SONOMA COUNTY ECONOMIC DEVELOPMENT BOARD

FALL 2018
LOCAL ECONOMIC REPORT

FORECAST REPORT | 2018

ECONOMIC DEVELOPMENT BOARD

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SONOMA COUNTY BOARD OF SUPERVISORS

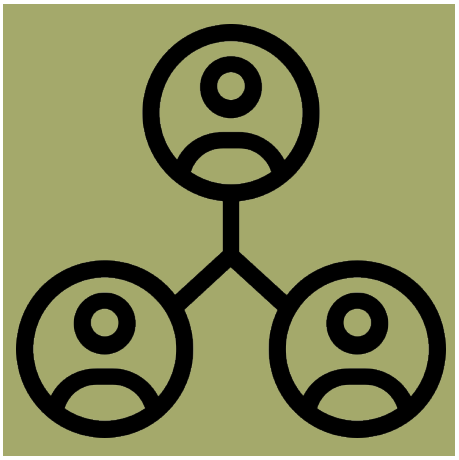
CONTENTS

EXECUTIVE SUMMARY

October 2018

The Sonoma County Economic Development Board is pleased to present the Fall 2018 Local Economic Report. Our research partner, Moody's Analytics, provided the data for this report. For additional information, questions, comments, or suggestions, please contact us at (707) 565-7170 or visit www.sonomaedb.org.

HIGHLIGHTS



Despite an increasingly tight **labor market**, job growth in Sonoma County matches the state average and surpasses that of similarly-sized economies in Santa Barbara, Sacramento, Santa Cruz, and Monterey. The most growth is in low-wage jobs; nevertheless, income growth is higher than most other California counties. Keeping pace with job growth is household permit issuance, which has doubled since 2017 and continues to grow. The first six months of 2018 saw more permits issued in Sonoma County than at any other time since 1990.

Housing remains Sonoma County's most pressing issue: while permit issuance is up, household formation is still growing four times faster than single-family home construction. Vacancy rates are low both in homes for sale and for renters as compared with the United States; houses are about half as affordable in Sonoma County as they are in the United States. This has demographic implications, as well: higher home prices are curtailing migration, limiting the supply of working-age people to take up the jobs of the County's many retirees. For the first time, net migration in Sonoma County is negative.

Sonoma County's **business outlook** is also strong across sectors: productivity is up in manufacturing, leisure, and healthcare as these sectors hire more. Consumer demand for craft beverages is driving growth, pushing sales up and encouraging greater tourism from the region and throughout California. As wages continue to increase here and elsewhere, tourism can be expected to maintain a steady growth rate into the future. Cost of doing business remains relatively low, although high energy prices compared to the United States are driving those up.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Navigate
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Stop
Default Setup
Trigger
Measure
Trigger
Force Trigger
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Cursors
Meas
Waveform
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Analyze
Acquire
Display
Save Recall
Print
Tools
Clear Display
Utility
Quick Action
Touch
Wave Gen1
Wave Gen2
Push to Select
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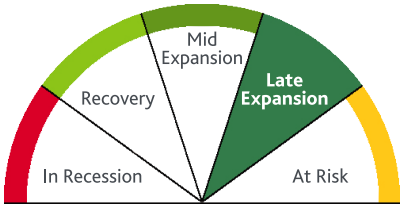
MOODY'S ANALYTICS

SONOMA COUNTY CA

METRO COMPARISON	EMPLOYMENT GROWTH RANK 2016-2018	EMPLOYMENT GROWTH RANK 2016-2021	RELATIVE COSTS LIVING	RELATIVE COSTS BUSINESS	VITALITY RELATIVE	VITALITY RANK
	Best=1, Worst=409		U.S.=100%		U.S.=100%	Best=1, Worst=402
Sonoma County	90 (2nd quintile)	137 (2nd quintile)	134%	117%	102%	125
Santa Barbara County	186 (3rd quintile)	210 (3rd quintile)	132%	123%	102%	120
Santa Cruz County	77 (1st quintile)	75 (1st quintile)	148%	120%	105%	104
Sacramento MSA	115 (2nd quintile)	147 (2nd quintile)	110%	119%	110%	86
Monterey County	78 (1st quintile)	112 (2nd quintile)	122%	116%	84%	267

BUSINESS CYCLE STATUS



STRENGTHS & WEAKNESSES

STRENGTHS

- World-class wineries and craft breweries are magnets for tourism.
- Leader in organic food production.
- Diverse climate draws outdoor enthusiasts.

WEAKNESSES

- Limited land availability for new wineries and commercial construction.
- High costs relative to emerging tech hubs.
- Unduly tight labor market.
- Unfavorable age structure.

FORECAST RISKS

SHORT TERM ↑ | LONG TERM ↑

RISK EXPOSURE 2018-2023 **119** 2nd quintile *Highest=1 Lowest=403*

UPSIDE

- Consumers embrace organic foods with even greater enthusiasm.
- Marin biotech firms expand in Sonoma.
- Greater trade with East Asia boosts medical device and wine industries.

DOWNSIDE

- Declining housing affordability further discourages in-migration.
- More wine enthusiasts flock to the Pacific Northwest.

MOODY'S RATING

Aa2 SANTA ROSA AS OF DEC 20, 2017

ANALYSIS

Recent Performance. Sonoma County is reasserting itself as one of California's strongest midsize economies after a brief hiccup following the Tubbs fire. Job growth has been remarkably stable, in line with the strong California average even as the labor market grows increasingly tight.

Labor market strength is broad-based; manufacturing, leisure/hospitality and healthcare are soaring this year. Further, the county has extended a sizable lead in job growth over its peers: Santa Barbara, Sacramento, Santa Cruz and Monterey.

Although the labor market is churning out new jobs, labor supply constraints are becoming more apparent. The jobless rate is the state's third lowest, and the county's labor market has wrung out nearly all existing slack. As a result, income growth is near the top of the pack in the state despite low-wage job gains outpacing the medium- and high-wage segments.

Like much of the state, the housing market is still significantly supply-constrained. However, progress in the county has been notable this year: Permit issuance has more than doubled through the first half of the year, a welcome trend that will help combat affordability declines.

Smooth sailing. Sonoma County's diverse drivers are on steady ground and will help the county navigate post-fire turbulence with ease. County wineries, breweries, vineyards and distilleries were largely unscathed by the fall blazes and emerged from the ashes to meet rising demand for premium wines and craft beverages. Mass-market labels have struggled to increase sales, but Sonoma vintners and craft beverage makers are thriving. Consumers' growing taste for more sophisticated wines and adult beverages has played to county producers' strong suit, lifting sales and burnishing the county's repute among wine, beer and spirits enthusiasts.

