SONOMA COUNTY ECONOMIC DEVELOPMENT BOARD

SPRING 2018
LOCAL ECONOMIC REPORT

FORECAST REPORT

2018

ECONOMIC DEVELOPMENT BOARD

EDB FOUNDATION SPONSORS

FOUNDATION LEVEL

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PRESENTING LEVEL

Sonoma Raceway
City of Santa Rosa
Redwood Credit Union
Exchange Bank — Invested in you.
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Pure Luxury Transportation — Committed to Perfection
Kaiser Permanente
tri counties bank — Service With Solutions

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Friedemann Goldberg
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State of California ETP

EXECUTIVE LEVEL

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- NORBAR
- SONOMA COUNTY ALLIANCE
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- VANTREO INSURANCE
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- ZAINER RINEHART CLARKE

MEDIA LEVEL

North Bay Business Journal — North San Francisco Bay Area, Sonoma, Napa, and Marin Counties

SONOMA COUNTY BOARD OF SUPERVISORS

CONTENTS

EXECUTIVE SUMMARY

May 2018

The Sonoma County Economic Development Board is pleased to present the Spring 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

The October wildfires had a blurred effect on employment. Projections for the next five years of employment growth are significantly lower than the previous five years of growth (18.1% growth from 2012-2017 versus 4.2% growth from 2017-2022). However, it's not clear that this projected slowdown in growth is caused by the wildfires; Moody's pre-fire 5-year projection was also forecast also projected just 4.5% growth. Sonoma County is ranked 207 of 409 metro areas for employment growth, placing it at below the national average and slightly behind its group of comparative peers. But as the chain reactions of the wildfires play out over 2018 (both economically negative, such as displacement, and positive, such as outside influx of money), these projections may change to reflect Sonoma County's new reality.

Sonoma County remains in the mid-expansion phase of the business cycle, with labor markets tight and production output increasing. The county's wineries, craft breweries, and food manufacturing are still drivers of industry with newcomer industries like outdoor recreation and health & wellness surging with higher-than-average growth. Sonoma County's Gross Metropolitan Product is currently $26.3 billion, with 12.2% growth expected over the next five years. Still, productivity lags the state average, with Sonoma County's industries generating $85,607 per worker (versus California's $98,475). Impediments to productivity and Gross Metropolitan Product growth will be contingent on labor availability, cost of doing business, and future activity of commercial property development.

The county's "unfavorable age structure" will be an inhibitor to future growth if trends continue. Roughly a fifth of all residents are 65+, with another 15% within 10 years of retirement age. This is contrasted by a smaller proportion of the youth population (0-19), which currently accounts for about a quarter of total population. Overall, population growth has slowed. 2012-2017 experienced a 2.8% population growth while 2017-2022 is projected to see just a 1.1% growth. Net migration in Sonoma County is experiencing the same decline in growth as population; only 1,900 net migrants are estimated to settle in Sonoma County over the next five years.

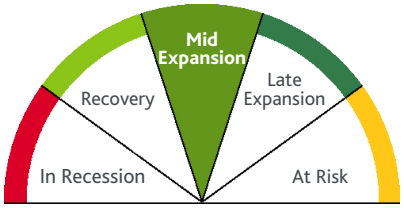

300mV/
3.50mV
100.0ms/
-298.0ms
S&H 1 375mV
Stop
Summary
Acquisition
High Resolution
1.00MSa/s
Channels
DC 1.00:1
DC 1.00:1
DC 1.00:1
DC 1.00:1
Horizontal
Run Control
Run
Stop
Trigger
Measure
Waveform
File
Tools
Vertical

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	224 (3rd quintile)	240 (3rd quintile)	130%	114%	102%	125
Santa Barbara County	129 (2nd quintile)	170 (3rd quintile)	129%	119%	102%	120
Santa Cruz County	197 (3rd quintile)	142 (2nd quintile)	144%	115%	105%	104
Sacramento MSA	106 (2nd quintile)	131 (2nd quintile)	108%	116%	110%	86
Monterey County	161 (2nd quintile)	184 (3rd quintile)	119%	112%	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 2017-2022 **120** 2nd quintile *Highest=1 Lowest=402*

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's economy is gradually returning to form following damages sustained in the Tubbs and Atlas wildfires. While the blazes dealt a setback to the mainstay tourism industry, robust growth in manufacturing and healthcare has kept total payroll employment on a steady upward path.

Worker shortages that besiege California's other coastal counties are no less present in Sonoma. The county's tight job market is lifting wages, but the pool of idle workers is wearing thin: The jobless rate is at its lowest since the late-1990s dot-com bubble, and the labor force has grown only marginally in the past two years.

Homebuilders in Santa Barbara, Sacramento, Santa Cruz and Monterey counties are struggling to keep pace with demand, but the housing shortage in Sonoma has grown especially acute. The leveling of several thousand homes in the October wildfires has tightened the screws on what was already a supply-constrained market, and the uptick in new construction has proved insufficient to replenish inventories.

Sonoma's key industry clusters emerged relatively unscathed from the fires. County vintners, brewers, spirit makers, and artisanal food producers continue to grow in sales and prestige, with direct shipments from Sonoma wineries outpacing those from California's other wine-growing regions for the second consecutive year.

Sonoma strong. Diverse industries will underpin the economy's resurgence. Agriculture, manufacturing, tourism, and technology-producing industries will propel job and income gains even as the labor market grows increasingly tight. The county's lineage of entrepreneurs extends well beyond winemakers and tech firms and now counts some of the fastest-growing craft brewers and organic food purveyors among its ranks. Millennials' embrace of craft beer and spirits and consumers' growing preference for organic and fair trade foods will drive increased sales over the next few years.

Meanwhile, abundant outdoor recreation opportunities and world-class spas and wellness centers will draw a new generation of health enthusiasts to the county. Technology firms will expand more cautiously, but each additional job will be a boost for incomes. Higher rents and labor costs in other North Bay counties create upside risk for Sonoma tech firms.

