

Blackstone

Coping with the Unprecedented

APRIL 2020

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- **A Coronavirus-caused Bear Market**
- **Framing the Secular Change**
- **Global Economy Fell Ill; Fundamentals Going in Were Mixed**
- **Global Recession Is Underway**
- **Sentiment Set Up the Decline**

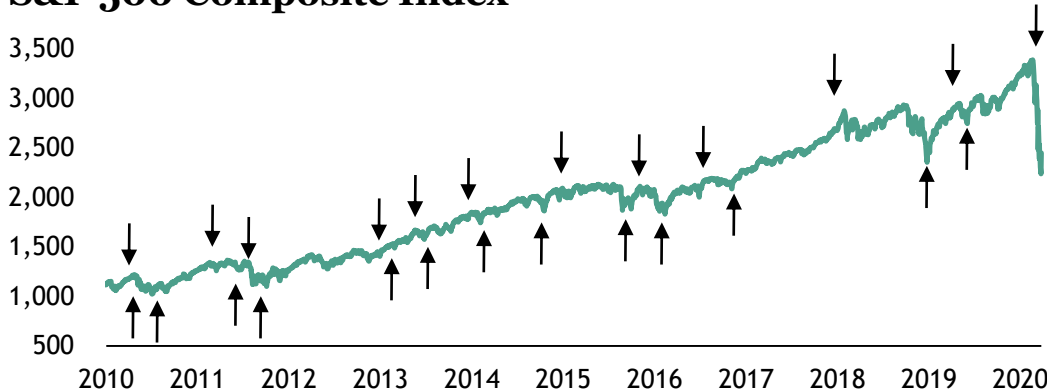
Note: As detailed in the “Disclaimers” section, the above reflects the personal views of Joseph Zidle, Managing Director and Byron Wien, Vice Chairman in the Private Wealth Solutions Group, and does not necessarily reflect the view of Blackstone itself.

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I. U.S. Outlook

Investor sentiment has reached a pessimistic extreme

S&P 500 Composite Index

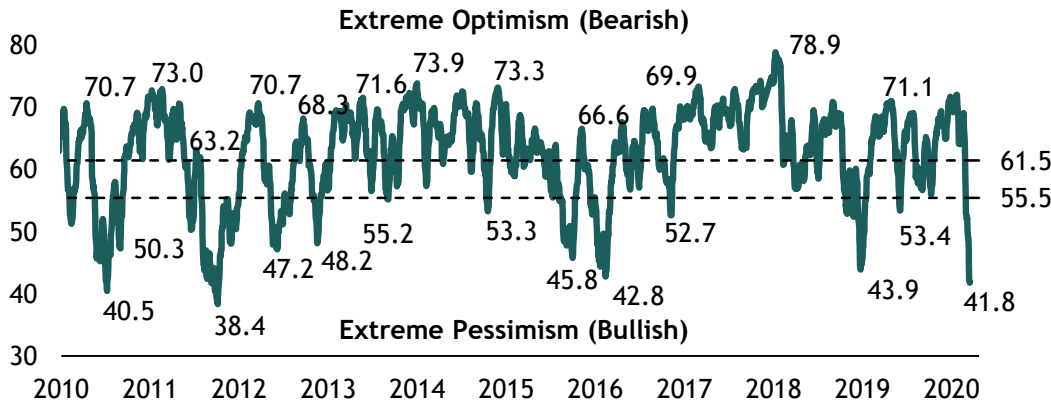


S&P 500 Index Performance Full History: 12/01/1995-03/17/2020		
NDR Crowd Sentiment Poll is:	% Gain/Annum	% of Time
Above 66.0	-3.2	26.1
57.0 - 66.0 From Above	0.5	18.1
57.0 - 66.0 From Below	20.2	19.2
Below 57.0	9.1	36.1
<i>Buy/Hold = 7.1% Gain/Annum</i>		

Average value of indicator at:⁽¹⁾

- Optimistic Extremes (down arrows) = 68.7
- Pessimistic extremes (up arrows) = 46.9
- Average spread between extremes = 21.5

NDR Crowd Sentiment Poll



Extremes generated when sentiment reading:⁽²⁾

- Rises above 61.5 = Extreme Optimism
- Declines below 55.5 = Extreme Pessimism

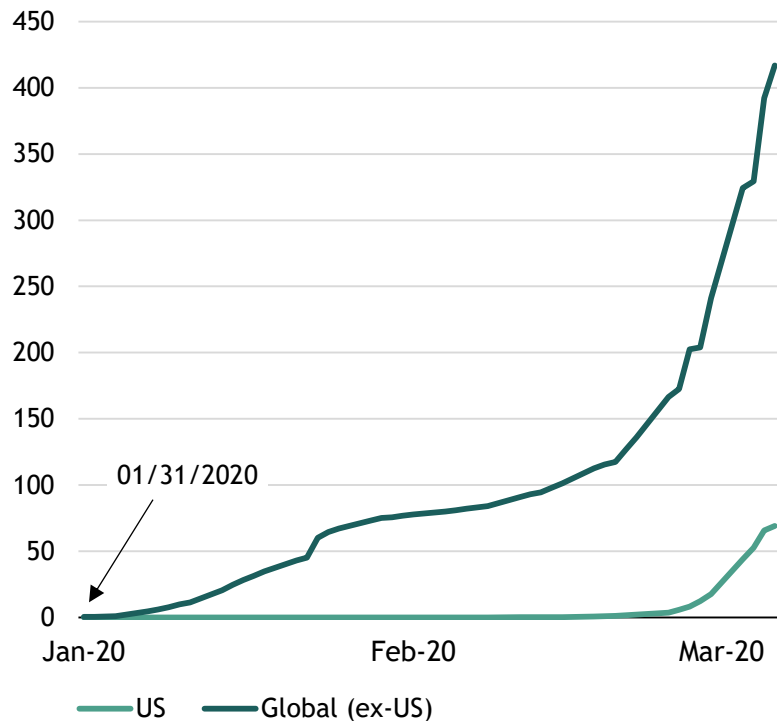
Source: Ned Davis Research, as of 3/31/20.

(1) Arrows represent extremes in optimism and pessimism. They do not represent buy and sell signals, and can only be known for certain (and added to the chart) in hindsight.
 (2) Sentiment must reverse by 10 percentage points to signal an extreme, in addition to reaching the above extreme levels.

New COVID-19 cases need to peak and trend down before the economy can recover

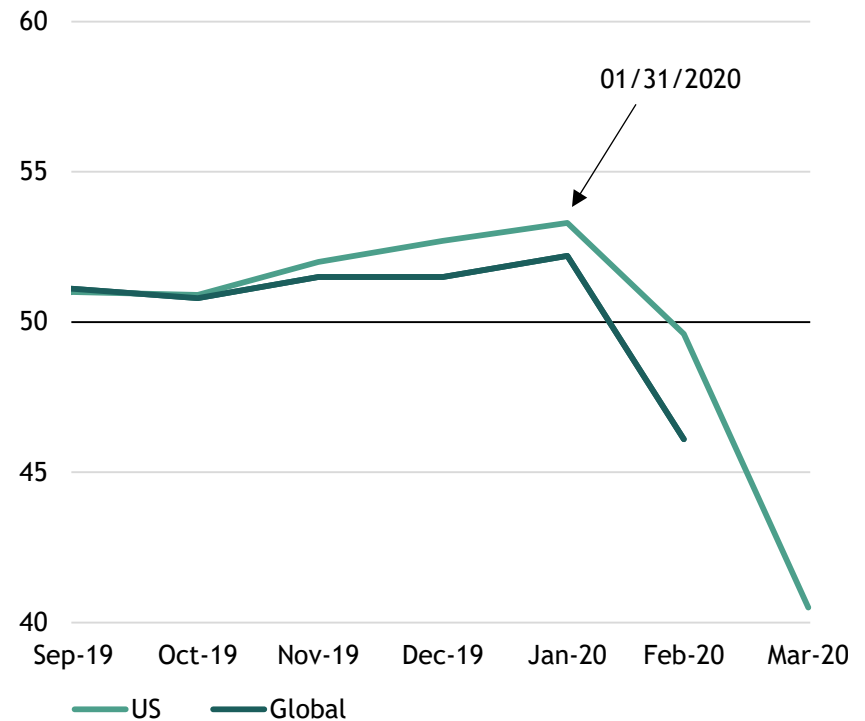
Confirmed COVID-19 Cases⁽¹⁾

(in thousands)



Global and U.S. Composite PMIs⁽²⁾

(above 50 = expanding, below 50 = contracting)



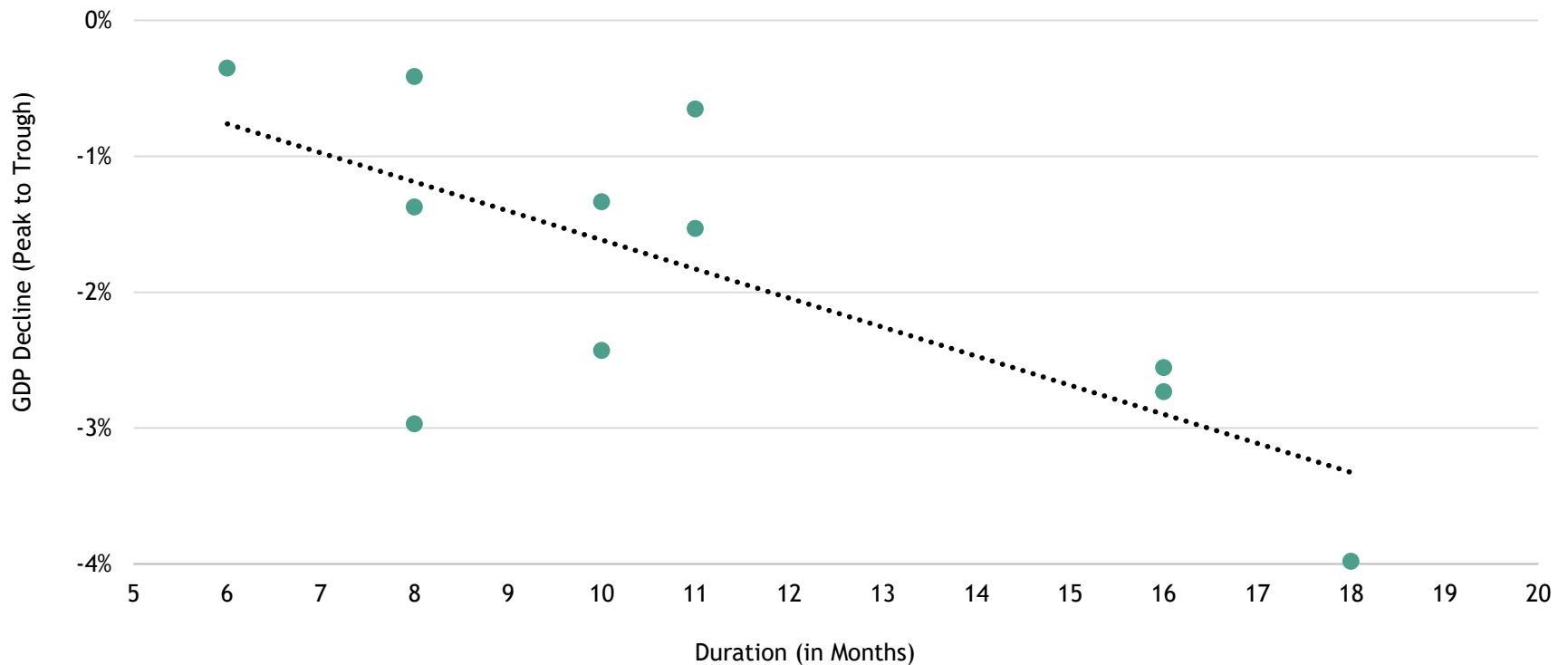
Source: Bloomberg and Blackstone Investment Strategy.

- (1) Confirmed coronavirus (2019-nCov) case counts compiled by Bloomberg, as of 3/26/20. Counts are subject to change as governments survey and confirm cases. Data are based on reported values as of midnight EST on each day.
- (2) Represents JPMorgan Global Composite PMI, as of 2/28/20, and Markit U.S. Composite PMI, as of 3/31/20.

Average recession duration of 3.7 quarters since WWII, with average GDP decline of -1.8% from peak to trough

U.S. Recessions since 1947

(GDP decline and duration)

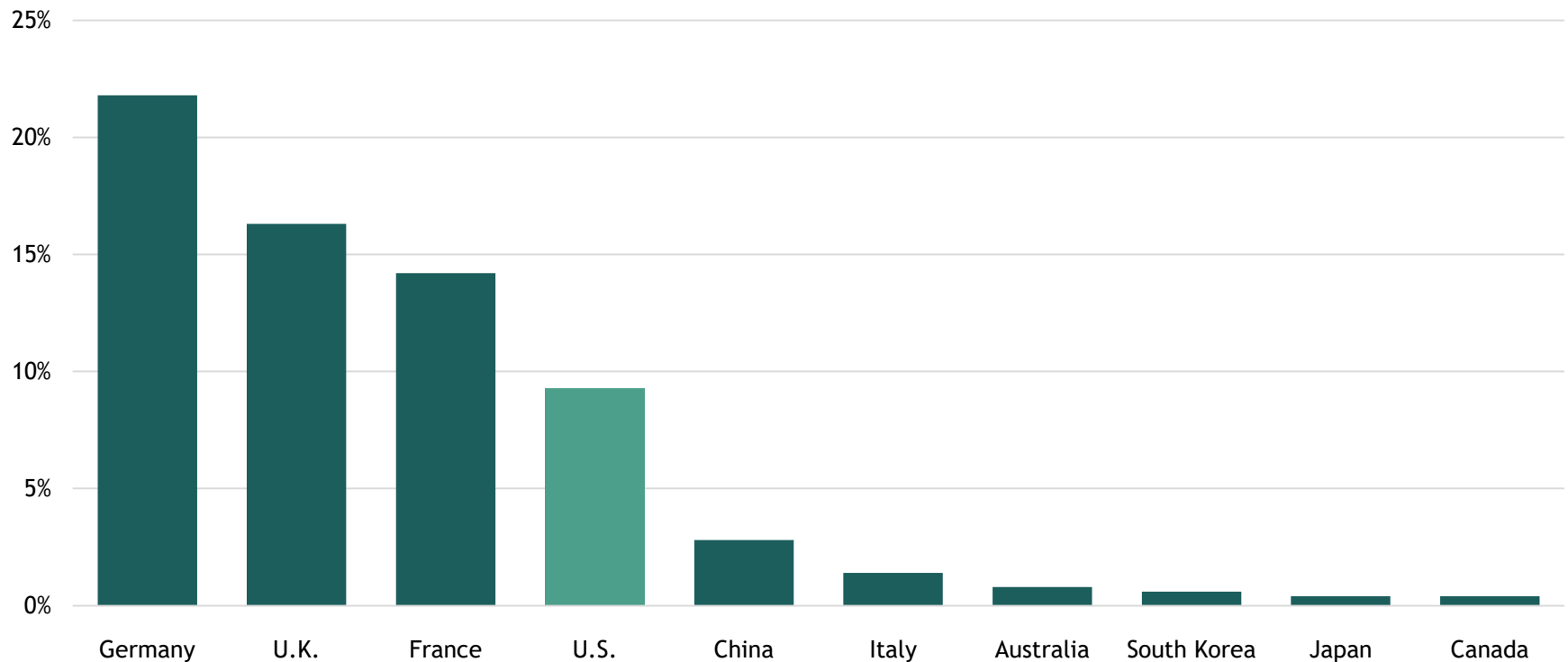


Source: Federal Reserve, National Bureau of Economic Research and Blackstone Investment Strategy, as of 3/31/20.

