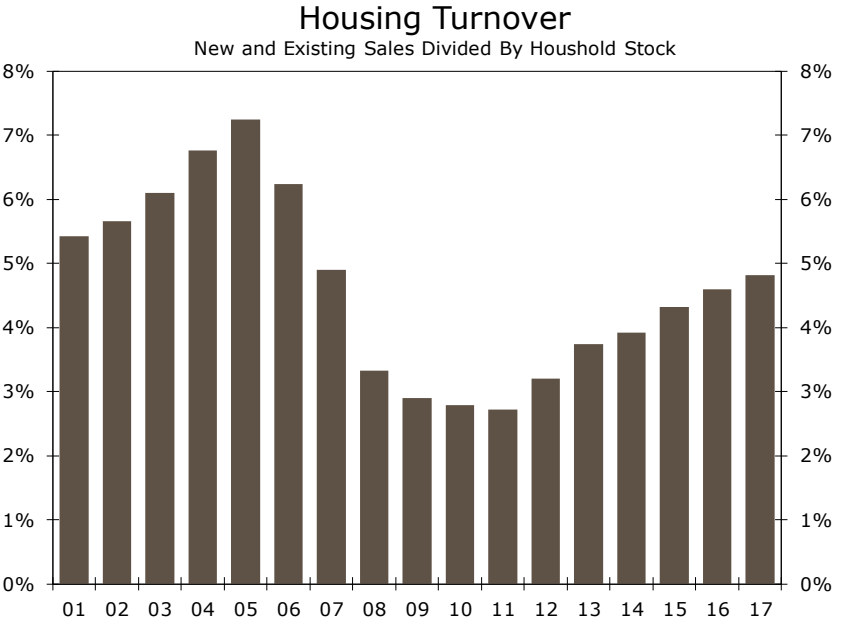
S&P CoreLogic Case-Shiller Home Prices  
Year-over-Year Percent Change, NSA



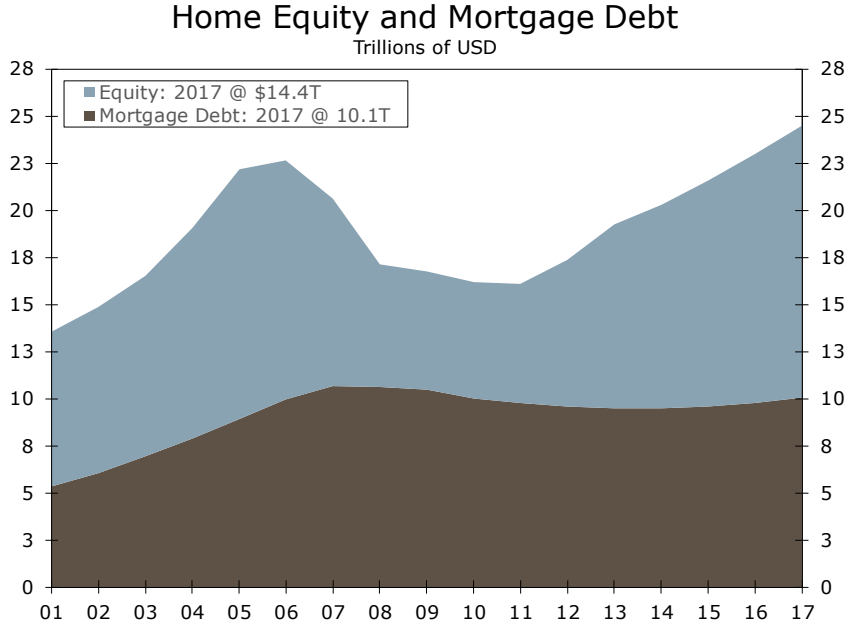
Source: S&P Case-Shiller and Wells Fargo Securities

Housing turnover remains below its historic norms. We suspect that many current homeowners are opting to remain in homes that they refinanced at near generational low mortgage rates. The rise in home equity provides a much needed cushion for Baby Boomers.

## Turnover



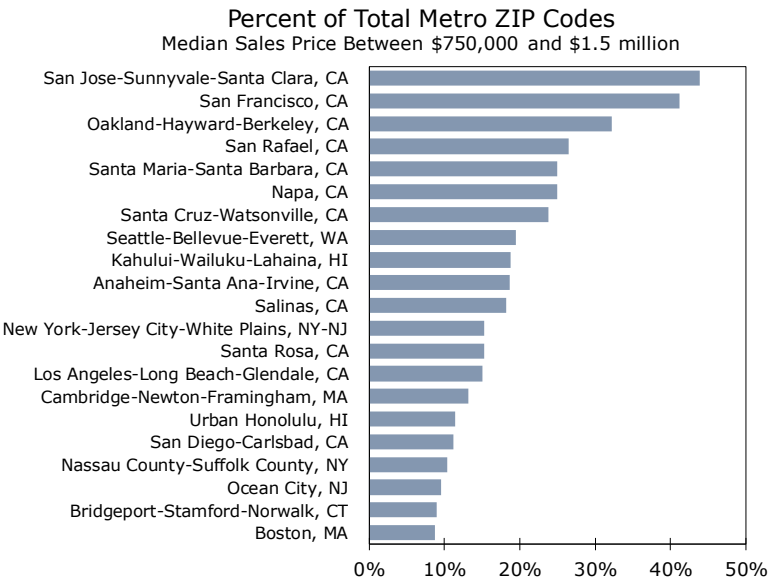
## Equity



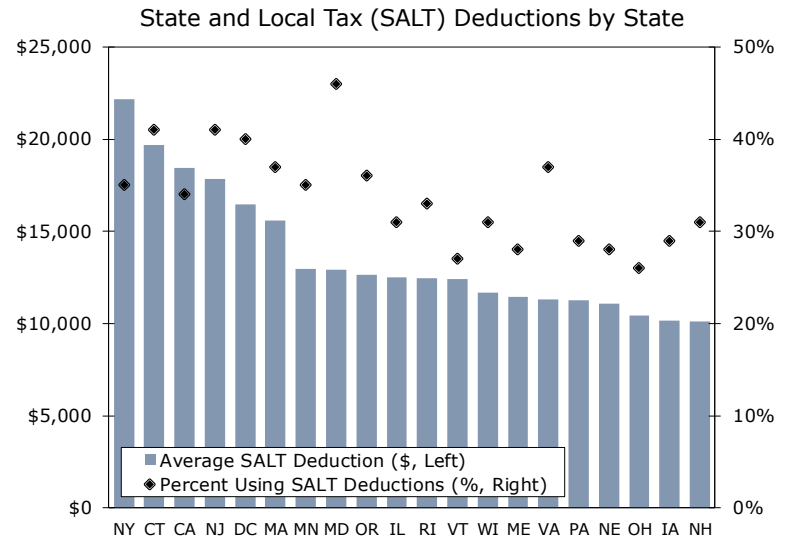
Source: U.S. Department of Commerce, CoreLogic, Inc. and Wells Fargo Securities

The reduced limitations on the deduction of mortgage interest and cap on state and local tax deductions enacted with the new tax law will affect the sale of homes priced around the \$750,000-\$1.5 million range.

## Median Home Prices by MSA



## SALT Deductions

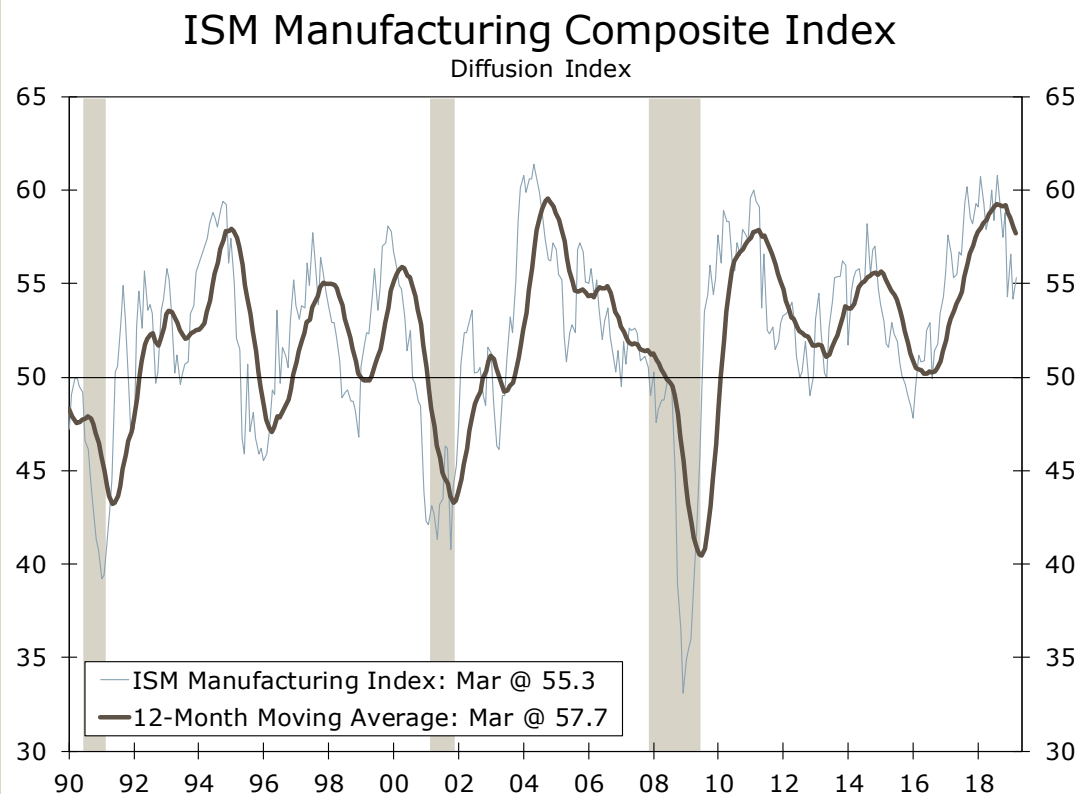


Source: Government Finance Officers Association, CoreLogic, Inc. and Wells Fargo Securities

The ISM manufacturing survey has fallen in recent months, amid concerns about a global economic slowdown.

The most recent reading remains consistent with expansion in the factory sector but the index is likely to decline further in coming months.

The Federal Reserve has seldom raised interest rates when the ISM index is declining and typically cuts interest rates if the ISM falls below the key 50 break-even level.