Lodging statistics are likewise painting a sanguine outlook. Average daily rates and occupancy rates are at or near record highs. Thanks to steady job creation and better wage gains, residents in Sonoma's top feeder markets will spend more on leisure and travel. Soaring wage gains in the Bay Area have boosted day trips to wineries and restaurants, and visitors outside of driving distance are also flocking to the area.

Housing. The housing market is grappling with supply constraints. Over the past three years, household formations have outstripped single-family completions by a ratio of 4-to-1, and the shortage of inventory relative to demand has kept house prices rising at a double-digit rate. Fortunately, the Tubbs fire may have sparked a newfound urgency to bring supply more in line with demand. Single-family permit issuance in first half of the year marked the strongest six-month stretch since the 1990s. The welcome progress has necessitated an upgrade to the near-term residential construction outlook.

Demographics. As it will take some time for the housing market to rebalance, worsening housing affordability is affecting migration. As in other coastal California counties, the latter stages of the business cycle are characterized by rising wages, house prices and office rents, which encourage firms and households to locate in lower-cost areas inland. The share of median family income required to purchase a median-priced home has increased by one-quarter in the past four years alone. Therefore, affordability ranks among the lowest in the nation.

Sonoma County will remain a strong performer in the dynamic California economy. The county's pivotal tourism and winemaking industries will propel its expansion. Housing constraints and affordability remain the biggest sores. Longer term, world-class wineries, breweries, and restorative care centers will enable the county to match California's other midsize areas in job and income gains.

Colin Seitz 1-866-275-3266
September 2018 help@economy.com

2012	2013	2014	2015	2016	2017	INDICATORS	2018	2019	2020	2021	2022	2023
22.4	22.9	24.2	25.7	26.2	27.3	Gross metro product (C09$ bil)	28.8	29.4	29.6	30.4	31.3	32.0
0.3	*2.2*	*5.7*	*6.2*	*2.0*	*4.0*	*% change*	*5.6*	*2.4*	*0.5*	*2.8*	*3.0*	*2.2*
173.6	181.8	191.1	196.7	201.5	205.8	Total employment (ths)	209.8	212.3	212.6	212.4	214.1	215.3
1.7	*4.7*	*5.1*	*2.9*	*2.5*	*2.1*	*% change*	*1.9*	*1.2*	*0.1*	*-0.1*	*0.8*	*0.6*
8.9	7.1	5.6	4.5	4.0	3.4	Unemployment rate (%)	3.0	3.2	3.6	4.6	5.1	5.3
4.4	4.2	6.5	8.2	4.3	4.5	Personal income growth (%)	4.2	4.4	3.7	4.2	4.7	4.2
61.5	63.4	65.3	69.7	73.9	76.4	Median household income ($ ths)	78.3	80.8	83.6	86.3	89.0	91.8
490.7	495.0	499.6	502.1	503.8	504.2	Population (ths)	504.4	505.4	506.8	508.4	510.0	511.7
0.6	*0.9*	*0.9*	*0.5*	*0.3*	*0.1*	*% change*	*0.0*	*0.2*	*0.3*	*0.3*	*0.3*	*0.3*
1.8	3.1	3.6	1.6	1.0	-0.2	Net migration (ths)	-0.4	0.4	0.8	1.0	1.0	1.0
312	453	419	431	621	840	Single-family permits (#)	1,672	1,560	1,466	1,506	1,449	1,362
248	593	244	190	298	338	Multifamily permits (#)	397	337	341	399	423	404
179.6	208.1	238.7	260.1	281.7	307.0	FHFA house price (1995Q1=100)	332.2	343.5	351.9	360.5	370.2	383.6

ECONOMIC HEALTH CHECK

3-MO MA

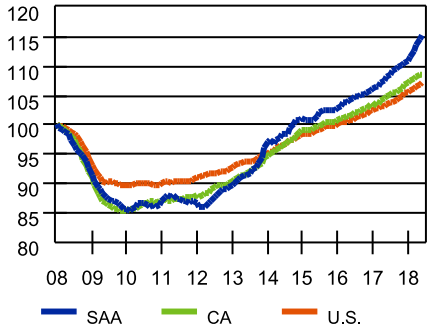
	Jan 18	Feb 18	Mar 18	Apr 18	May 18	Jun 18
Employment, change, ths	0.4	0.5	0.5	0.3	0.3	0.3
Unemployment rate, %	3.1	3.0	3.0	2.9	2.9	2.8
Labor force participation rate, %	64.2	64.2	64.1	63.9	63.7	63.5
Employment-to-population ratio, %	62.2	62.3	62.2	62.0	61.8	61.7
Average weekly hours, #	32.5	32.5	32.1	32.2	32.1	32.3
Industrial production, 2012=100	108.2	108.7	108.7	109.7	110.2	110.8
Residential permits, single-family, #	1,169	1,260	1,779	2,191	2,963	3,212
Residential permits, multifamily, #	283	343	427	490	406	217

Better than prior 3-mo MA | Unchanged from prior 3-mo MA | Worse than prior 3-mo MA

Sources: BLS, Census Bureau, Moody's Analytics

BUSINESS CYCLE INDEX

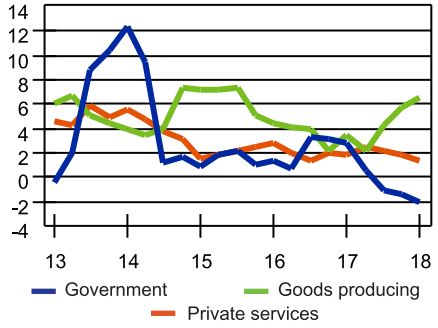
JAN 2007=100



Source: Moody's Analytics

CURRENT EMPLOYMENT TRENDS

% CHANGE YR AGO



Sources: BLS, Moody's Analytics

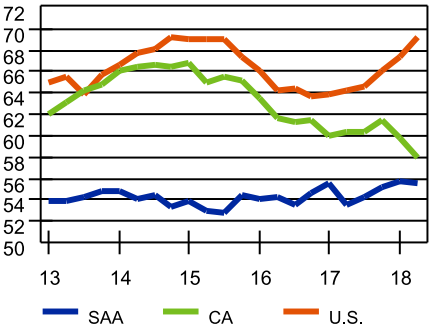
% CHANGE YR AGO, 3-MO MA

	Jun 17	Dec 17	Jun 18
Total	2.3	2.0	1.8
Mining	-0.4	0.1	-0.3
Construction	7.5	5.6	6.0
Manufacturing	1.4	3.4	6.2
Trade	0.8	0.6	1.3
Trans/Utilities	-4.7	-0.6	2.5
Information	0.1	0.1	-0.1
Financial Activities	0.1	1.7	0.7
Prof & Business Svcs.	4.3	5.1	-2.5
Edu & Health Svcs.	2.8	4.9	5.5
Leisure & Hospitality	1.9	-0.6	0.2
Other Services	1.0	0.6	-1.0
Government	2.8	-1.0	-1.2