Housing crunch. Despite playing host to diverse economic drivers, Sonoma County will continue to grapple with a shortage of affordable housing. While most Sonoma homeowners have recovered equity lost in the housing market crash, home sales are moving sideways as potential buyers face limited options. Median house prices have spiked in the wake of the fires and herald further declines in affordability.

Workforce. Sonoma County boasts a skilled workforce, but housing constraints pose an obstacle to replenishing the labor force. In-migration has slowed in tandem with the decline in housing affordability. The rapid rise in house prices will make it more difficult to attract prime-age workers. Should rising rents and house prices continue to deter new migrants, productivity growth will suffer. On average, the prime-age cohort is more likely to start a business and to migrate in search of better job opportunities.

Housing constraints will test the resilience of Sonoma County's economy, but growth in manufacturing, tourism, and health and wellness centers will keep the expansion intact. Longer term, world-class wineries, breweries, hospitality establishments and wellness centers will be a draw for high-income tourism and enable income and output gains to keep pace with those of the U.S. and other midsize California metro areas.

Jesse Rogers *1-866-275-3266*
April 2018 *help@economy.com*

2011	2012	2013	2014	2015	2016	INDICATORS	2017	2018	2019	2020	2021	2022
22.2	22.3	22.8	24.1	25.6	26.1	Gross metro product (C09$ bil)	26.6	27.5	28.2	28.4	29.3	30.1
2.3	*0.3*	*2.2*	*6.0*	*6.1*	*2.0*	*% change*	*1.6*	*3.7*	*2.4*	*0.8*	*2.9*	*2.9*
169.5	172.6	180.9	191.1	196.8	201.7	Total employment (ths)	203.7	206.4	208.4	208.7	209.1	210.9
1.2	*1.8*	*4.8*	*5.6*	*3.0*	*2.5*	*% change*	*1.0*	*1.3*	*1.0*	*0.2*	*0.2*	*0.9*
10.1	8.8	7.0	5.6	4.4	4.0	Unemployment rate (%)	3.5	3.3	3.4	3.7	4.3	4.7
5.5	4.4	4.2	6.5	8.2	4.3	Personal income growth (%)	4.5	4.3	4.2	3.8	4.2	4.5
61.0	61.5	63.4	65.3	69.7	73.9	Median household income ($ ths)	76.4	78.5	80.9	83.8	86.4	88.9
487.6	490.6	494.8	499.4	502.0	503.7	Population (ths)	505.3	506.2	507.1	508.1	509.3	511.0
0.6	*0.6*	*0.9*	*0.9*	*0.5*	*0.3*	*% change*	*0.3*	*0.2*	*0.2*	*0.2*	*0.2*	*0.3*
1.3	1.9	2.9	3.4	1.2	1.0	Net migration (ths)	1.1	0.3	0.4	0.4	0.7	1.1
449	312	453	419	431	621	Single-family permits (#)	917	1,133	1,052	1,133	1,330	1,280
183	248	593	244	190	298	Multifamily permits (#)	289	264	210	246	314	315
180.0	179.7	208.2	238.8	260.3	282.1	FHFA house price (1995Q1=100)	304.8	309.9	311.9	320.5	332.9	348.2

ECONOMIC HEALTH CHECK

3-MO MA

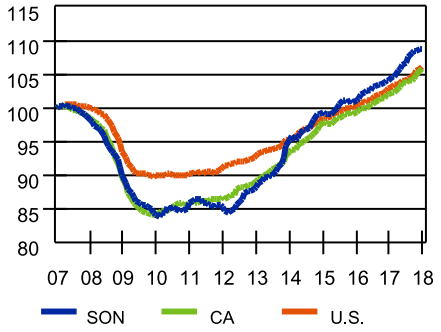
	Sep 17	Oct 17	Nov 17	Dec 17	Jan 18	Feb 18
Employment, change, ths	0.2	0.2	0.2	0.3	0.4	0.6
Unemployment rate, %	3.6	3.9	3.7	3.4	3.0	ND
Labor force participation rate, %	62.5	62.8	63.2	63.2	63.4	ND
Employment-to-population ratio, %	60.3	60.4	60.8	61.0	61.4	ND
Average weekly hours, #	32.6	32.1	32.1	32.2	32.5	ND
Industrial production, 2012=100	106.6	106.9	107.3	108.0	108.0	ND
Residential permits, single-family, #	1,147	1,393	1,141	1,200	1,028	ND
Residential permits, multifamily, #	603	658	202	306	280	ND

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

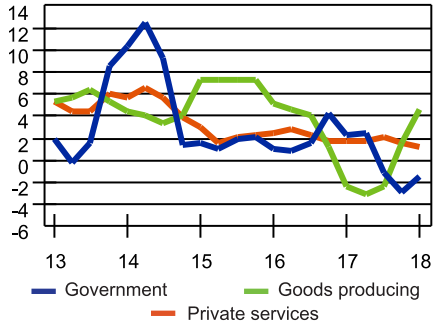
JAN 2007=100



Source: Moody's Analytics

CURRENT EMPLOYMENT TRENDS

% CHANGE YR AGO



Sources: BLS, Moody's Analytics

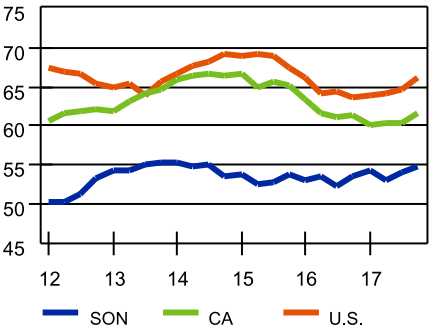
% CHANGE YR AGO, 3-MO MA

	Jan 17	Jul 17	Jan 18
Total	2.2	2.2	2.1
Mining	-18.2	-0.3	21.0
Construction	4.3	7.2	7.0
Manufacturing	2.7	1.2	3.3
Trade	1.1	1.0	1.7
Trans/Utilities	-3.9	-4.0	-0.8
Information	0.1	0.0	-1.3
Financial Activities	0.9	2.0	0.8
Prof & Business Svcs.	1.9	3.5	4.6
Edu & Health Svcs.	2.3	3.4	4.6
Leisure & Hospitality	2.3	1.7	-0.4
Other Services	2.1	0.0	0.4
Government	3.6	2.3	-1.1