U.S. fiscal policy stimulus lags other countries as a percent of each economy's respective GDP

Estimated Fiscal Policy Stimulus

(percent of 2019 GDP)

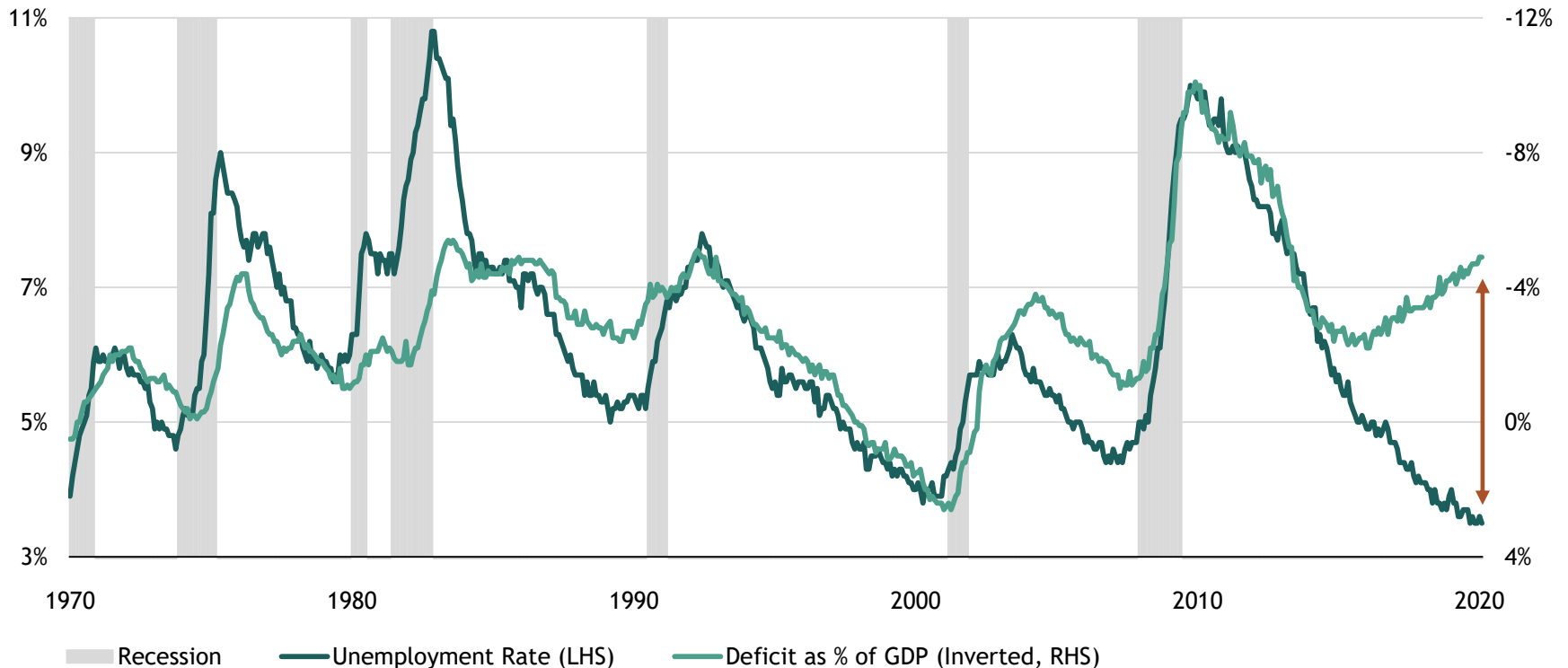


Source: Ned Davis Research, as of 3/26/20.

Budget deficits have never been this high with the unemployment rate so low

U.S. Budget Deficit (Percent of Nominal GDP) and Unemployment Rate

(1970-2020)⁽¹⁾



Source: U.S. Treasury, Bureau of Labor Statistics, Bloomberg and Blackstone Investment Strategy, as of 2/28/20.

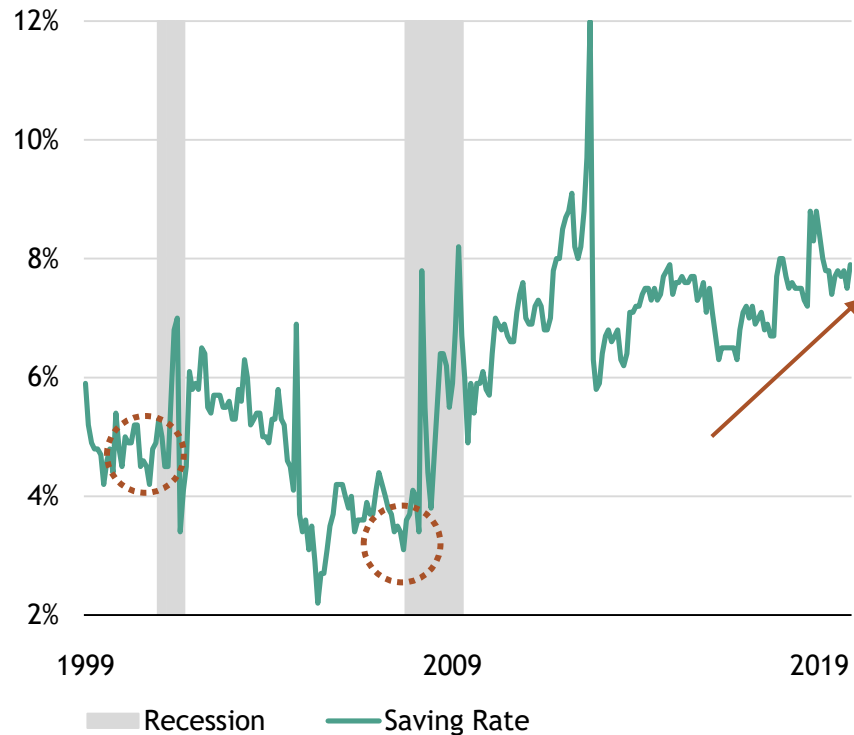
(1) Represents the U.S. Treasury Federal Budget Deficit/Surplus as a percent of nominal U.S. GDP, and the U-3 U.S. unemployment rate, seasonally adjusted.

A. Check-Up on the Consumer

Consumers saving more and spending less on debt service relative to prior cycle peaks

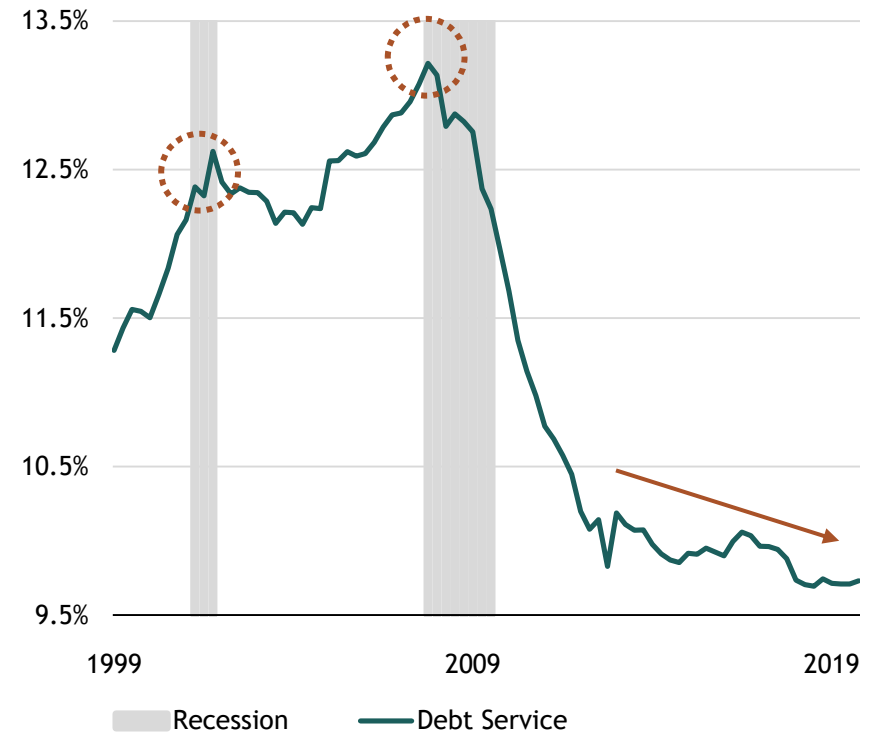
Personal Saving Rate

(SAAR, 3 month average)⁽¹⁾



U.S. Household Debt Service

(percent of disposable personal income)⁽²⁾



Source: Bureau of Economic Analysis, Federal Reserve and Blackstone Investment Strategy.

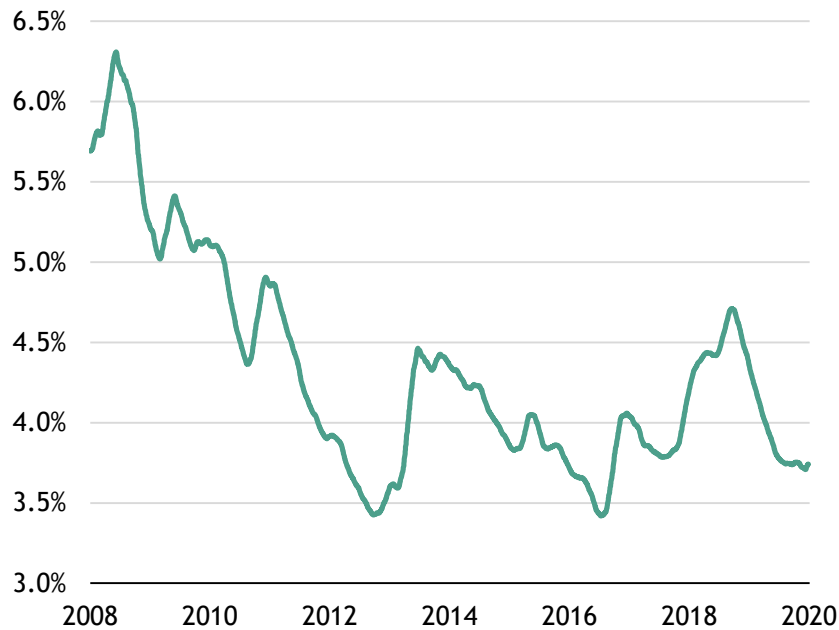
(1) As of 1/31/20.

(2) As of 12/31/19.

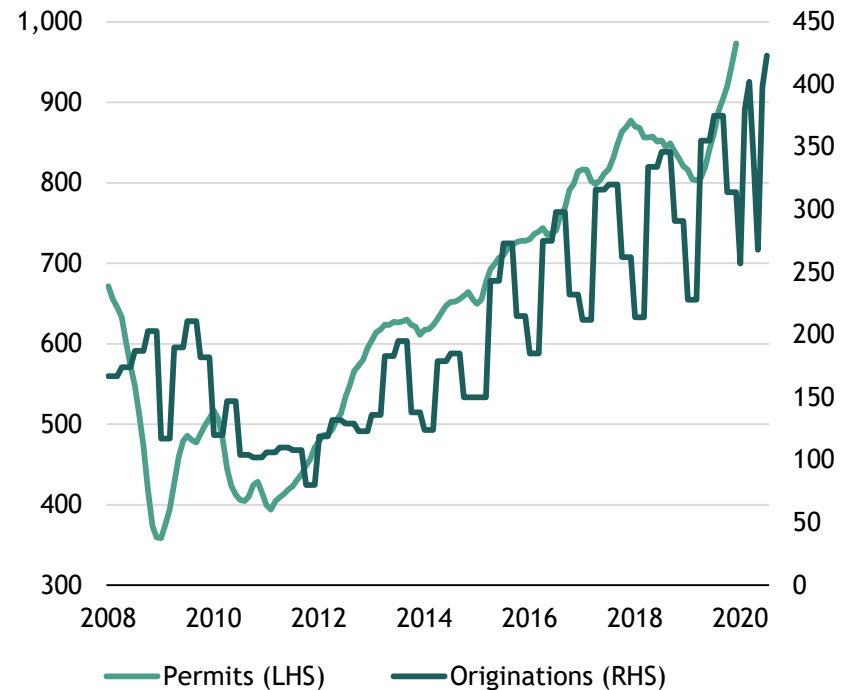
Strong housing market, driven by low mortgage rates, may help to put a floor on the economy

30-Year Mortgage Rates⁽¹⁾

(3-month average)



Mortgage Loan Originations for Purchase and Single Family Housing Permits⁽²⁾



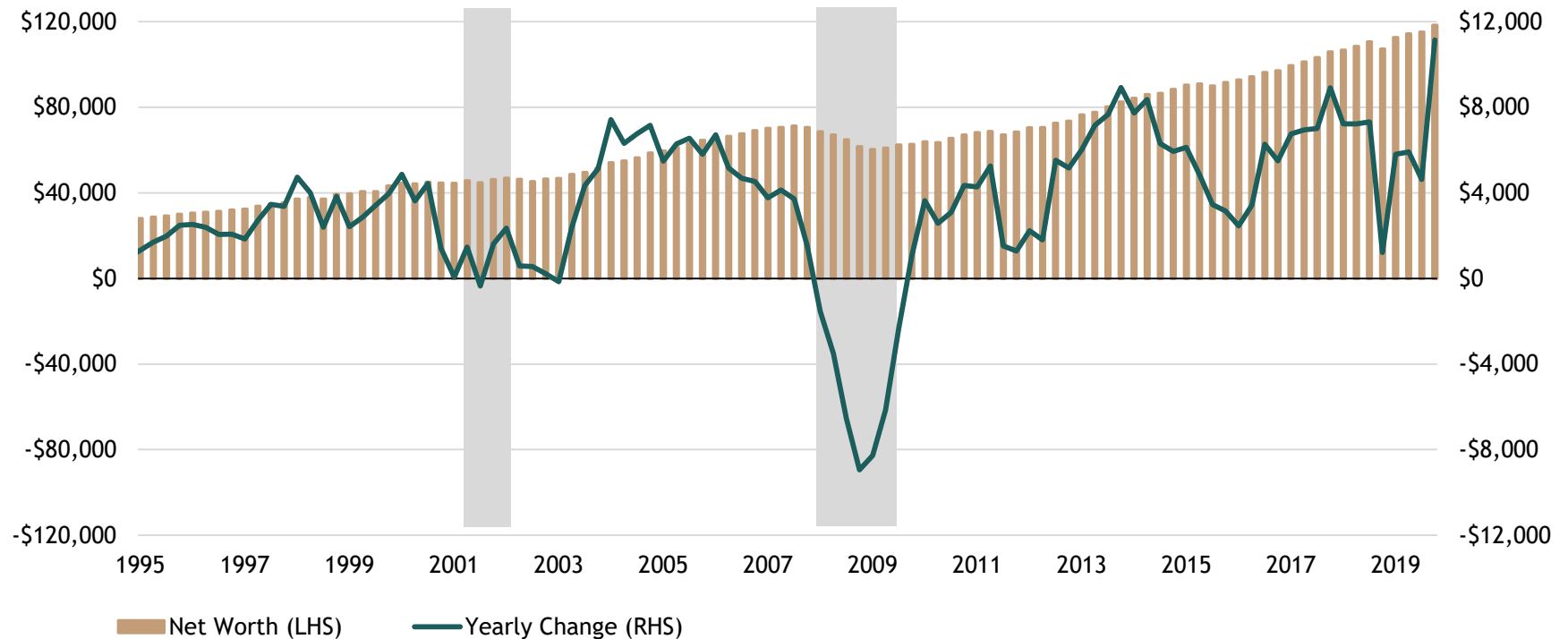
(1) Source: Bloomberg, Bankrate.com and Blackstone Investment Strategy, as of 3/26/20.