Sources: BLS, Moody's Analytics

DIFFUSION INDEX

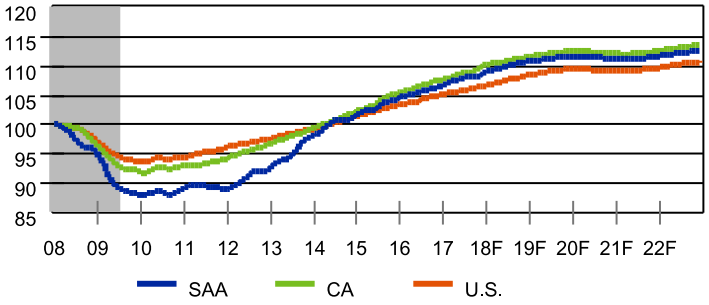
3-DIGIT NAICS LEVEL, 6-MO MA



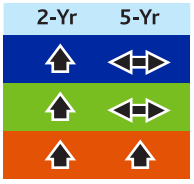
Sources: BLS, Moody's Analytics

RELATIVE EMPLOYMENT PERFORMANCE

JAN 2007=100



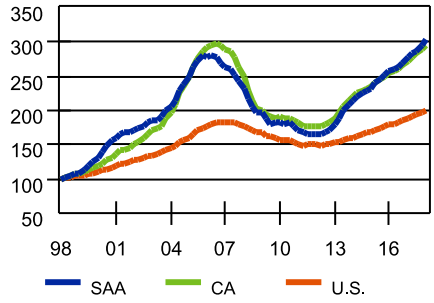
FORECAST VS. 6 MO PRIOR



Sources: BLS, Moody's Analytics

HOUSE PRICE

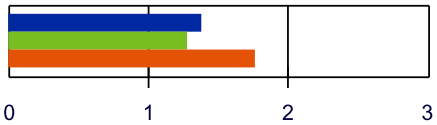
1998Q1=100, NSA



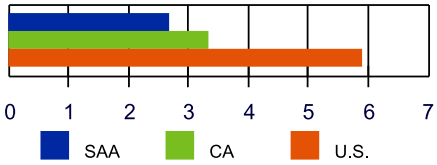
Sources: FHFA, Moody's Analytics

VACANCY RATES

HOMEOWNER, % HOUSES FOR SALE



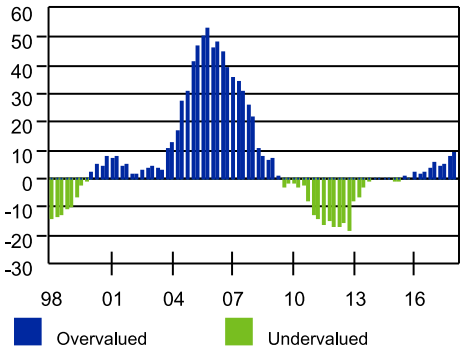
RENTAL, % INVENTORY FOR RENT



Sources: Census Bureau, ACS, Moody's Analytics, 2016

HOUSE PRICE TRENDS

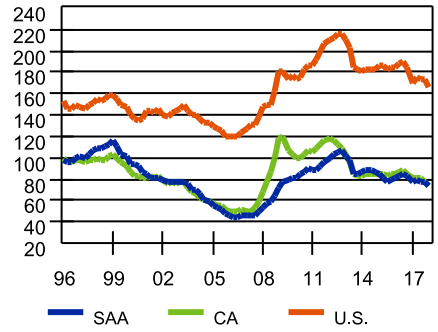
%



Sources: FHFA, Moody's Analytics

HOUSING AFFORDABILITY

GREATER THAN 100=MORE AFFORDABLE



Sources: NAR, Moody's Analytics

EMPLOYMENT AND INDUSTRY

TOP EMPLOYERS

Kaiser Permanente	2,640
Graton Resort & Casino	2,000
St. Joseph Health System	1,578
Keysight Technologies	1,300
Safeway Inc.	1,200
Medtronic CardioVascular	1,000
Amy's Kitchen	987
Sutter Santa Rosa Regional Hospital	936
Wells Fargo	916
Lagunitas Brewing Co.	900
Jackson Family Wine	800
Cyan	700
Wal-Mart Stores Inc.	650
Hansel Auto Group	600
AT&T	600
Lucky	550
Santa Rosa Community Health Centers	523
PG&E	500
Petaluma Acquisitions	455
Ghilotti Construction Co.	425

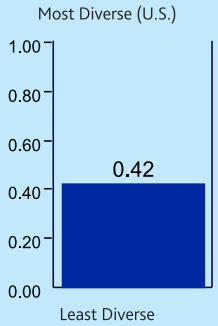
Sources: North Bay Business Journal Book of Lists, 2017, San Francisco Business Journal Book of Lists, 2017

PUBLIC

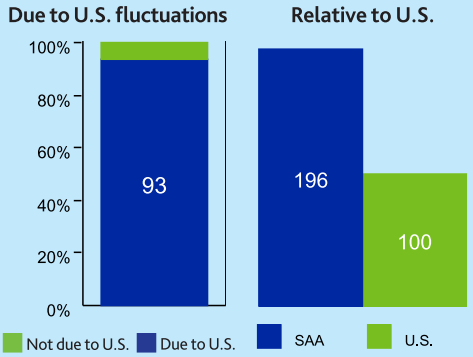
Federal	1,350
State	4,824
Local	26,528

2017

INDUSTRIAL DIVERSITY

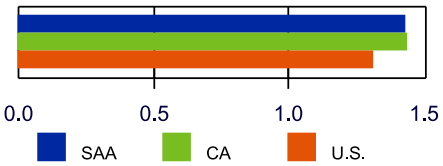


EMPLOYMENT VOLATILITY



ENTREPRENEURSHIP

EMPLOYMENT IN NEW COMPANIES, % OF TOTAL



Sources: Census Bureau, Moody's Analytics, avg 2010-2014

EXPORTS

Product	$ mil
Food and kindred products	ND
Chemicals	146.6
Primary metal manufacturing	ND
Fabricated metal products	ND
Machinery, except electrical	184.1
Computer and electronic products	422.2
Transportation equipment	ND
Miscellaneous manufacturing	ND
Other products	270.6
Total	**1,194.3**