Sources: BLS, Moody's Analytic

DIFFUSION INDEX

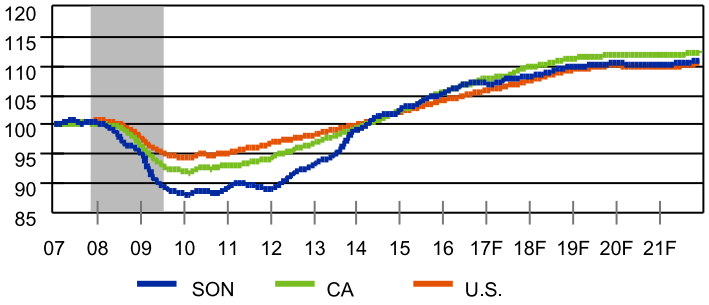
3-DIGIT NAICS LEVEL, 6-MO MA



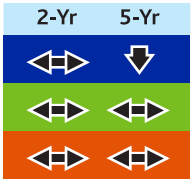
Sources: BLS, Moody's Analytics

RELATIVE EMPLOYMENT PERFORMANCE

JAN 2007=100



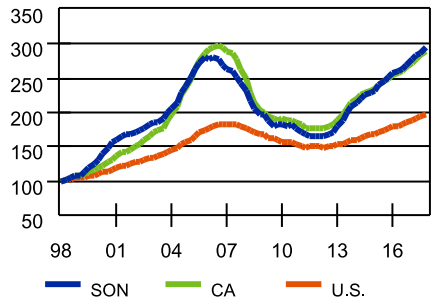
FORECAST VS. 6 MO PRIOR



Sources: BLS, Moody's Analytics

HOUSE PRICE

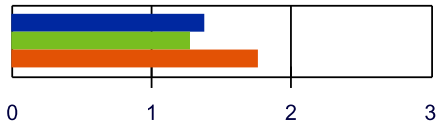
1998Q1=100, NSA



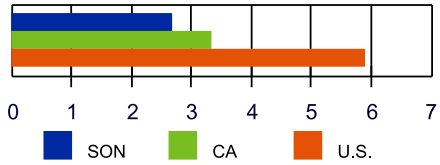
Sources: FHFA, Moody's Analytics

VACANCY RATES

HOMEOWNER, % HOUSES FOR SALE



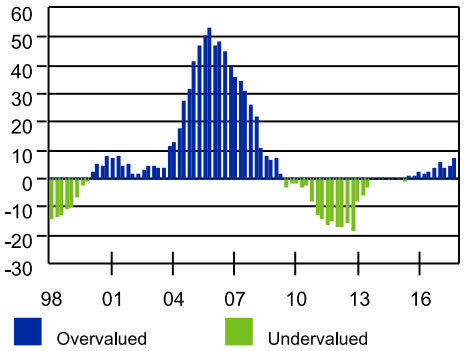
RENTAL, % INVENTORY FOR RENT



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

HOUSE PRICE TRENDS

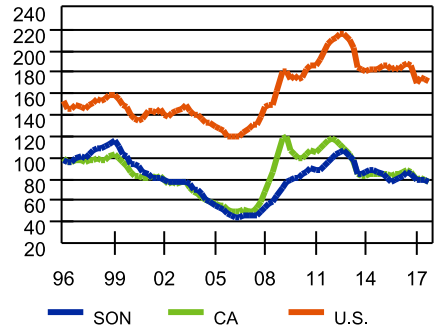
%



Sources: FHFA, Moody's Analytics

HOUSING AFFORDABILITY

GREATER THAN 100=MORE AFFORDABLE



Sources: NAR, Moody's Analytics

EMPLOYMENT AND INDUSTRY

TOP EMPLOYER

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

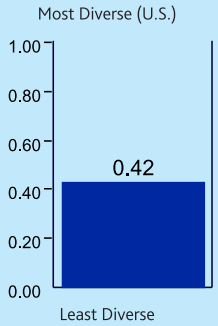
Sources: North Bay Business Journal Book of Lists, 2017, San Francisco Business Journal Book of Lists, 2017

PUBLIC

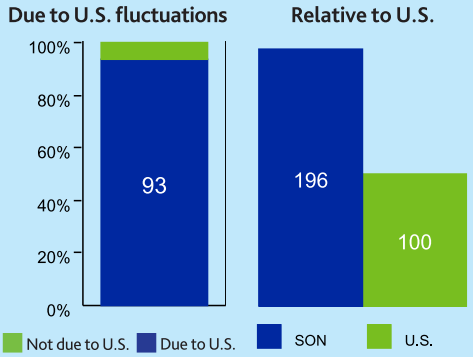
Federal	1,308
State	4,970
Local	25,989

2016

INDUSTRIAL DIVERSITY

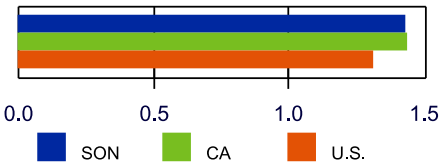


EMPLOYMENT VOLATILITY



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	*4.0*
Rank among all metro areas	*220*