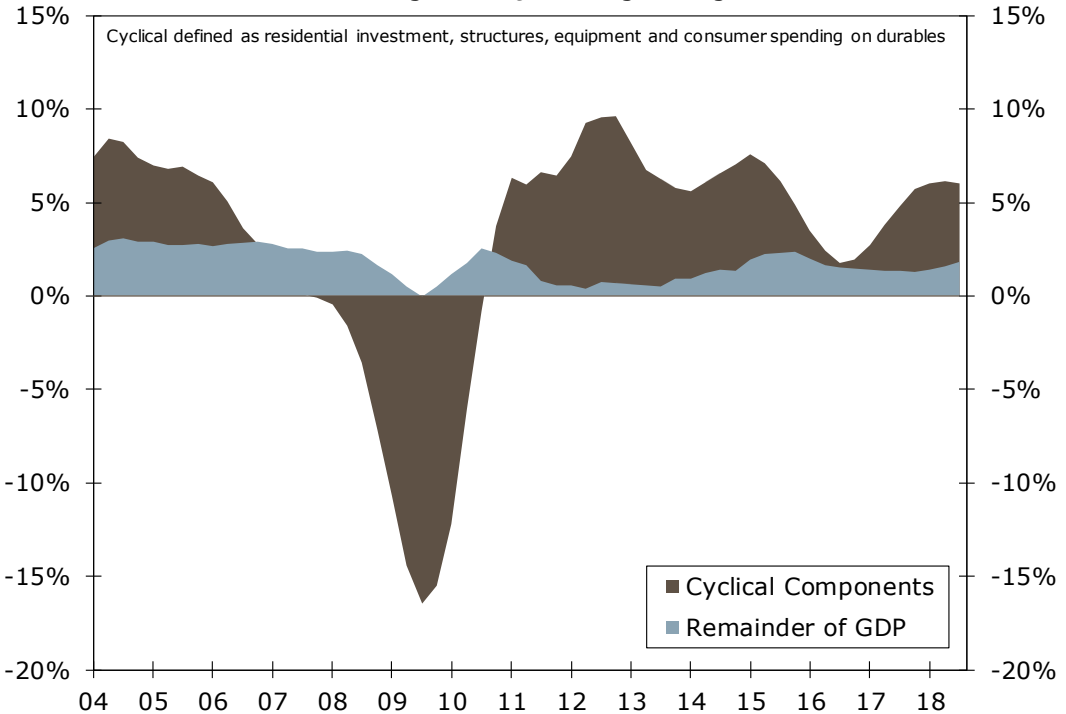
Source: Institute for Supply Management and Wells Fargo Securities

Consumer spending on durable goods, housing, capital spending and nonresidential structures collectively account for 20% of GDP but over 100% of the decline in GDP during recessions.

We have seen less of a boom in the most cyclical parts of the economy during this cycle, which may push a correction further out and ultimately make that correction less severe.

## Cyclical Components vs. Rest of GDP

Year-over-Year Change of 4-Qtr Moving Average of Real GDP



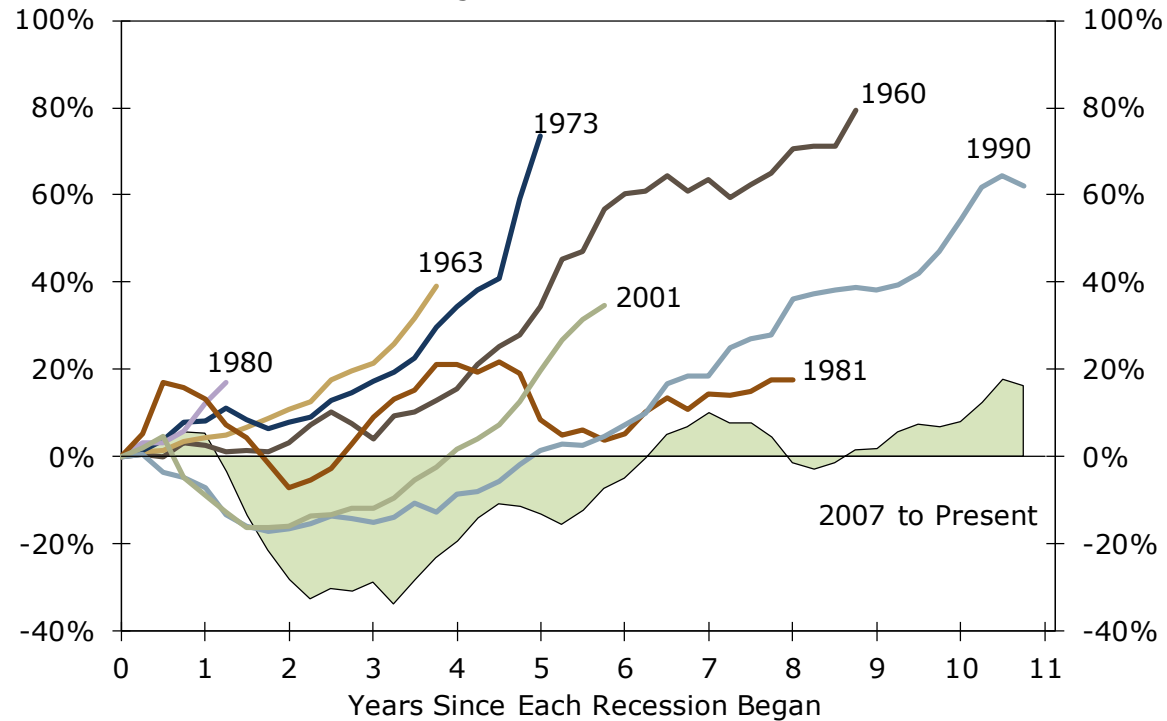
Source: U.S. Department of Commerce and Wells Fargo Securities

Overall building has remained relatively subdued this cycle.

Much of the activity has been concentrated in several large markets.

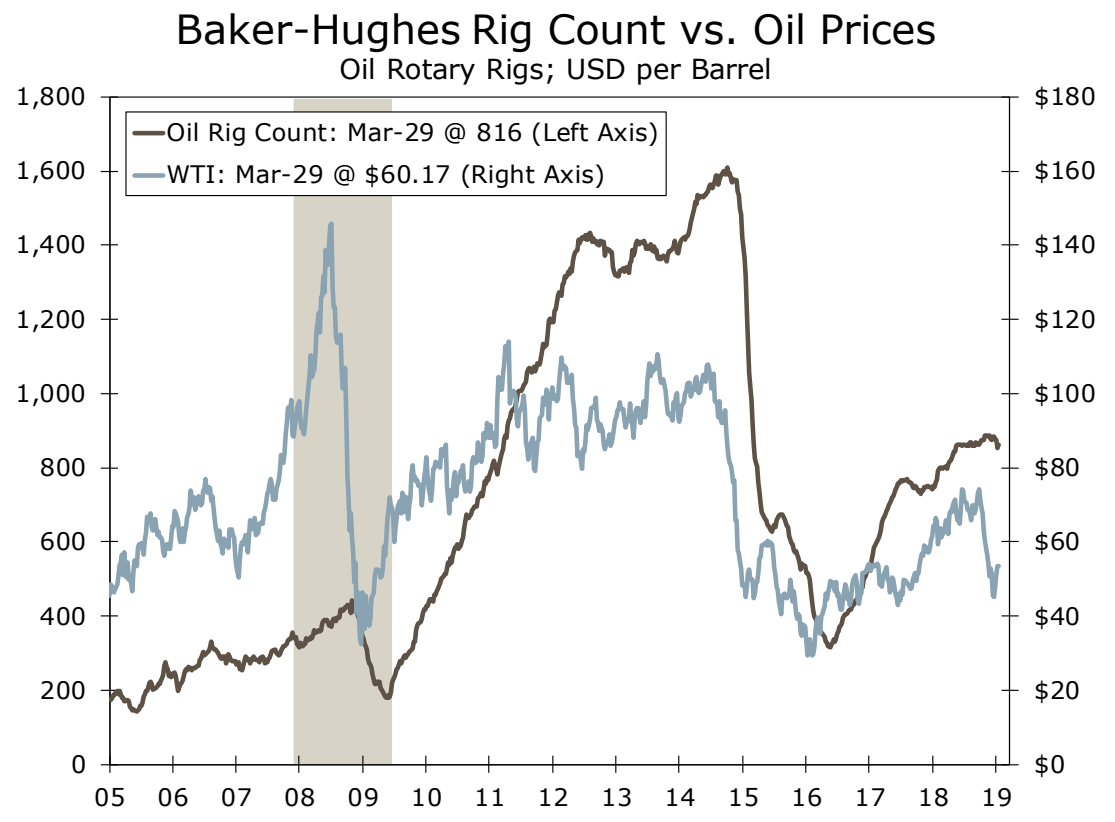
## Nonresidential Structures Investment

Percent Change Since Start of Each Recession



Source: U.S. Department of Commerce and Wells Fargo Securities

Commodity prices have been trending down of late on concerns over slowing global growth.



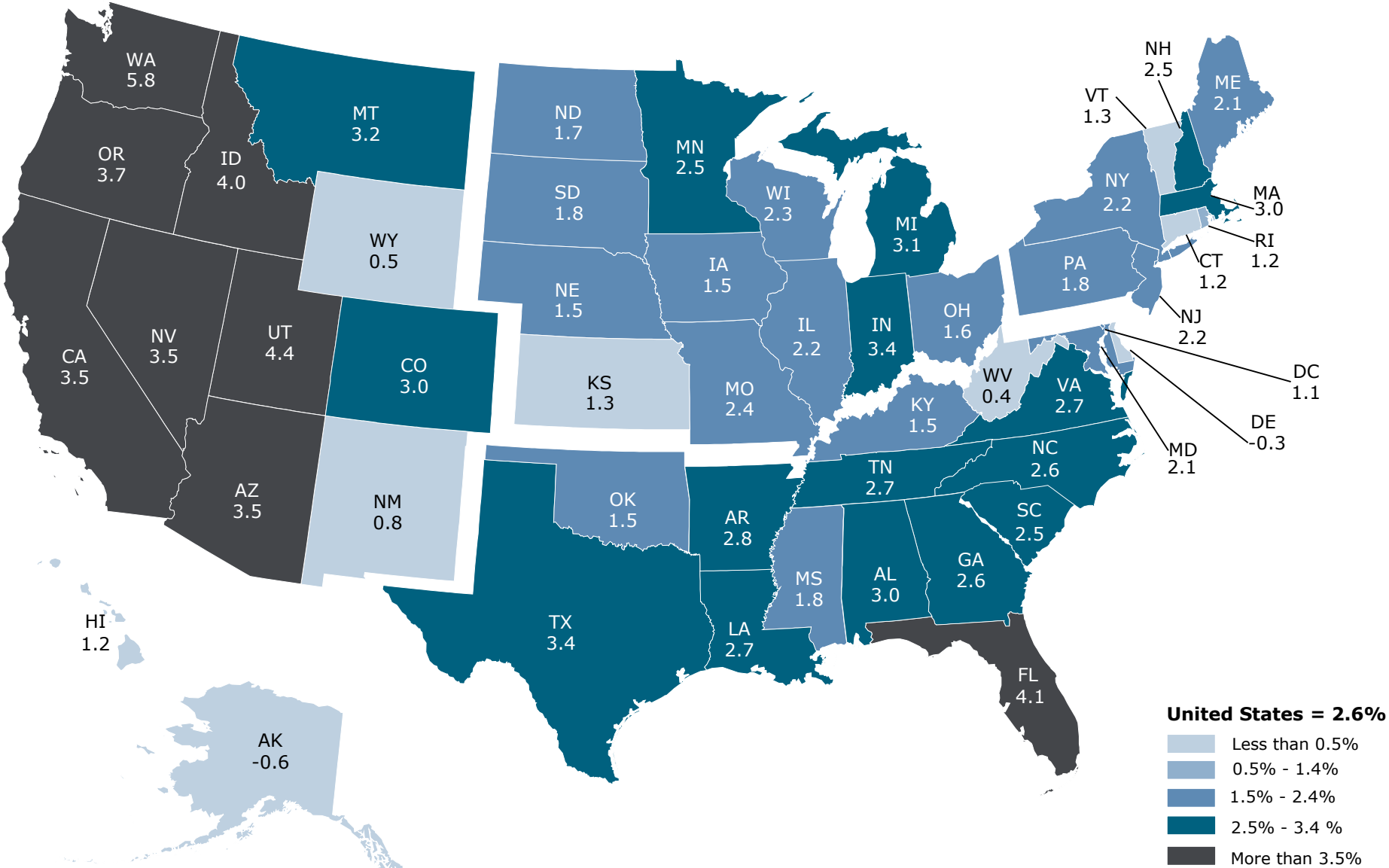
Source: Bloomberg LP and Wells Fargo Securities