(2) Source: Mortgage Bankers Association, U.S. Census Bureau, Bloomberg and Blackstone Investment Strategy, as of 2/29/20. Single family housing permits shown as a three month rolling average, in thousands. Mortgage loan originations are quarterly estimates for home purchase for one- to four-unit structures.

Impact to household net worth will influence whether consumers hold back spending or not

U.S. Household Net Worth

(\$ in billions)



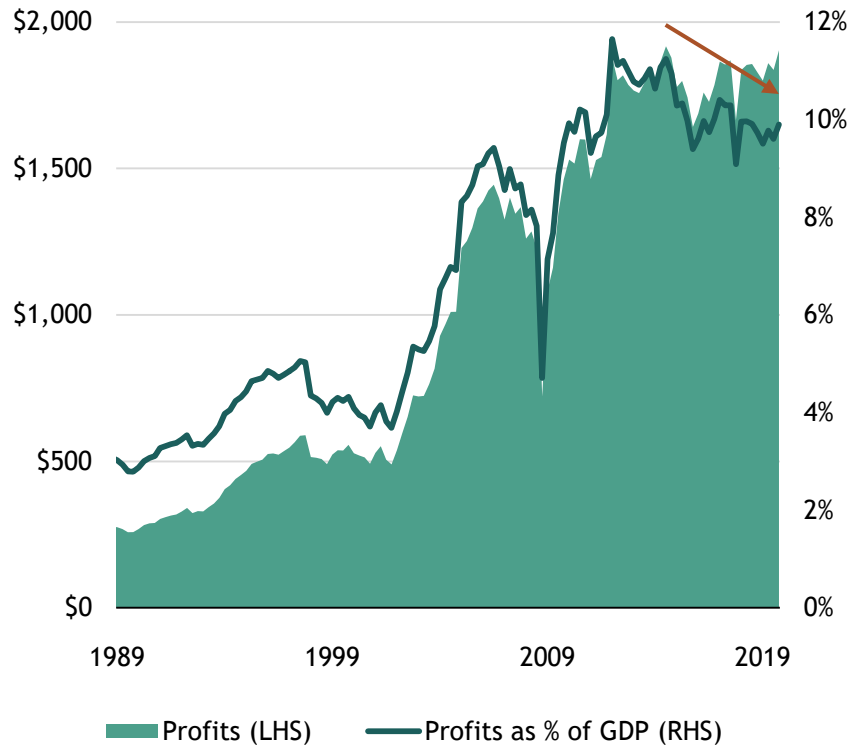
Source: Federal Reserve and Blackstone Investment Strategy, as of 12/31/19. Includes households and nonprofit organizations.

B. Corporate Profits and Equity Markets

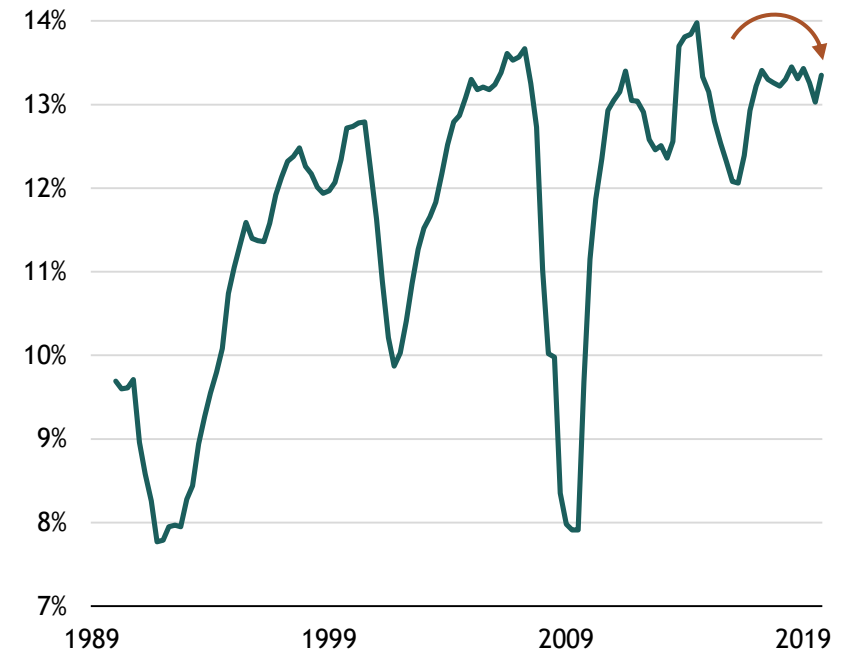
Corporate profits had been declining; profit margins will be further challenged by slowing growth

Post-Tax Corporate Profits⁽¹⁾

(\$ in billions; percent of GDP)



S&P 500 Operating Margin



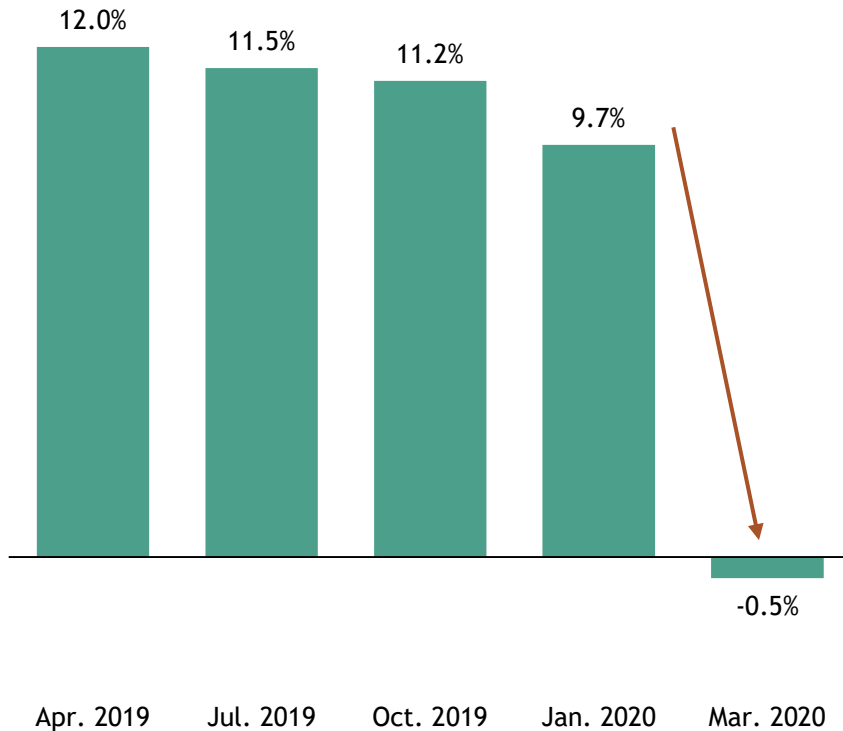
Source: Bureau of Economic Analysis, Bloomberg and Blackstone Investment Strategy, as of 12/31/19.

(1) Based on corporate profits after tax, without inventory valuation or capital consumption adjustments, as a percent of U.S. real GDP. Seasonally adjusted annual rate.

Bottom-up consensus earnings estimates in free-fall, but haven't fallen far enough

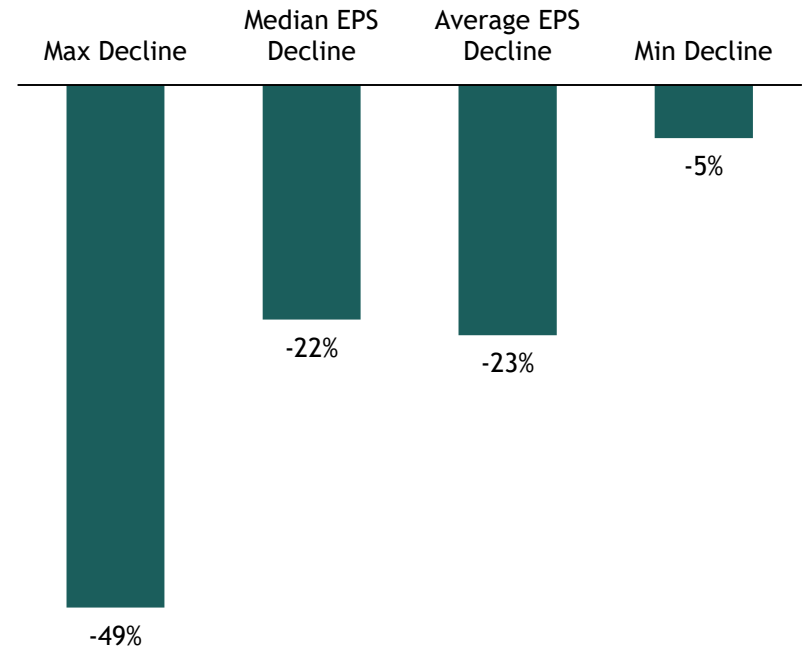
2020 Estimates for S&P 500 EPS Growth over Time

(April 2019-present; YoY change)⁽¹⁾



S&P 500 EPS Recessions Which Coincided with Economic Recessions

(1935-present; peak to trough)⁽²⁾



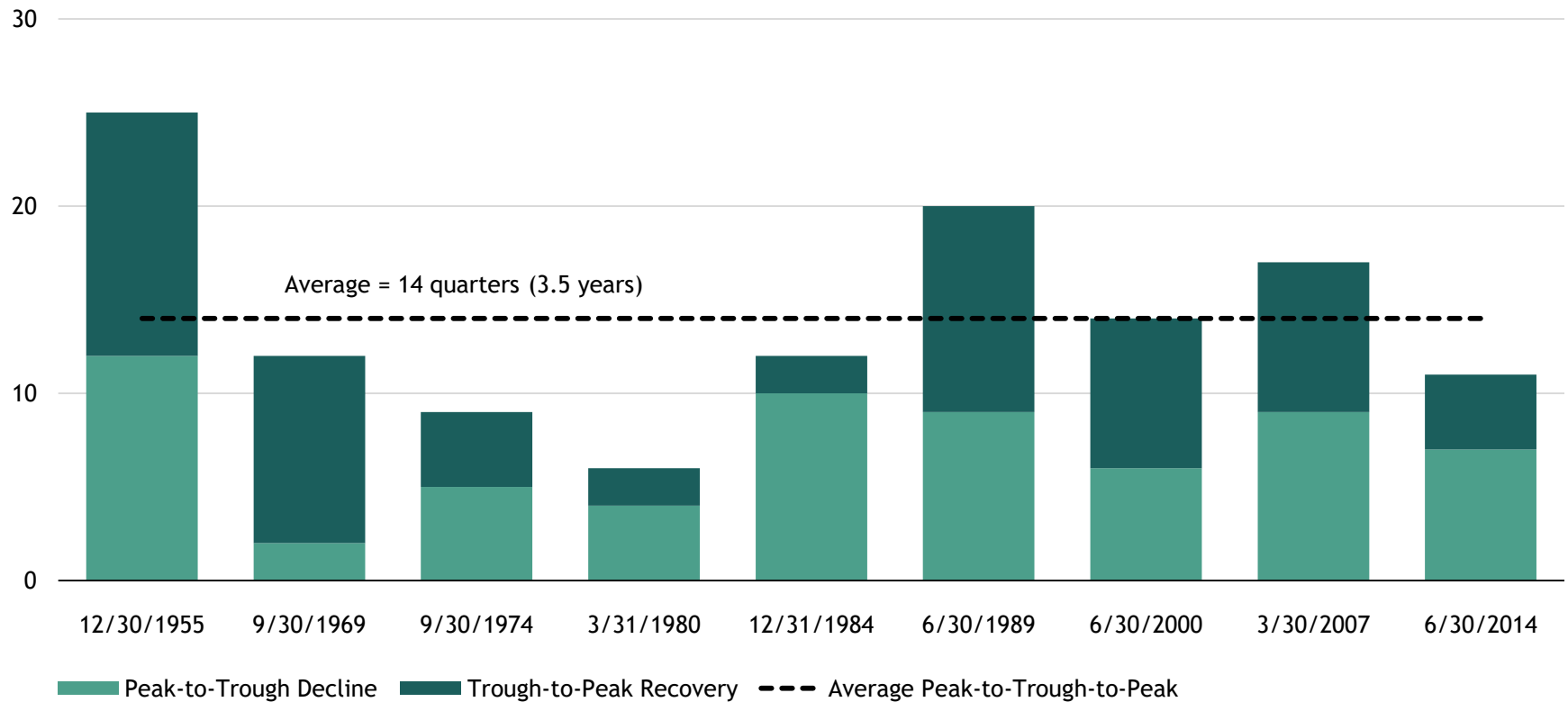
(1) I/B/E/S data from Refinitiv, as of 3/27/20.

(2) Source: FactSet, Haver Analytics and BofA U.S. Equity & Quant Strategy. EPS recessions defined as any periods since 1935 with two consecutive quarters of negative YoY quarterly EPS growth. Figures represent the peak-to-trough decline in trailing 4-qr EPS.

In the post-war era, it takes 3.5 years on average for S&P 500 earnings to regain a prior peak

Peak-to-Trough-to-Peak Analysis of S&P 500 Earnings Recessions⁽¹⁾

(in quarters)



Source: Bloomberg and Blackstone Investment Strategy.

(1) Based on quarterly trailing twelve month S&P 500 earnings per share. "Earnings recessions" defined as two consecutive quarters of negative year-over-year EPS growth. Peak in earnings is defined as the high in absolute EPS levels attained prior to an earnings recession, while trough in earnings is defined as the low in absolute EPS levels attained subsequent to the onset of an earnings recession.