Destination	$ mil
Africa	4.9
Asia	477.4
European Union	216.7
Canada & Mexico	291.4
South America	11.9
Rest of world	191.9
Total	**1,194.3**
% of GDP	*4.4*
Rank among all metro areas	*218*

Sources: BEA, International Trade Administration, Moody's Analytics, 2016

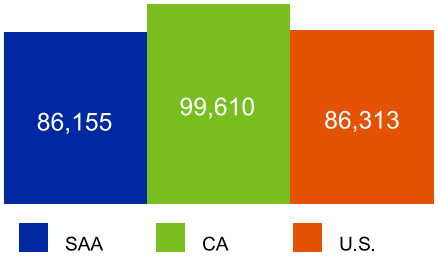
COMPARATIVE EMPLOYMENT AND INCOME

	% OF TOTAL EMPLOYMENT			AVERAGE ANNUAL EARNINGS		
Sector	**SON**	**CA**	**U.S.**	**SON**	**CA**	**U.S.**
Mining	0.1	0.1	0.4	$17,528	$71,263	$90,606
Construction	6.3	4.8	4.7	$85,643	$76,177	$67,379
Manufacturing	11.2	7.8	8.5	$82,408	$102,895	$80,835
Durable	*36.2*	*62.8*	*62.2*	*nd*	*$116,086*	*$83,048*
Nondurable	*63.8*	*37.2*	*37.8*	*nd*	*$81,146*	*$77,168*
Transportation/Utilities	1.9	3.7	3.9	$63,667	$61,961	$64,189
Wholesale Trade	3.7	4.3	4.0	$71,785	$80,572	$80,930
Retail Trade	12.3	10.1	10.8	$40,816	$41,552	$34,829
Information	1.3	3.1	1.9	$99,796	$168,335	$114,771
Financial Activities	4.2	4.9	5.8	$42,936	$59,539	$53,946
Prof. and Bus. Services	10.4	15.3	14.0	$52,514	$77,632	$68,173
Educ. and Health Services	16.7	15.7	15.8	$57,717	$55,492	$54,662
Leisure and Hosp. Services	12.5	11.6	11.0	$28,474	$34,606	$27,790
Other Services	3.5	3.4	3.9	$46,210	$39,508	$36,665
Government	15.9	15.2	15.2	$83,852	$98,293	$77,509

Sources: Percent of total employment — BLS, Moody's Analytics, 2017, Average annual earnings — BEA, Moody's Analytics, 2016

PRODUCTIVITY

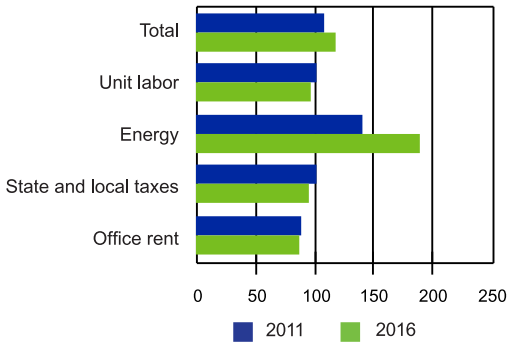
REAL OUTPUT PER WORKER, $



Sources: BEA, Moody's Analytics, 2016

BUSINESS COSTS

U.S.=100



Source: Moody's Analytics

HI -TECH EMPLOYMENT

	Ths	% of total
SON	8.7	4.2
U.S.	7,046.4	4.8

HOUSING-RELATED EMPLOYMENT

	Ths	% of total
SON	24.6	12.0
U.S.	13,892.2	9.5

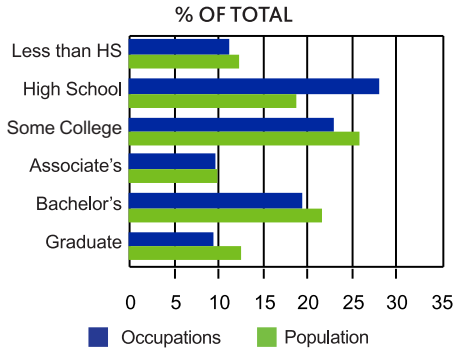
Source: Moody's Analytics, 2017

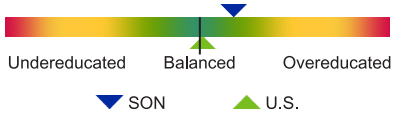
LEADING INDUSTRIES BY WAGE TIER

	NAICS	Industry	Location Quotient	Employees (ths)
HIGH	6221	General medical and surgical hospitals	0.7	4.3
	6214	Outpatient care centers	3.6	4.2
	6211	Offices of physicians	0.7	2.6
	5511	Management of companies and enterprises	0.7	2.1
MID	GVL	Local Government	1.3	25.3
	3121	Beverage manufacturing	24.8	8.0
	GVS	State Government	0.7	5.0
	2382	Building equipment contractors	1.0	2.9
LOW	7225	Restaurants and other eating places	1.1	16.3
	6241	Individual and family services	2.4	7.6
	4451	Grocery stores	1.7	6.5
	FR	Farms	1.7	6.2

Source: Moody's Analytics, 2017

SKILLS MISMATCH





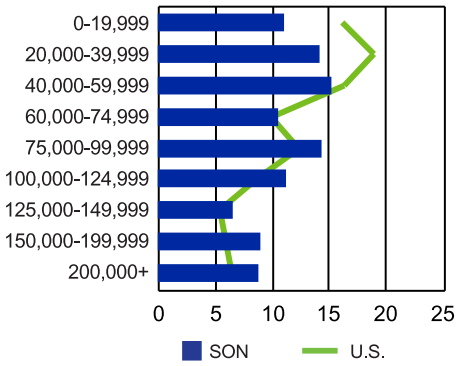
Sources: Census Bureau, ACS, Moody's Analytics, 2016

ECONOMIC DISENFRANCHISEMENT

Index	2016	Rank*
Gini coefficient	0.45	262
Palma ratio	3.0	275
Poverty rate	9.2%	369

