

Blackstone

# The Square Root Recovery Has Begun

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## Joe and Byron's view of the recovery:

1. We believe this was a policy-created recession. Policymakers responded to the threat of the pandemic by imposing lockdowns. We have now entered a policy-created recovery, and we believe we have seen the cycle low for the economy and the financial markets. We expect to see continued volatility.
2. We believe the recovery will be square root-shaped. The early phase, probably lasting through the summer, will be “V” shaped, followed by a gradual rise in the fall and beyond.
3. We believe the economy will not reach the level of 2019 GDP until 2022. It usually takes several years for a post-recession recovery to get back to the pre-recession pace.
4. We expect COVID-19 cases to increase during the recovery but not to the level that would be considered a “second wave,” requiring another lockdown.
5. We expect the unemployment rate to come down to 10%. It will remain that high because of the number of businesses that have permanently closed or gone bankrupt during the recession. More than thirty million were unemployed at the bottom and only twenty million will come back to work in the near term. Companies have also learned during the lockdown that they can operate effectively with fewer workers.
6. The lockdown has made consumers somewhat cautious. The savings rate will continue to be elevated; travel will be restrained; and older, vulnerable people will spend more time at home until a cure or vaccine is available.
7. While remote working and remote learning proved reasonably effective, we believe people want to interact and cross-fertilize ideas with each other. As a result, we expect offices and schools will resume face-to-face exchanges over the next year.
8. We believe we will make important progress in managing the symptoms of the disease before year-end, but a vaccine will take time before it is developed, tested, manufactured in large quantities and available widely. Signs are encouraging that significant progress will take place before the end of 2021.
9. We have yet to assess the medium- and long-term consequences of certain elements of the lockdown—such as ineffective remote learning and the absence of cultural institutions and sports—on the population.

Note: As detailed in the “Disclaimers” section, the above and all subsequent commentary in this presentation 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. The Recovery Is Underway**

# The worst of the economic data is likely behind us; green shoots emerging in the global economy

- A key risk is that COVID-19 cases are surging in the US, even as prior epicenters of the pandemic continue to improve
- Projections of global growth have continued to be revised downward, but these have likely troughed as economists are becoming more optimistic about a “V-shaped” recovery
  - Advanced economies are projected to lag in the recovery, relative to emerging markets and overall world growth
  - Green shoots are emerging globally and in the US
  - We expect continued sequential improvement in the month-over-month and quarter-over-quarter data
- There are a number of indicators on our “recovery checklist” that we are watching for signs of continued recovery in the US

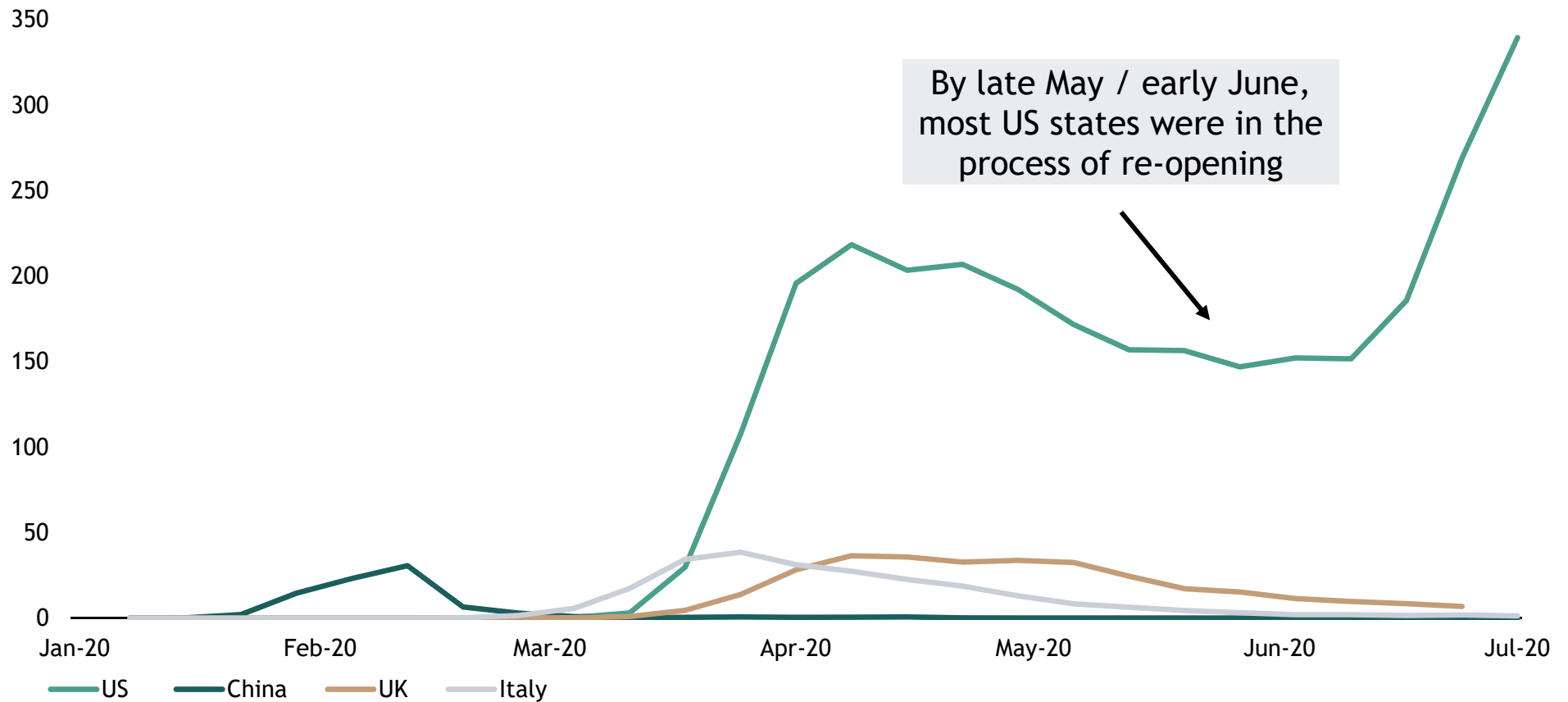
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# COVID-19 cases surging in the US even as prior epicenters of the pandemic continue to improve

## Number of Confirmed COVID-19 Cases

(weekly, in thousands)

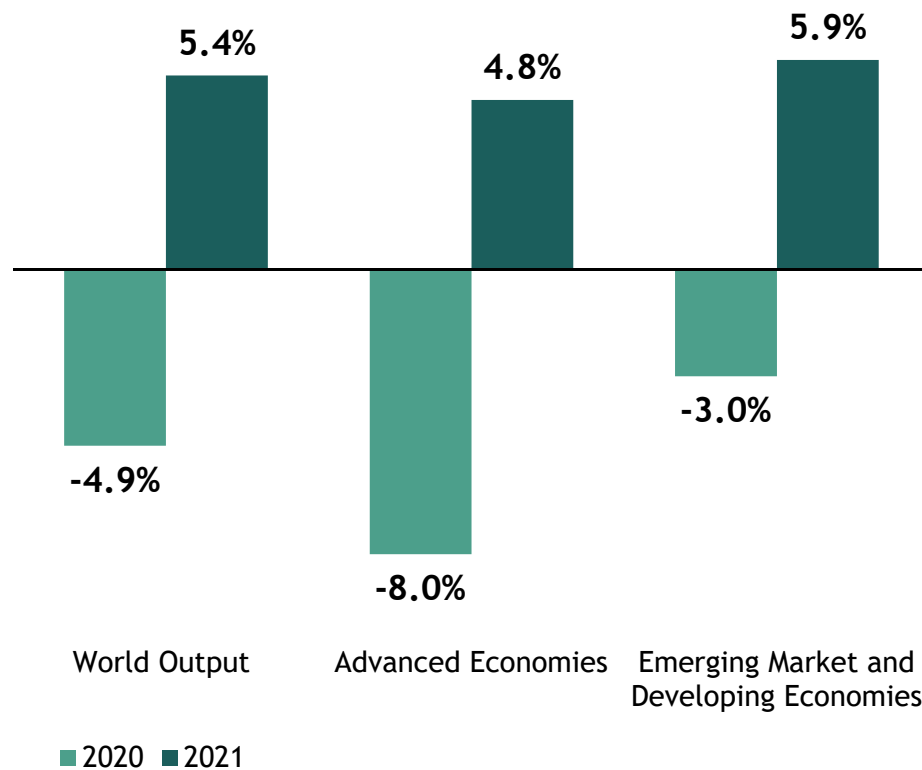


Source: Bloomberg and Blackstone Investment Strategy, as of 7/5/20.

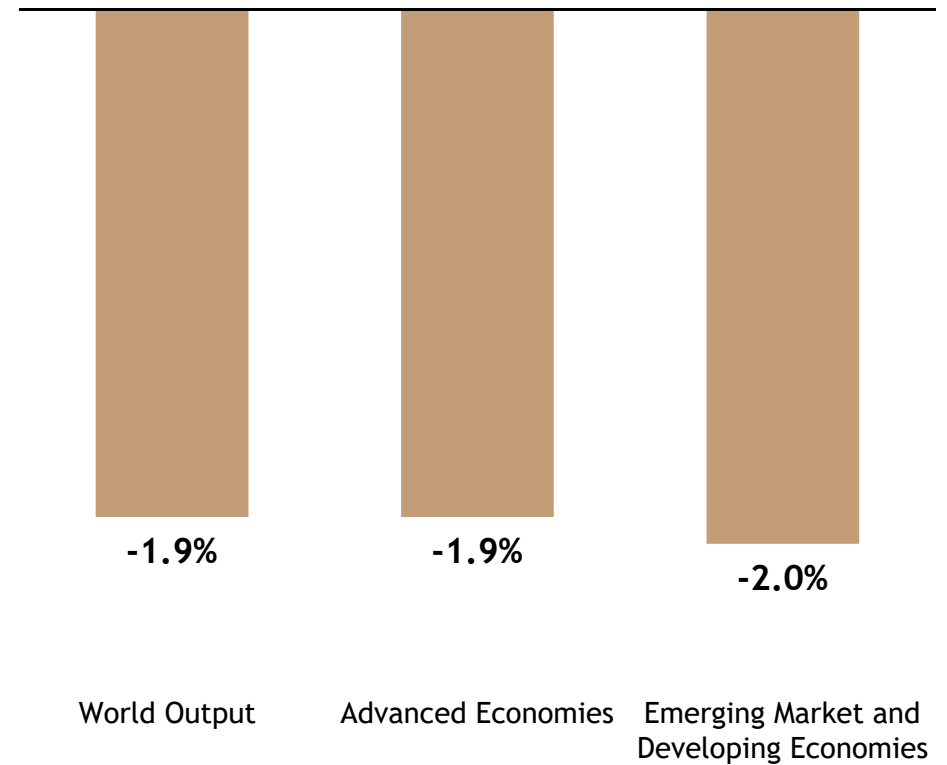
# Projections of global growth continue to be revised downward

## Estimates for Real GDP Growth

(YoY % change)



## Change in 2020 GDP Growth Estimates from April 2020 to June 2020

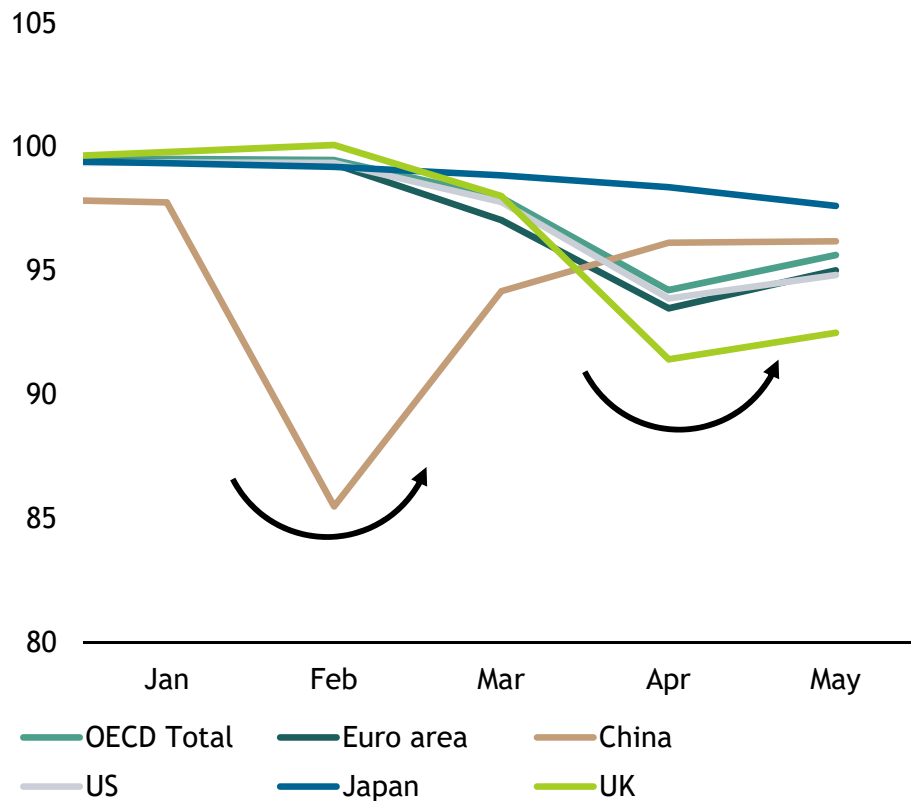


Source: IMF World Economic Outlook and Blackstone Investment Strategy, as of 6/24/20.

# Global green shoots are emerging; leading indicators in most major economies (ex-Japan) have likely troughed

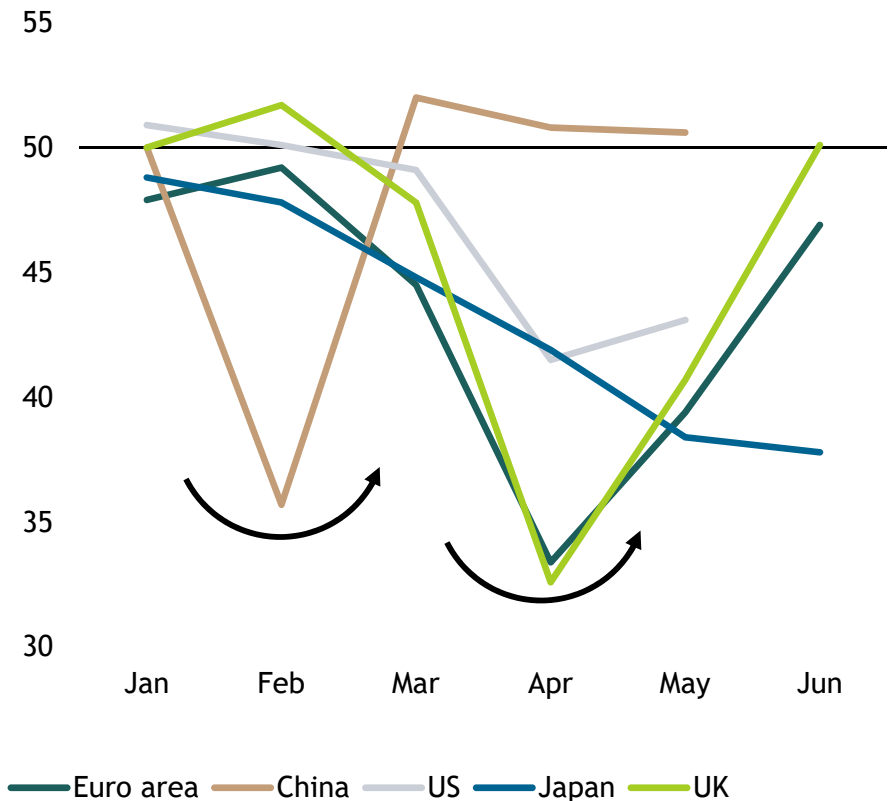
## OECD Leading Economic Indicators<sup>(1)</sup>

(2020 YTD; selected major economies)



## Purchasing Managers' Indices<sup>(2)</sup>

(2020 YTD; selected major economies; over 50=expanding)

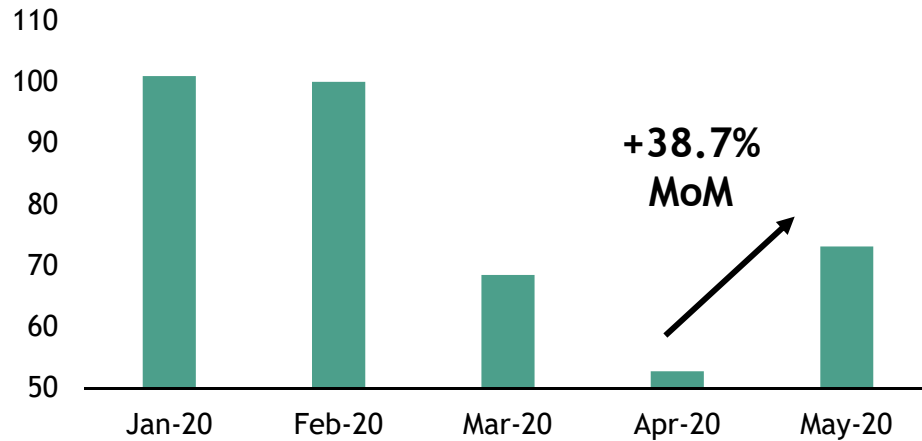


Source: OECD, Bloomberg, Haver Analytics and Blackstone Investment Strategy.  
 (1) As of 5/31/20. Represents composite leading indicators (amplitude adjusted).  
 (2) As of 6/30/20. (China and US as of 5/31/20.)