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

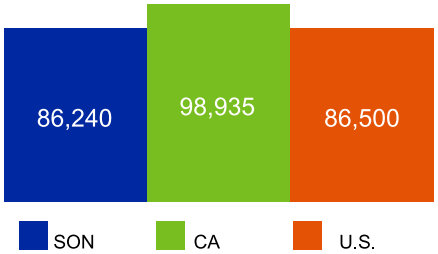
COMPARATIVE EMPLOYMENT AND INCOME

	% 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

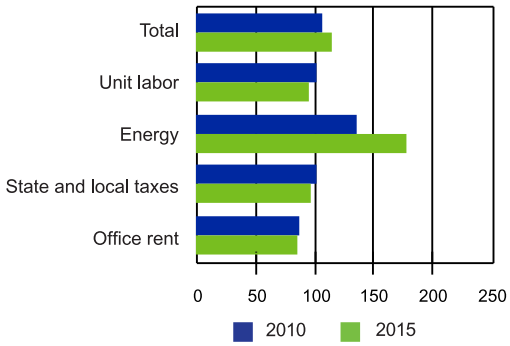
REAL OUTPUT PER WORKER, $



Sources: BEA, Moody's Analytics, 2015

BUSINESS COSTS

U.S.=100



Source: Moody's Analytics

HIGH-TECH EMPLOYMENT

	Ths	% of total
SON	8.5	4.2
U.S.	7,046.4	4.8

HOUSING-RELATED EMPLOYMENT

	Ths	% of total
SON	24.7	12.1
U.S.	13,892.2	9.5

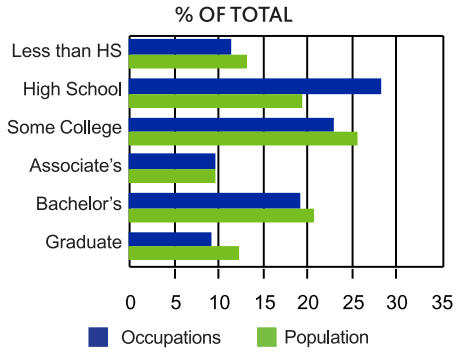
Source: Moody's Analytics, 2017

LEADING INDUSTRIES BY WAGE TIER

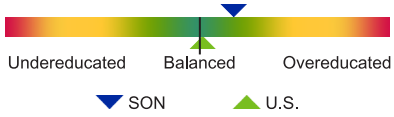
	NAICS	Industry	Location Quotient	Employees (ths)
HIGH	6221	General medical and surgical hospitals	0.7	4.3
	6214	Outpatient care centers	3.6	4.2
	6211	Offices of physicians	0.7	2.6
	5511	Management of companies and enterprises	0.7	2.1
MID	GVL	Local Government	1.3	25.3
	3121	Beverage manufacturing	24.8	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, 2016

SKILLS MISMATCH



Sources: Census Bureau, ACS, Moody's Analytics, 2015

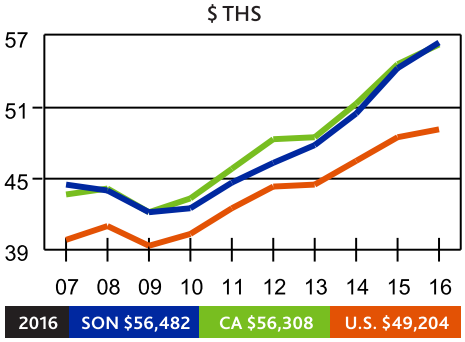


ECONOMIC DISENFRANCHISEMENT

Index	2016	Rank*
Gini coefficient	0.45	262
Palma ratio	3.0	274
Poverty rate	9.2%	368

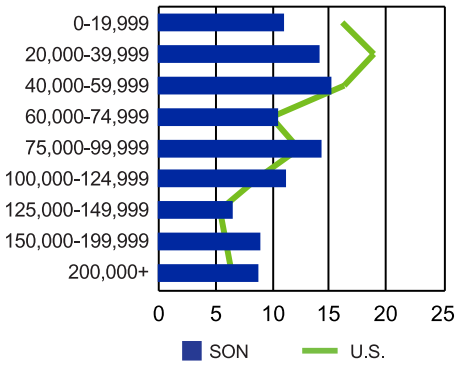
*Most unequal=1; Most equal=401

PER CAPITA INCOME



Sources: BEA, Moody's Analytics

HOUSEHOLDS BY INCOME, %



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

MIGRATION FLOWS

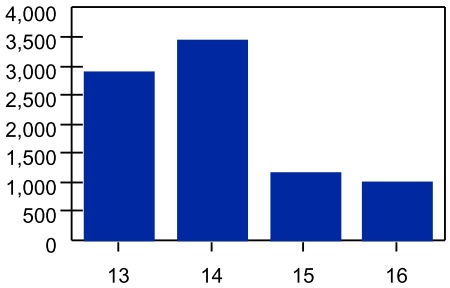
INTO SONOMA COUNTY CA

	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, #

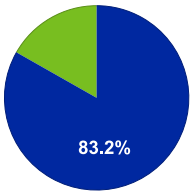


	2013	2014	2015	2016
Domestic	2,385	2,837	370	298
Foreign	423	551	605	592
Total	2,808	3,388	975	890

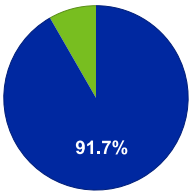
Sources: IRS (top), 2016, Census Bureau, Moody's Analytics