# Regional Commentary

---



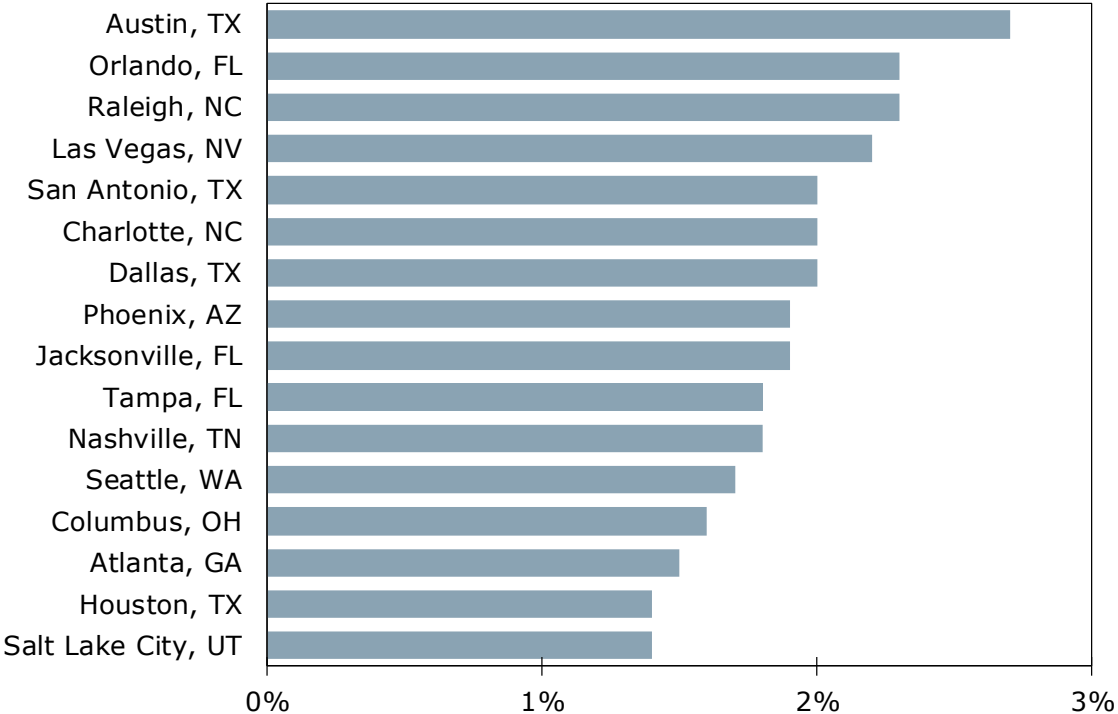
# Year-over-Year Percent Change in Real GDP by State (Q3-2018)



Source: U.S. Department of Commerce and Wells Fargo Securities

Many of the fastest growing metros are in areas where homes are more affordable. Most of these areas are in the South and Mountain West.

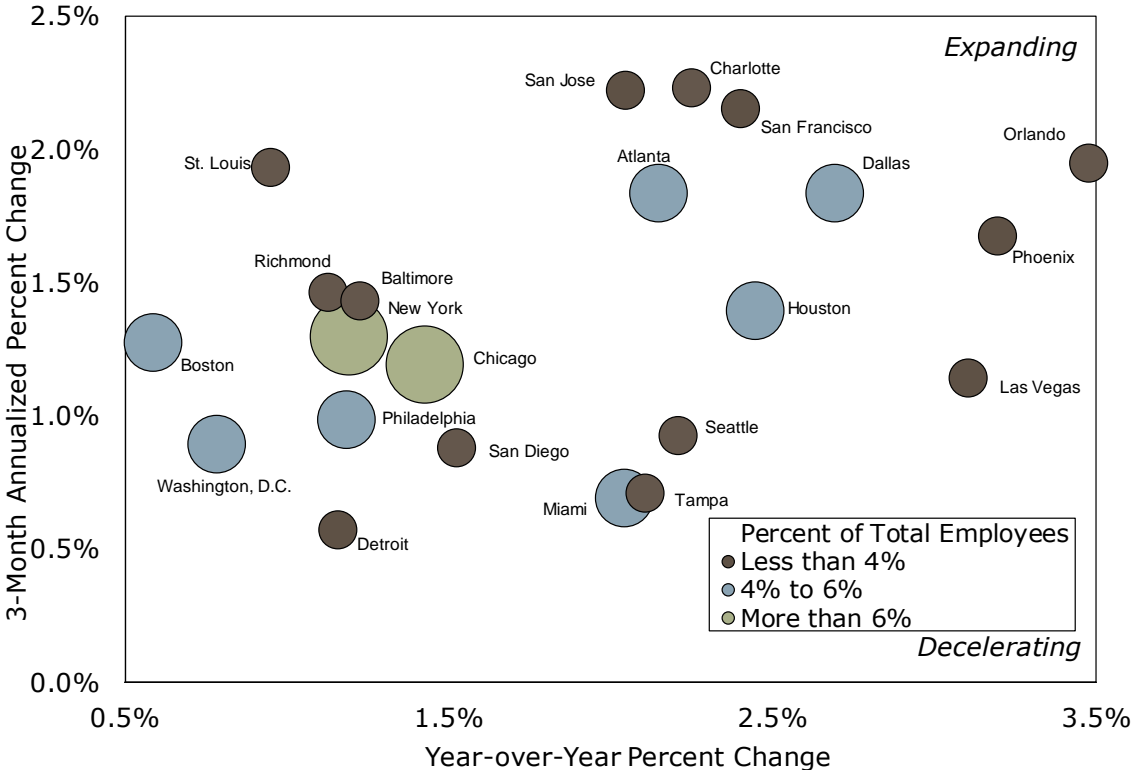
15 Fastest Growing Large Metro Areas in 2017  
Year-over-Year Population Growth, Among 50 Largest MSAs



Source: U.S. Department of Commerce and Wells Fargo Securities

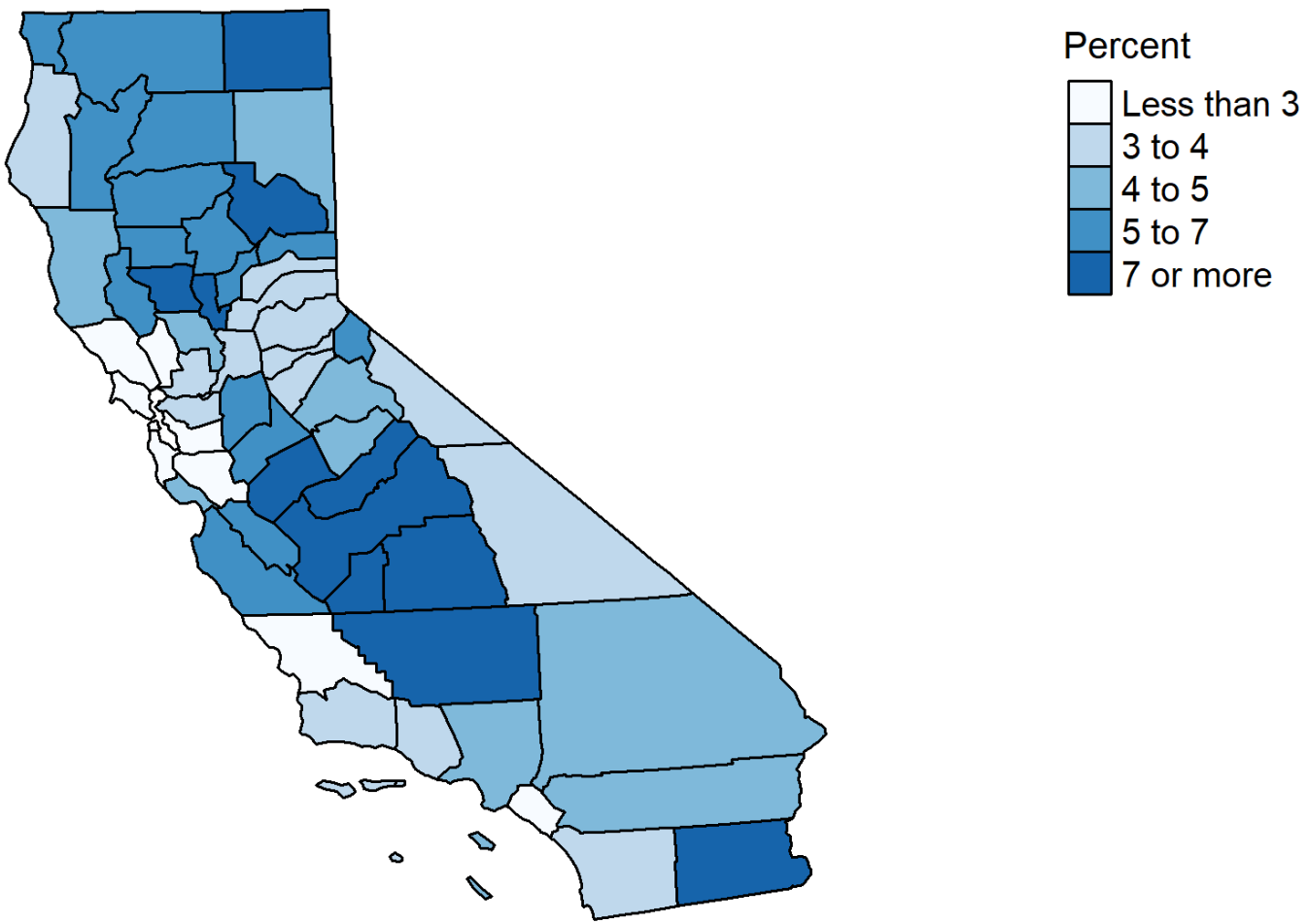
Employment growth is strongest in the South and West.