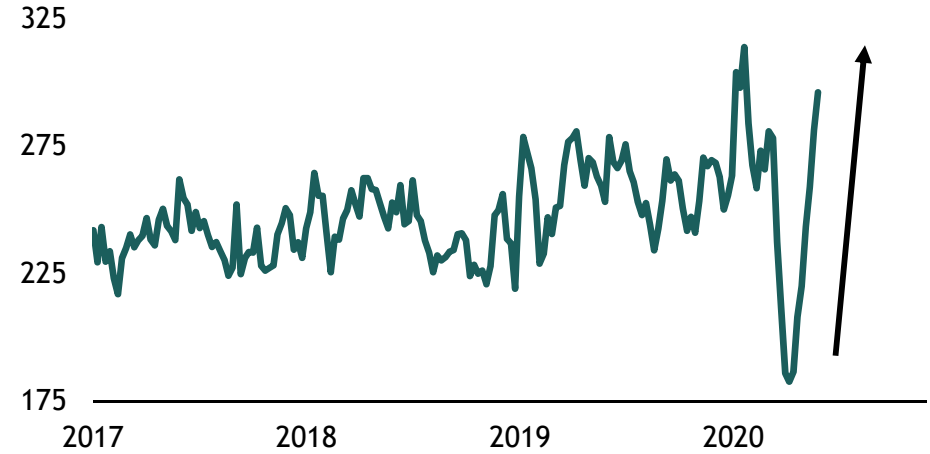


### Total Vehicle Sales<sup>(1)</sup>

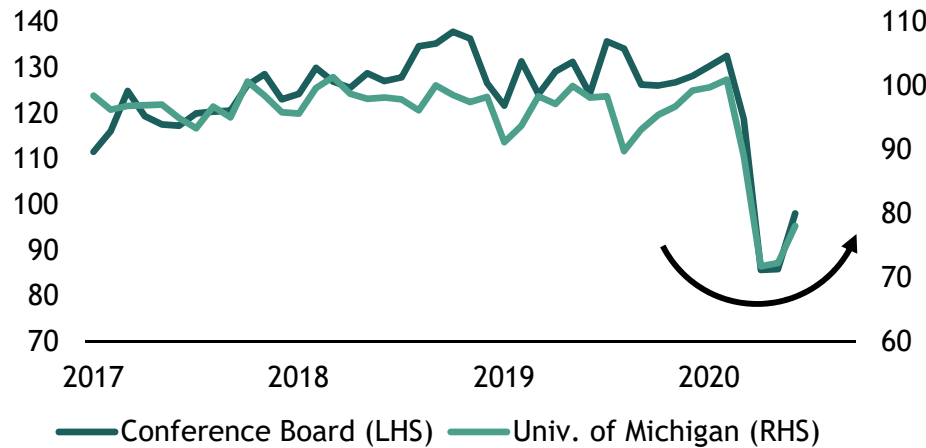
(annualized rate, indexed to 100 as of Feb 2020)



### Index of Mortgage Originations for Home Purchase<sup>(2)</sup>

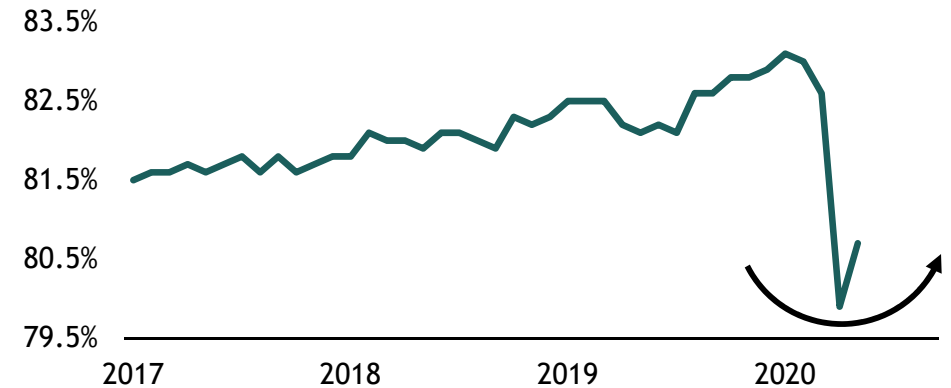


### Consumer Sentiment<sup>(3)</sup>



### Labor Force Participation Rate<sup>(4)</sup>

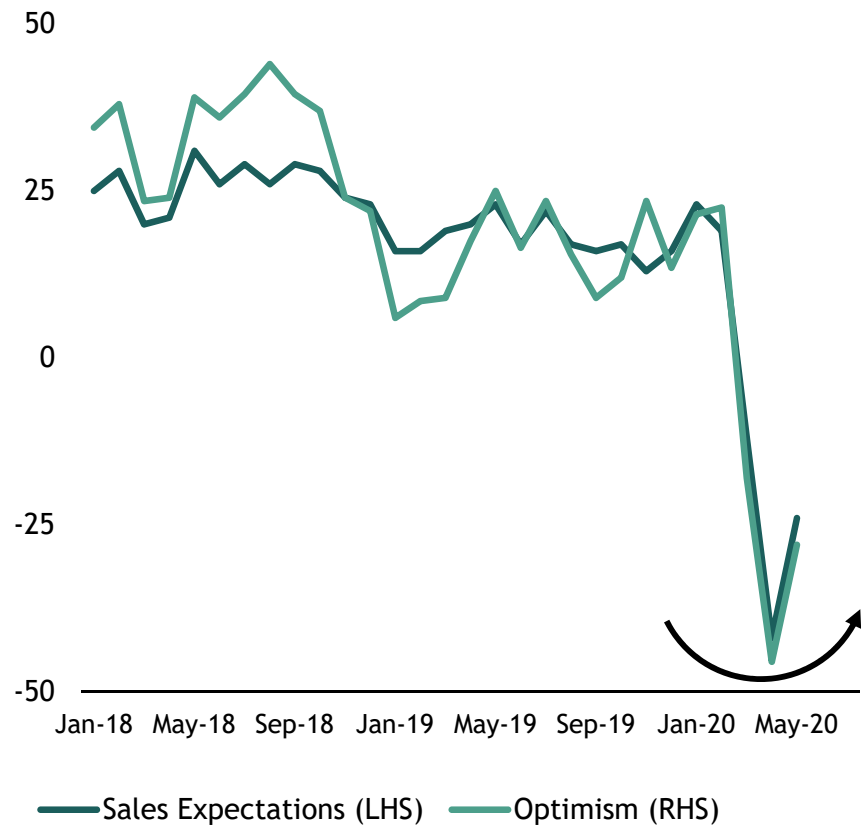
(ages 25-54)



(1) Source: BEA, as of 5/31/20. (2) Source: Mortgage Bankers Association and Bloomberg, as of 5/31/20. (3) Source: University of Michigan, Conference Board and Haver Analytics, as of 6/30/20. (4) Source: BLS and Haver Analytics, as of 5/31/20.

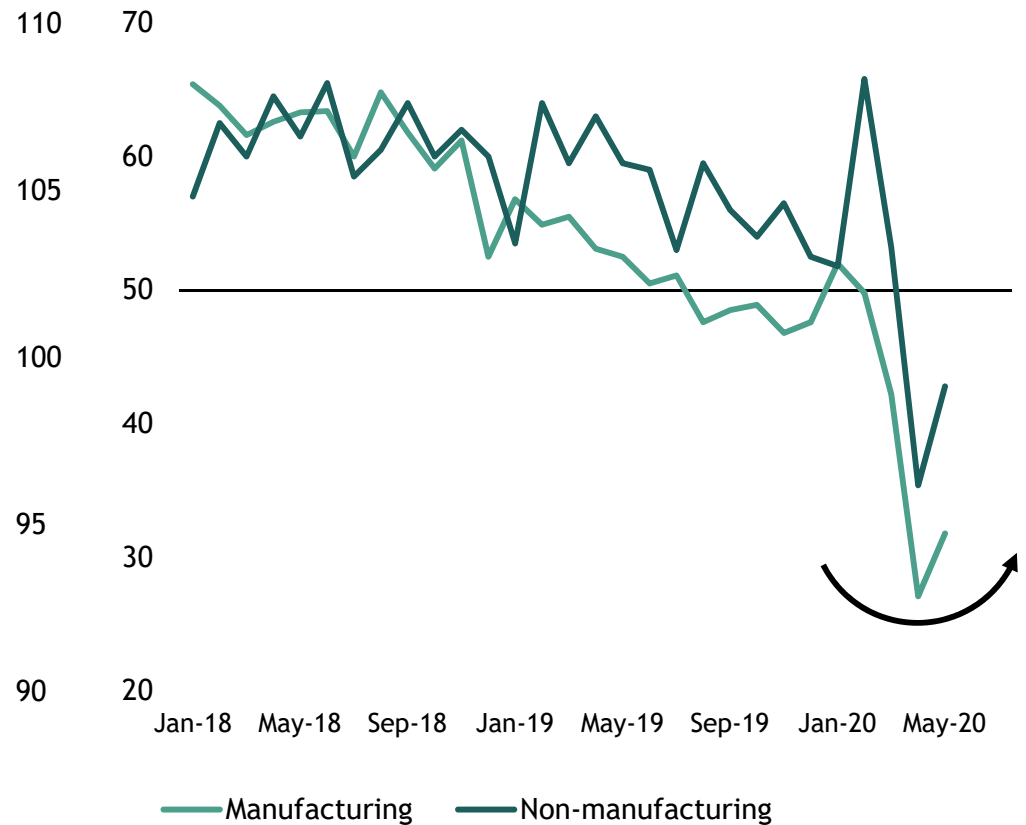
# US business sentiment indicators remain depressed but have likely troughed

**NFIB Small Business Indicators**



**Purchasing Manager Indices: New Orders**

(greater than 50=expanding)



Source: Haver Analytics, Bloomberg and Blackstone Investment Strategy, as of 5/31/20.

## These are the indicators we are watching carefully for continued recovery in the US economy

	Indicators	YTD Change (Since Feb-20)	MoM Change (Latest)	MoM Trend
Leading	Housing Permits <sup>(1)</sup>	-15%	+14%	▲
	10Y Treasury Spread over Fed Funds rate (bps)	+0.73	+0.03	▶
	Business Formations	+21%	+53%	▲
	Consumer Sentiment	-23%	+8%	▲
	Initial Jobless Claims (4-week moving average)	+616%	-34%	▲
	Mobility & Engagement Index (index level change)	-46	+26	▲
Coincident	Nonfarm Payrolls	-10%	+4%	▲
	Real Personal Income, ex-Transfer Payments <sup>(1)</sup>	-8%	+1%	▲
	Industrial Production <sup>(1)</sup>	-15%	+1%	▲
	Real Manufacturing/Trade Sales <sup>(1)</sup>	-15%	-11%	▼
	Global Trade Volumes <sup>(2)</sup>	-14%	-12%	▼
	Rail Traffic – Freight Carloads	-17%	-4%	▼

Source: Haver Analytics and Blackstone Investment Strategy, as of 6/30/20, unless otherwise indicated.

(1) As of 5/31/20.

(2) As of 4/30/20. Note: Represents total global trade volumes; all other indicators are US only.

## **II. Why We Expect a “Square Root” Recovery**

## The recovery has begun, but growth rates are likely to moderate after the initial bounce

- The economies in the US and other developed markets are likely to remain below 2019 GDP levels until at least 2022
- Following recessions it takes an average of 31 months for employment levels to recover prior peaks
  - Nearly 50 million people have filed jobless claims and over 8 million people directly exited the labor force
- While the vast majority of job losses have been self-reported as “temporary,” elevated bankruptcies and defaults could result in sustained and higher unemployment
  - After recessions, bankruptcies and HY defaults continue to rise for an average of 20 and 6 months, respectively
- Consumer behavior is likely to remain cautious for some time after lockdowns end
  - Many of the hardest-hit industries are the service industries that may face lower demand on a sustained basis, threatening the prospect of immediate employment recovery
  - Cautious consumers save more and pay down debt; older consumers may remain particularly cautious, and they account for 20% of US consumption expenditures
- Global consumption growth had already been in secular decline prior to COVID-19; emerging market contribution to growth is increasingly important

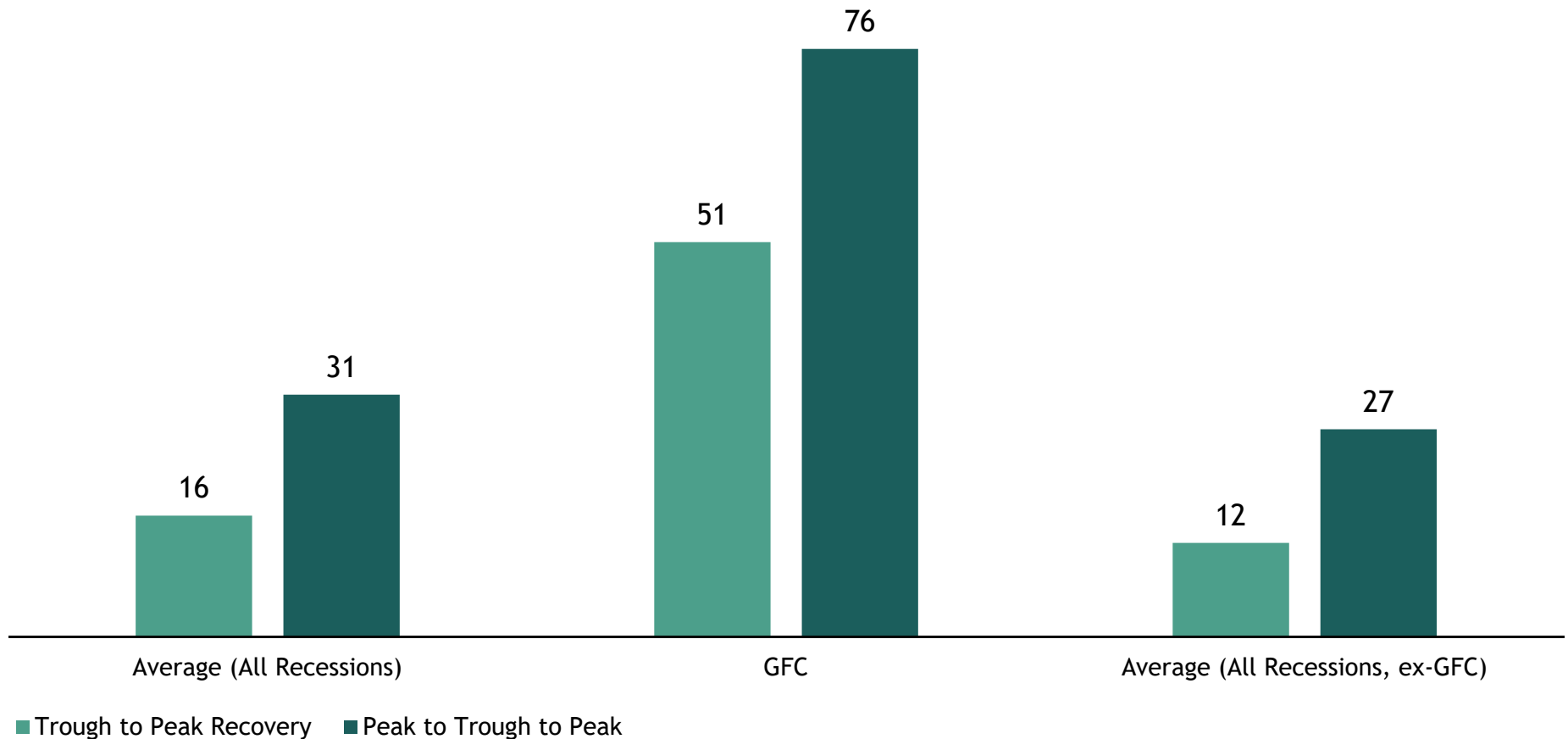
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# In the US, it takes 31 months on average for employment levels to recover prior peaks (76 months post-GFC)

## Number of Months for US Employment to Recover Prior Highs

(based on total nonfarm payrolls)

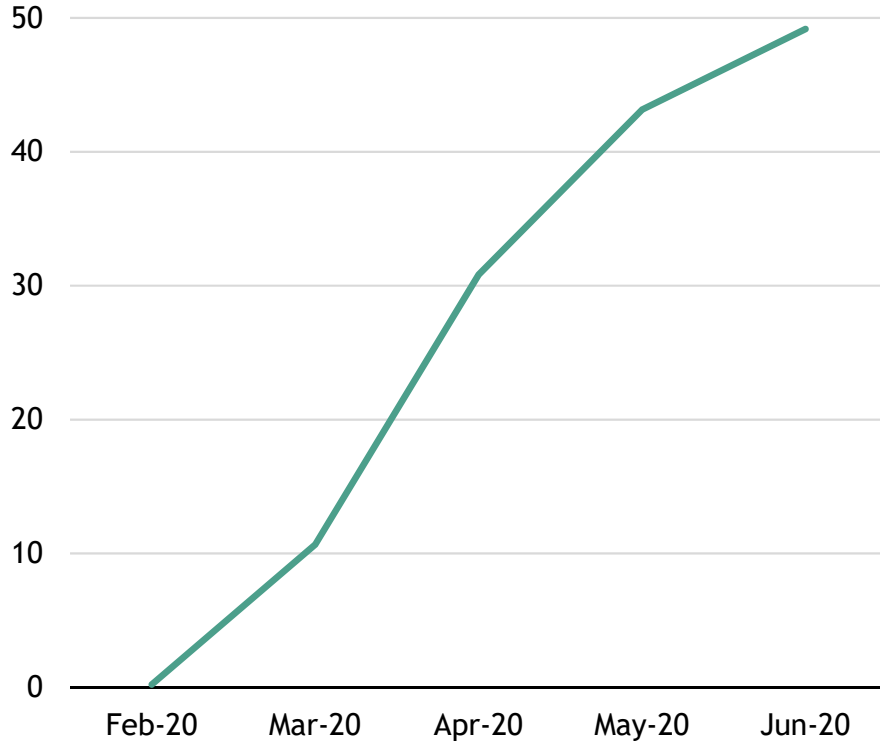


Source: Bureau of Labor Statistics and Blackstone Investment Strategy. Based on all recessions from 1939 through 2019.