Historically low rates distort the traditional relationship between interest rates and equities

S&P 500 Dividend Discount Model⁽¹⁾

		10-Year Treasury Yield												
		0.50%	0.75%	1.00%	1.25%	1.50%	1.75%	2.00%	2.25%	2.50%	2.75%	3.00%	3.25%	3.50%
Trailing Twelve-Month EPS	\$120	9,360	6,240	4,680	3,744	3,120	2,674	2,340	2,080	1,872	1,702	1,560	1,440	1,337
	\$122	9,516	6,344	4,758	3,806	3,172	2,719	2,379	2,115	1,903	1,730	1,586	1,464	1,359
	\$124	9,672	6,448	4,836	3,869	3,224	2,763	2,418	2,149	1,934	1,759	1,612	1,488	1,382
	\$126	9,828	6,552	4,914	3,931	3,276	2,808	2,457	2,184	1,966	1,787	1,638	1,512	1,404
	\$128	9,984	6,656	4,992	3,994	3,328	2,853	2,496	2,219	1,997	1,815	1,664	1,536	1,426
	\$130	10,140	6,760	5,070	4,056	3,380	2,897	2,535	2,253	2,028	1,844	1,690	1,560	1,449
	\$132	10,296	6,864	5,148	4,118	3,432	2,942	2,574	2,288	2,059	1,872	1,716	1,584	1,471
	\$134	10,452	6,968	5,226	4,181	3,484	2,986	2,613	2,323	2,090	1,900	1,742	1,608	1,493
	\$136	10,608	7,072	5,304	4,243	3,536	3,031	2,652	2,357	2,122	1,929	1,768	1,632	1,515
	\$138	10,764	7,176	5,382	4,306	3,588	3,075	2,691	2,392	2,153	1,957	1,794	1,656	1,538
	\$140	10,920	7,280	5,460	4,368	3,640	3,120	2,730	2,427	2,184	1,985	1,820	1,680	1,560
	\$142	11,076	7,384	5,538	4,430	3,692	3,165	2,769	2,461	2,215	2,014	1,846	1,704	1,582
	\$144	11,232	7,488	5,616	4,493	3,744	3,209	2,808	2,496	2,246	2,042	1,872	1,728	1,605
	\$146	11,388	7,592	5,694	4,555	3,796	3,254	2,847	2,531	2,278	2,071	1,898	1,752	1,627
	\$148	11,544	7,696	5,772	4,618	3,848	3,298	2,886	2,565	2,309	2,099	1,924	1,776	1,649
	\$150	11,700	7,800	5,850	4,680	3,900	3,343	2,925	2,600	2,340	2,127	1,950	1,800	1,671

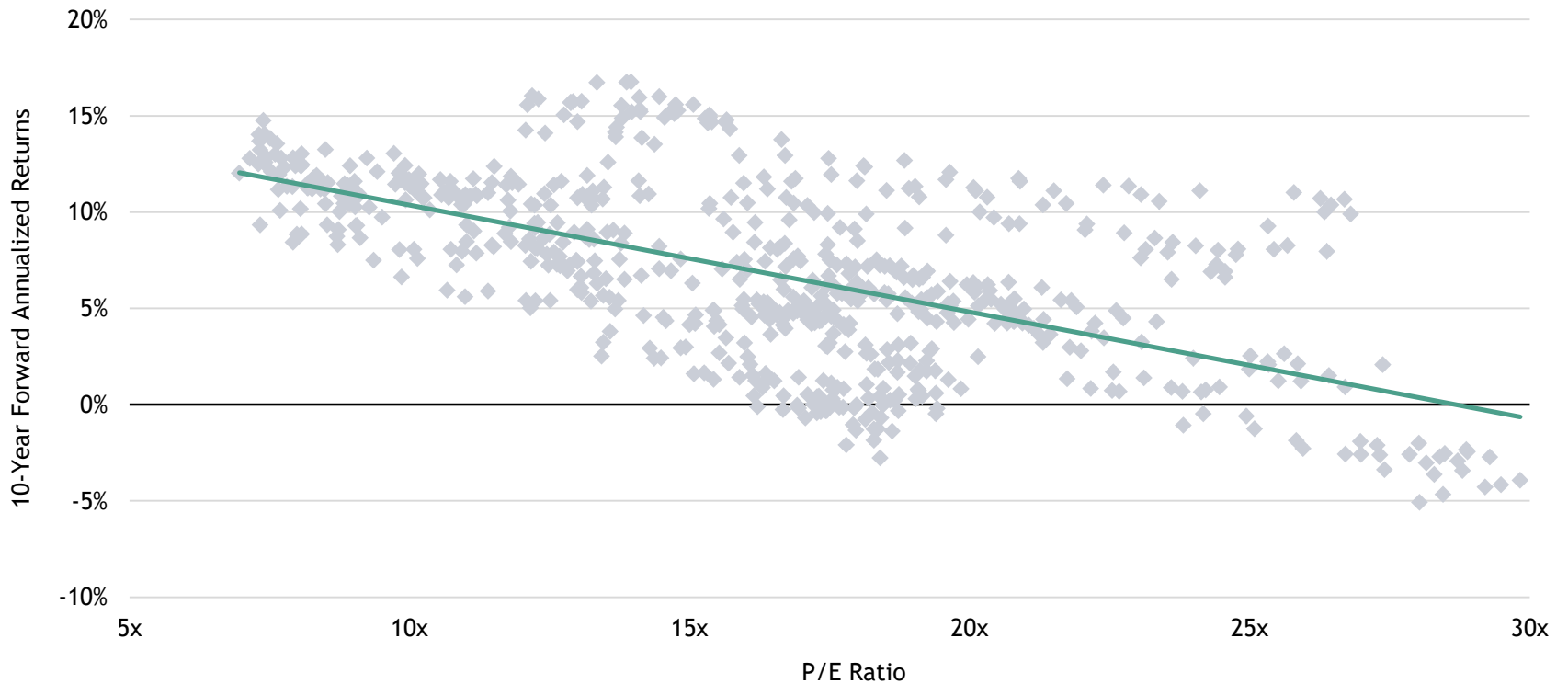
Source: Blackstone Investment Strategy, as of 3/31/20.

(1) Assumes starting S&P 500 Earnings Per Share of \$140, and that EPS start the period increasing/decreasing to level indicated in first column, before increasing/decreasing linearly over 2 years to a 4% nominal growth rate and remaining there in perpetuity. Further assumes dividend payout ratio remains at prior year's level of 39% and equity risk premium is a constant 4%.

Recent valuations imply structurally lower returns over the next decade

Relationship between S&P 500 P/E Ratios and Forward Returns

(1964 through 2019)⁽¹⁾



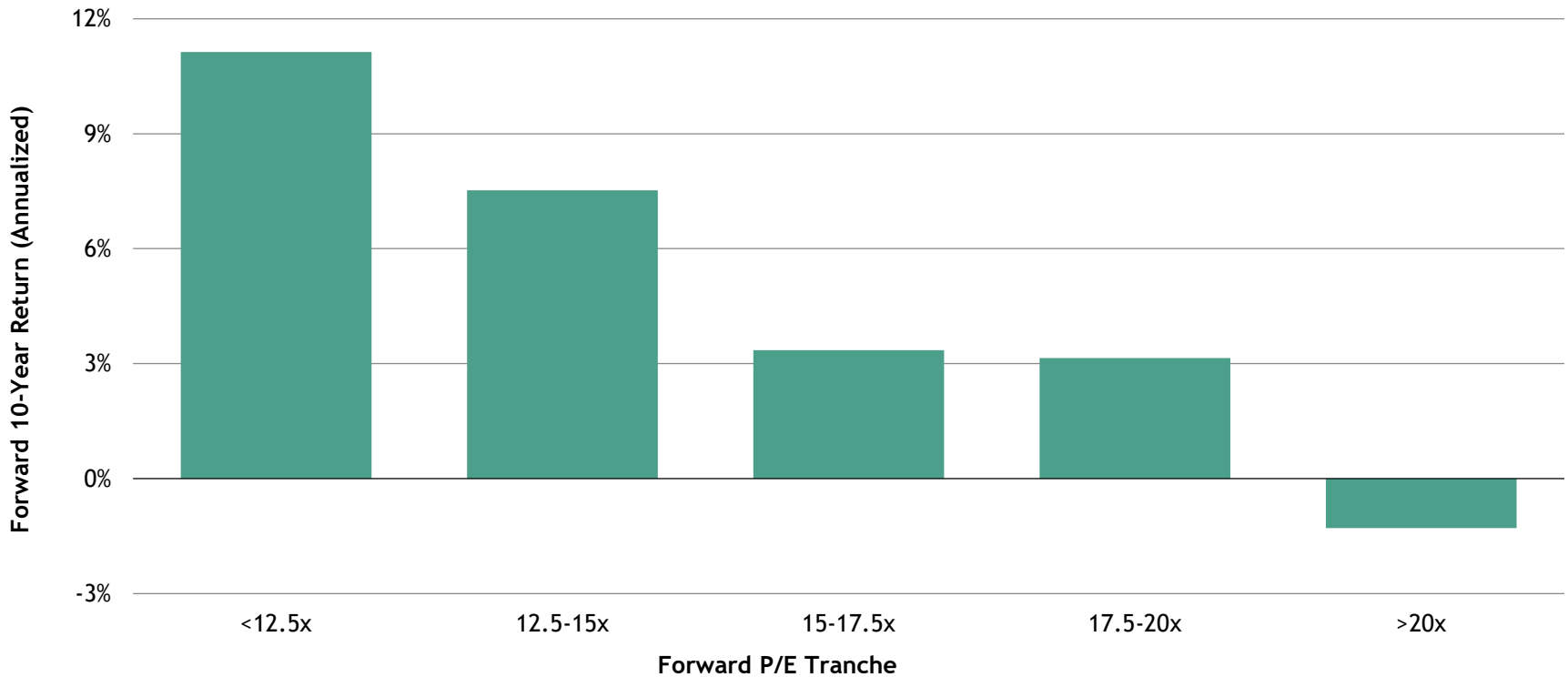
Source: Blackstone Investment Strategy, Bloomberg and Standard & Poor's.

(1) Represents monthly price levels and trailing 12-month price-to-earnings ratios for the period 1/1/1964 through 12/31/2019.

Recent valuations imply structurally lower returns over the next decade

S&P 500 Returns by P/E Tranche

(1950 through 2019)⁽¹⁾



Source: Strategas Research Partners and Blackstone Investment Strategy.

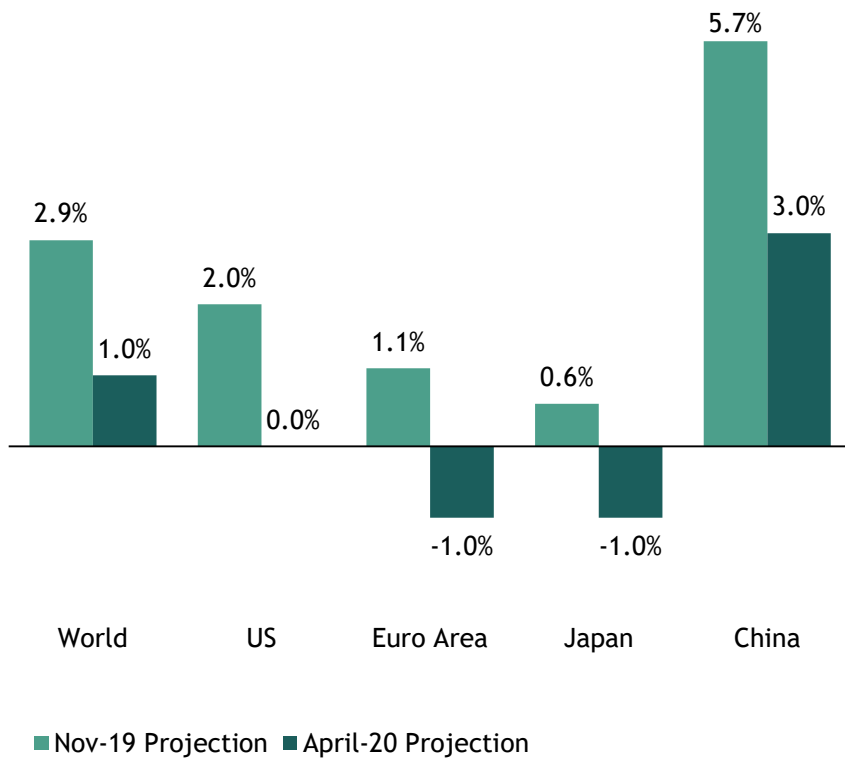
(1) Represents quarterly price levels and forward 12-month price-to-earnings ratios for the period 3/1/1950 through 12/31/2019.