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

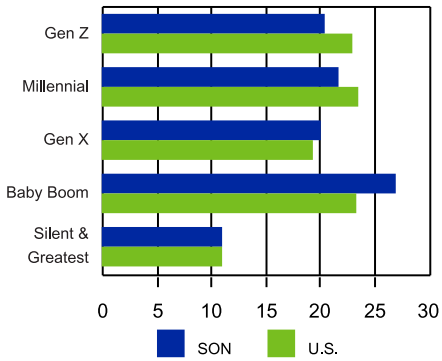
Top Five Outside Sources of Workers

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

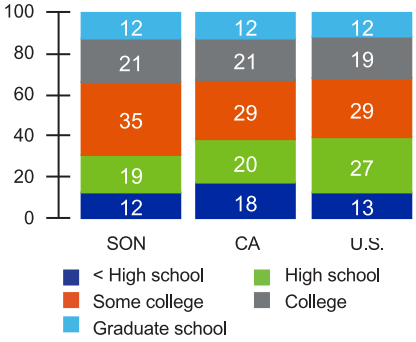
POPULATION BY GENERATION, %



Sources: Census Bureau, Moody's Analytics, 2015

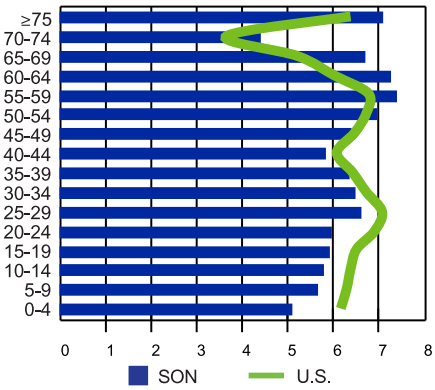
EDUCATIONAL ATTAINMENT

% OF ADULTS 25 AND OLDER



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

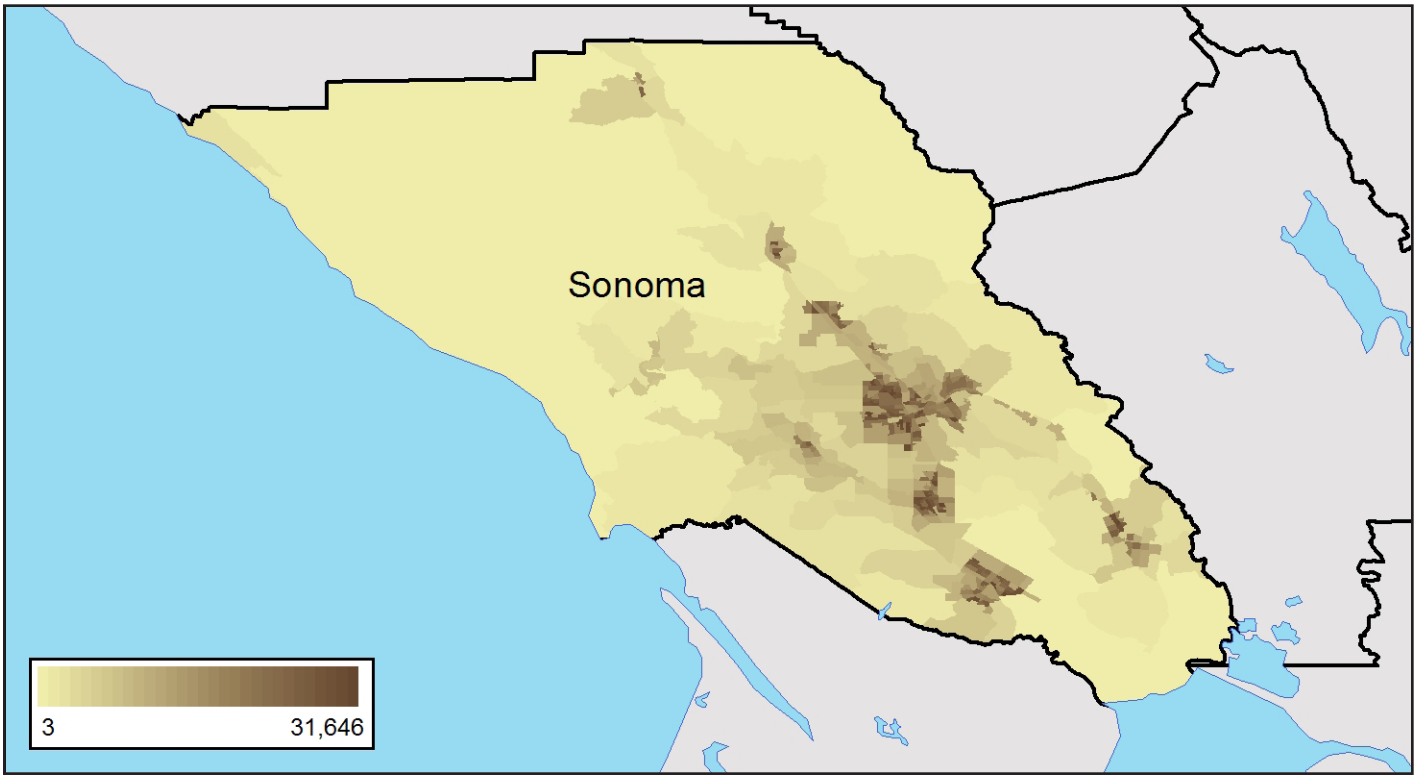
POPULATION BY AGE, %



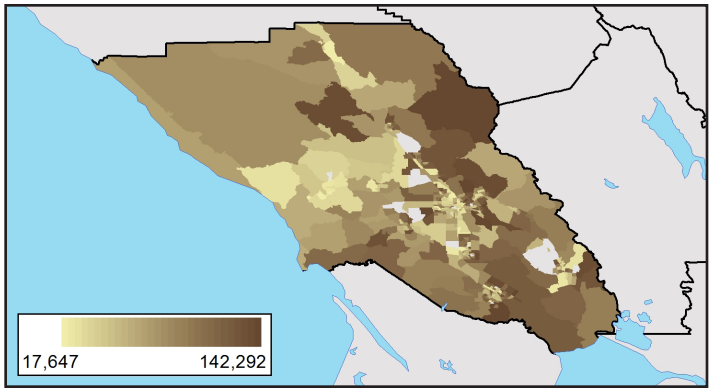
Sources: Census Bureau, Moody's Analytics, 2016

GEOGRAPHIC PROFILE

POPULATION DENSITY



MEDIAN HOUSEHOLD INCOME



AVERAGE COMMUTE TIME

COMING SOON

POPULATION & HOUSING CHARACTERISTICS

	Units	Value	Rank*
Total land area	sq mi	1,575.8	210
Population density	ratio population to land area	320.0	123
Total population	ths	504.2	124
White	% of population	63.9	275
Hispanic	% of population	26.5	57
Black	% of population	1.5	350
Asian	% of population	4.0	91
U.S. citizen at birth	% of population	80.9	351
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	259
Renter occupied	% of total	35.0	95
Vacant	% of total	9.9	231
1-unit; detached	% of total	67.4	183
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

Supply-Side Washout

BY MARK ZANDI

Recent Performance

The economy is set to boom. Growth is already strong—well above the economy's potential—and will soon accelerate. A massive dose of fiscal stimulus measures, including both deficit-financed tax cuts and federal government spending increases, has just begun to hit the economy.