# Nearly 50M people have filed jobless claims, while over 8M people directly exited the labor force

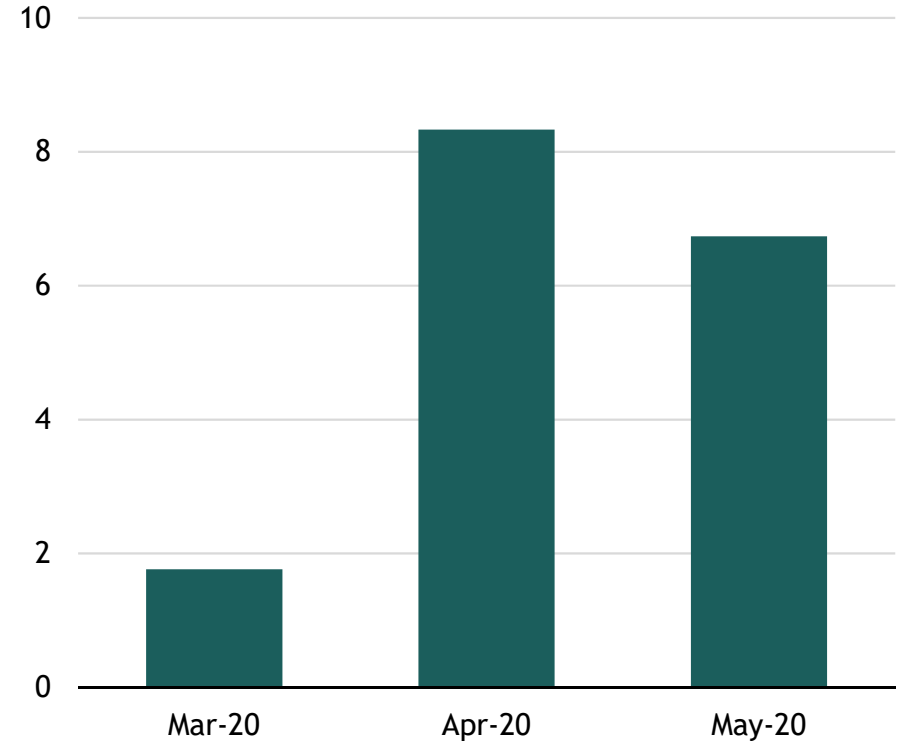
## Cumulative Initial Jobless Claims Filed since Feb. 2020

(in millions)



## Increase in Number of People Considered “Not in the Labor Force” since Feb. 2020

(in millions)

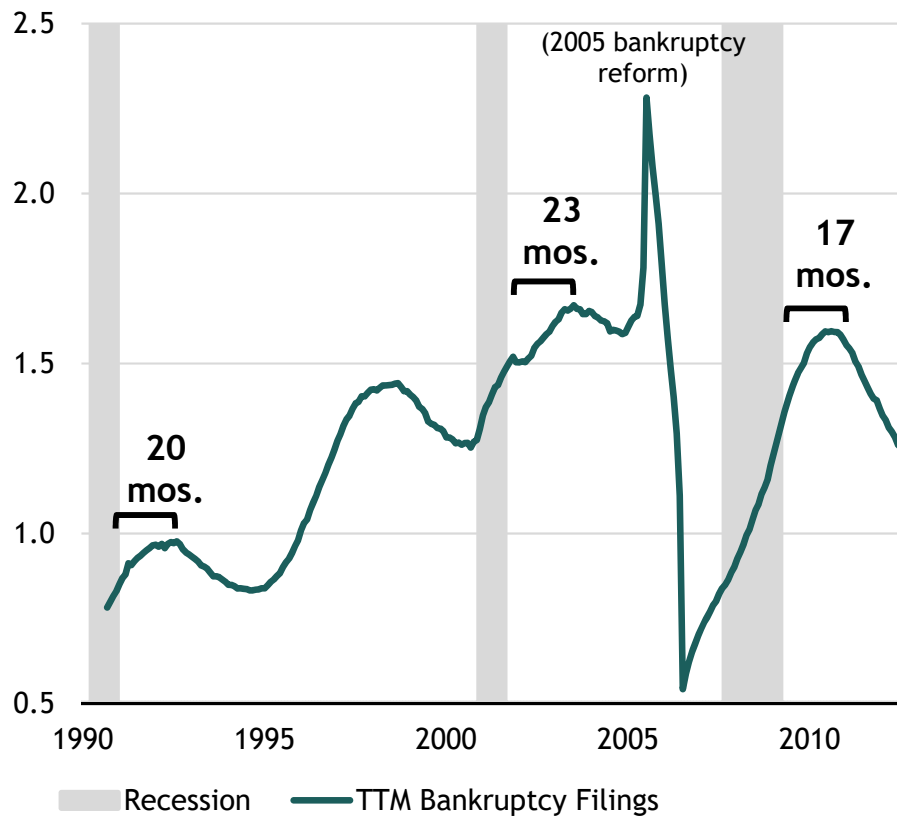


Source: Bureau of Labor Statistics, Haver Analytics and Blackstone Investment Strategy. Jobless claims data as of 6/30/20, “not in labor force” data as of 5/31/20.

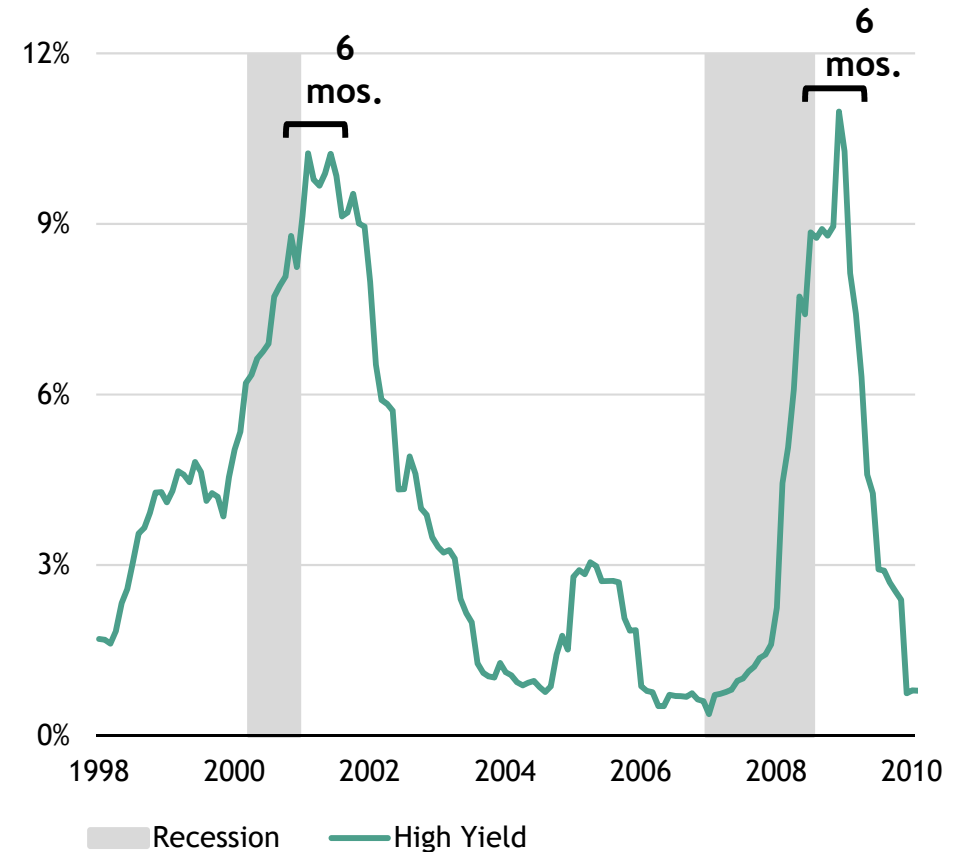
# After recessions, bankruptcies and HY defaults continue to rise for an average of 20 and 6 months, respectively

**US Business Bankruptcy Filings (TTM)**

(in millions)



**US High Yield Default Rate (TTM)**



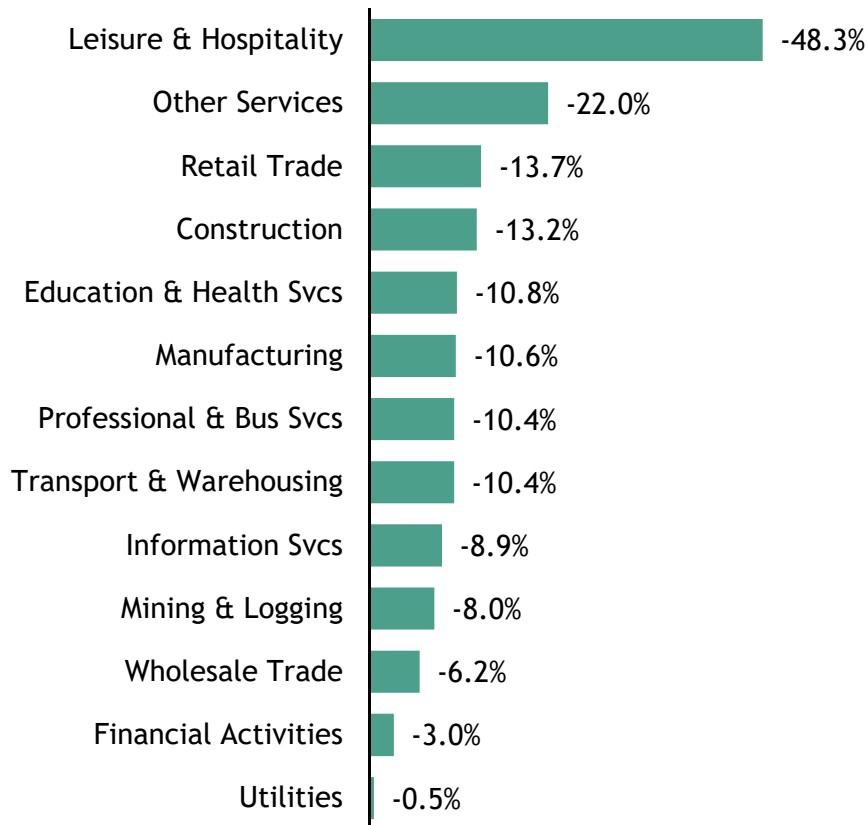
Source: Administrative Office of the US Courts, Haver Analytics, J.P. Morgan and Blackstone Investment Strategy.



# Many of the hardest-hit industries are service industries that may face lower demand on a sustained basis

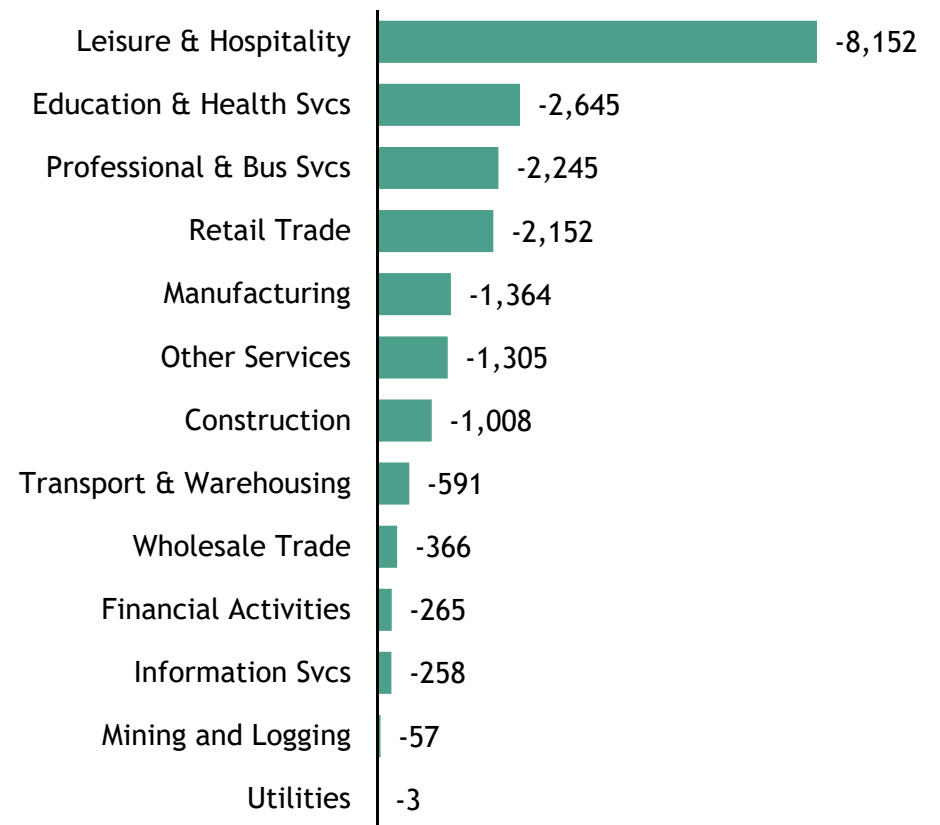
## Change in Employment by Industry

(Feb-20 to Apr-20)



## Change in Employment by Industry

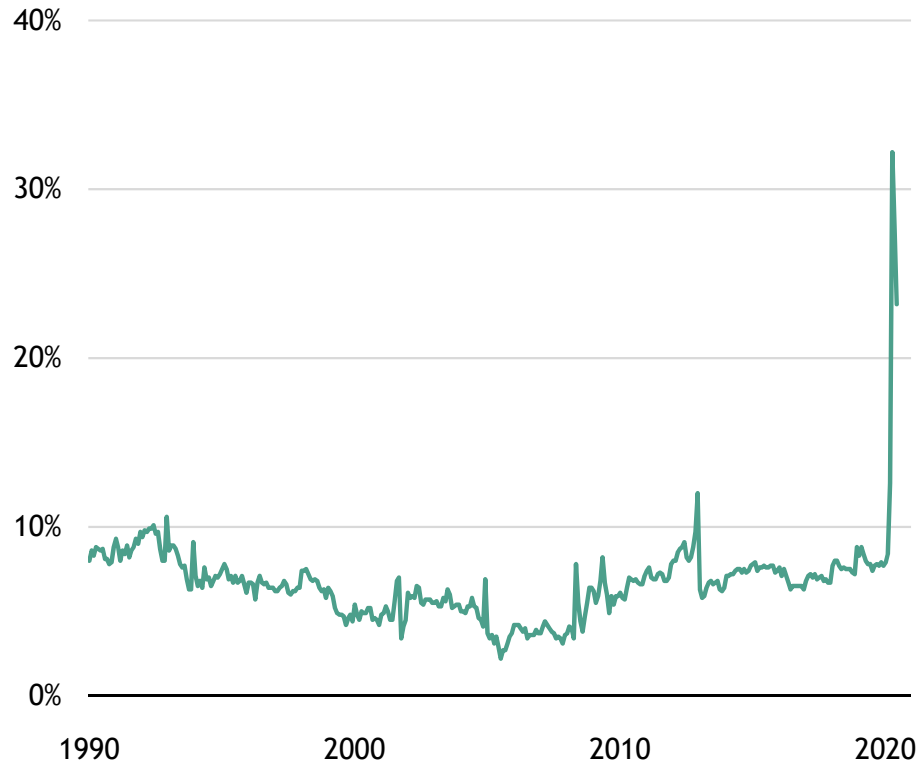
(Feb-20 to Apr-20, no. in thousands)