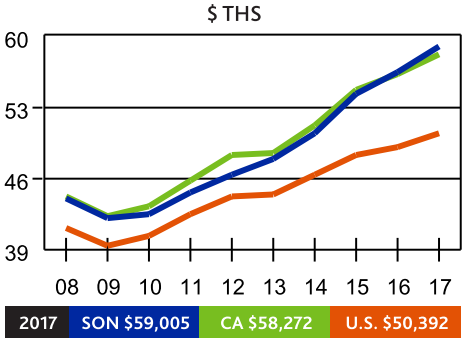
**Most unequal=1; Most equal=401*

HOUSEHOLDS BY INCOME, %



Sources: Census Bureau, ACS, Moody's Analytics, 2016

PER CAPITA INCOME



Sources: BEA, Moody's Analytics

MIGRATION FLOWS

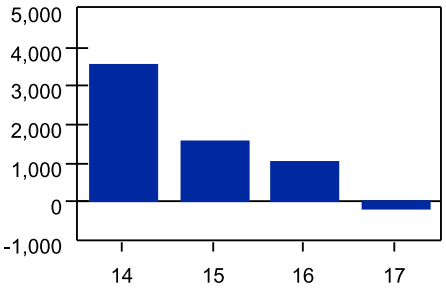
INTO SONOMA COUNTY CA

	Number of Migrants
San Rafael CA	2,011
San Francisco CA	1,546
Oakland CA	1,466
Sacramento CA	755
Los Angeles CA	672
San Jose CA	620
Napa CA	502
Vallejo CA	406
San Diego CA	365
Riverside CA	240
Total in-migration	*15,791*

FROM SONOMA COUNTY CA

Sacramento CA	1,160
San Rafael CA	984
Oakland CA	922
San Francisco CA	667
Vallejo CA	561
Napa CA	499
Los Angeles CA	471
San Jose CA	349
Portland OR	331
San Diego CA	327
Total out-migration	*15,282*
Net migration	**509**

NET MIGRATION, #

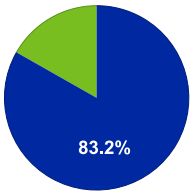


	2014	2015	2016	2017
Domestic	2,839	655	96	-1,126
Foreign	733	929	945	943
Total	3,572	1,584	1,041	-183

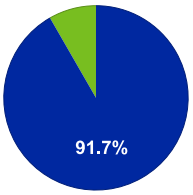
Sources: IRS (top), 2016, Census Bureau, Moody's Analytics

COMMUTER FLOWS

RESIDENTS WHO WORK IN SON



WORKERS WHO LIVE IN SON



Top Five Outside Sources of Jobs

Sonoma County CA	Share
San Rafael CA	7.4
San Francisco CA	3.3
Napa CA	1.9
Oakland CA	1.7
Vallejo CA	0.5

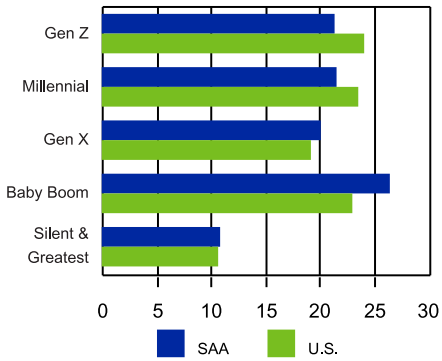
Top Five Outside Sources of Workers

Sonoma County CA	Share
San Rafael CA	2.1
Vallejo CA	1.3
Napa CA	1.0
Oakland CA	0.9
San Francisco CA	0.5