II. Global Growth Outlook

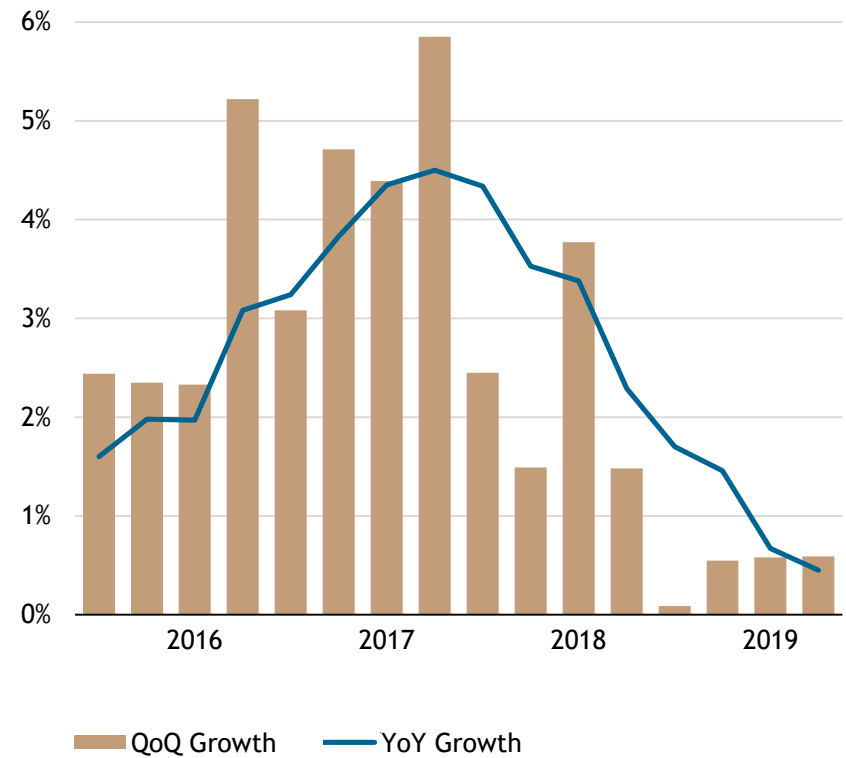
Projections of global growth continue to decline

Estimates for 2020 Real GDP Growth

(YoY % change)



Global Industrial Production Growth⁽¹⁾

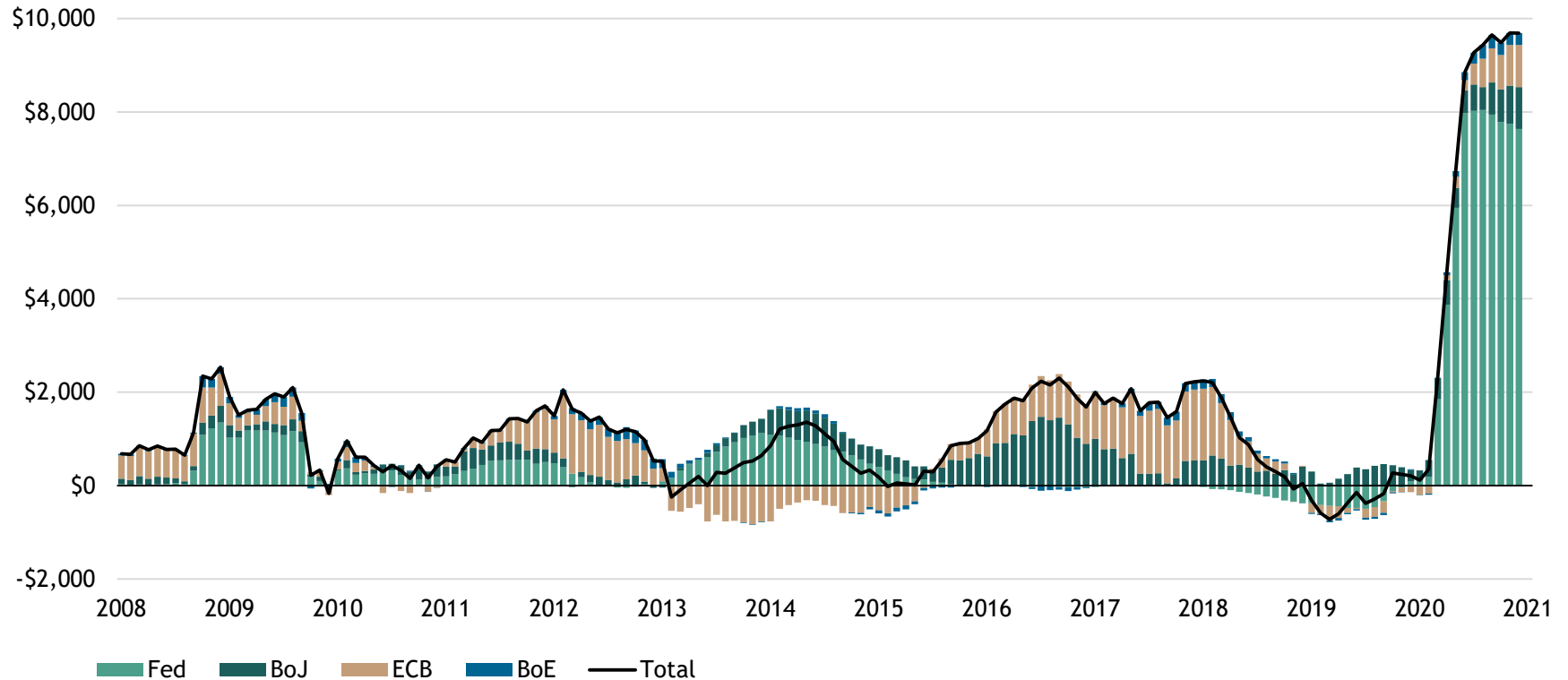


Source: Organisation for Economic Co-operation and Development and Blackstone Investment Strategy, as of 3/31/20.
 (1) Quarterly growth rates are annualized, estimates for 2019 as of 3/2/20.

Central bank balance sheets are poised to grow at historic rates

Global Central Bank Balance Sheets

(US\$ in billions, 12M change)⁽¹⁾

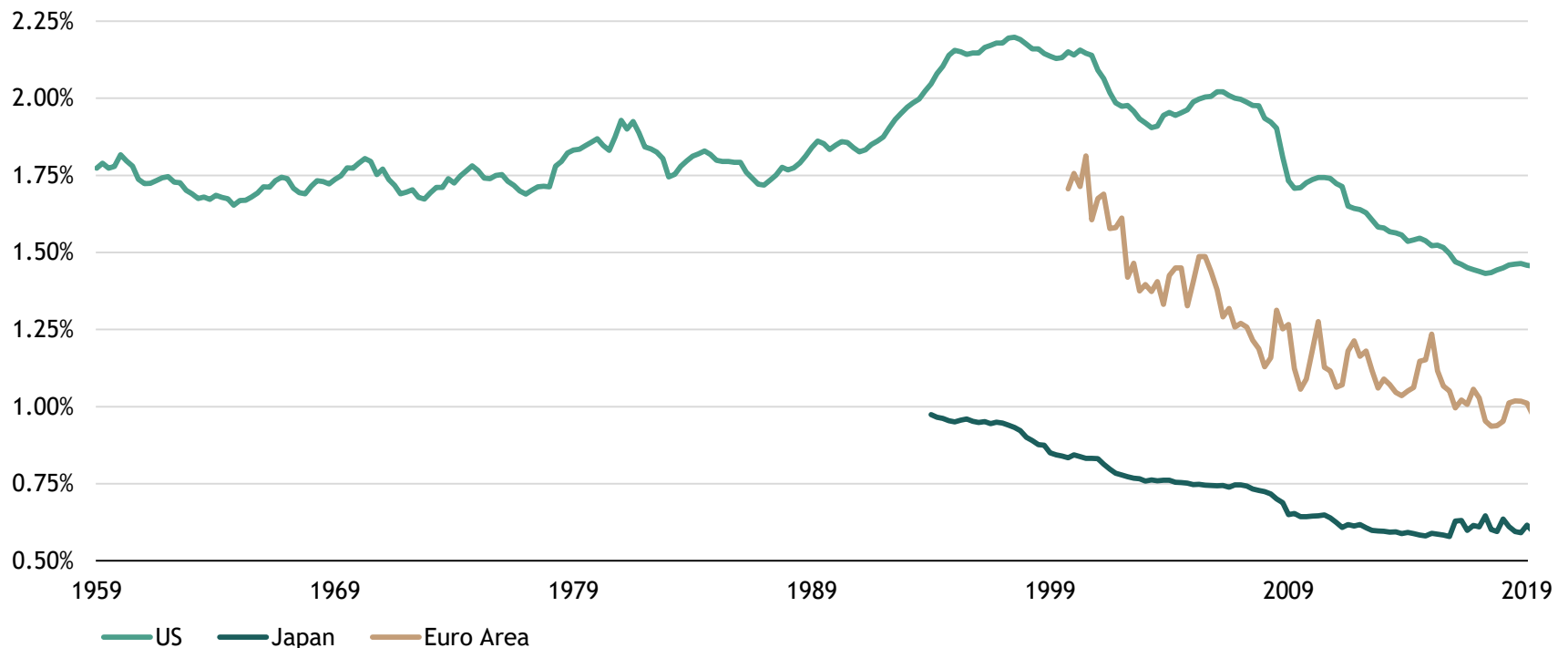


Source: Strategas Research Partners and Blackstone Investment Strategy.

(1) As of 3/31/20. Data from 3/31/20 through 12/31/20 are estimates based on forward guidance from central banks.

Low velocity of money means it takes more monetary stimulus to create the same level of growth

Velocity of M2 Money Stock

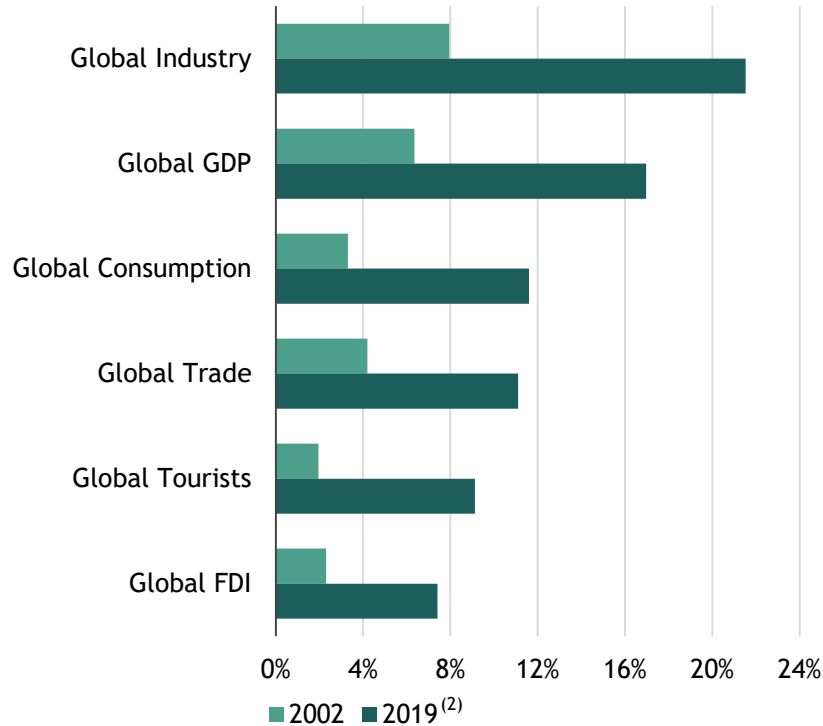


Source: Federal Reserve, Bank of Japan, European Central Bank and Blackstone Investment Strategy, as of 12/31/19.

China's recovery depends on help from trading partners

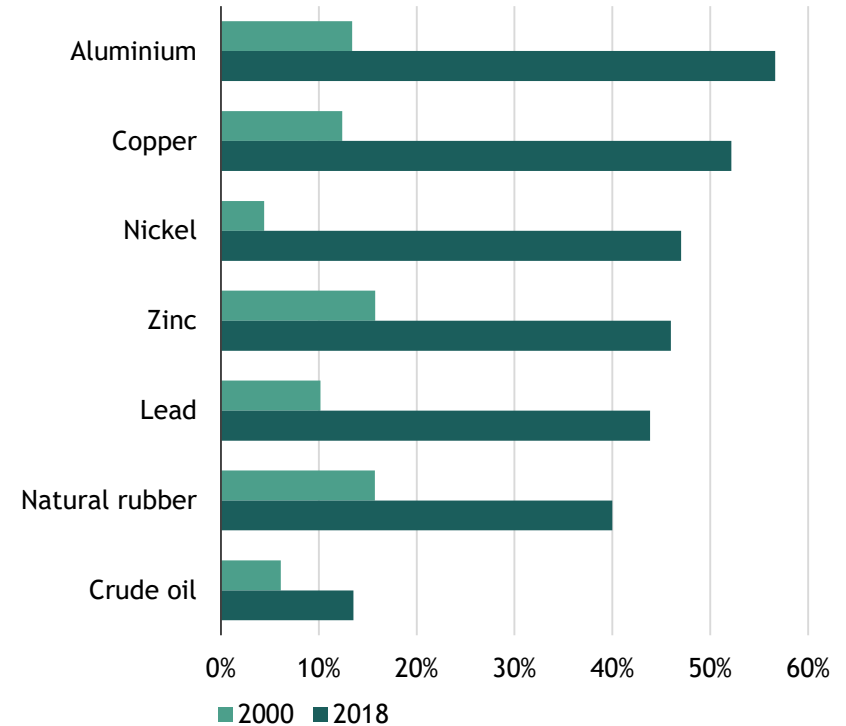
China's Share of Global Activity

(percent of world)⁽¹⁾



China's Share of Commodity Demand

(percent of world)



Source: Organisation for Economic Co-operation and Development, World Bank and Blackstone Investment Strategy.

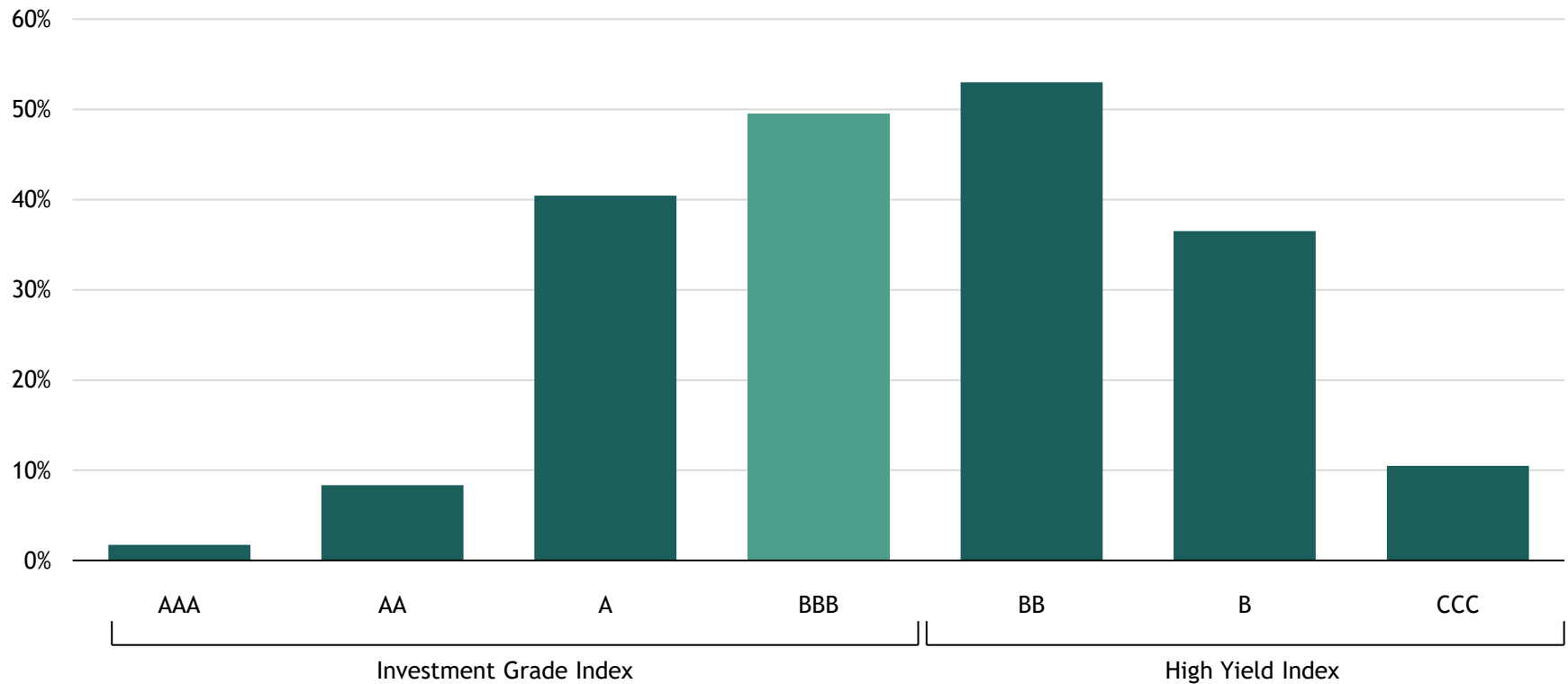
(1) Note: Share of industry, GDP and trade in constant U.S. dollars. Share of consumption and foreign direct investment ("FDI") in current U.S. dollars. Industry data are on a value-added basis and include the construction sector.