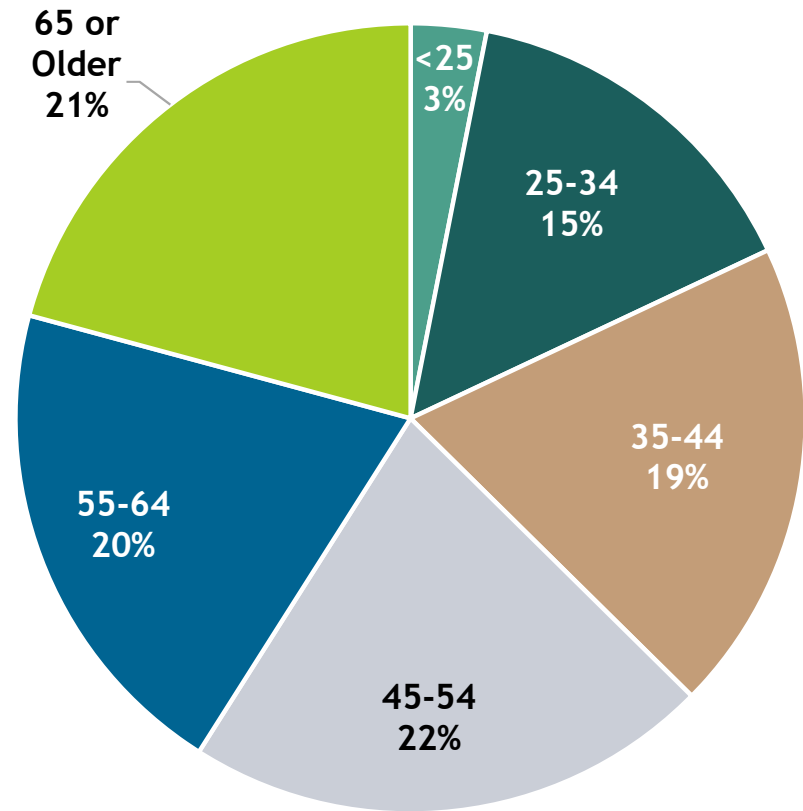
Source: Bureau of Labor Statistics, Haver and Blackstone Investment Strategy, as of 4/30/20. Represents nonfarm private payrolls.

# US consumers are saving more; older consumers may remain more cautious and comprise 20% of spending

US Personal Saving Rate



Share of US Total Aggregate Expenditures by Age Range (2018)

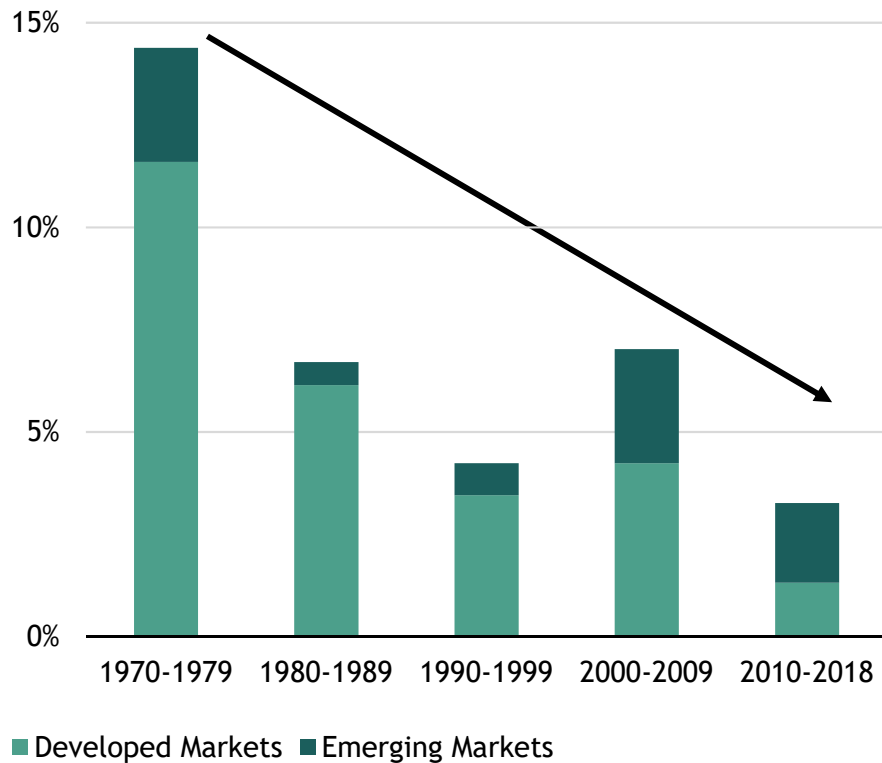


Source: BEA, BLS and Blackstone Investment Strategy. Savings rate data as of 5/31/20. Expenditures data as of 12/31/18.

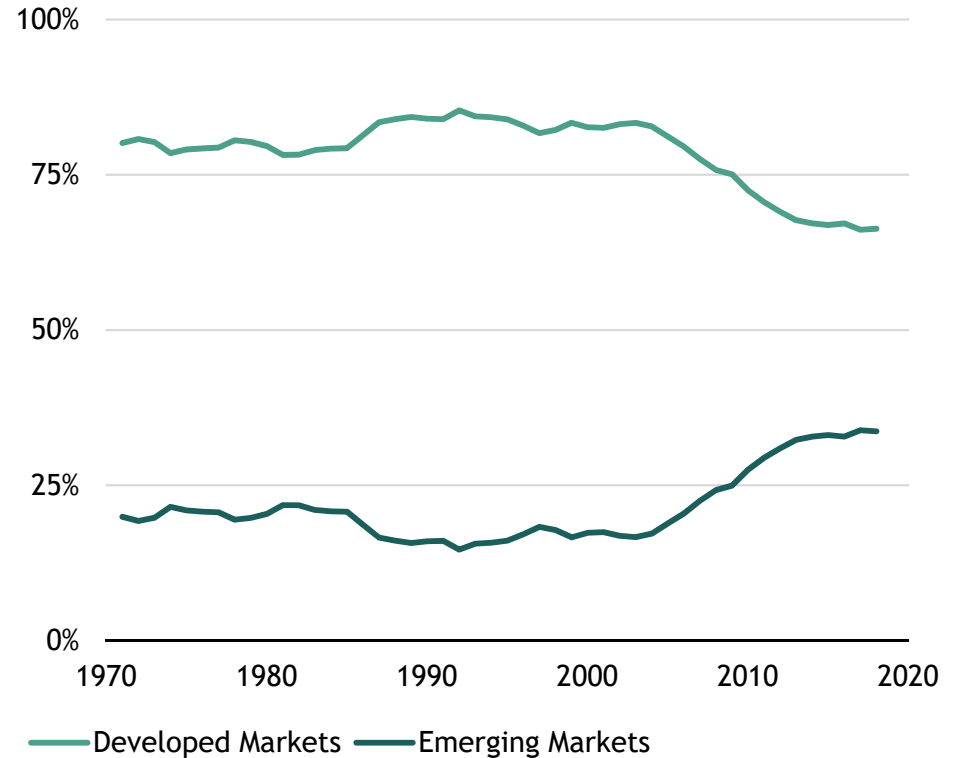
# Global consumption growth in secular decline; emerging market contribution to growth is increasingly important

## Growth in Global Consumption Expenditures by Decade (CAGR)

(contribution to growth broken out by DM/EM)



## Share of Total Global Consumption Expenditures



Source: World Bank and Blackstone Investment Strategy, as of 12/31/18. Developed markets represented by “high income” countries, and emerging markets represented by “low & middle income” countries, as defined by the World Bank.

# **III. Markets Driven by Liquidity, Not Fundamentals**

# Unprecedented amounts of monetary stimulus have put a floor on the global economy, and on markets

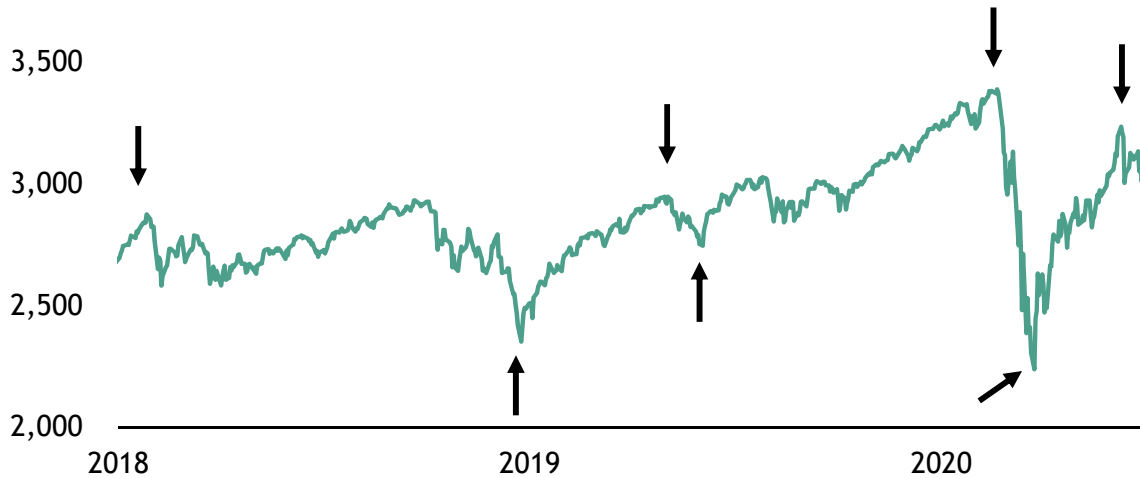
- Markets have responded favorably to monetary and fiscal stimulus measures
- Investor sentiment in the equity markets reached an optimistic extreme in the midst of the pandemic, though it has since normalized
  - The S&P 500 experienced its fastest-ever descent from its peak to a bear market, but also had its fastest-ever recovery
  - The market's recovery is largely attributable to just a handful of technology stocks
- Credit market spreads widened significantly, but have re-traced the majority of this movement since the Fed announced its new asset purchase facilities on March 23
  - Despite continued uncertainty and projections of elevated default rates in corporate debt, bond issuance is at record levels, and up 87% YoY in 2020 YTD

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# Markets reached optimistic extreme in spite of COVID-19

## S&P 500 Composite Index

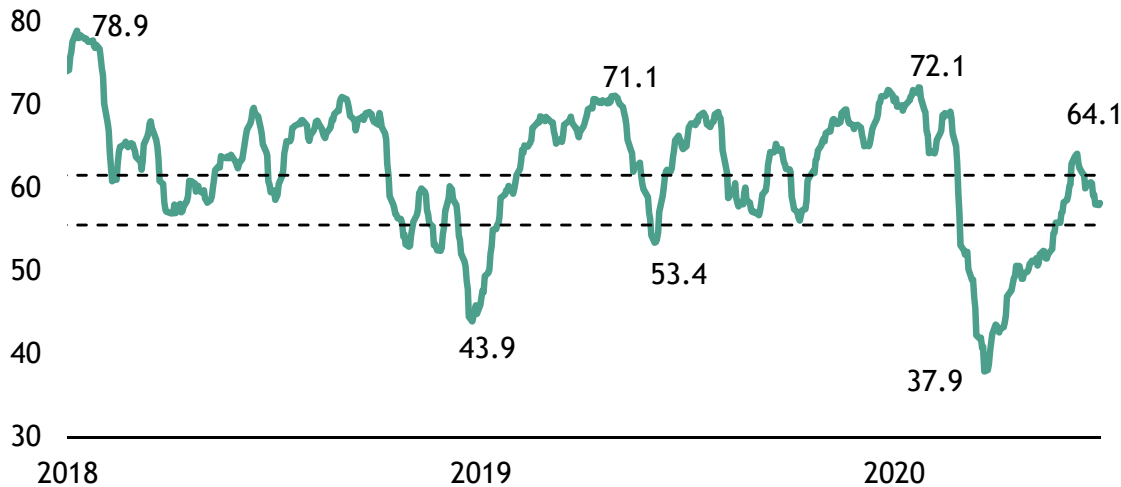


S&P 500 Index Performance Full History: 12/01/1995-06/30/2020		
NDR Crowd Sentiment Poll is:	% Gain/Annum	% of Time
Above 66.0	-3.2	25.8
57.0 - 66.0 from Above	0.5	17.9
57.0 - 66.0 from Below	20.4	19.4
Below 57.0	11.1	36.5
<i>Buy/Hold = 6.9% Gain/Annum</i>		

### Historical average value of Crowd Sentiment Poll at:<sup>(1)</sup>

- 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:<sup>(2)</sup>

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

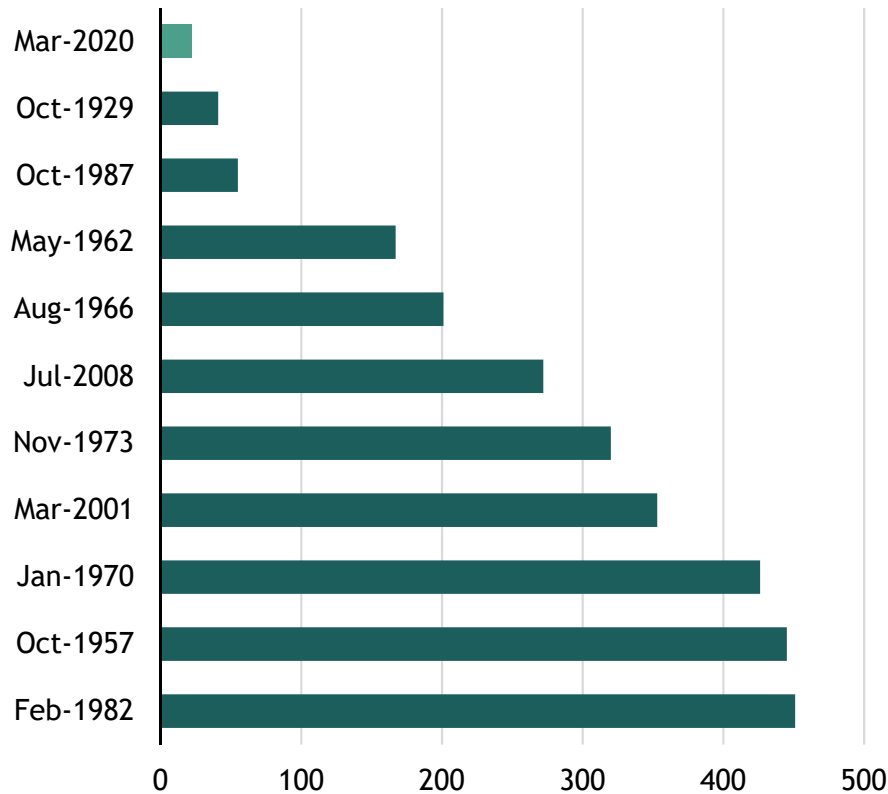
Source: Ned Davis Research, as of 6/30/20.

(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.