U.S. Employment Growth by MSA  
3-Month Moving Averages, February 2019



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

# California Unemployment – January 2019

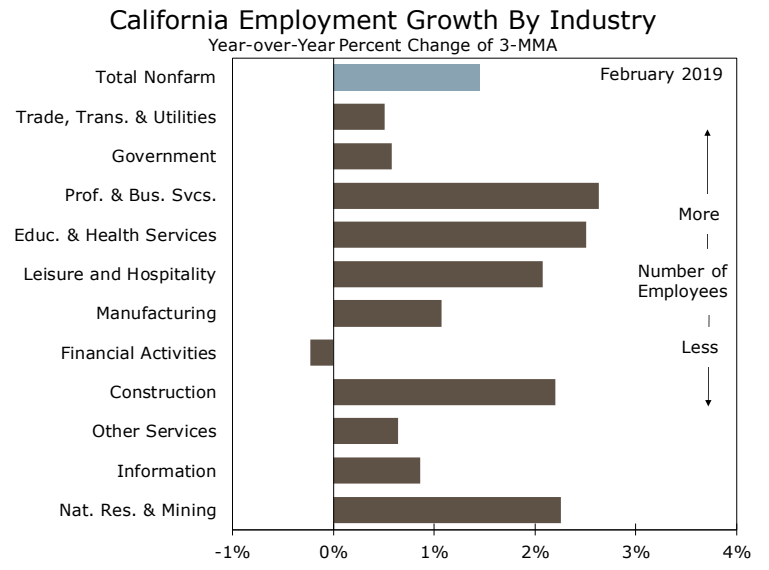
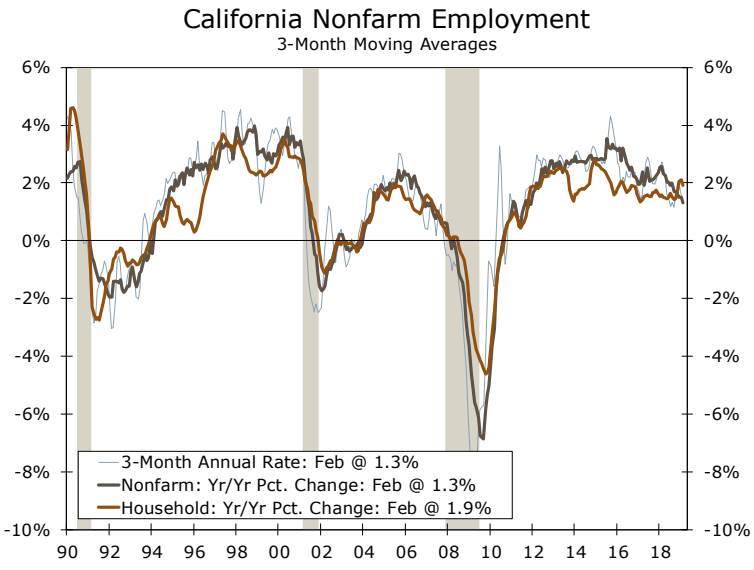


Source: U.S. Department of Labor and Wells Fargo Securities

Job gains in California have outpaced the nation and hiring has risen solidly in nearly every major industry category, with professional & business services employment leading the way. The unemployment rate stabilized at 4.2% but may move lower as growth moves inland.

## Nonfarm Employment

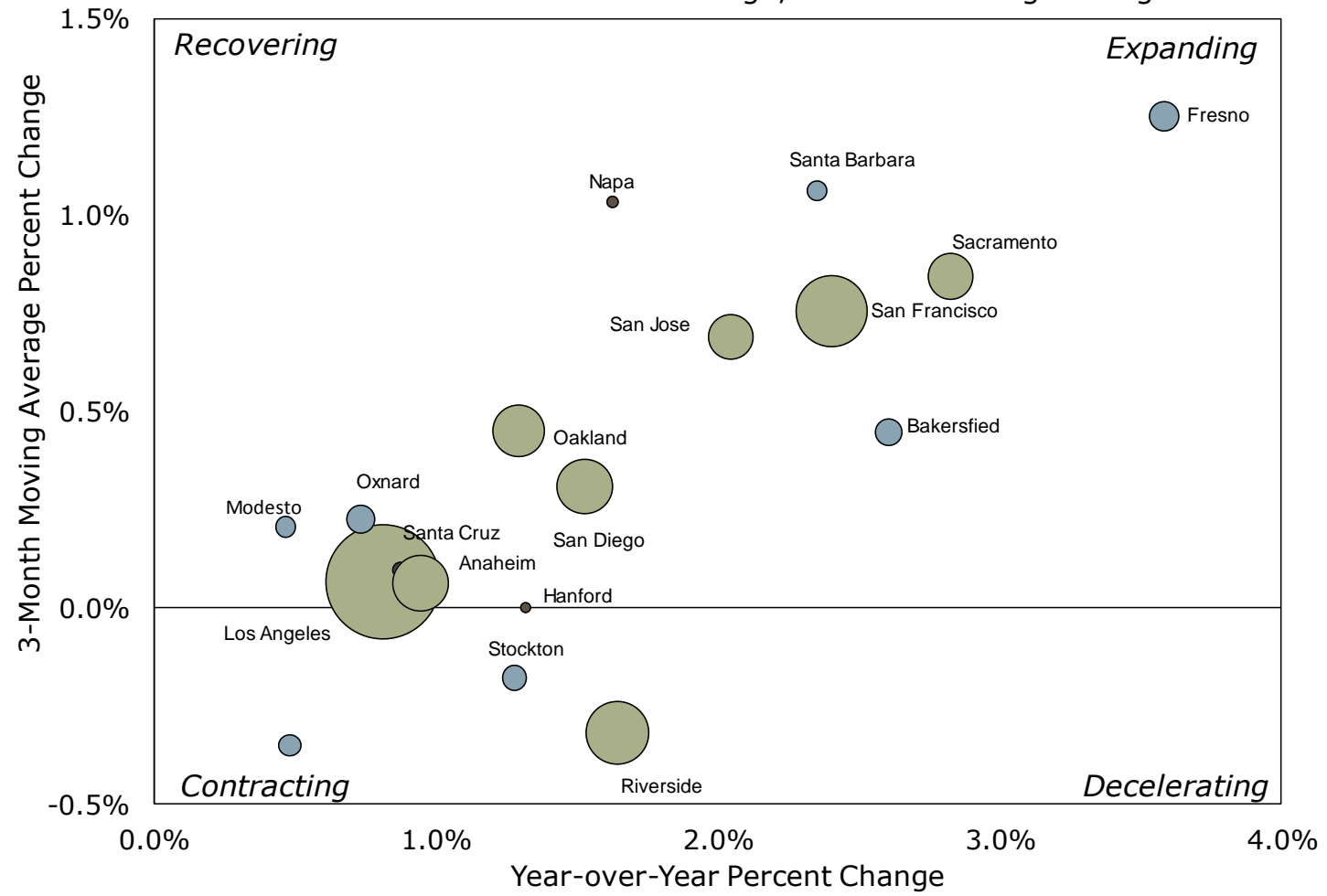
## Employment by Industry



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

### California Employment Growth: February 2019

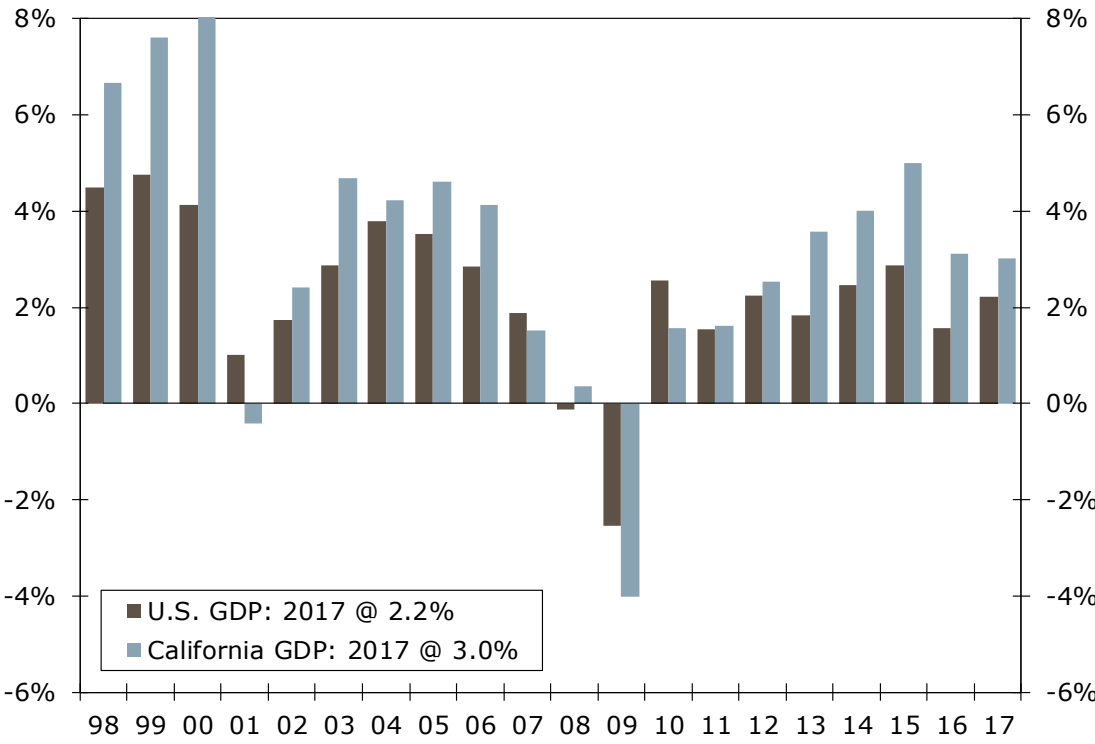
Year-over-Year Percent Change, 3-Month Moving Average



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

California continues to outperform the rest of the country. Growth is being driven by technology, tourism, entertainment and construction.