(2) Data for the tourist share as of 2017, date for global consumption as of 2018 and data for FDI refer to 2005 and 2018.

III. Global Debt Markets

Nearly half of U.S. investment grade debt is concentrated in the lowest rating (BBB)

Percent of IG and HY Bond Indices at Various Quality Ratings

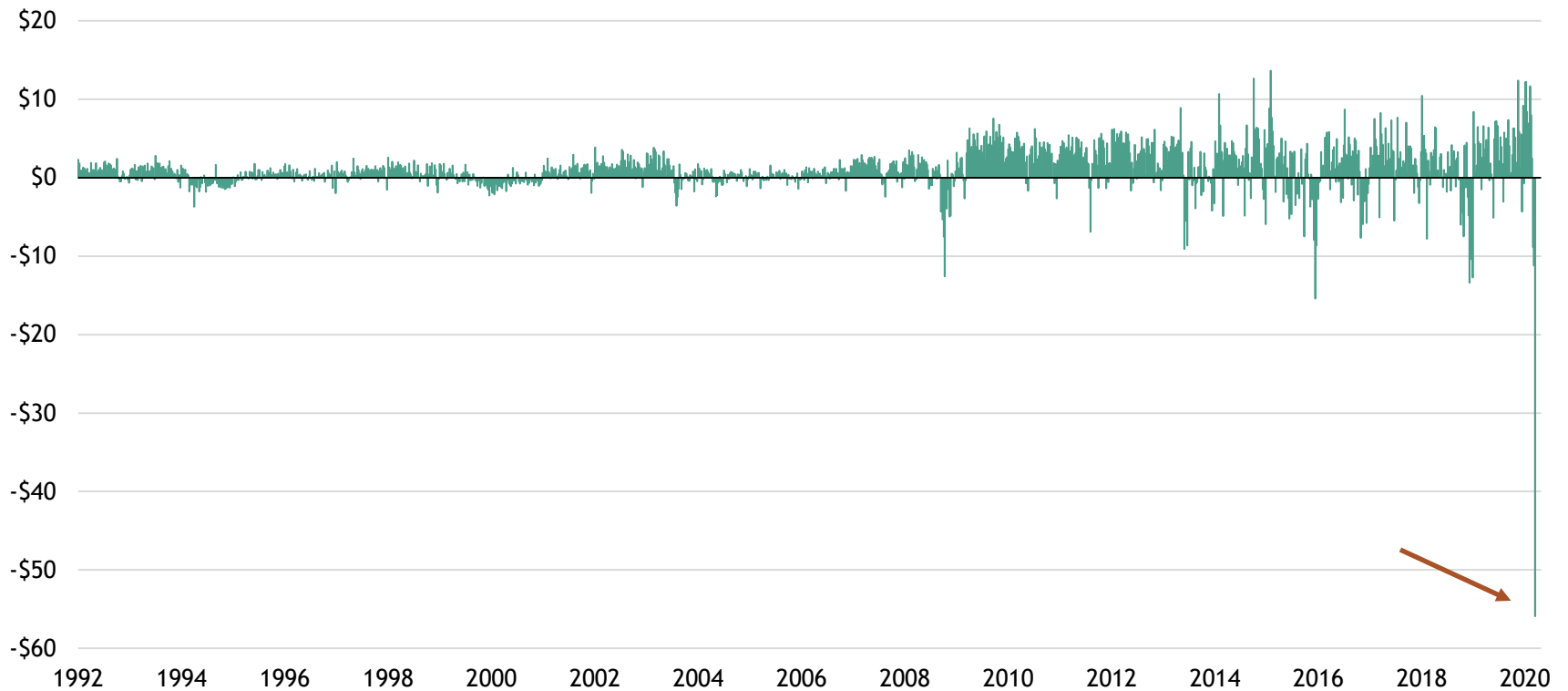


Source: Morgan Stanley, as of 2/28/20.

Taxable bond funds saw record weekly outflows of \$56B in recent weeks

U.S. Taxable Bond Fund Flows

(weekly net flows, \$ in billions)⁽¹⁾



Source: Refinitiv Lipper and Blackstone Investment Strategy, as of 3/18/20.

Amount of debt with negative yields has declined dramatically as spreads have widened

Amount of Global Debt with Negative Yields

(US\$ in trillions)



Share of Global Debt with Negative Yields

(percent of Bloomberg Global Aggregate Bond Index)

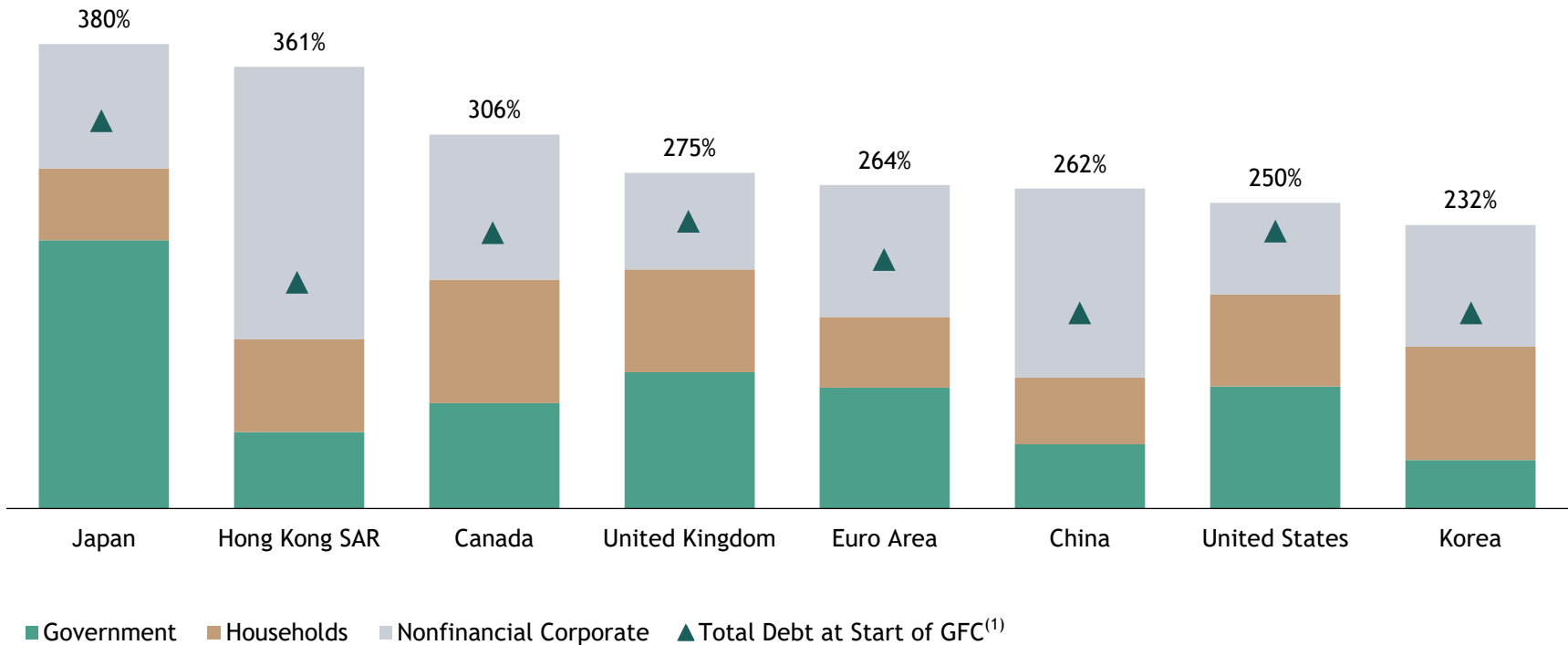


Source: Bloomberg and Blackstone Investment Strategy, as of 3/26/20.

Debt levels have increased overall across major economies since the Global Financial Crisis

Debt Levels by Economy and Component

(percent of GDP)

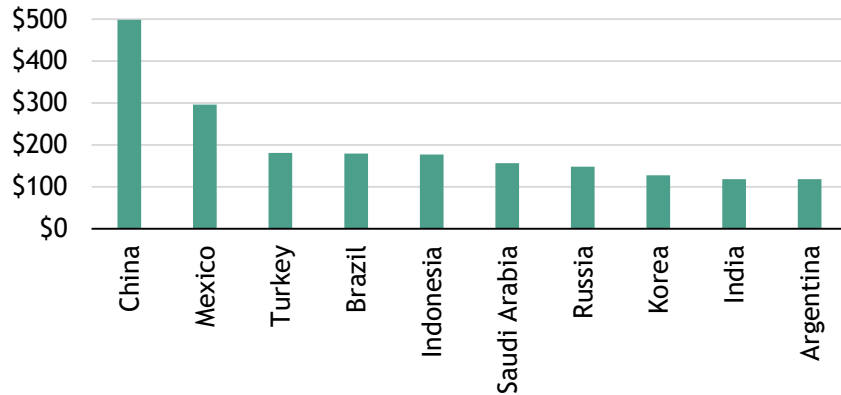


Source: Bank for International Settlements and Blackstone Investment Strategy, as of 6/30/19. Represents credit from all sectors at market value, as percentage of each economy's GDP, for the following categories: general government, households and nonprofit institutions serving households (NPISHs) and nonfinancial corporations.

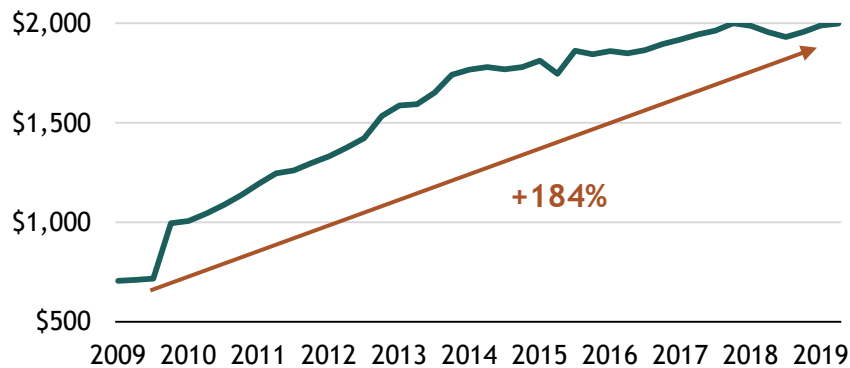
(1) As of 3/31/08

EM Holders of US\$-Denominated Debt⁽¹⁾

(ten largest holders, \$ in billions)



US\$-Denominated Debt Held by EM since 2009⁽¹⁾



US\$ Index at Highest Level This Cycle⁽²⁾

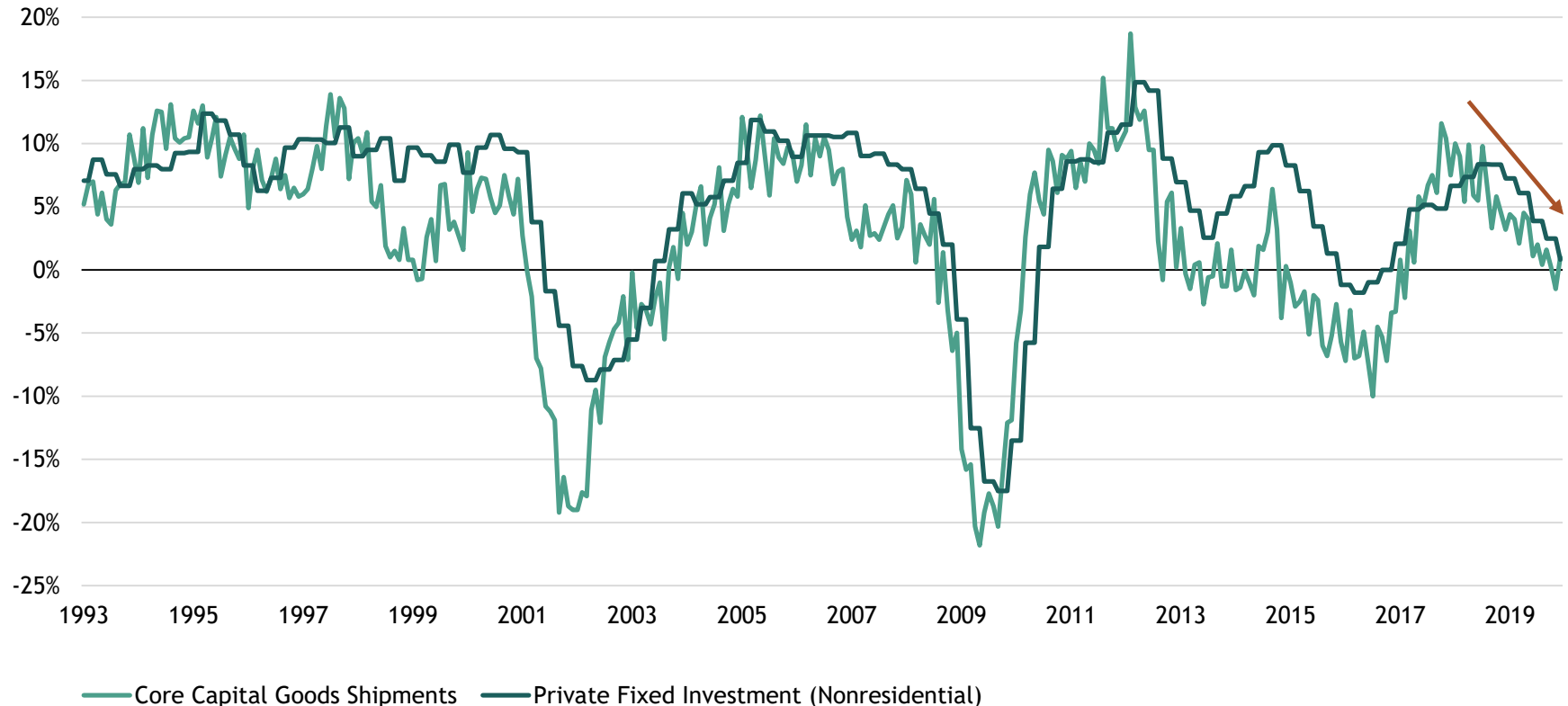


(1) Bank for International Settlements and Blackstone Investment Strategy. Represents total credit to non-bank sectors, for the period 6/30/09 to 9/30/19.
 (2) Bloomberg, as of 3/20/20. Represents the U.S. Dollar Index spot rate.