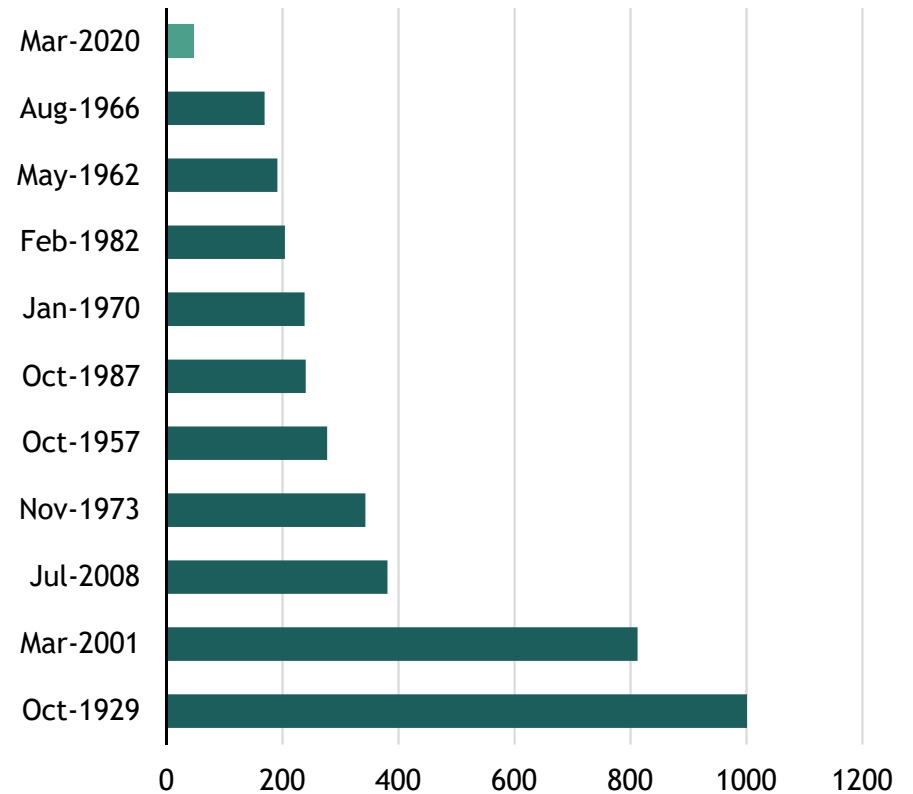
(2) Sentiment must reverse by 10 percentage points to signal an extreme, in addition to reaching the above extreme levels.

# The S&P 500 experienced its fastest-ever decline into a bear market and its fastest exit out of one

**Days from S&P 500 Peak to Start of Bear Market**



**Days from Start of S&P 500 Bear Market to Recovery**

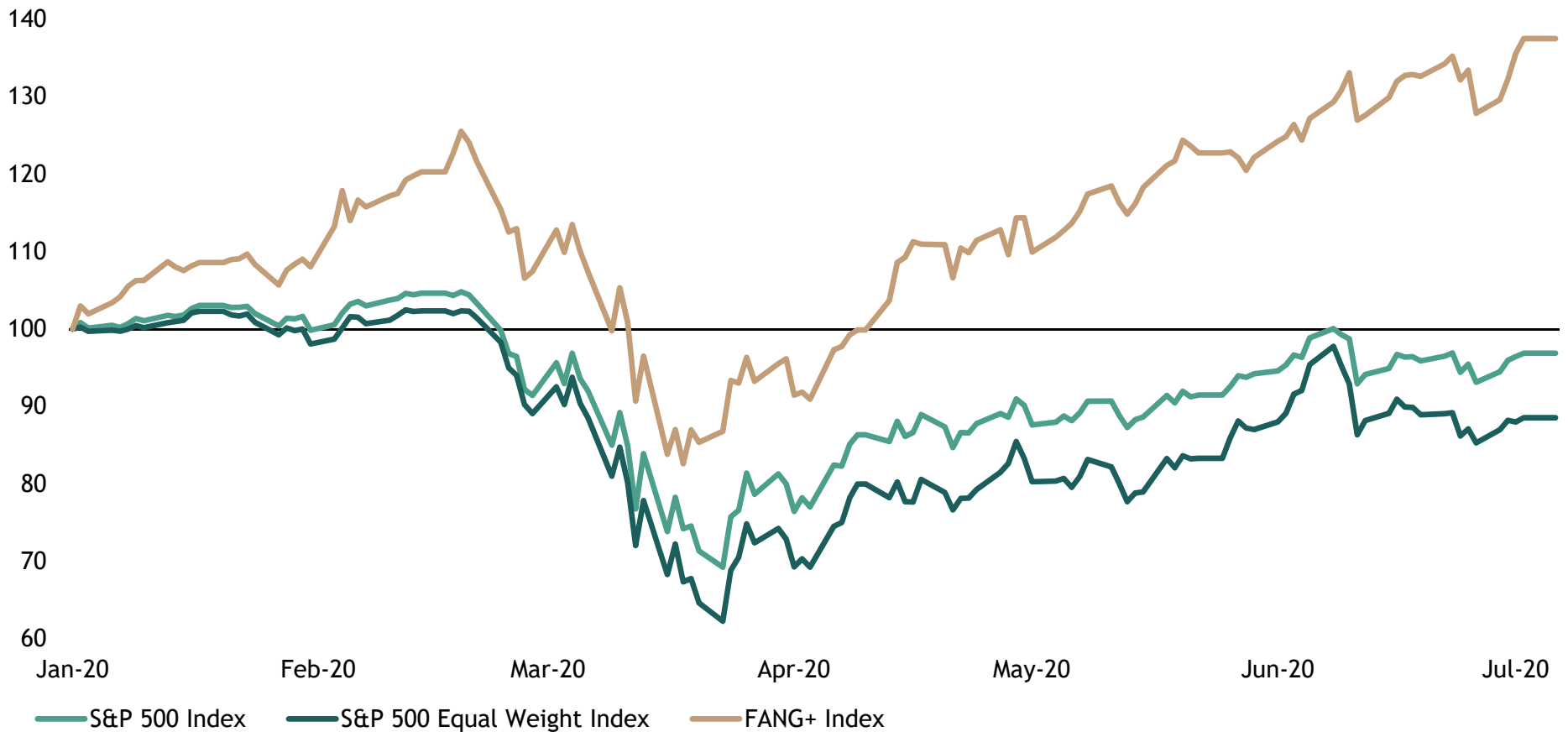


Source: Bloomberg and Blackstone Investment Strategy, as of 6/30/20. Represents index declines of greater than 20% since 1929. "Recovery" defined as index recovering 20% from bear market trough.

# The market's recovery is largely attributable to just a handful of technology stocks

## S&P 500 YTD Performance

(indexed to 100 as of Jan. 1, 2020)



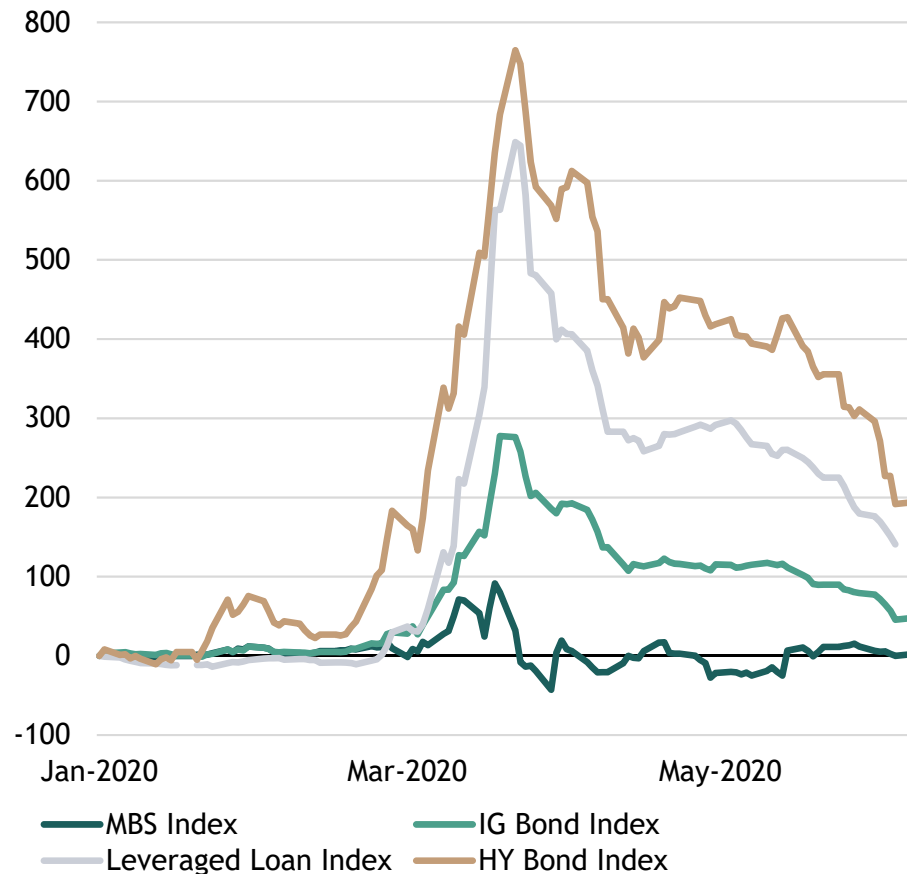
Source: Bloomberg and Blackstone Investment Strategy, as of 7/5/20. Note: FANG+ Index is equal-weighted and includes the following members: Facebook, Apple, Amazon, Netflix and Alphabet's Google.



# Credit markets stabilized after the Fed's March 23 announcement of new asset purchase facilities

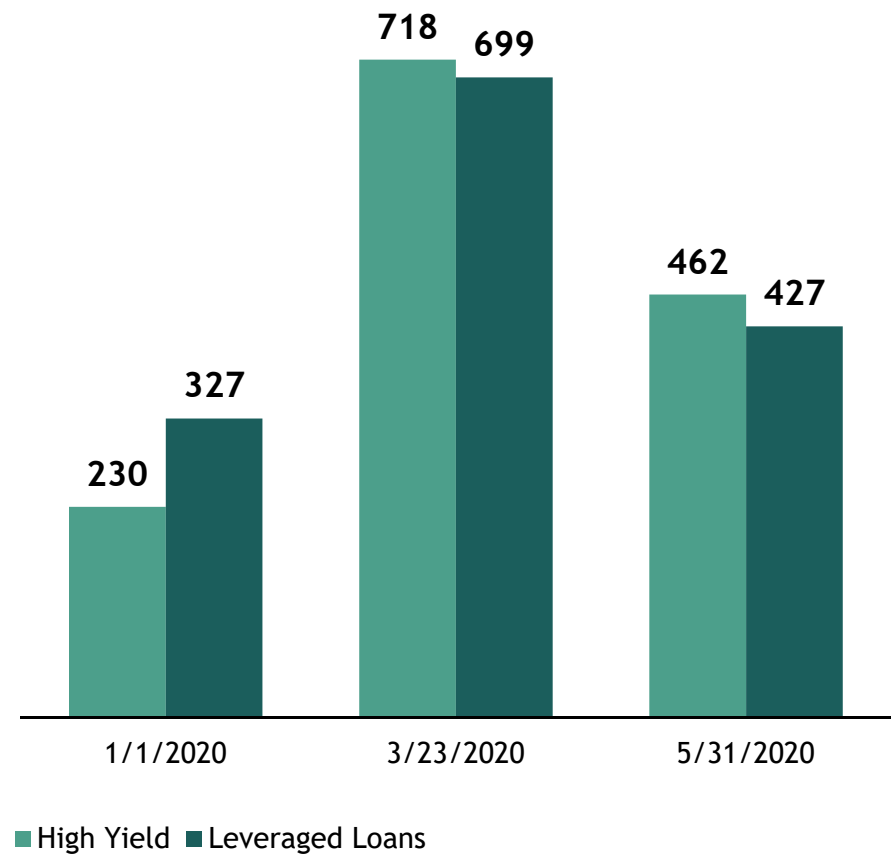
## Credit Market Spreads

(bps, 1/1/2020=0)



## Spreads Relative to IG Spreads

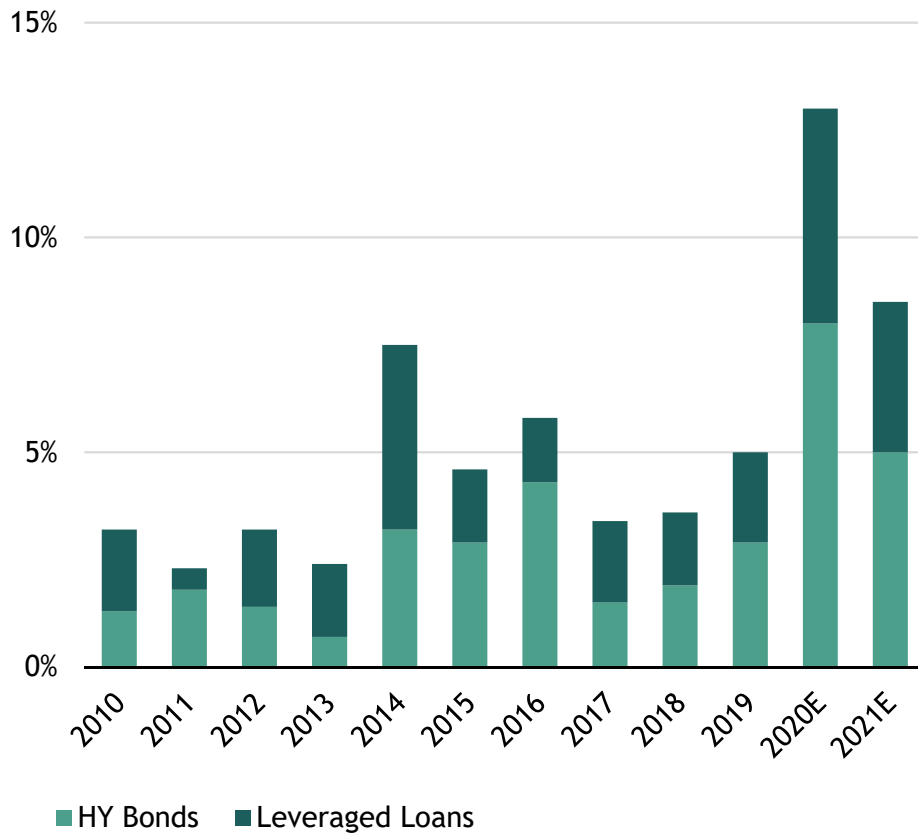
(bps)



Source: S&P Global, Bloomberg and Blackstone Investment Strategy, as of 6/5/20. Represents the Bloomberg Barclays US Corporate Bond Index, the Bloomberg Barclays US High Yield Corporate Bond Index, Bloomberg Barclays US MBS Index and the S&P/LSTA Leveraged Loan Index. Spreads for IG, HY and MBS represent the yield to worst of each index relative to the generic 10Y UST yield. Spreads for the LL Index represent spread to maturity.

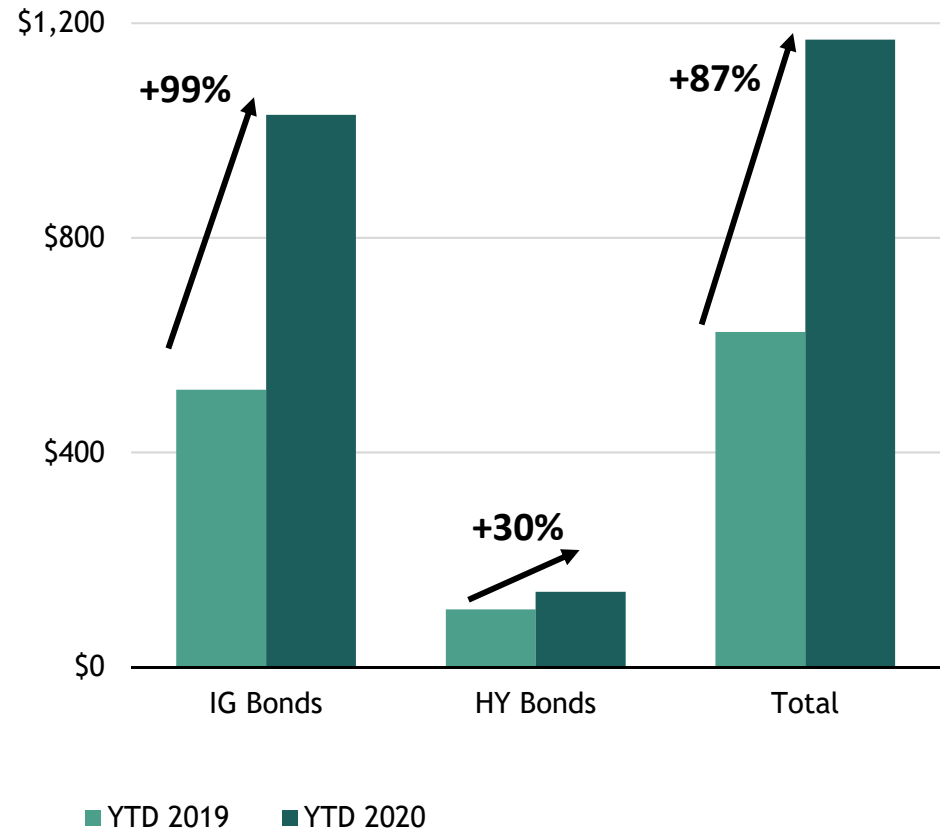
# Despite uncertainty and rising default rates, total corporate bond issuance is up 87% YoY in 2020 YTD

## High Yield and Leveraged Loan Default Rates



## US Corporate Bond Issuance

(US\$ in billions)



Source: JP Morgan, SIFMA and Blackstone Investment Strategy, as of 6/01/20.