California Gross State Product & U.S. GDP  
Year-over-Year Percent Change

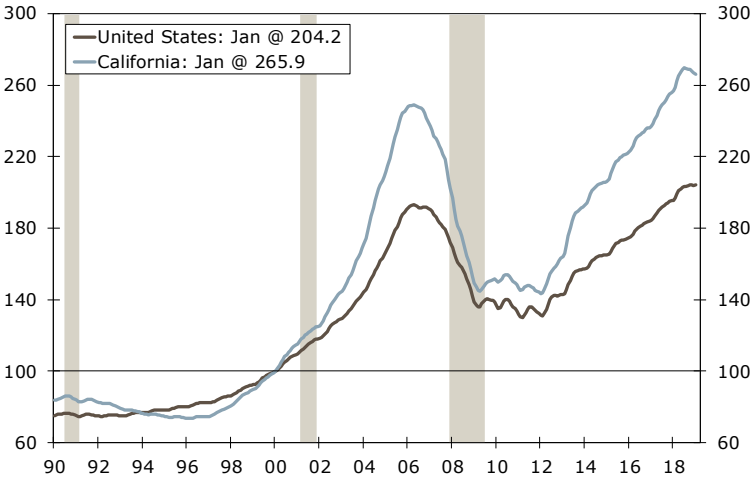


Source: U.S. Department of Commerce and Wells Fargo Securities, LLC

Home prices have rolled over in California, reflecting diminished affordability, fewer overseas buyers and the impact of limits on mortgage interest and state and local tax deductions.

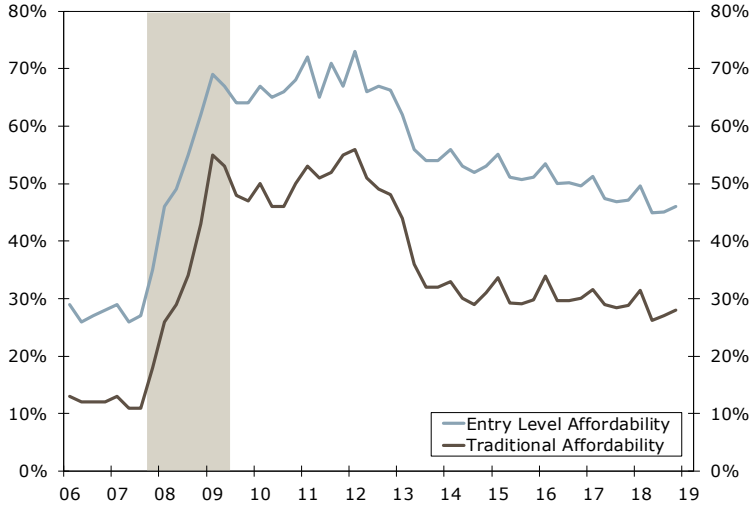
## Home Prices

CoreLogic HPI: CA vs. U.S.  
Index, 2000=100, Not Seasonally Adjusted



## Affordability

California Affordability Index  
Percent of Households that Can Afford Home



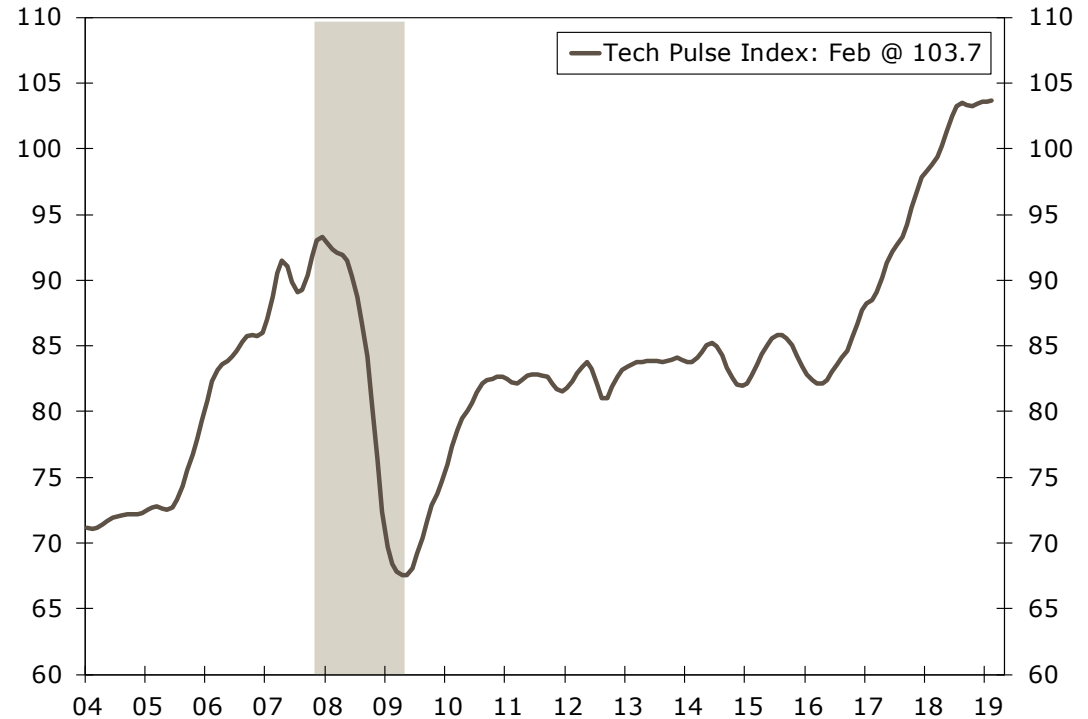
Source: CoreLogic, Inc., California Association of Realtors and Wells Fargo Securities



California's technology sector has enjoyed a strong run the past few years. The growing 'techlash' is threat to the industry and will likely result in increased regulation.

## San Francisco Fed Tech Pulse Index

Index, 2000 = 100

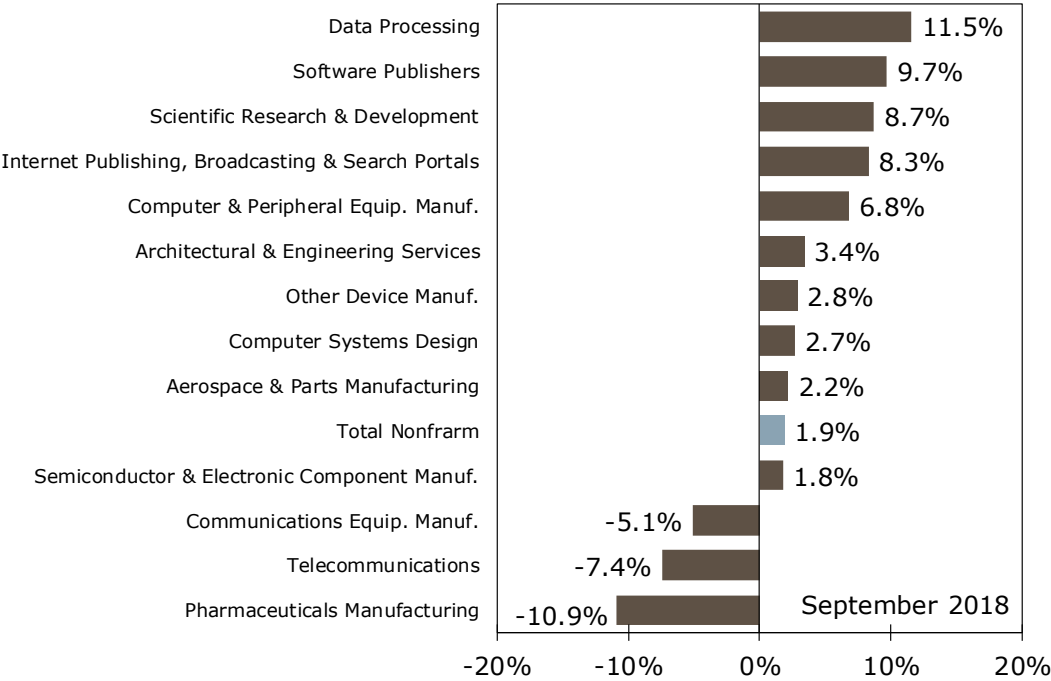


Source: Federal Reserve Bank of San Francisco and Wells Fargo Securities

Tech employment is up across most categories, with the strongest gains coming in IT, search, social media and cloud computing. Job growth at hardware producers and pharmaceuticals is much more modest.

## California High-Tech Employment Growth

Year-over-Year Percent Change, 3-MMA, QCEW



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

A significant portion of U.S. exports and imports flow through the Ports of Long Beach and Los Angeles, which have seen lower traffic this year.

## CA Top Export Industries

<u>Export</u>	<u>Export Value</u>	
	<u>in 2018 (\$Bil)</u>	<u>% of Total</u>
All Exports	178.36	100.0%
Computer and Electronic Product Manufacturing	45.14	25.3%
Transportation Equipment Manufacturing	19.14	10.7%
Machinery Manufacturing	17.79	10.0%
Miscellaneous Manufacturing	15.80	8.9%
Agriculture Forestry Fishing and Hunting	13.97	7.8%
Chemical Manufacturing	13.79	7.7%
Crop Production	13.51	7.6%
Food Manufacturing	9.11	5.1%
Electrical Equipment; Appliance; and Component Manuf:	7.82	4.4%
Petroleum and Coal Products Manufacturing	5.05	2.8%
Waste and Scrap	4.85	2.7%
#N/A	#N/A	#N/A
Fabricated Metal Product Manufacturing	4.56	2.6%
Primary Metal Manufacturing	3.61	2.0%

Source: U.S. Department of Commerce and Wells Fargo Securities

## CA Top Export Countries

<u>Country</u>	<u>Export Value</u>	
	<u>in 2018 (\$B)</u>	<u>% of Total</u>
All Exports	178.40	100.0%
Exports: Total to Mexico	30.74	17.2%
Exports: Total to Canada	17.75	9.9%
Exports: Total to China	16.35	9.2%
Exports: Total to Japan	13.10	7.3%
Exports: Total to South Korea	9.94	5.6%
Exports: Total to Hong Kong	9.91	5.6%
Exports: Total to Taiwan	6.82	3.8%
Exports: Total to Germany	6.59	3.7%
Exports: Total to Netherlands	6.43	3.6%
Exports: Total to India	6.12	3.4%
Exports: Total to United Kingdom	5.24	2.9%
Exports: Total to Singapore	4.44	2.5%
Exports: Total to Australia	3.53	2.0%
Exports: Total to France	3.33	1.9%
Exports: Total to Belgium	2.81	1.6%
Exports: Total to Malaysia	2.18	1.2%
Exports: Total to Switzerland	2.08	1.2%