Sources: Census Bureau, Moody's Analytics, avg 2009-2013

GENERATIONAL BREAKDOWN

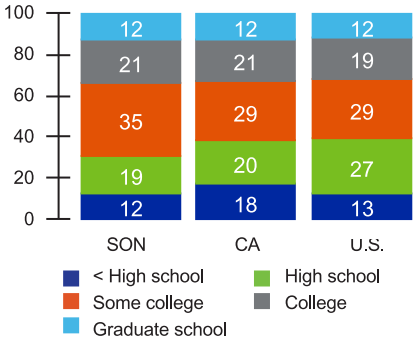
POPULATION BY GENERATION, %



Sources: Census Bureau, Moody's Analytics, 2016

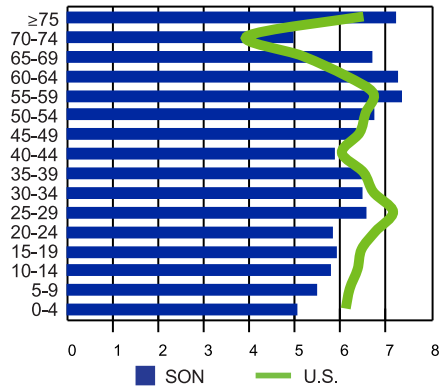
EDUCATIONAL ATTAINMENT

% OF ADULTS 25 AND OLDER



Sources: Census Bureau, ACS, Moody's Analytics, 2016

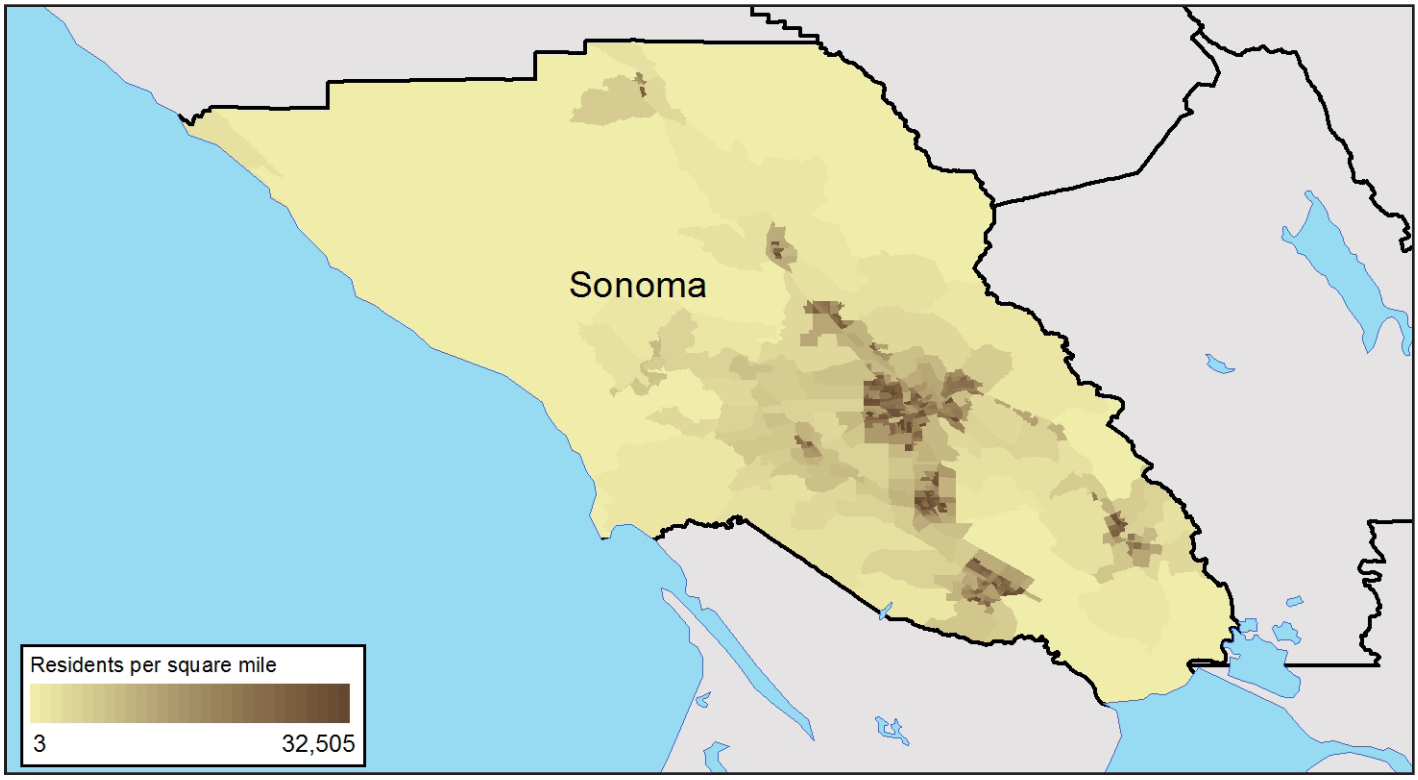
POPULATION BY AGE, %



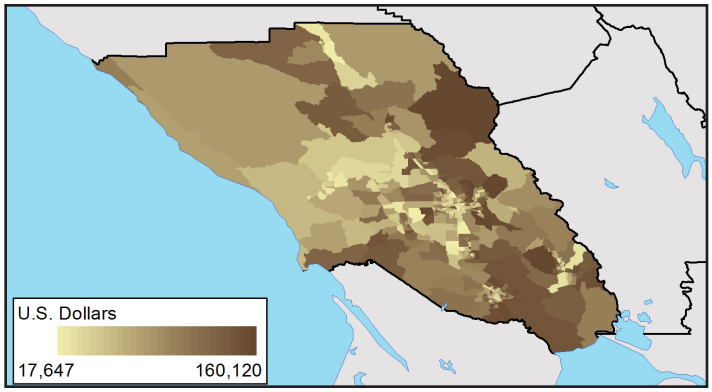
Sources: Census Bureau, Moody's Analytics, 2017

GEOGRAPHIC PROFILE

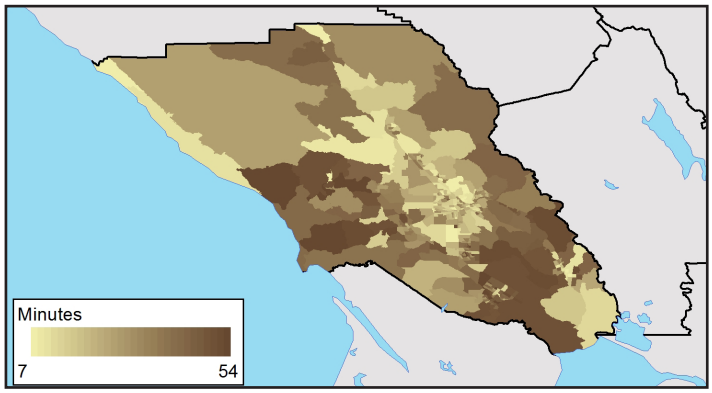
POPULATION DENSITY



MEDIAN HOUSEHOLD INCOME



AVERAGE COMMUTE TIME



POPULATION & HOUSING CHARACTERISTICS

	Units	Value	Rank*
Total land area	sq mi	1,575.8	211
Population density	ratio population to land area	320.0	123
Total population	ths	504.2	124
White	% of population	63.5	277
Hispanic	% of population	27.0	56
Black	% of population	1.6	349
Asian	% of population	4.2	92
U.S. citizen at birth	% of population	80.9	352
Naturalized U.S. citizen	% of population	7.4	51
Not a U.S. citizen	% of population	10.1	48
Median age		42.1	59
Total housing units	ths	208.2	127
Owner occupied	% of total	55.1	260
Renter occupied	% of total	35.0	95
Vacant	% of total	9.9	231
1-unit; detached	% of total	67.4	184
1-unit; attached	% of total	8.9	38
Multifamily	% of total	18.0	283
Median year built		1977	

** Out of 402 metro areas and metro divisions*

Sources: Census Bureau, Moody's Analytics, 2016 except land area 2010

Sources: ACS, Moody's Analytics

Significant Differences, Eerie Similarities

BY MARK ZANDI

The business cycle has entered its boom phase, a period that typically comes closer to a cycle's end, just prior to a recession. It is characterized by robust economic growth, tightening labor and product markets, intensifying wage and price pressures, monetary tightening, and higher interest rates.

Growth remains about as strong as it has been since the cycle began more than nine years ago, juiced up by massive deficit-financed tax cuts for individuals and businesses and increases in government spending. Real GDP is on track to expand 3% this year, substantially more than the economy's estimated 2% potential growth rate. Employment should increase by nearly 2.5 million jobs.

Unemployment appears set to ultimately fall into the low threes, well below our 4.5% estimate of the full-employment unemployment rate.

Capacity utilization rates are increasing, and the percentage of the housing stock that is vacant is as low as it has been since the early 1980s despite overbuilding in the high end of the apartment market (see Chart 1). Hotel occupancy rates are as high as they have been since prior to the recession, and airline load factors are hovering near record highs.

Pressures building

Contrary to conventional wisdom, wage growth is picking up on cue. As measured by the employment cost index, the most accurate of the wage statistics, wages for private sector workers are up 3% from a year ago. This is the strongest wage growth since the recession hit, as it should be in an economy operating beyond full employment.

As unemployment heads lower, wage growth will accelerate further, outstripping productivity gains, squeezing businesses' profit margins, and pressuring businesses to raise prices more quickly. Indeed, core consumer price inflation is now as strong as it has been in almost a decade.

The Federal Reserve recognizes it needs to steadily normalize short-term rates. This means raising the federal funds rate from its current level near 2% to its equilibrium rate, which we estimate to be near 3.5%.

Financial conditions are signaling that stock, bond and real estate markets are almost certainly overvalued. Equity price-earnings multiples are high, credit spreads for below-investment-grade corporate and emerging market bonds are thin, and commercial real estate capitalization rates are low. Combined with an easing in underwriting standards by banks and other creditors, the Fed will need to raise rates even more to cool off the booming economy.