# **IV. Greater Policy Support for Longer**

# Certain elements of monetary and fiscal policy are likely to be with us for years to come

## Fiscal policy

- Global fiscal policy has been coordinated across many developed markets, reaching an average of 20% of GDP
- In the US, debt as a percent of GDP is estimated to rise to its highest level ever, as deficits continue to expand and unemployment insurance puts further pressure on spending

## Monetary policy

- The Fed's monetary policy actions have been extraordinary both in magnitude and speed
  - In three months, growth in Fed's balance sheet and money supply has exceeded that in the 4 years post-GFC
- The low and declining velocity of money across major economies means it takes more monetary stimulus to create the same level of growth
- Once interest rates hit zero, the examples of Japan and Europe indicate they are likely to stay there for some time; markets consistently get the timing of rate changes wrong
- High debt and aging demographics are putting downward pressure on rates at a time that yield is already hard to come by in traditional fixed income

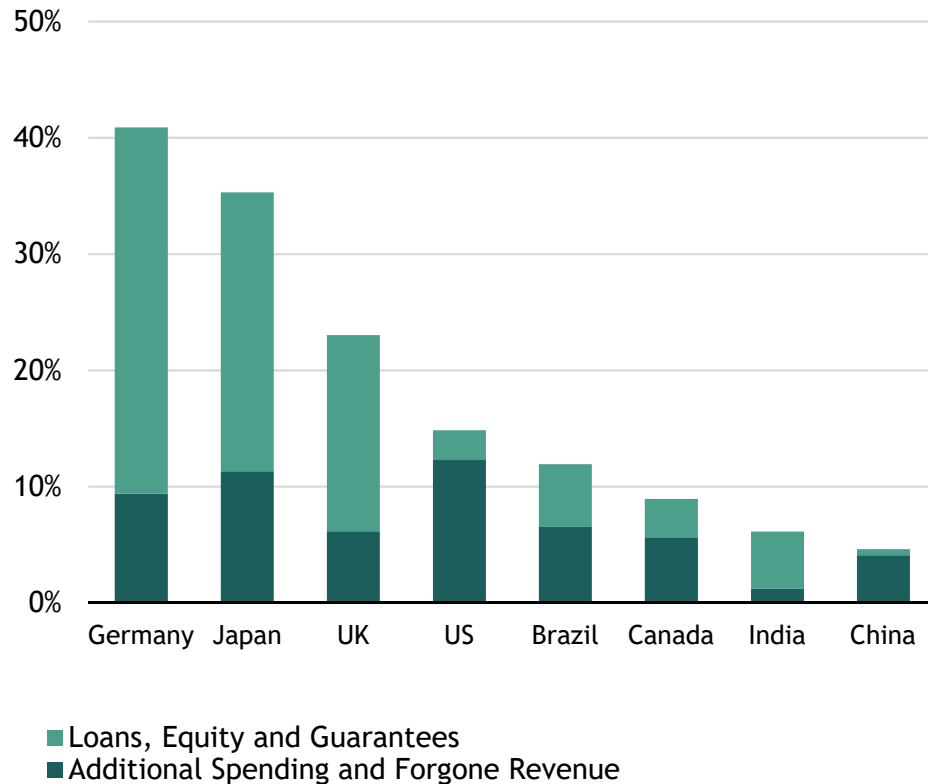
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# Global fiscal policy has been coordinated across many developed markets, in stark contrast to many EMs

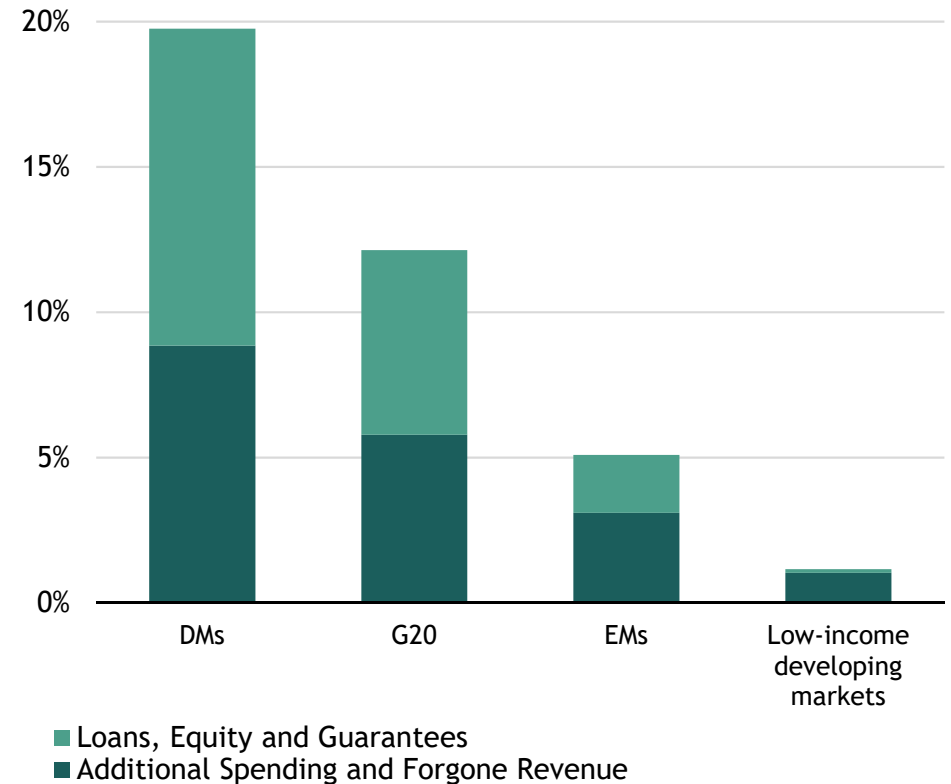
## Summary of Fiscal Measures in Response to COVID-19: Selected Major Economies

(% of GDP)



## Summary of Fiscal Measures in Response to COVID-19: Aggregates

(% of GDP)

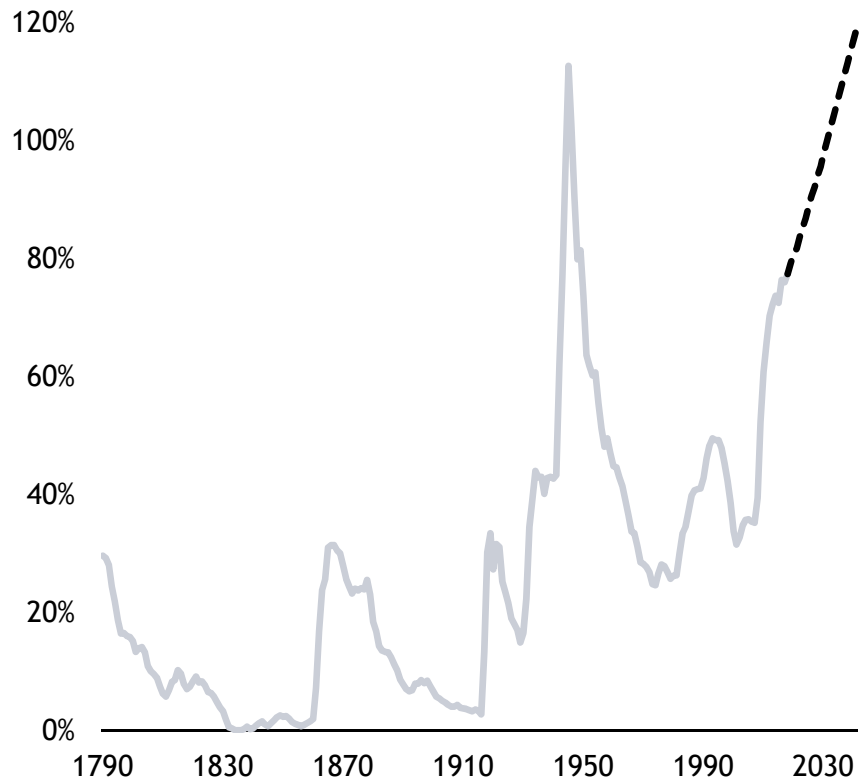


Source: IMF Fiscal Monitor Database, as of 6/12/20.

# In the US, debt as percent of GDP estimated to rise to its highest level ever as deficits continue to expand

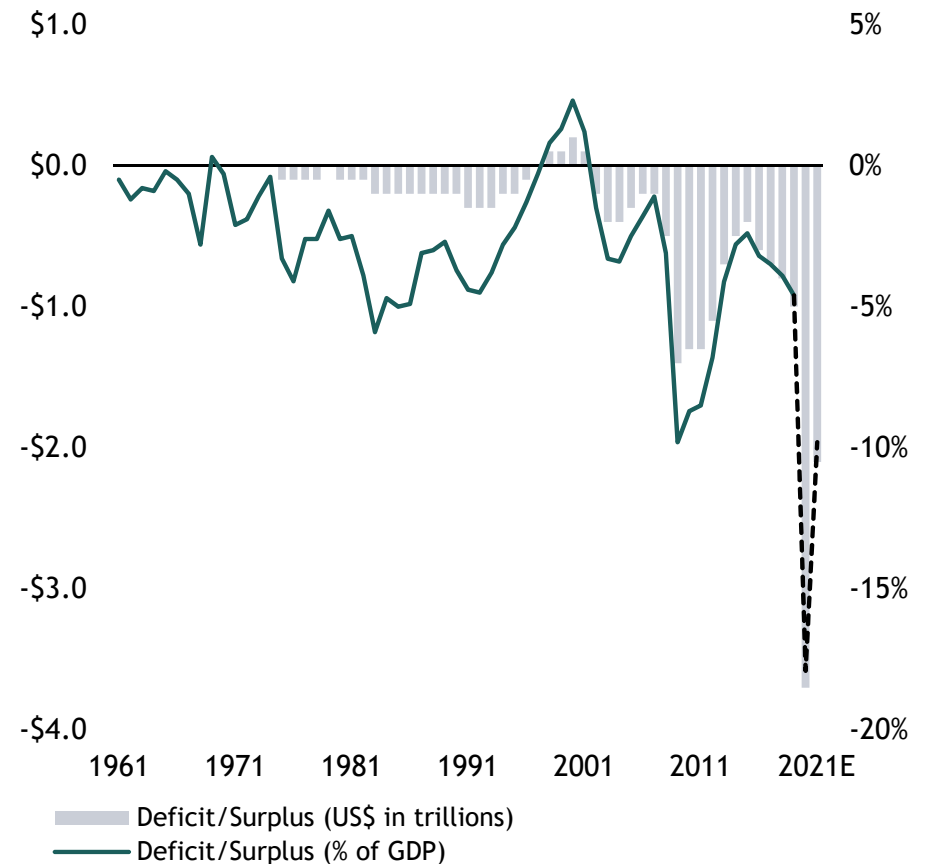
## Total Federal Debt Held by the Public

(% of GDP)



## Federal Deficit (Annual)

(US\$ in trillions)

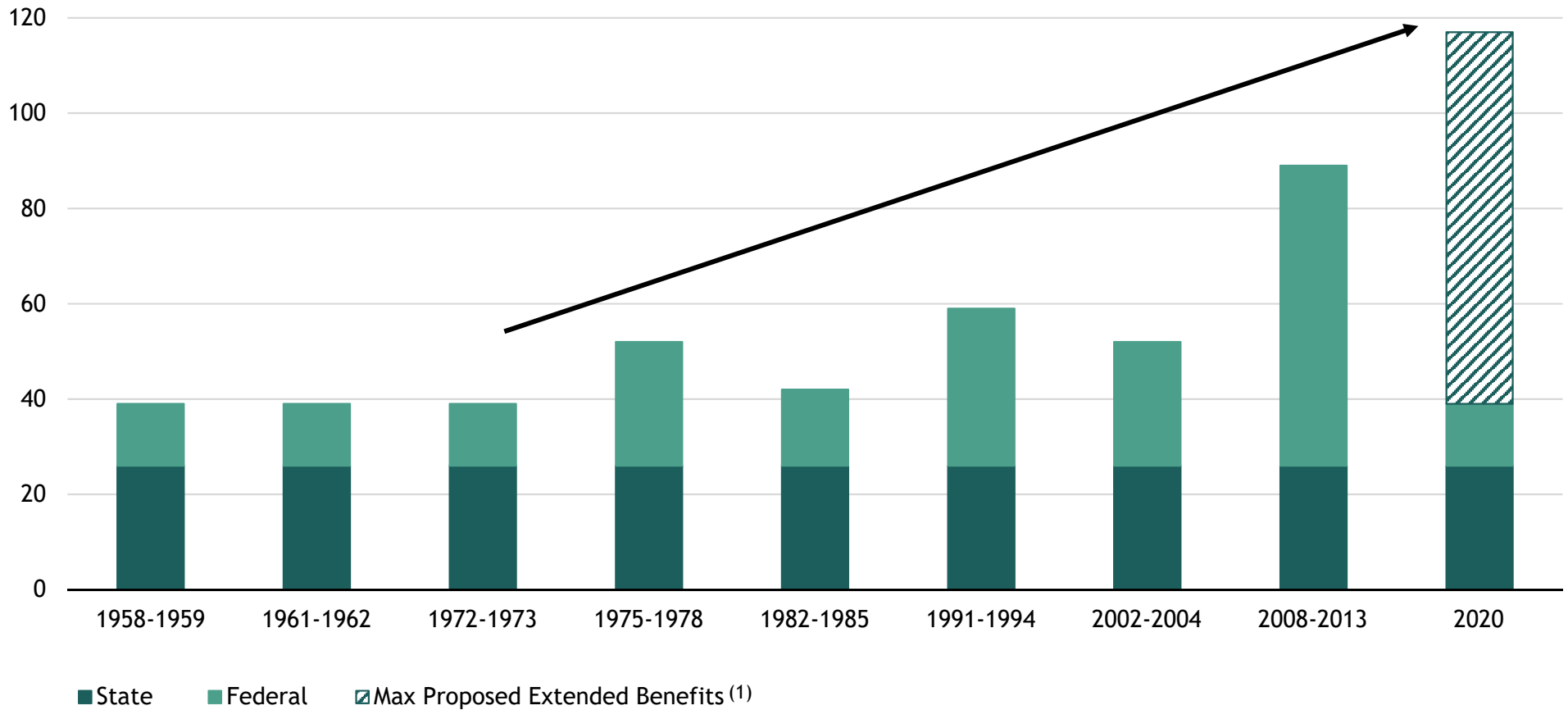


Source: OMB, CBO, Federal Reserve, Haver Analytics and Blackstone Investment Strategy, actual data as of 12/31/19. Data for 2020-2030 are estimates from the most recent CBO update, as of 6/30/20.

# In the US, the duration of federal unemployment insurance benefits has increased over time

## Max Duration of Unemployment Insurance Benefits, in Weeks

(1948-2019)



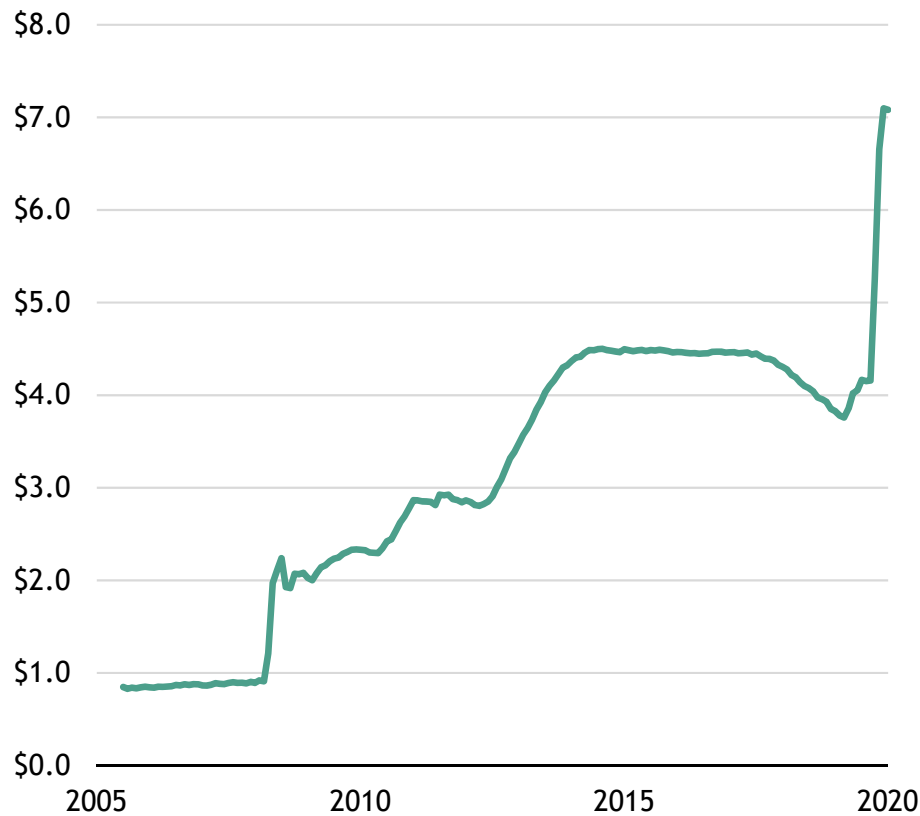
Source: Congressional Research Service and American Enterprise Institute, as of 6/3/20. Note: "Federal" benefits represent the maximum extended benefits offered by the federal government, even if they were not fully funded by the federal government. The maximum benefits were not necessarily available for the entire period referenced. The periods referenced do not include reach back periods.