By this summer, real GDP growth should be consistently over 3% with job gains of more than 200,000 per month. At this pace, the unemployment rate will quickly fall into the threes and, by this time next year, will be in the low threes. This has rarely happened in the nation's history and has never been sustained for very long (see Chart 1). Under such conditions, the economy quickly overheats as wage and price pressures boil over and interest rates rise. A recessionary bust ultimately ensues.

A similar ending seems increasingly likely for the current expansion once the fiscal stimulus fades early next decade.

Supply-side bailout?

The best way to forestall this unhappy ending would be for the supply side of the economy to rev up. That is, for labor force and productivity growth to accelerate. This could stem the decline in unemployment and forestall the wage and price pressures and rising rates. It would also mean higher incomes, profits and wealth.

Indeed, there is evidence that the economy's long-dormant supply side is coming back to life. Labor force participation may break out as potential workers are attracted by the record number of open job positions and accelerating wage growth. Prime-age men have been especially slow to get back on the job since the Great Recession.

Labor force growth should pick up in coming months but should prove temporary and modest. For one, the number of people who are out of the workforce but say they want a job if they could find a suitable one has fallen sharply in the past year and is now close to its level in the best of times. And at least some of those nonworking prime-age men are struggling with the side-effects of opioid addiction and incarceration. Also, retiring baby boomers are a strong headwind against any increase in participation.

Another impediment to stronger labor force growth will be less foreign immigration. The Census was marking down expectations of immigration to the U.S. even before considering the fallout from the Trump administration's heavy-handed policies. No one is arguing to completely stop all immigration, but if it did stop, the labor force would steadily contract in coming decades, since the natural-born working-age population will decline (see Chart 2).

Productivity fetters

There is also the possibility that a productivity revival will forestall an overheating economy. Productivity growth has seriously lagged this decade, averaging below 1% per annum. This is less than half the pace of the last half century and more.

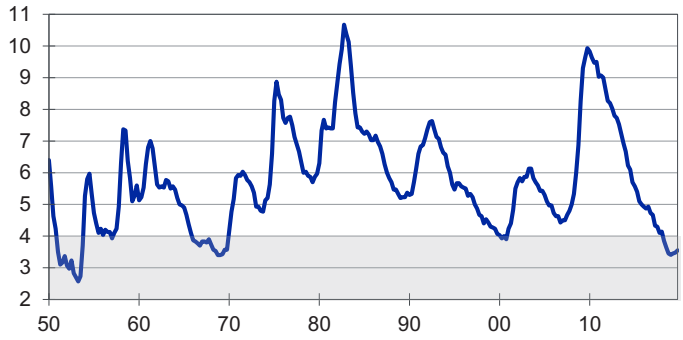
Fallout from the Great Recession, such as less worker mobility and fewer business formations, has likely contributed to the productivity slump. The oil and gas fracking boom may have also diverted investment dollars away from labor-saving technologies at a time when there was little economic incentive to invest in those technologies given high unemployment and cheap labor.

These fetters are fading, and productivity growth is expected to accelerate. However, it is not expected to return to its prerecession pace, largely because of the aging population. Using employee-level data from human resource company ADP, we find that the aging population was responsible for reducing productivity growth by as much as a quarter percentage point per annum over the past decade, and this is not likely to abate soon (see Chart 3).

One view holds that budding technologies, including artificial intelligence and machine learning, drones, and driverless vehicles, will soon pump up productivity growth. Perhaps, but this would run com-

Unemployment Is Headed Into the Threes

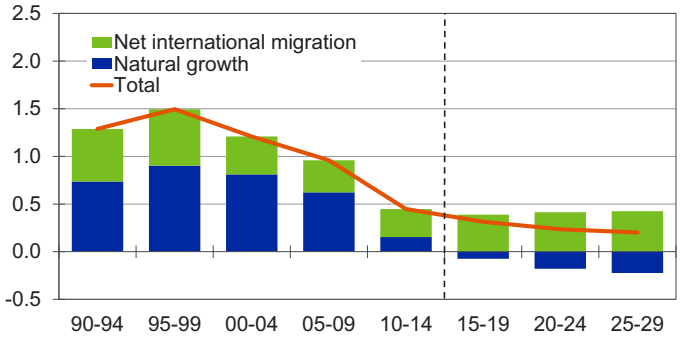
Unemployment rate, %



Sources: BLS, Moody's Analytics

Immigration Critical to Labor Force Growth

Contribution to working-age population growth, ppt, 5-yr avg



Sources: Census Bureau, Moody's Analytics

pletely counter to the long historical experience that it takes years, if not decades, for new technologies to diffuse broadly enough to significantly lift productivity.

Recent corporate tax cuts also will do little to support productivity in the foreseeable future. Much of the benefit of the lower tax rates on the cost of capital and investment has already been washed out by the higher interest rates resulting from deficit-financing of the cuts. Even if the tax cuts were paid for, and interest rates remained low, it would take years for the stronger investment to increase the capital stock enough to meaningfully boost productivity growth.

Trump tariffs

That a supply-side revival might forestall an overheating economy became even more unlikely when President Trump decided to slap large tariffs on imports of steel and aluminum. This action by itself will not do much economic damage, but it signals that Trump is set to follow through on his broader anti-trade agenda. This is also manifest in his decisions to pull out of the Trans-Pacific Partnership and to reopen the North American Free Trade Agreement, and in expectations that he will soon slap higher tariffs and other penalties on China (see Chart 4).

The president's argument that the steel and aluminum tariffs are necessary for national security is specious. Our military uses very little of the steel and aluminum we currently produce, and the biggest overseas sources are our two strongest allies, Canada and the European Union. South Korea, Mexico and Brazil—hardly enemies of the U.S.—are also key suppliers.

Trump has linked the tariffs to renegotiation of NAFTA with Canada and Mexico. There will be no tariffs on steel and aluminum from these countries if they relent to our terms on that trade deal. What the president wants to change in the NAFTA agreement—most important being how much of a vehicle is actually produced in the U.S.—will have no discernible macroeconomic impact and is hardly worth the risk of causing the agreement to fall apart.