Excessive risk-taking

Another feature of the boom phase of a business cycle is excessive risk-taking somewhere in the financial system. This fuels the boom and is eventually at the center of the subsequent bust. Subprime mortgage loans were the obvious culprit a decade ago.

Risk-taking is clearly on the rise, though it is unclear precisely what might do this cycle in. There has been hand-wringing that households may be overborrowing again, but this concern seems overblown. Household credit growth is consistent with income gains, and debt loads that had fallen sharply after the last recession show no indication of rising. Debt service burdens remain low. And personal savings rates look ample after recent data revisions (see Chart 2).

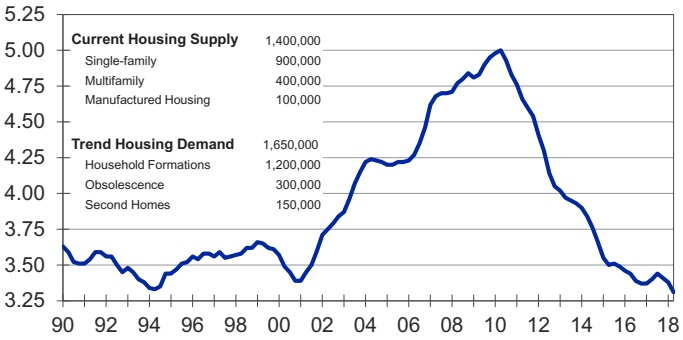
Student loans are a problem, but not for the financial system, since the bulk of these loans are backed by the federal government. Student loans are thus a taxpayer problem, which could manifest itself in the next downturn by adding to the nation's fiscal problems. Even so, worries that the nation's ballooning budget deficits and debt load could do this cycle in are also overdone. They are a corrosive on growth as they push up long-term interest rates, but we are still a long way from U.S. Treasury bonds losing their safe-haven status to global investors.

Leveraged lending

The most serious developing threat to the current cycle is lending to highly lever-

A Housing Shortage

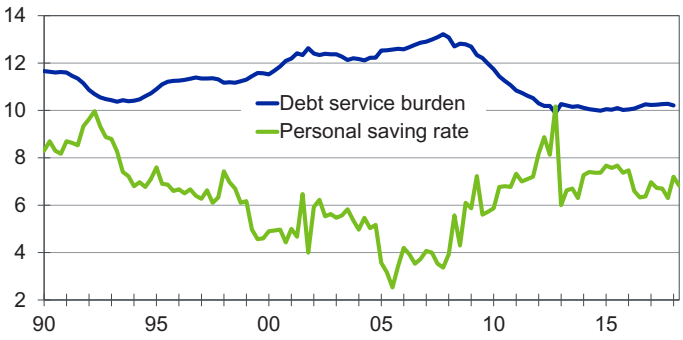
Vacancy rate, homes for sale and rent, 4-qtr MA, %



Sources: Census Bureau, Moody's Analytics

Household Finances Are Strong

%



Sources: BEA, Federal Reserve, Moody's Analytics

aged nonfinancial businesses. Across all businesses, borrowing appears manageable. The ratio of debt outstanding to GDP is about as high as it has ever been, yet this is a continuation of a long-running trend and reflects a broadening in the availability of credit to more businesses.

However, while businesses appear to be in good shape in aggregate, a significant number of highly leveraged companies are taking on sizable amounts of debt. This is evident in the rapid growth of so-called leveraged loans—loans extended to companies that already have considerable debt. These loans tend to have floating rates—typically Libor plus a spread—with a below-investment-grade (Baa or less) rating.

Leveraged loan volumes are setting records, and loans outstanding have increased at a double-digit pace over the past five years to near $1.4 trillion (see Chart 3).

Powering leveraged lending is demand from the collateralized loan obligation market. CLOs are leveraged loans that have been securitized. Global investors cannot seem to get enough of CLOs. This is clear from the thin spreads between CLO yields and comparable risk-free Treasuries. Approximately one-half of leveraged loans currently being originated are packaged into CLOs, with CLO outstandings approaching $550 billion.

Easing underwriting

To meet the strong demand, lenders are easing their underwriting standards. According to the Federal Reserve's survey of senior loan officers at commercial banks, a net 15% of respondents say they lowered their standards on commercial and industrial loans to large and medium-size companies this quarter compared with the previous quarter. The only other time loan officers eased as aggressively on a consistent basis was at the height of the euphoria leading up the financial crisis in the mid-2000s (see Chart 4).

Covenants on leveraged loans—restrictions on borrowers to ensure they can repay their loans—have also deteriorated, according to Moody's Investors Service. The rating agency's loan covenant quality indicator has fallen to its lowest level in its six-year history. Borrowers are negotiating greater flexibility to manage their balance sheets. They are increasingly able to sell collateral without using the proceeds to pay down their loans. It is becoming more unclear whether the collateral backstopping loans will be available in a bankruptcy.

The easing in underwriting is also evident in the below-investment-grade or junk corporate bond market. It has not kept pace with the surging leveraged loan market, but it is nearly as big, with more than $1.3 trillion in outstandings. Here as well, bond covenants have eroded substantially in recent years.

Eerie similarities

Considering the leveraged loan and junk corporate bond market together, highly indebted nonfinancial companies owe some $2.7 trillion. As interest rates rise, so too will financial pressure on these borrowers. Despite all this, global investors appear sanguine; credit spreads in the CLO and junk corporate bond market are narrow by any historical standard.

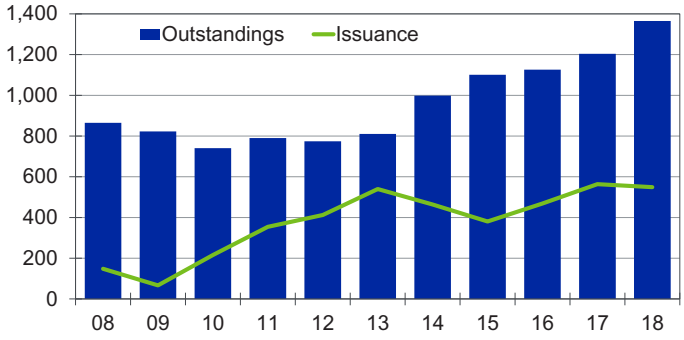
Regulators are undoubtedly nervous—they issued guidance to banks to rein in their leveraged lending in 2013—but an increasing amount of the most aggressive lending is being done by private equity, mezzanine debt, and other institutions outside the banking system and regulators' purview.