(1) Represents the maximum number of weeks that has been proposed in recent major legislative proposals.

# The Fed's balance sheet has grown over time from ~\$1T (2007) to \$2.2T (2008), \$4.5T (2017) and over \$7T today

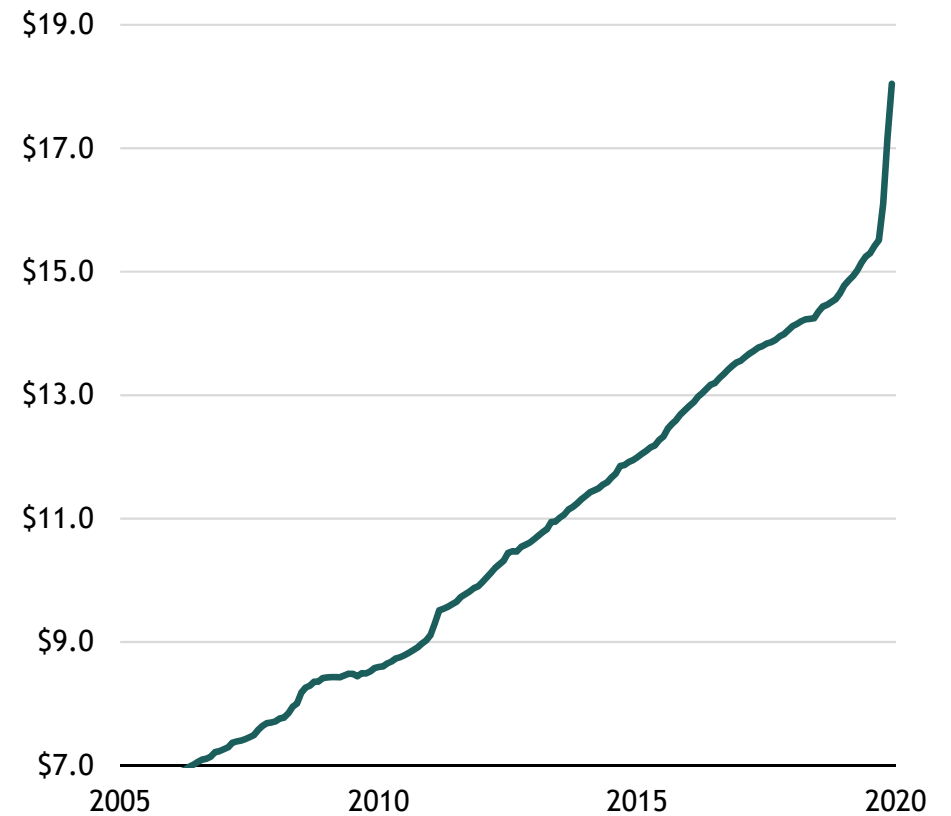
## Federal Reserve Balance Sheet Assets

(US\$ in trillions)



## US Money Supply (M2)

(US\$ in trillions)



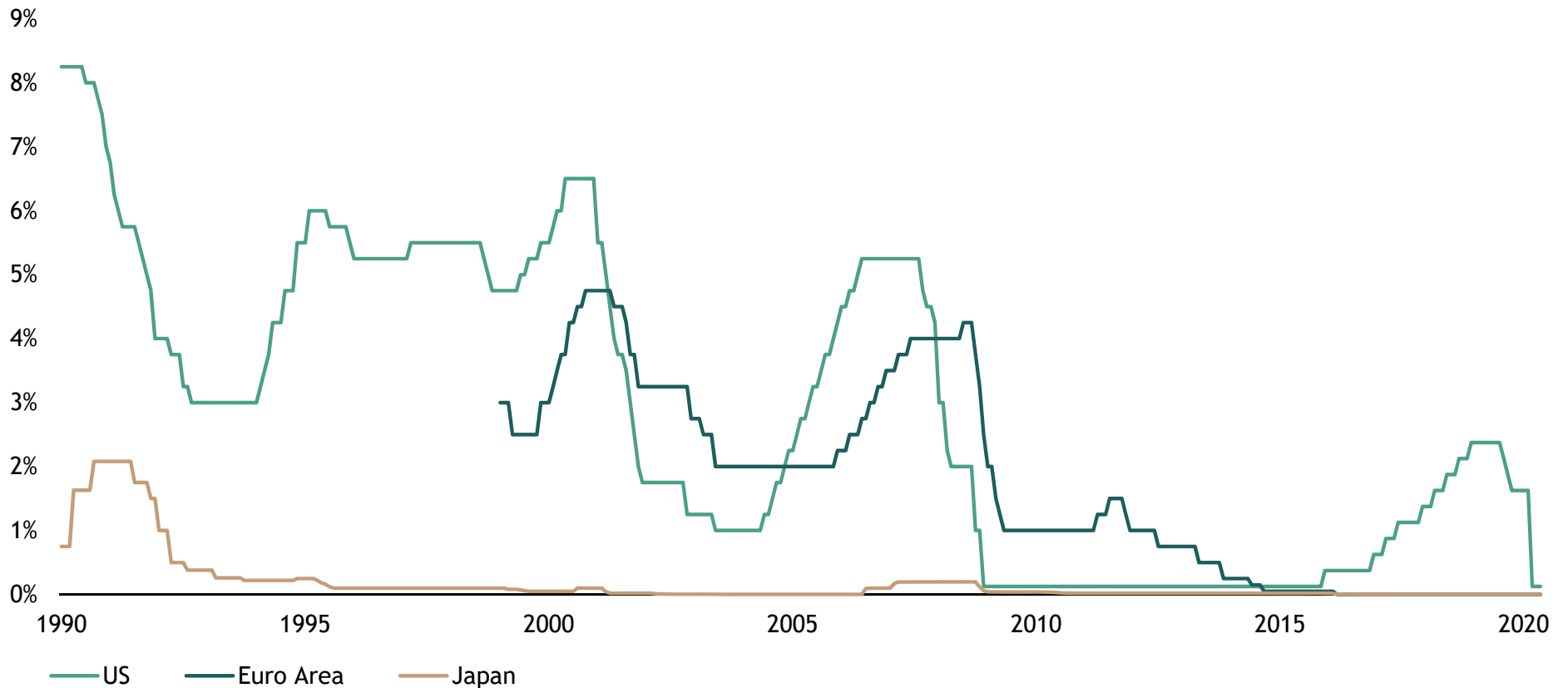
Source: Federal Reserve, Haver Analytics and Blackstone Investment Strategy. Fed balance sheet data as of 6/30/20, money supply data as of 5/31/20.



# Once interest rates are reduced to zero, they tend to stay there for sustained periods of time

## Selected Central Bank Policy Rates<sup>(1)</sup>

(monthly, end of period)

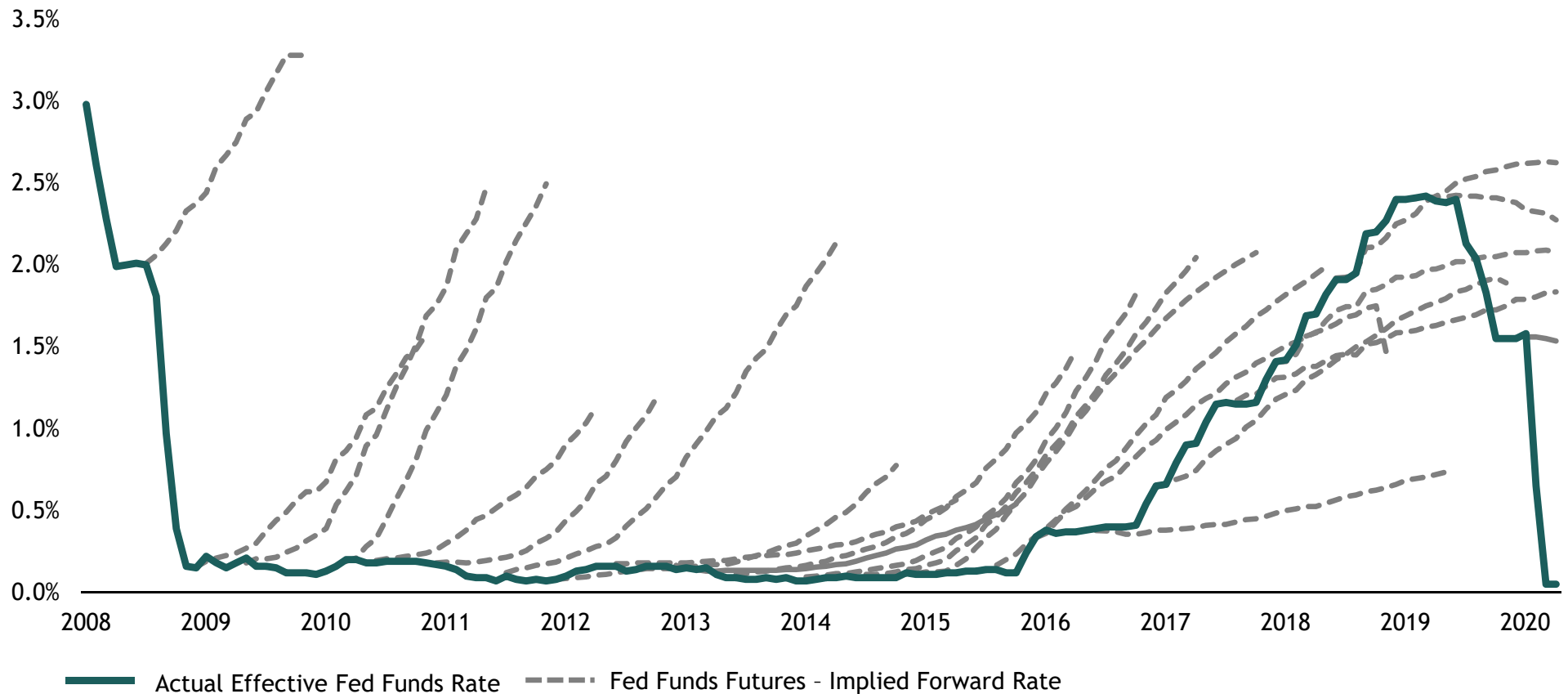


Source: Haver Analytics and Blackstone Investment Strategy, as of 5/31/20.

(1) Represents Fed Funds Target Rate, Euro Area Main Refinancing Rate, and Japan Interest Rate on Ordinary Deposits.

# Markets are consistently wrong on the direction of the Fed Funds rate

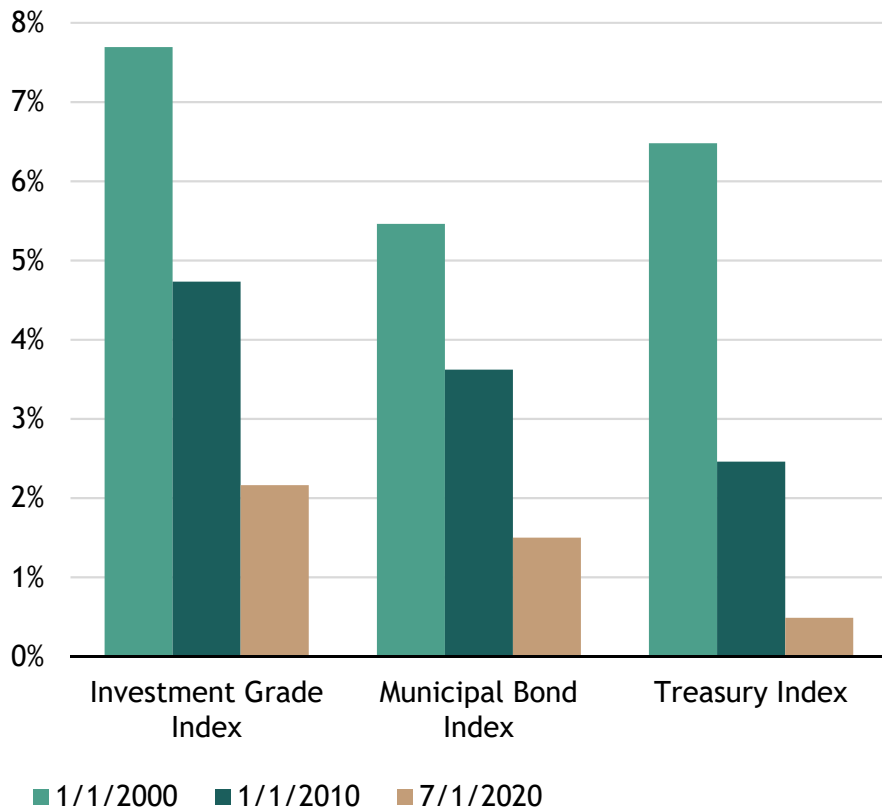
## Actual Fed Funds Rate and Market Expectations Based on Fed Funds Futures



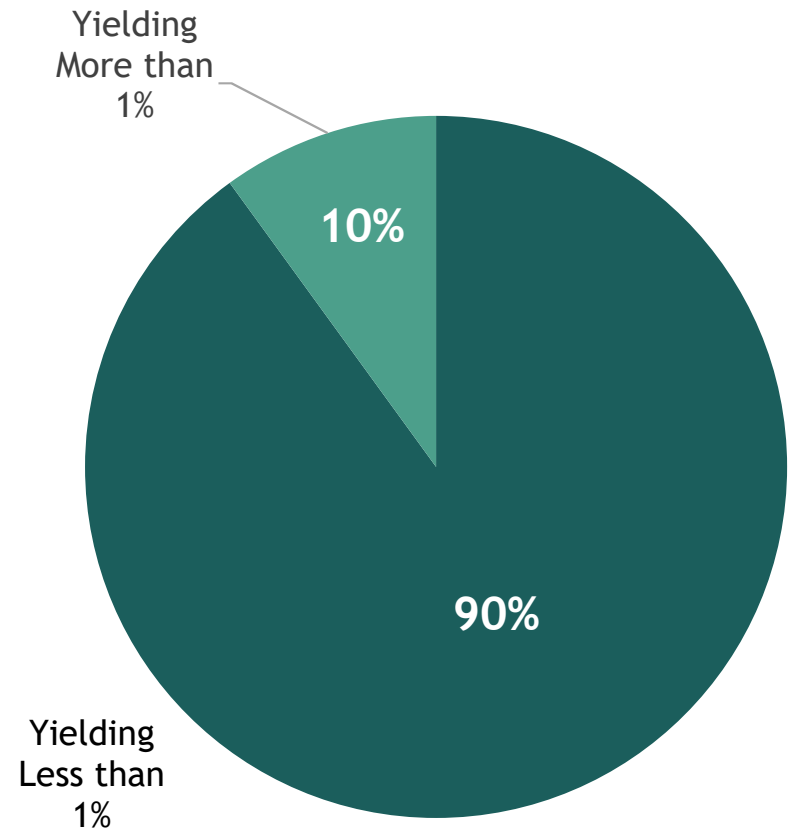
Source: Bloomberg and Blackstone Investment Strategy. Actual Fed Funds data as of 4/30/20. Futures data as of 12/31/19. Represents interest rate probability calculated using Fed Funds Futures.

# Yields in traditional fixed income have declined dramatically over the past two decades

Traditional US Fixed Income Yields<sup>(1)</sup>



Global Developed Sovereign Bond Yields



Source: Bloomberg, Deutsche Bank and Blackstone Investment Strategy, as of 7/1/20.

(1) Represents yield to worst for the respective Bloomberg Barclays Total Return Indices.