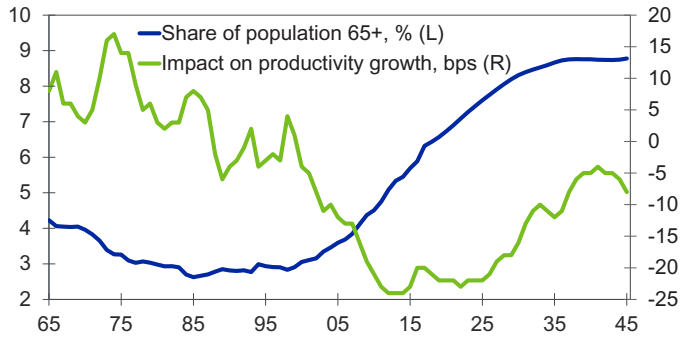
The tariffs are not likely to save the steel and aluminum industries and their workers for very long. It is simply cheaper to produce these metals in other places, and those cost advantages will ultimately prevail. Meanwhile, these industries have been shedding workers for decades, mostly because of inexorable productivity gains. And the tariffs will hurt U.S. industries and workers that use now-costlier steel and aluminum. They will suffer as global competitors get cheaper steel and aluminum, allowing them to lower their prices and be more competitive.

The president has justified the tariffs arguing that the big U.S. trade deficit shows we have let our trading partners cheat us. The U.S. does have a deficit in trade, equal to about 3% of our GDP, but it has narrowed substantially over the past decade. Some years it is bigger, like now, but that is because our economy is strong and we are able to buy more things, including imports. Other years it has been smaller, as during the Great Recession, because we could not afford to buy things. A trade deficit is not necessarily a sign of economic weakness. In the U.S. case in recent years, it has been a sign of strength.

Arguably more important for U.S. businesses is their direct investment overseas. Historically, U.S. companies have aggressively expanded operations in the countries with which they do business, exporting less to these countries and producing more in them. This is a different business model than is generally pursued by export powerhouses China, Japan and Germany, but it has been highly successful. Not only do U.S. multinationals dominate global commerce, but they have been instrumental in U.S. so-called soft power—spreading U.S. culture and political and economic mores to the world. Simply focusing on trade as a barometer of success misses, and will almost surely undermine, this broader global relationship.

Anti-trade policies represent a negative supply shock to the economy. In the near term, higher tariffs and less trade will result in less growth and higher inflation, increasing the risk the economy will overheat. Longer run, less trade will weigh on productivity growth, as the benefits of comparative advantage and global competition are diminished. The economy's supply side seems increasingly unlikely to rescue this expansion.

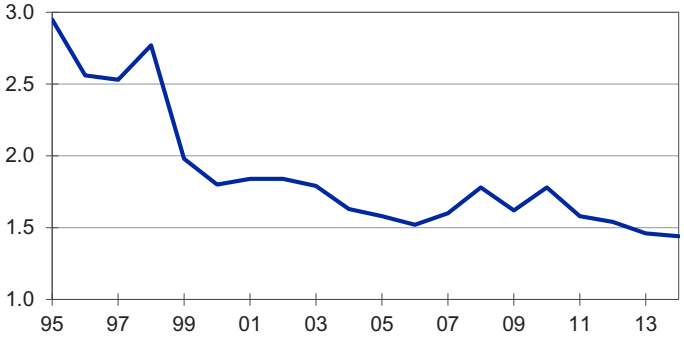
Aging Population a Weight on Productivity



Sources: BLS, ADP, Moody's Analytics

Decades-Long Decline in U.S. Tariffs Ends

U.S. avg effective tariff rate, %



Sources: World Bank, Moody's Analytics

Forecast Assumptions

BY MARK ZANDI

Monetary policy

The Federal Reserve is expected to continue steadily normalizing interest rates over the remainder of the decade. The Fed hiked the federal funds rate three times in 2017, a quarter percentage point each time, and is expected to hike rates four times in 2018 and again in 2019, with the funds rate peaking near 4% by decade's end.

Driving this expected normalization in monetary policy is an economy operating beyond full employment. Both the unemployment rate at just over 4% and the 8% underemployment rate are below our estimates of the natural rate. And now, with deficit-financed tax cuts and government spending increases hitting, the labor market threatens to overheat.

Inflation is expected to pick up from less than its 2% target to a high near 3% by late 2019. Fueling the stronger inflation will be the tight labor market, sturdy rent growth, and greater medical care inflation. Somewhat higher oil and other commodity prices will also more than offset any impacts on inflation of an anticipated modest firming of the U.S. dollar.

Normalization of monetary policy also means that 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% currently to just over 4% by late 2019. This is near the estimated 4.4% normalized 10-year Treasury yield consistent with an economy at full employment. Long-term yields will not fully normalize until global central banks end their quantitative easing programs and the Fed's balance sheet shrinks—not likely until early next decade.

Fiscal policy

The federal government's fiscal situation is set to weaken substantially with the passage of deficit-financed tax cuts and government spending increases. The budget deficit was on the rise before these policy changes. The tax cuts and spending increases will 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. Even on a dynamic basis—after accounting for the effects of the tax and spending policies on the economy—the tax cuts and spending increases will add approximately $1.3 trillion to the government's cumulative budget deficits over the next decade. 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, including tax and spending policy, should add approximately 0.5 percentage point to real GDP growth in 2018 and about the same in 2019, but there will be little long-term economic benefit from these policies. Any economic benefit from the lower marginal corporate tax rates will be washed out by the economic cost created by the bigger government debt load and resulting higher interest rates.

U.S. dollar

The real broad trade-weighted U.S. dollar has weakened over the past year, retracing about half of the more than 20% appreciation from summer 2014 to late 2016. The dollar has softened in recent months against most major currencies. Behind the softness is the stronger global economy. Given the better economic backdrop, the European Central Bank has signaled that it will soon begin tapering its quantitative easing efforts, and the next step will be to begin normalizing rates, although that is not expected until 2019. The Bank of Canada has already begun raising short-term rates, and the Bank of England is signaling its intention to begin raising rates more consistently.