IV. Long-Term Trends to Consider

No trough yet in capital expenditures

Core Capital Goods Shipments (Nondefense, ex-Aircraft) and Private Fixed Investment⁽¹⁾
(YoY % change)

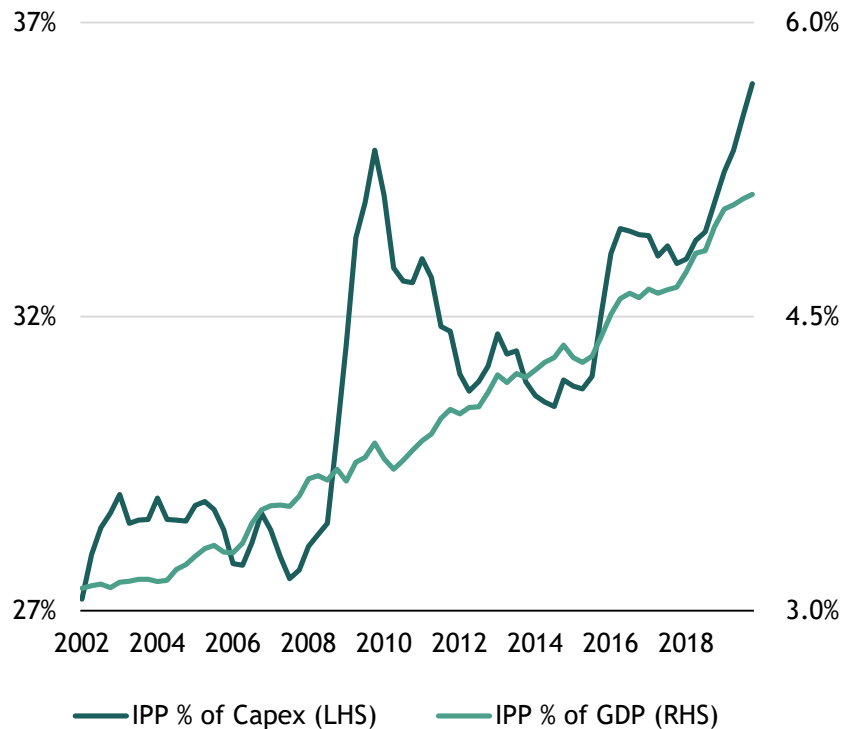


Source: Bureau of Economic Analysis, U.S. Census Bureau, Bloomberg and Blackstone Investment Strategy, as of 12/31/19.
(1) "Business investment" represented by gross fixed capital formation, seasonally adjusted annual rate.

Capex increasingly being directed to intellectual property products (IPP) rather than traditional PPE

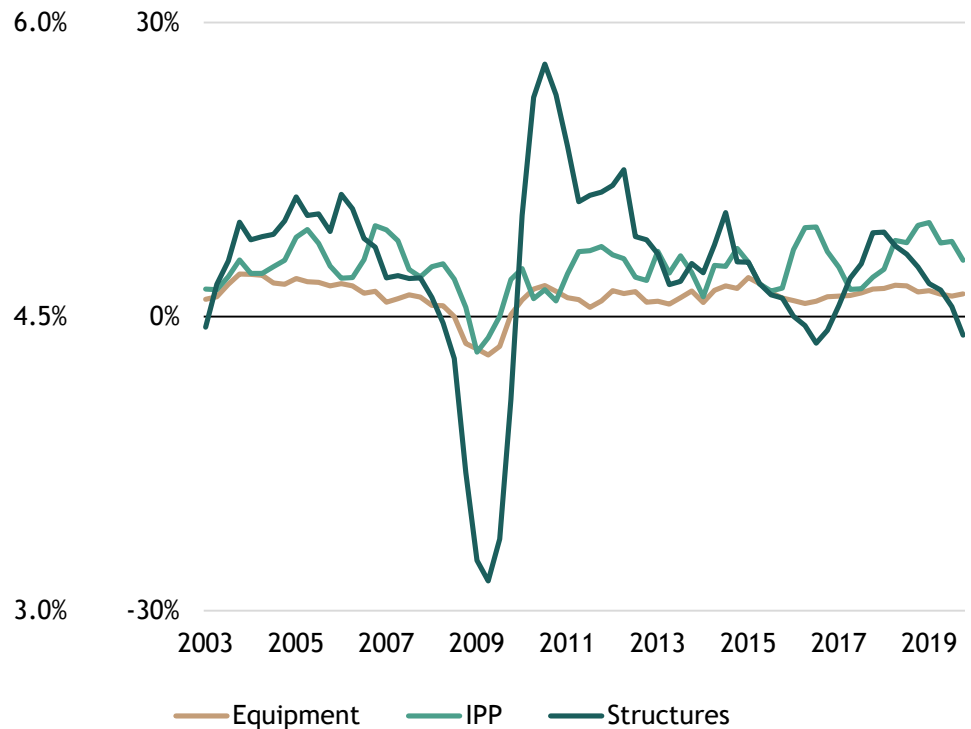
Nonresidential Fixed Investment in IPP

(percent of total capex and GDP)⁽¹⁾



Growth in Capex Categories

(YoY % change)⁽¹⁾

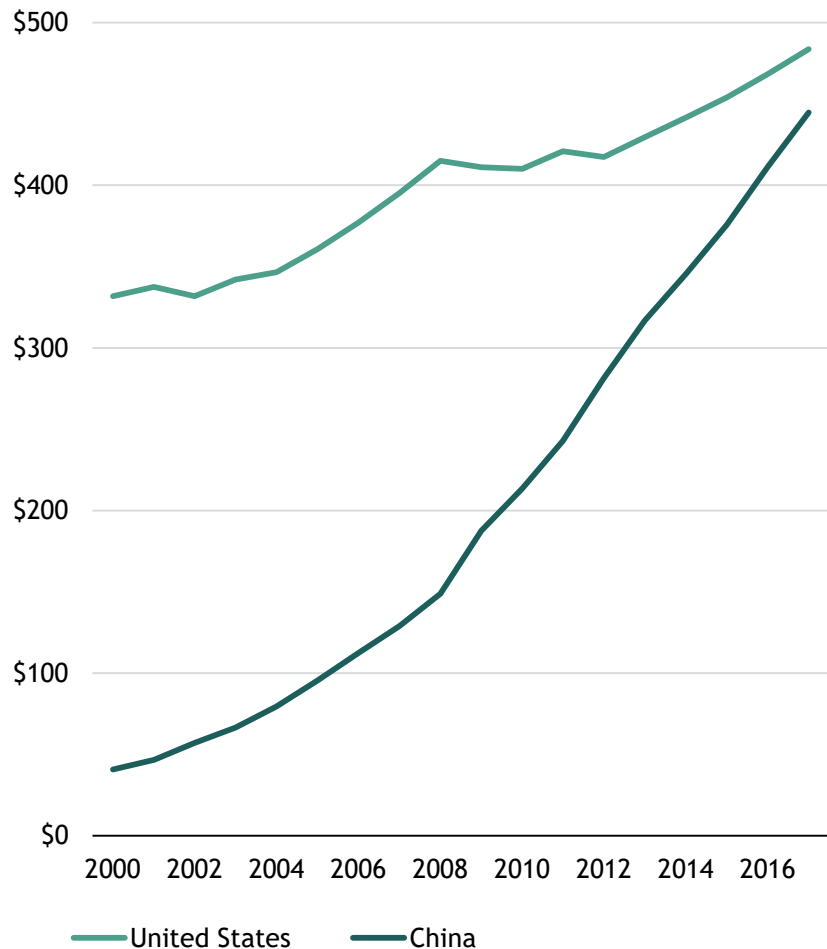


Source: Bureau of Economic Analysis and Blackstone Investment Strategy, as of 12/31/19.

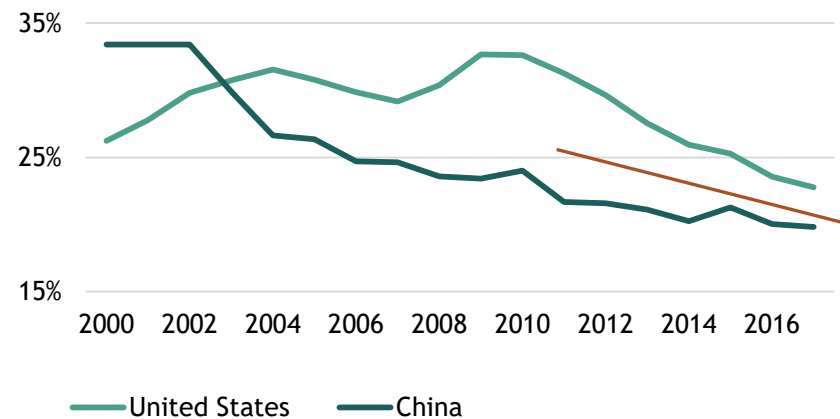
(1) Represents real private nonresidential fixed investment in intellectual property products, structures and equipment.

U.S. and China Total R&D Spending

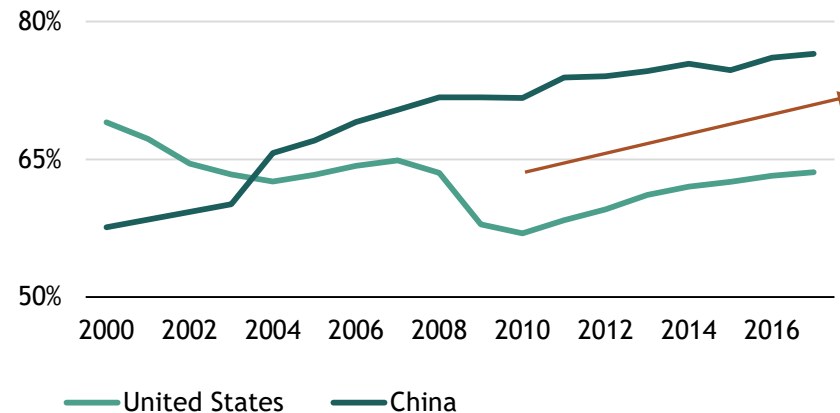
(constant 2010 US\$, in billions)



Percent of R&D Financed by Government⁽¹⁾



Percent of R&D Financed by Business⁽¹⁾

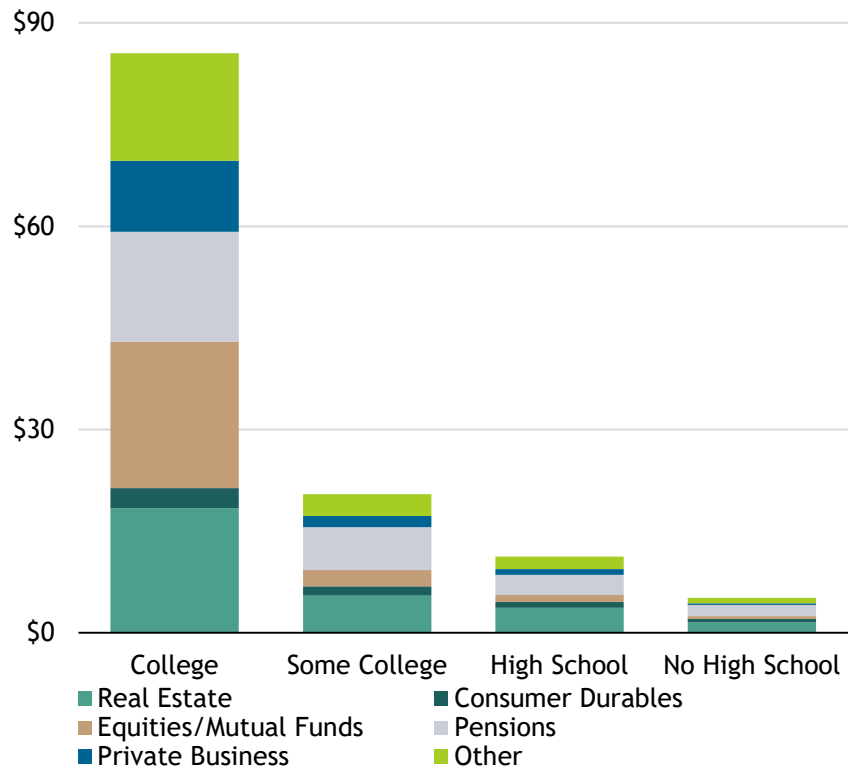


Source: Organisation for Economic Co-operation and Development and Blackstone Investment Strategy, as of 12/31/17.
 (1) China numbers extrapolated for 2001 and 2002 due to unavailability of data.

Inequality will be an important issue in the 2020 election and beyond

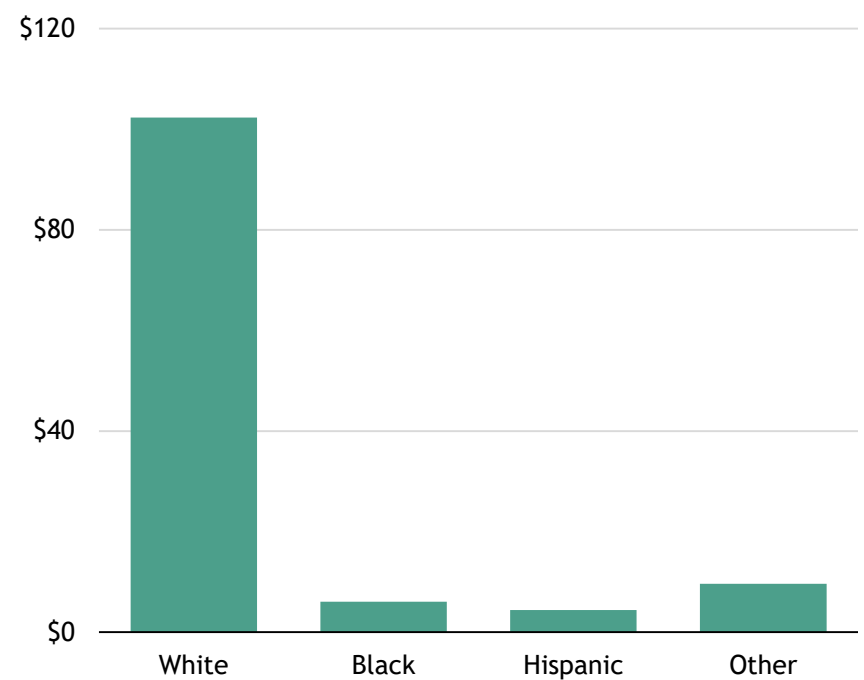
Wealth Distribution by Education Level

(US\$ in trillions)



Wealth Distribution by Race

(US\$ in trillions)



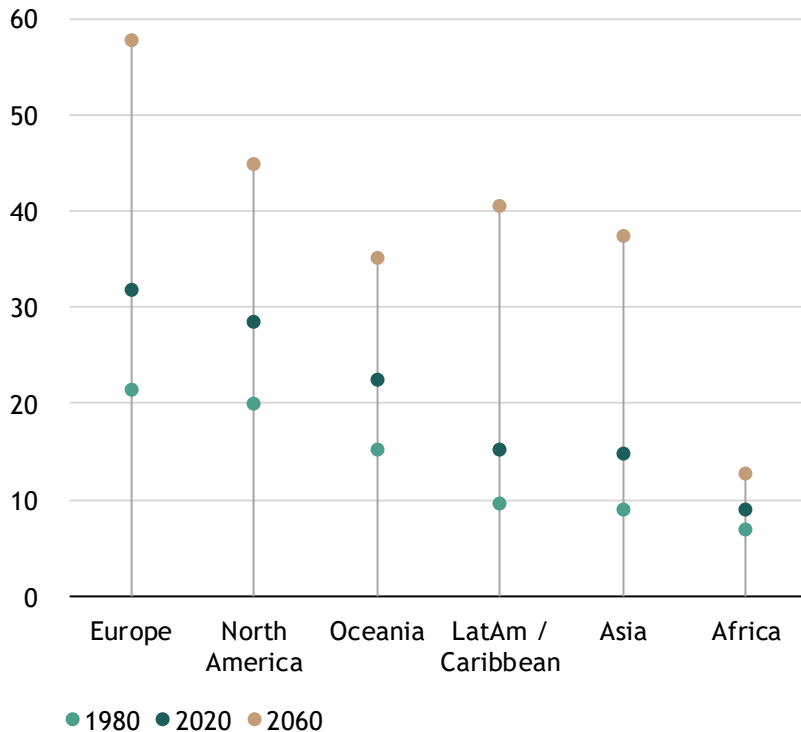
Source: Federal Reserve, Census Bureau and Blackstone Investment Strategy, as of 6/30/19.