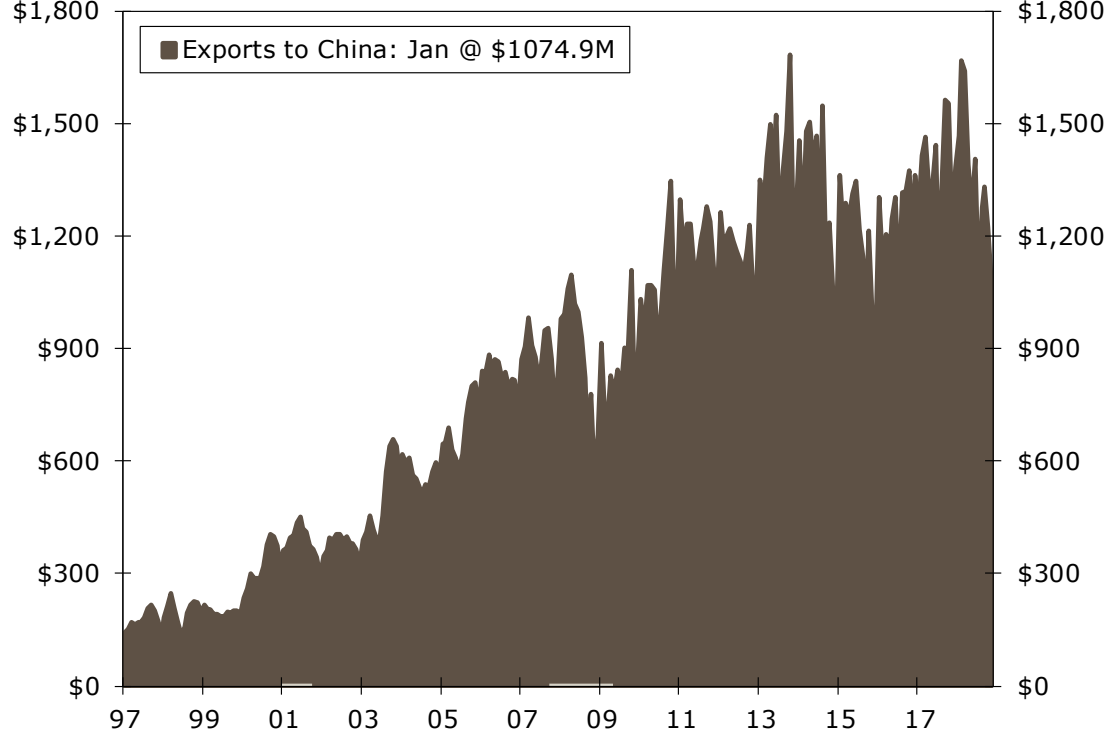
Source: U.S. Department of Commerce and Wells Fargo Securities

California's exposure to China has grown substantially over the past decade.

Exports have fallen this past year.

## California Exports to China

In Millions of U.S Dollars

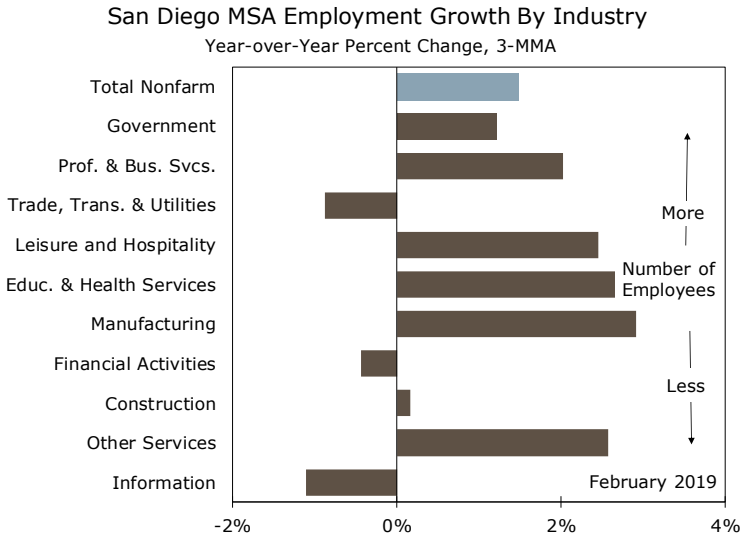
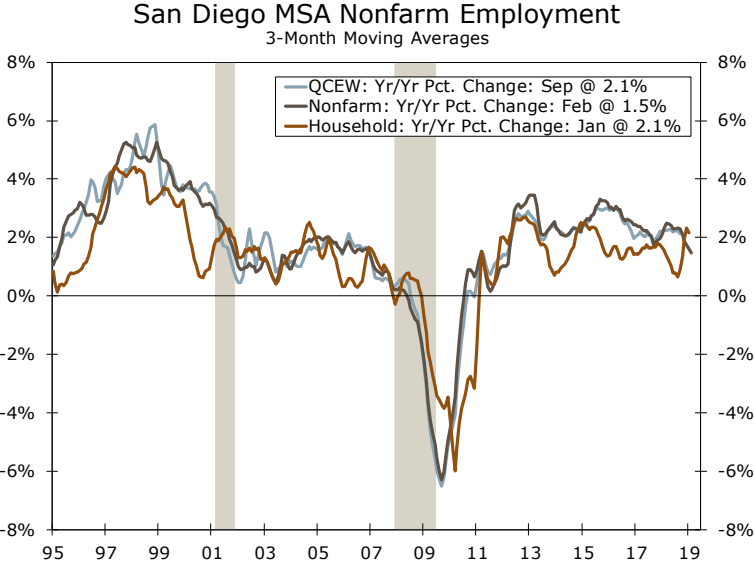


Source: U.S. Department of Commerce and Wells Fargo Securities, LLC

San Diego's economy has flourished with its mix of tech, life sciences and communications industries.

## Employment Growth

## Unemployment

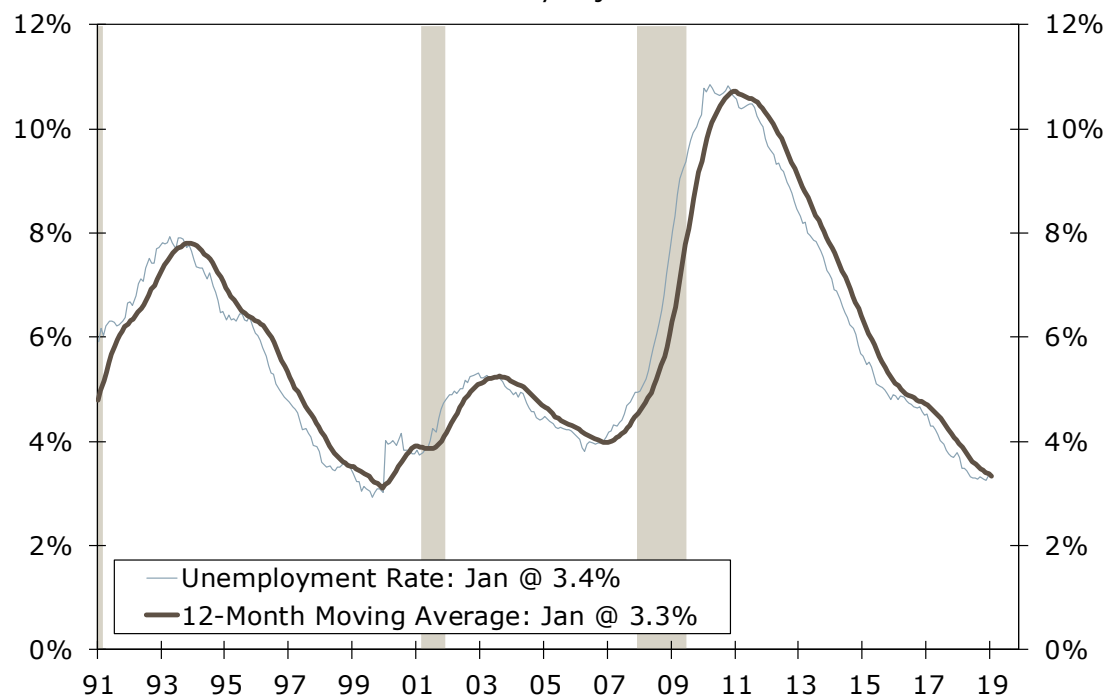


Source: U.S. Department of Labor and Wells Fargo Securities

With an unemployment rate of just 3.4%, San Diego's labor market is exceptionally tight.

The availability of jobs is not drawing new residents to the region in quite the same way that it did previously, as home prices and rents are pricey.

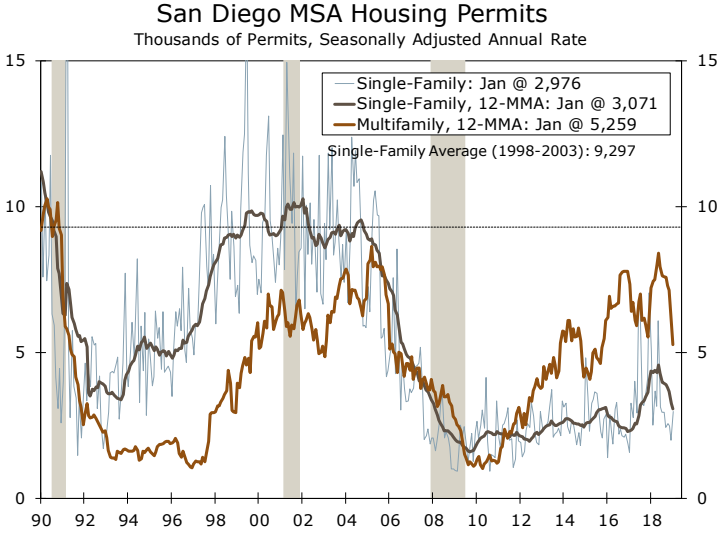
### San Diego MSA Unemployment Rate Seasonally Adjusted



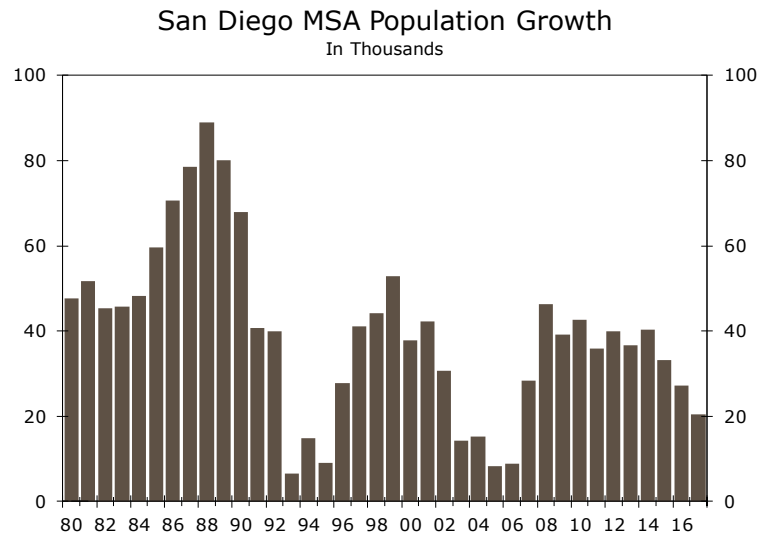
Source: U.S. Department of Labor and Wells Fargo Securities, LLC

Apartment construction continues to outpace single-family development.  
Population growth has slowed, as affordability has diminished.