The dollar is expected to stabilize soon, and to even appreciate a bit over the coming two years as the Fed steadily normalizes U.S. monetary policy. The Fed is approximately three years ahead of the ECB in normalizing policy, and even further ahead of the Bank of Japan. The Trump administration's anti-trade stance will also support the dollar against currencies of countries with which the U.S. has trade frictions, including the Mexican peso and the Canadian dollar.

Energy prices

Oil prices are hovering close to $60 per barrel from a low of nearly $25 per barrel in early 2016. Prices will remain volatile but are expected to remain near current levels through the end of the decade. Underpinning prices is the sharp pullback in investment in North American shale oil production. OPEC has also moved to curtail production, and higher-cost non-OPEC producers in the North Sea and Arctic are also curtailing investment plans. Global oil demand has also received a lift from the lower prices.

The long-run price for oil is estimated at $55 to $60 per barrel. Brent oil prices should narrow relative to West Texas Intermediate, given the reversal in the Seaway oil pipeline and other projects, allowing WTI to flow from the interior of the U.S.—where WTI is plentiful due to increased production in North Dakota—to the Gulf Coast.

Natural gas prices will remain low, particularly compared with oil prices, for the next decade. There is a substantial glut of natural gas since demand has not fully recovered from the recession and supply has increased given the surge in shale gas production.

Forecast Risks

BY MICHAEL FERLEZ

⬇ Geopolitical tensions

Geopolitical tensions outside the U.S. transmitted through international trade, consumer sentiment and financial markets pose a threat to the U.S. economy. The U.K. and the European Union are locked in heated negotiations. Although the dire Brexit scenarios have yet to materialize, much depends on the final agreement. Less than cordial terms of a U.K. withdrawal from the European single market would not only disrupt financial markets but could also lower the growth prospects for both the U.K. and the EU.

Years of subpar growth and an influx of thousands of refugees have strained many European countries, leading to the rise of populist and Eurosceptic parties. In the most recent round of national elections in Europe, Italians voted overwhelmingly for populist parties. The Five Star Movement received the most amount of votes followed closely by the far-right League. Since no single party was able to secure a majority of votes, however, it will be up to the Five Star Movement and League to form a coalition government. While Italy is unlikely to depart the EU, restrictions on immigration and delays in necessary fiscal reforms risk derailing Italy's nascent recovery.

Tensions with North Korea have cooled in recent months but remain a key concern. North Korean missile tests and saber-rattling between it and the U.S. elevated tensions to an unprecedented level. A face-to-face meeting between President Trump and Kim Jong-un could help to de-escalate tensions, or it could exacerbate the situation. Continued provocations risk upending financial markets or something much worse.

⬇ Trade and immigration

Trump's protectionist stance on immigration and trade, especially anti-China and anti-Mexico rhetoric and the desire to renegotiate key trade agreements, poses a significant downside risk. Financial markets reacted negatively to Trump's decision earlier this month to levy tariffs on steel and aluminum import. The administration's shift toward more protectionist policies increases the risk of a trade war. Although the baseline forecast does not assume a trade war, retaliations to U.S. tariffs would not be surprising. Should this scenario play out, U.S. and global growth would fall below expectations. Longer term, immigration adds another dimension to uncertainty, as undocumented workers leave the country, leading to a contraction in the labor force. Tighter immigration policies would further dampen population growth, which is already at its slowest rate in decades, and slow the economy's potential.

⬆ Renewed global growth

Despite numerous geopolitical risks, the global economy is strengthening, and there are reasons to be optimistic that growth will be even stronger in the years ahead. Nearly 10 years after the recession, all the world's major economies are growing. U.S. growth has accelerated after a sluggish start to 2017 and the euro zone is expanding at the fastest rate in two years. Rising commodity prices are aiding South America, putting it on the path to recovery after a two-year recession. Asia will remain the world's fastest-expanding region, with stabilizing growth in China driving broad-based expansion. Assuming the global economy can avoid serious setbacks, solid economic fundamentals could usher in a period of stronger growth.

⬇ China

A hard landing for China would deal a serious blow to the global economy. Recent economic data from China have been mixed, but the world's second largest economy has stabilized following turbulence in 2015 and 2016. Still, growth is expected to decelerate over the medium term as the Chinese government attempts to rebalance the economy toward more domestic consumption.

Uncertainty lies in China's ability to maintain sturdy growth and the impact of its interventions in the foreign exchange market on other global markets. China's expansion has been supported by a massive buildup in credit that poured into property investments and other projects. This has led to overcapacity in some industries and a frothy housing market. Should property prices tumble, the resulting sharp drop in asset quality in China's banks could heighten stress in the domestic financial sector, with significant spillover effects on global financial markets. Chinese officials are working to tighten lending standards and rein in the shadow banking system. A policy misstep during this process would have significant impacts on both financial markets and the global economy.

⬇ Interest rates

Rising interest rates will pose a downside risk to the global economy. In the U.S., the Federal Reserve has been slow and deliberate in its decisions to raise interest rates, though a fiscal stimulus so late in the expansion could force officials to accelerate the pace of rate hikes. Meanwhile, improving economic conditions in Europe set the stage for the European Central Bank to examine ending its quantitative easing program and possibly joining the Federal Reserve, Bank of England, and Bank of Canada in tightening monetary policy. Even the Bank of Japan recently pared back some of its monthly asset purchases, signaling that it may be ready to scale back monetary support.

Years of record low interest rates have had a dramatic effect on the global financial system. Negative real returns on sovereign bonds have driven investors into riskier assets, including equities and high-yield bonds, in search of higher returns. The result has been rapid inflation of asset prices. As accommodative policies are gradually removed and global interest rates rise, the value of risky assets could change dramatically. This was evidenced by the recent sharp correction in U.S. equities, triggered by rising fears of higher interest rates and inflation.

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707 - 565 - 7170

141 STONY CIRCLE, STE. 110, SANTA ROSA, CA 95401