Demographics are destiny...

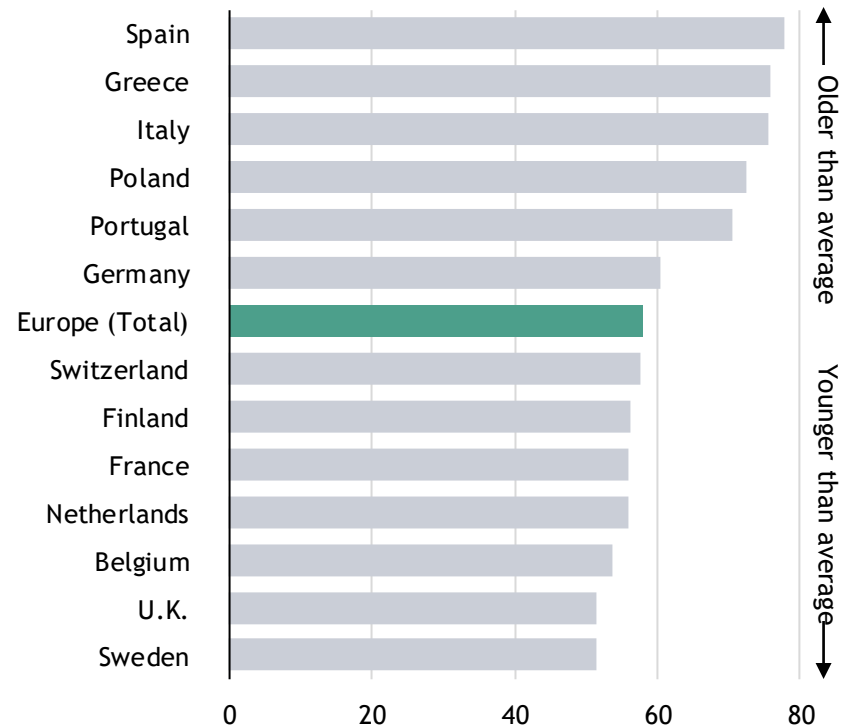
...and Europe has the worst overall demographics of any geographic region.

Old-Age Dependency Ratios

(population aged 65+ vs. aged 20-64)



European Countries That Will Have Highest Old-Age Dependency Ratios in 2060⁽¹⁾

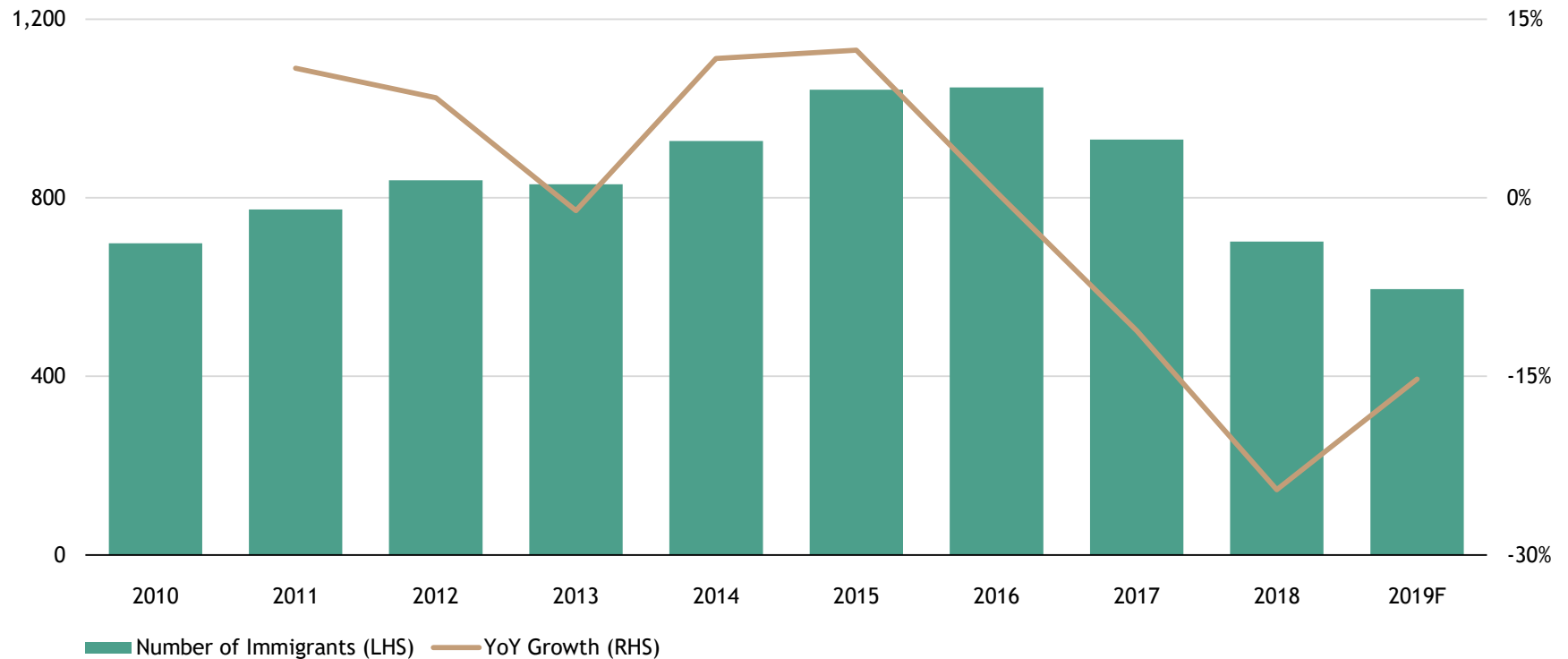


Source: United Nations World Population Prospects 2019, as of 8/28/19. All data for 2020 and 2060 are estimates.
 (1) Old-age dependency ratio represents the ratio of the population aged 65+ to the population aged 20-64.

Net migration into the U.S. has been declining since 2015

Net Migration into the United States

(in thousands)



Source: U.S. Census Bureau, Vintage 2019 Population Estimates and Blackstone Investment Strategy, as of 12/30/19. Data shown for 2019 are projections. Note: Year represents the annual estimates ending on June 30. Released data will report 2010 as a quarter year (April 1, 2010-June 30, 2010) instead of a full year.

V. The Ten Surprises of 2020 and Byron's Life's Lessons

These Surprises were announced January 6, 2020

The definition of a Surprise is an event that the average investment professional would assign a one out of three chance of taking place, but which we believe is probable, having a better than 50% chance of happening.

1. The economy disappoints the consensus forecast, but a recession is avoided. Federal Reserve Chair Powell lowers the Fed funds rate to 1%. Without a comprehensive trade deal in hand, President Trump exercises every executive authority he has to stimulate growth and ward off recession. He cuts payroll taxes to put more money in the hands of consumers.
2. Inequality and climate change become important election themes, but centrist ideas prevail. The House of Representatives sends articles of impeachment to the Senate, but Donald Trump is not convicted or removed from office. Enough information is revealed in the proceedings to cause some of his supporters, as well as many independents, to throw their support to liberal candidates in 2020 state races. The Democrats take the Senate in November.
3. There is no comprehensive Phase Two trade deal that limits China's ability to acquire intellectual property. National interests result in the Balkanization of technology. The development of separate standards for 5G and other tech hardware proves to be bad news for the future of world economies. The move toward "decoupling" gains traction in negotiations with China. U.S. economic co-dependence with China erodes. Both China and the U.S. keep their hands off Hong Kong and let the protest settle down by itself.
4. The prospect of a self-driving car is pushed further into the future. A series of accidents with experimental vehicles causes a major manufacturer or technology company to issue a statement that it is no longer developing self-driving technology.

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5. Emboldened by the pain of economic sanctions, Iran takes advantage of America's unwillingness to intervene and steps up acts of hostility against Israel and Saudi Arabia. The Strait of Hormuz is closed and the price of oil (West Texas Intermediate) soars to over \$70/barrel.
6. Even though some observers believe valuations are stretched, a surge in investor enthusiasm pushes the Standard & Poor's 500 above 3,500 at some point during the year. Earnings increase only 5%, and S&P 500 multiples remain elevated because monetary policy is easy and investors become more comfortable that intermediate interest rates will rise slowly. Volatility increases and there are several market corrections greater than 5% throughout the year.
7. Big tech companies face growing political scrutiny and social blowback. Once the market leaders, certain FAANG stocks underperform and the equal-weighted S&P 500 outperforms. A proposal to break up the largest social media platforms and increase regulation and government oversight gains popularity. This has greater success than prior government efforts against Apple, Microsoft and IBM, because it has widespread support from the American people. A millennial in New York City puts a phone down and makes eye contact with another human and finds it non-threatening and refreshing.
8. Having secured a workable Brexit deal, the United Kingdom turns out to be the winner in its divorce from the European Union. The equity market rises and the pound rallies. The UK benefits from a long transition period, and growth exceeds 2% as foreign direct investment resumes now that the outlook is clarified. The EU economy remains soft, and European markets other than the UK underperform the U.S. and Asia.
9. The bond bubble starts to leak, but negative rates continue abroad. Even though the U.S. economy is slowing, the 10-year Treasury yield approaches 2.5% and the yield curve steepens. Japan and China pull away from the Treasury auctions. Rather than economic fundamentals or inflation, supply and demand drive yields higher.
10. The problems with Boeing's 737 Max are fixed and deliveries begin. The plane becomes a mainstay around the world, enabling airlines to operate more efficiently and increase profits. The stocks become market leaders.

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Here are some of the lessons I have learned in my first 80 years. I hope to continue them in the next 80

1. Concentrate on finding a big idea that will make an impact on the people you want to influence. The Ten Surprises, which I started doing in 1986, has been a defining product. People all over the world are aware of it and identify me with it. What they seem to like about it is that I put myself at risk by going on record with these events which I believe are probable and hold myself accountable at year-end. If you want to be successful and live a long, stimulating life, keep yourself at risk intellectually all the time.
2. Network intensely. Luck plays a big role in life, and there is no better way to increase your luck than by knowing as many people as possible. Nurture your network by sending articles, books and emails to people to show you're thinking about them. Write op-eds and thought pieces for major publications. Organize discussion groups to bring your thoughtful friends together.
3. When you meet someone new, treat that person as a friend. Assume he or she is a winner and will become a positive force in your life. Most people wait for others to prove their value. Give them the benefit of the doubt from the start. Occasionally you will be disappointed, but your network will broaden rapidly if you follow this path.
4. Read all the time. Don't just do it because you're curious about something, read actively. Have a point of view before you start a book or article and see if what you think is confirmed or refuted by the author. If you do that, you will read faster and comprehend more.
5. Get enough sleep. Seven hours will do until you're sixty, eight from sixty to seventy, nine thereafter, which might include eight hours at night and a one-hour afternoon nap.
6. Evolve. Try to think of your life in phases so you can avoid a burn-out. Do the numbers crunching in the early phase of your career. Try developing concepts later on. Stay at risk throughout the process.
7. Travel extensively. Try to get everywhere before you wear out. Attempt to meet local interesting people where you travel and keep in contact with them throughout your life. See them when you return to a place.
8. When meeting someone new, try to find out what formative experience occurred in their lives before they were seventeen. It is my belief that some important event in everyone's youth has an influence on everything that occurs afterwards.

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9. On philanthropy, my approach is to try to relieve pain rather than spread joy. Music, theatre and art museums have many affluent supporters, give the best parties and can add to your social luster in a community. They don't need you. Social services, hospitals and educational institutions can make the world a better place and help the disadvantaged make their way toward the American dream.
10. Younger people are naturally insecure and tend to overplay their accomplishments. Most people don't become comfortable with who they are until they're in their 40's. By that time they can underplay their achievements and become a nicer, more likeable person. Try to get to that point as soon as you can.
11. Take the time to give those who work for you a pat on the back when they do good work. Most people are so focused on the next challenge that they fail to thank the people who support them. It is important to do this. It motivates and inspires people and encourages them to perform at a higher level.
12. When someone extends a kindness to you write them a handwritten note, not an e-mail. Handwritten notes make an impact and are not quickly forgotten.
13. At the beginning of every year think of ways you can do your job better than you have ever done it before. Write them down and look at what you have set out for yourself when the year is over.
14. The hard way is always the right way. Never take shortcuts, except when driving home from the Hamptons. Short-cuts can be construed as sloppiness, a career killer.
15. Don't try to be better than your competitors, try to be different. There is always going to be someone smarter than you, but there may not be someone who is more imaginative.
16. When seeking a career as you come out of school or making a job change, always take the job that looks like it will be the most enjoyable. If it pays the most, you're lucky. If it doesn't, take it anyway. I took a severe pay cut to take each of the two best jobs I've ever had, and they both turned out to be exceptionally rewarding financially.
17. There is a perfect job out there for everyone. Most people never find it. Keep looking. The goal of life is to be a happy person and the right job is essential to that.
18. When your children are grown or if you have no children, always find someone younger to mentor. It is very satisfying to help someone steer through life's obstacles, and you'll be surprised at how much you will learn in the process.
19. Every year try doing something you have never done before that is totally out of your comfort zone. It could be running a marathon, attending a conference that interests you on an off-beat subject that will be populated by people very different from your usual circle of associates and friends or traveling to an obscure destination alone. This will add to the essential process of self-discovery.
20. Never retire. If you work forever, you can live forever. I know there is an abundance of biological evidence against this theory, but I'm going with it anyway.

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