## Permits



## Population Growth

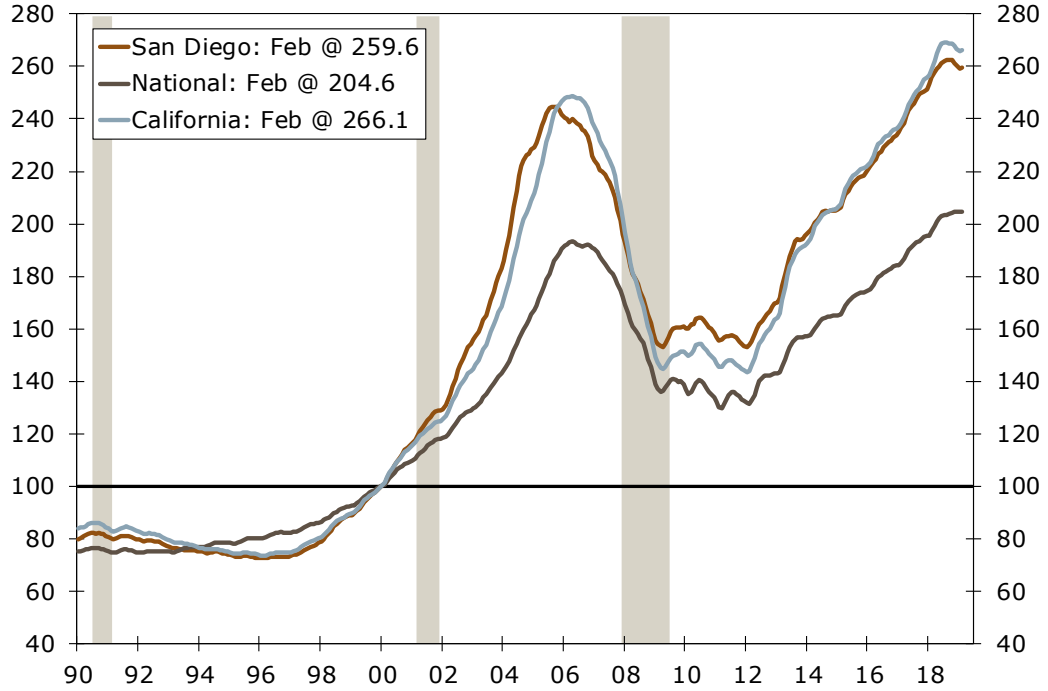


Source: U.S. Department of Commerce and Wells Fargo Securities

Affordability is a significant impediment to homeownership.

### CoreLogic Home Price Index: San Diego, CA

Index, 2000=100, Not Seasonally Adjusted



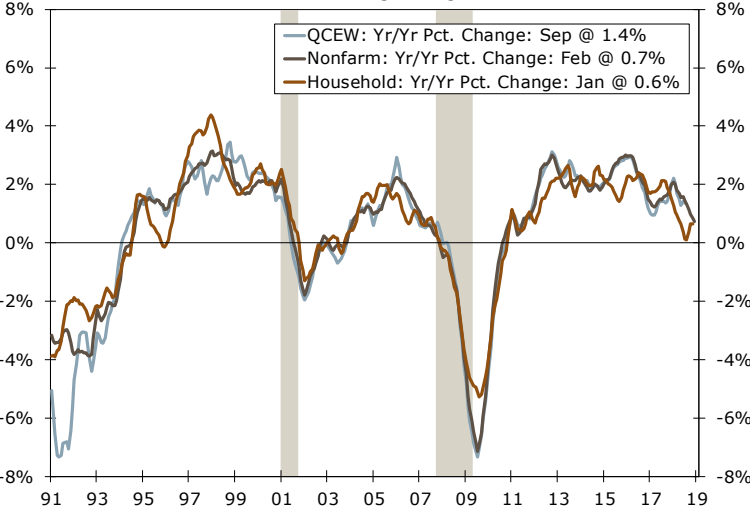
Source: CoreLogic, Inc. and Wells Fargo Securities, LLC



Employment growth has slowed. Port traffic data are raising some concerns.

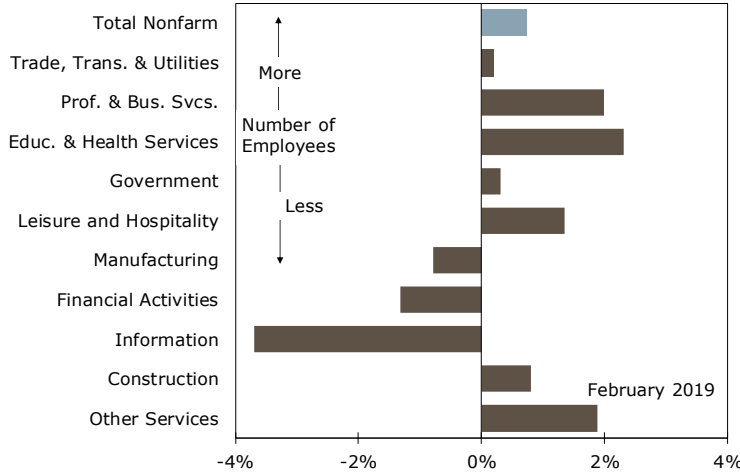
## Employment Growth

Los Angeles MSA Nonfarm Employment  
3-Month Moving Averages



## Employment by Industry

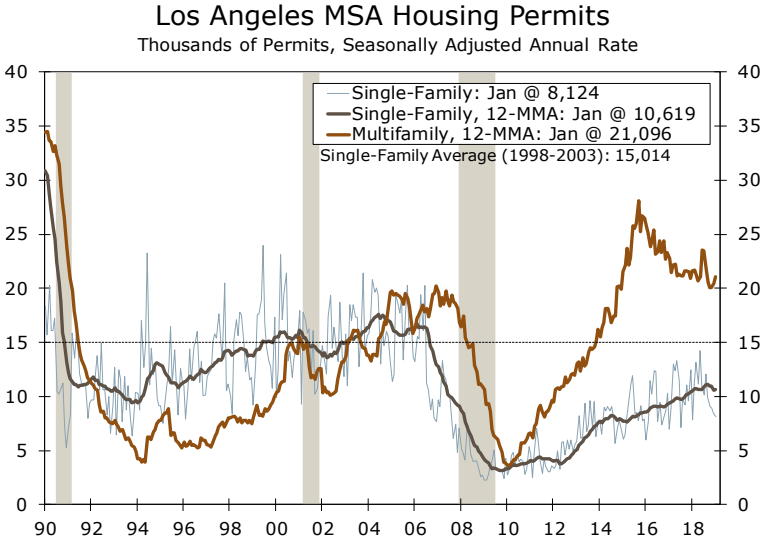
Los Angeles MSA Employment Growth By Industry  
Year-over-Year Percent Change, 3-MMA



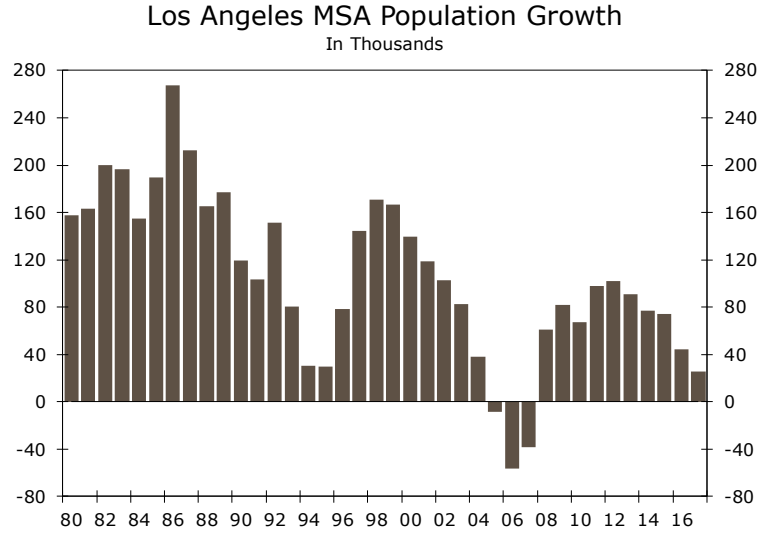
Source: U.S. Department of Labor and Wells Fargo Securities

Apartment construction surged earlier in this expansion but has since cooled. Population growth is moderating.

## Permits



## Population Growth



Source: U.S. Department of Commerce and Wells Fargo Securities

## California Economic Outlook

	Actual						Forecast		
	2012	2013	2014	2015	2016	2017	2018	2019	2020
Real Gross Domestic Product by State, \$ Millions	2,144,497	2,220,868	2,309,928	2,425,160	2,500,645	2,576,223	2,665,102	2,753,051	2,838,395
Annual Rate	2.5%	3.6%	4.0%	5.0%	3.1%	3.0%	3.4%	3.3%	3.1%
Nominal Personal Income, \$ Millions	1,853,467	1,885,672	2,021,640	2,173,300	2,259,414	2,364,129	2,475,243	2,594,055	2,713,382
Nominal Personal Income, Percent Change	6.6%	1.7%	7.2%	7.5%	4.0%	4.6%	4.7%	4.8%	4.6%
Real Median Household Income, \$	60,990	64,078	62,693	65,843	68,070	69,759	72,898	76,135	79,371
Population, Thousands	37,961	38,281	38,625	38,953	39,209	39,399	39,557	39,690	39,790
Change in thousands	319	320	344	328	256	190	158	133	100
Percent Change	0.8%	0.8%	0.9%	0.8%	0.7%	0.5%	0.4%	0.3%	0.3%
Nonfarm Employment, Thousands	14,762	15,151	15,576	16,052	16,481	16,837	17,175	17,441	17,668
Change in thousands	327	389	425	476	428	356	338.5	266.0	226.7
Percent Change	2.3%	2.6%	2.8%	3.1%	2.7%	2.2%	2.0%	1.5%	1.3%
Unemployment Rate, Annual Average	10.4%	8.9%	7.5%	6.2%	5.5%	4.8%	4.2%	4.0%	3.8%
Total Housing Permits	58,540	79,028	82,925	95,955	100,265	113,320	117,079	120,000	121,000
Single-Family Permits	27,361	36,659	38,599	44,452	49,254	58,134	62,236	67,500	70,400
Multi-Family Permits	31,179	42,369	44,326	51,503	51,011	55,186	54,843	52,500	50,600
FHFA Home Price Index, Percent Change	0.1%	12.7%	12.4%	7.1%	7.2%	7.9%	8.2%	5.5%	6.0%