Now consider that subprime mortgage debt outstanding was close to $3 trillion at its peak prior to the financial crisis. Insatiable demand by global investors for residential mortgage securities drove the demand for subprime mortgages, inducing lenders to steadily lower their underwriting standards. Subprime loans were adjustable rate, which became a problem in a rising rate environment as borrowers did not have the wherewithal to make their rising mortgage payments. Regulators were slow to respond, in part because they did not have jurisdiction over the more egregious players.

It is much too early to conclude that nonfinancial businesses will end the current cycle in the way subprime mortgage borrowers did the previous one. Even so, while there are significant differences between leveraged lending and subprime mortgage lending, the similarities are eerie.

Nonfinancial Firms Take On Lots of Debt

Leveraged loans, $ bil

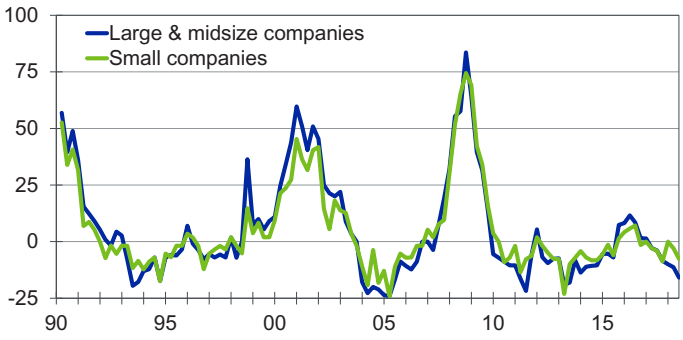


Sources: IMF, Moody's Analytics

Note: 2018 issuance is YTD annualized.

Lenders Go Easier on Business Borrowers

Net % of loan officers tightening standards on C&I loans



Sources: Federal Reserve, Moody's Analytics

Forecast Assumptions

BY MARK ZANDI

Monetary policy

The Federal Reserve is expected to steadily normalize interest rates over the remainder of the decade. The Fed hiked the federal funds rate three times in 2017, and twice so far this year, a quarter percentage point each time. We expect it to hike rates two more times in 2018, and four times in 2019, with the funds rate peaking at 3.5%.

Behind this expected normalization in monetary policy is an economy operating well beyond full employment. With deficit-financed tax cuts and government spending increases juicing up growth, the economy threatens to overheat. Core inflation is expected to pick up, from near its 2% target as measured by the growth in the core consumer expenditure deflator, to a high closer to 3% by the end of the decade.

Normalization also means the Fed will allow its balance sheet to diminish. The balance sheet swelled to nearly $4.5 trillion in Treasury and mortgage securities as a result of four rounds of quantitative easing. In a full-employment economy, the Fed's balance sheet should be closer to $3 trillion. The Fed has begun to right-size its balance sheet by allowing the securities it owns to mature and prepay. It is expected to take approximately four years to complete the task.

The behavior of bond investors could complicate the job of normalizing monetary policy. The economic outlook is based on a steady but orderly rise in long-term rates, with 10-year Treasury yields rising from just under 3% to nearer 4% by late 2019. This compares with an estimated 4.4% normalized 10-year yield consistent with an economy at full employment. Long-term yields will not fully normalize until global central banks end their QE programs, and the Fed's balance sheet shrinks—not likely until the next decade.

Fiscal policy

The federal government's fiscal situation is eroding as the deficit-financed tax cuts and government spending increases kick in. Those measures ensure that the deficit this fiscal year will be near $800 billion, and well over $1 trillion, equal to 5% of GDP, in fiscal 2019. The nation's debt-to-GDP ratio will be more than 3 percentage points higher by the end of President Trump's first term than if there were no change in fiscal policy, and almost 7 percentage points higher in a decade.

Fiscal policy should add approximately 0.7 percentage point to real GDP growth in 2018 and about the same in 2019, but any long-term economic benefit from the lower marginal corporate tax rates will be washed out by the economic cost of the bigger government debt load and resulting higher interest rates.

U.S. dollar

The real broad trade-weighted U.S. dollar has firmed this year because of the fiscal-stimulus fueled U.S. economy and somewhat weaker growth overseas, particularly in Europe. Volatile European politics, most notably in Italy and Spain, are also behind the softer euro. The dollar has found further support in the escalating trade tensions between the U.S. and its trading partners, which is supporting a flight-to-quality bid for the dollar.

The dollar is expected to hold firm, and even appreciate a bit more over the coming two years as the Fed steadily normalizes U.S. monetary policy. The Trump administration's anti-globalization stance will also support the dollar against currencies of countries with which the U.S. has trade frictions, including the Mexican peso and Canadian dollar.

Despite the ups and downs in the U.S. dollar, on a real broad trade-weighted basis, it is close to its average value since it began to freely float in the early 1970s and is near its estimated long-run fair value. The dollar's resilience will ensure that it remains the global economy's principal reserve currency for the foreseeable future.

Energy prices

Oil prices have firmed to more than $65 per barrel from a low of nearly $25 per barrel in early 2016. Prices will remain volatile and may rise in coming months given the anticipated collapse of the Iranian nuclear deal. Also underpinning prices are strong global oil demand, a right-sizing of global oil inventories, and a pullback in energy investment.

Despite all this, oil prices are expected to fall back to their long-run equilibrium level of $55 to $60 per barrel by early 2020. Natural gas prices will remain low, particularly compared with oil prices, for the next decade.

Geopolitics

How the escalating trade war will play out is increasingly difficult to gauge. Trump appears set on increasing tariffs on a widening range of imports until U.S. trade partners blink and agree to help reduce the U.S. trade deficit, and in the case of the Chinese, protect intellectual property of U.S. companies and more fully open their markets. However, China and the rest of world are digging in and unlikely to back down. This brinkmanship seems set to escalate until global financial markets crack.

In the most likely scenario, only $100 billion of U.S. imports and exports will ultimately face higher tariffs. If this is the extent of the tariff increases, then the macroeconomic consequences will be modest. U.S. real GDP will be reduced by just more than 0.1 percentage point at the peak of the impact a year from now, and some 170,000 jobs will be lost over the period.

Moody's Analytics assumes a relatively soft Brexit scenario, in which the U.K. stays in the customs union for goods but not for services, for which it negotiates some type of free-trade deal; the U.K. maintains control over immigration into the country; and the U.K. continues to pay some of the EU's budget. Under this baseline, uncertainty weighs on U.K. growth through much of 2020, and the U.K.'s long-term growth potential is diminished. The global macroeconomic implications are small.

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