Sources: National Association of Realtors, Federal Housing Finance Authority, U.S. Department of Commerce, U.S. Department of Labor, Moody's Analytics & Wells Fargo Securities  
Forecast as of: March 29, 2019

Source: IHS Global Insight and Wells Fargo Securities

## Wells Fargo U.S. Economic Forecast

	Actual				Forecast				Actual			Forecast	
	2018				2019				2016	2017	2018	2019	2020
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q					
Real Gross Domestic Product <sup>1</sup>	2.2	4.2	3.4	2.2	1.4	2.7	2.3	2.5	1.6	2.2	2.9	2.4	2.2
Personal Consumption	0.5	3.8	3.5	2.5	1.7	2.6	2.4	2.5	2.7	2.5	2.6	2.5	2.2
Inflation Indicators <sup>2</sup>													
PCE Deflator	1.9	2.2	2.2	1.9	1.5	1.7	1.8	2.0	1.1	1.8	2.0	1.8	2.2
Consumer Price Index	2.2	2.7	2.6	2.2	1.6	1.8	2.0	2.2	1.3	2.1	2.4	1.9	2.5
Industrial Production <sup>1</sup>	2.5	5.2	4.9	4.6	-0.3	2.5	1.2	2.0	-1.9	1.6	4.0	2.4	1.7
Corporate Profits Before Taxes <sup>2</sup>	5.9	7.3	10.4	7.4	3.9	6.6	6.7	5.1	-1.1	3.2	7.6	5.6	0.2
Trade Weighted Dollar Index <sup>3</sup>	86.3	90.0	90.1	91.8	92.3	92.3	91.5	90.8	91.5	91.1	89.0	91.7	88.4
Unemployment Rate	4.1	3.9	3.8	3.8	3.9	3.7	3.7	3.6	4.9	4.4	3.9	3.7	3.5
Housing Starts <sup>4</sup>	1.32	1.26	1.23	1.19	1.23	1.26	1.27	1.28	1.17	1.20	1.25	1.27	1.29
Quarter-End Interest Rates <sup>5</sup>													
Federal Funds Target Rate	1.75	2.00	2.25	2.50	2.50	2.50	2.75	2.75	0.52	1.13	1.96	2.63	2.69
Conventional Mortgage Rate	4.44	4.57	4.63	4.64	4.40	4.55	4.65	4.70	3.65	3.99	4.54	4.58	4.65
10 Year Note	2.74	2.85	3.05	2.69	2.80	2.95	3.05	3.10	1.84	2.33	2.91	2.98	3.05

Forecast as of: March 29, 2019

<sup>1</sup> Compound Annual Growth Rate Quarter-over-Quarter

<sup>2</sup> Year-over-Year Percentage Change

<sup>3</sup> Federal Reserve Major Currency Index, 1973=100 - Quarter End

<sup>4</sup> Millions of Units

<sup>5</sup> Annual Numbers Represent Averages

Source: IHS Global Insight and Wells Fargo Securities

# Appendix

---

## A Sampling of Our Recent Special, Regional & Industry Commentary

Recent Special Commentary		
Date	Title	Authors
<b>U.S. Macro</b>		
March-19	Shifting Burdens of Household Debt	Quinlan & Seery
March-15	What 737-MAX Groundings Mean for Durable Goods	Quinlan, House & Seery
February-25	Refund Status: Still Processing	Quinlan, Pugliese & Seery
February-14	Dating Advice: A Compendium	Quinlan, House & Seery
January-31	Myth Busting Real-Time Recession Predictors	Iqbal, Kinnaman & Seery
<b>U.S. Regional</b>		
March-22	Utah Continues to Grow for All the Right Reasons	Vitner & Dougherty
March-22	California Sees Modest Job Gains in February	Vitner & Dougherty
March-22	Texas Payrolls Rise in February	Vitner & Dougherty
March-22	North Carolina Sees Hiring Moderate in February	Vitner & Dougherty
March-22	Florida Payrolls Post Huge Gain in February	Vitner & Dougherty
<b>Global Economy</b>		
March-22	European Recession Revisited	Nelson
March-07	ECB: When Doves Fly	Nelson & Bennenbroek
March-06	Window Closes on Further Bank of Japan Policy Action	McKenna & Bennenbroek
March-04	ECB Preview: The Loan Time is Running Out (TLTRO)	Nelson & Bennenbroek
February-27	Brazilian Pension Reform in Queue	McKenna
February-25	Making Sense of China's Fiscal Dollard and Cents	Pugliese & Bennenbroek
<b>Interest Rates/Credit Market</b>		
March-20	FOMC Thinks It Will Be on Hold Throughout 2019	Bryson
March-13	Could the Fed Go Negative?	Bryson, House & Nelson
March-04	Two Thine Own Inflation Target Be True?	Bryson, House & Nelson
February-20	The Outlook for the Fed's Balance Sheet: An Update	Bryson & Pugliese
February-07	"Crosscurrents" and the Outlook for Fed Policy	Bryson
<b>Real Estate &amp; Housing</b>		
March-20	Q4 CRE Chartbook: Construction Outlook	Vitner, Dougherty & Honnold
March-18	Housing Chartbook: March 2019	Vitner, Dougherty & Honnold
February-27	Manufactured Housing Outlook: 2019	Vitner, Dougherty & Honnold
January-16	What's Ahead for Housing in 2019?	Vitner, Dougherty & Honnold
December-07	Q3 CRE Chartbook: Outlook	Vitner, Dougherty & Honnold

To view any of our past research  
please visit:  
[http://www.wellsfargo.com/  
economics](http://www.wellsfargo.com/economics)

To join any of our research  
distribution lists please visit:  
[http://www.wellsfargo.com/  
economicsemail](http://www.wellsfargo.com/economicsemail)

## Economists & Macro Strategists

Jay H. Bryson, Global Economist	<a href="mailto:jay.bryson@wellsfargo.com">jay.bryson@wellsfargo.com</a>
Mark Vitner, Senior Economist	<a href="mailto:mark.vitner@wellsfargo.com">mark.vitner@wellsfargo.com</a>
Sam Bullard, Senior Economist	<a href="mailto:sam.bullard@wellsfargo.com">sam.bullard@wellsfargo.com</a>
Nick Bennenbroek, Macro Strategist	<a href="mailto:nicholas.bennenbroek@wellsfargo.com">nicholas.bennenbroek@wellsfargo.com</a>
Azhar Iqbal, Econometrician	<a href="mailto:azhar.iqbal@wellsfargo.com">azhar.iqbal@wellsfargo.com</a>
Tim Quinlan, Senior Economist	<a href="mailto:tim.quinlan@wellsfargo.com">tim.quinlan@wellsfargo.com</a>
Sarah House, Senior Economist	<a href="mailto:sarah.house@wellsfargo.com">sarah.house@wellsfargo.com</a>
Charlie Dougherty, Economist	<a href="mailto:charles.dougherty@wellsfargo.com">charles.dougherty@wellsfargo.com</a>
Erik Nelson, Macro Strategist	<a href="mailto:erik.f.nelson@wellsfargo.com">erik.f.nelson@wellsfargo.com</a>
Michael Pugliese, Economist	<a href="mailto:michael.d.pugliese@wellsfargo.com">michael.d.pugliese@wellsfargo.com</a>
Brendan McKenna, Macro Strategist	<a href="mailto:brendan.mckenna@wellsfargo.com">brendan.mckenna@wellsfargo.com</a>

## Economic Analysts

Shannon Seery, Economic Analyst	<a href="mailto:shannon.seery@wellsfargo.com">shannon.seery@wellsfargo.com</a>
Matthew Honnold, Economic Analyst	<a href="mailto:matthew.honnold@wellsfargo.com">matthew.honnold@wellsfargo.com</a>

## Administrative Assistants

Dawne Howes, Administrative Assistant	<a href="mailto:dawne.howes@wellsfargo.com">dawne.howes@wellsfargo.com</a>
---------------------------------------	--

Wells Fargo Securities Economics Group publications are produced by Wells Fargo Securities, LLC, a U.S. broker-dealer registered with the U.S. Securities and Exchange Commission, the Financial Industry Regulatory Authority, and the Securities Investor Protection Corp. Wells Fargo Securities, LLC, distributes these publications directly and through subsidiaries including, but not limited to, Wells Fargo & Company, Wells Fargo Bank N.A., Wells Fargo Clearing Services, LLC, Wells Fargo Securities International Limited, Wells Fargo Securities Canada, Ltd., Wells Fargo Securities Asia Limited and Wells Fargo Securities (Japan) Co. Limited. Wells Fargo Securities, LLC. is registered with the Commodities Futures Trading Commission as a futures commission merchant and is a member in good standing of the National Futures Association. Wells Fargo Bank, N.A. is registered with the Commodities Futures Trading Commission as a swap dealer and is a member in good standing of the National Futures Association. Wells Fargo Securities, LLC. and Wells Fargo Bank, N.A. are generally engaged in the trading of futures and derivative products, any of which may be discussed within this publication. Wells Fargo Securities, LLC does not compensate its research analysts based on specific investment banking transactions. Wells Fargo Securities, LLC's research analysts receive compensation that is based upon and impacted by the overall profitability and revenue of the firm which includes, but is not limited to investment banking revenue. The information and opinions herein are for general information use only. Wells Fargo Securities, LLC does not guarantee their accuracy or completeness, nor does Wells Fargo Securities, LLC assume any liability for any loss that may result from the reliance by any person upon any such information or opinions. Such information and opinions are subject to change without notice, are for general information only and are not intended as an offer or solicitation with respect to the purchase or sales of any security or as personalized investment advice. Wells Fargo Securities, LLC is a separate legal entity and distinct from affiliated banks and is a wholly owned subsidiary of Wells Fargo & Company © 2019 Wells Fargo Securities, LLC.

### Important Information for Non-U.S. Recipients

For recipients in the EEA, this report is distributed by Wells Fargo Securities International Limited ("WFSIL"). WFSIL is a U.K. incorporated investment firm authorized and regulated by the Financial Conduct Authority. For the purposes of Section 21 of the UK Financial Services and Markets Act 2000 ("the Act"), the content of this report has been approved by WFSIL, an authorized person under the Act. WFSIL does not deal with retail clients as defined in the Directive 2014/65/EU ("MiFID2"). The FCA rules made under the Financial Services and Markets Act 2000 for the protection of retail clients will therefore not apply, nor will the Financial Services Compensation Scheme be available. This report is not intended for, and should not be relied upon by, retail clients.

SECURITIES: NOT FDIC-INSURED/NOT BANK-GUARANTEED/MAY LOSE VALUE