# **V. Post-COVID-19 Risks and Opportunities**

# The pandemic has accelerated pre-existing trends and has highlighted new risks and opportunities

## Long-Term Themes Accelerated by COVID-19:

- **Inequality:** Low-income earners were more likely to be fired and less likely to be able to work from home during the lockdowns
- **Shrinking profit margins:** Profit margins likely hit a secular peak before COVID-19 as a result of low wage costs and favorable tax policies; we think strong management teams will be crucial in the years ahead, and that financial engineering won't fuel earnings growth as it did in the past decade
- **State and local government budgets:** Already challenged prior to COVID-19, state/local governments are projected to face severe budget shortfalls
- **Emerging markets:** Most governments are fighting COVID-19 with higher fiscal spending; we think that emerging markets with large gross financing needs are at risk of a surge in refinancing costs
- **Supply chains:** A potential trend towards re-shoring supply chains in areas such as medical supplies could present significant opportunities, in our view
- **Capex:** Companies had already been shifting their capital expenditures towards software/research and development; we think this trend accelerates post-COVID-19
- **Housing:** Strong fundamentals and favorable demographics have created one of the most favorable environments for housing in years, in our view

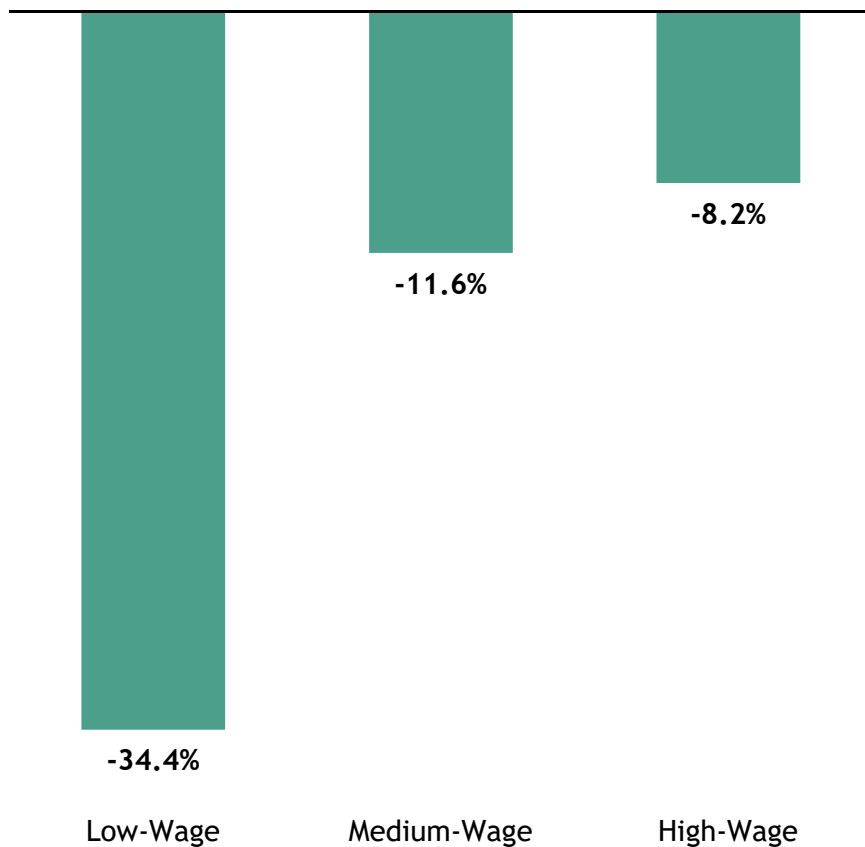
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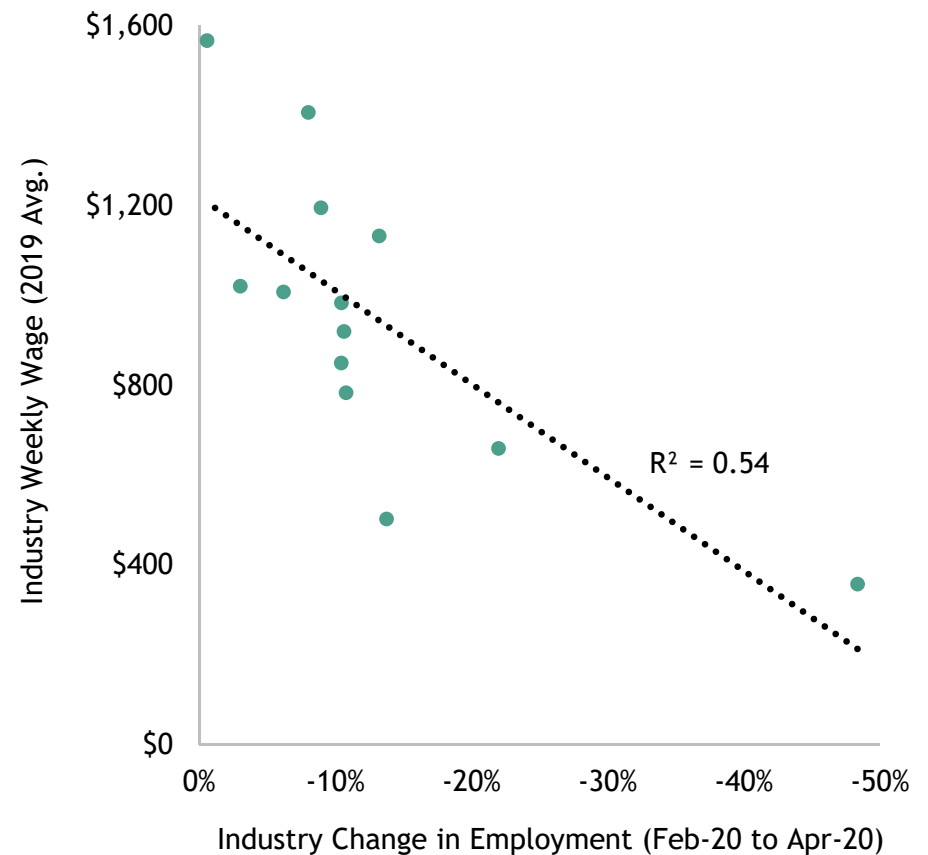
# Low-wage industries have had largest declines in number of employees on payrolls

## Change in Employment by Industry Wages

(Feb-20 to Apr-20, weighted average by number of employees)<sup>(1)</sup>



## Relationship Between Industry Wages and Change in Employment

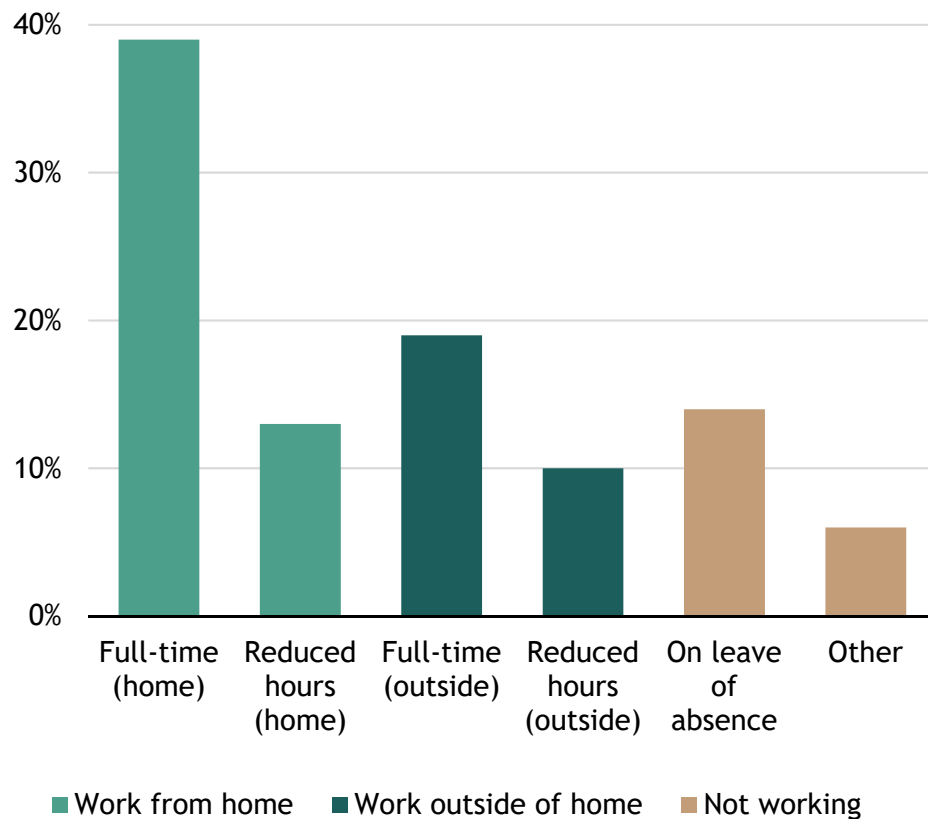


Source: Bureau of Labor Statistics, Haver and Blackstone Investment Strategy, as of 4/30/20. Represents total nonfarm private payrolls. Wages are for production and nonsupervisory employees.

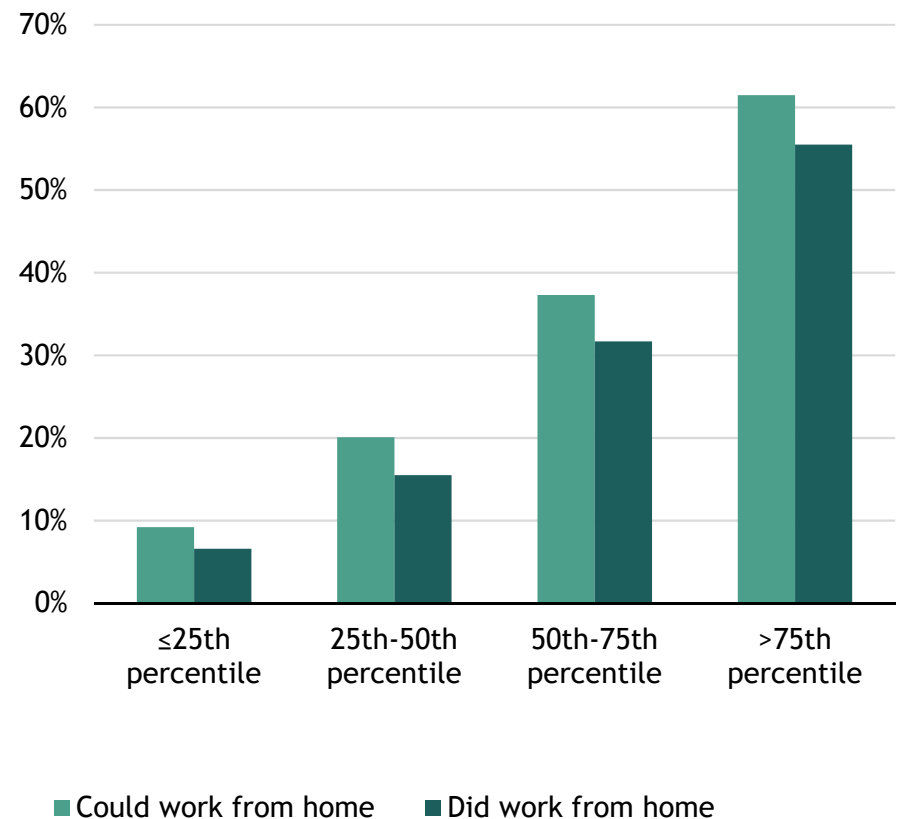
(1) Industries are grouped according to their respective 2019 average weekly wages: “Low-wage” industries (<\$750), “medium-wage” industries (\$750-\$1,000) and “high-wage” industries (>\$1,000). Industry groupings represent weighted average by number of employees as of Feb. 2020.

# Over 50% of US worked from home (WFH) during COVID-19, but ability to WFH varies demographically

Working Arrangements during COVID-19<sup>(1)</sup>



Work From Home by Income Percentile (2017-2018)<sup>(2)</sup>



Source: Bureau of Labor Statistics, Morgan Stanley and Blackstone Investment Strategy.

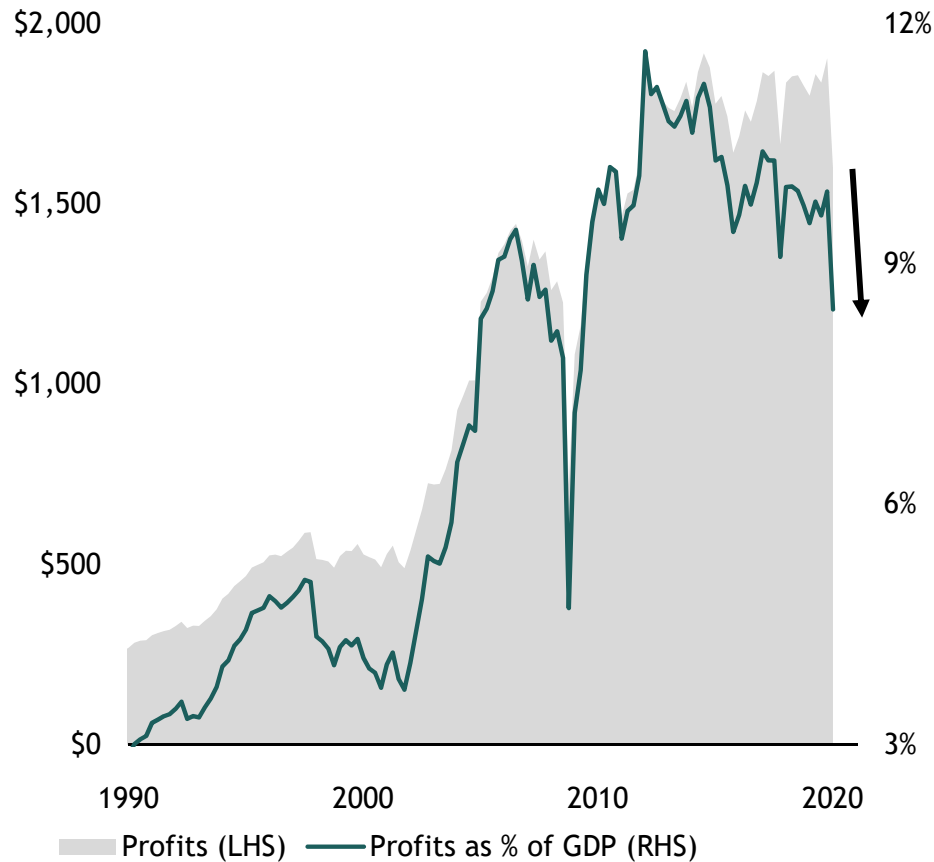
(1) Survey as of 4/20/20.

(2) Based on BLS survey data for the period 2017-2018. Data refer to wage and salary workers at their main jobs.

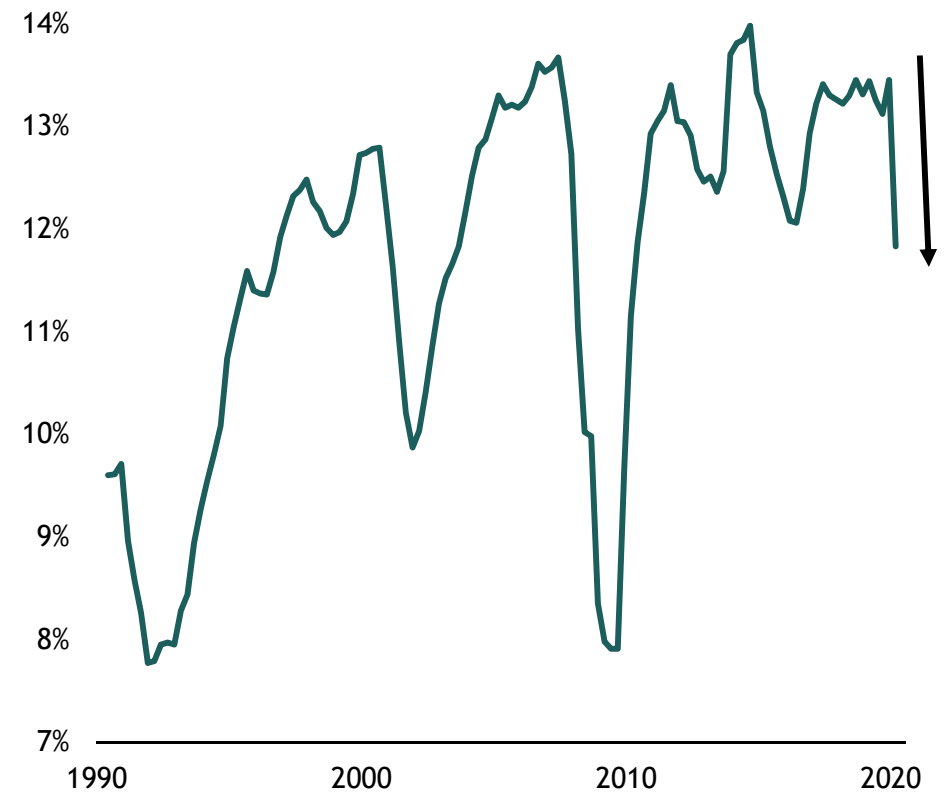
# Corporate profits and margins continue to decline

## Post-Tax Corporate Profits<sup>(1)</sup>

(\$ in billions)



## S&P 500 Operating Margin



Source: Bureau of Economic Analysis, Bloomberg and Blackstone Investment Strategy, as of 3/31/20.

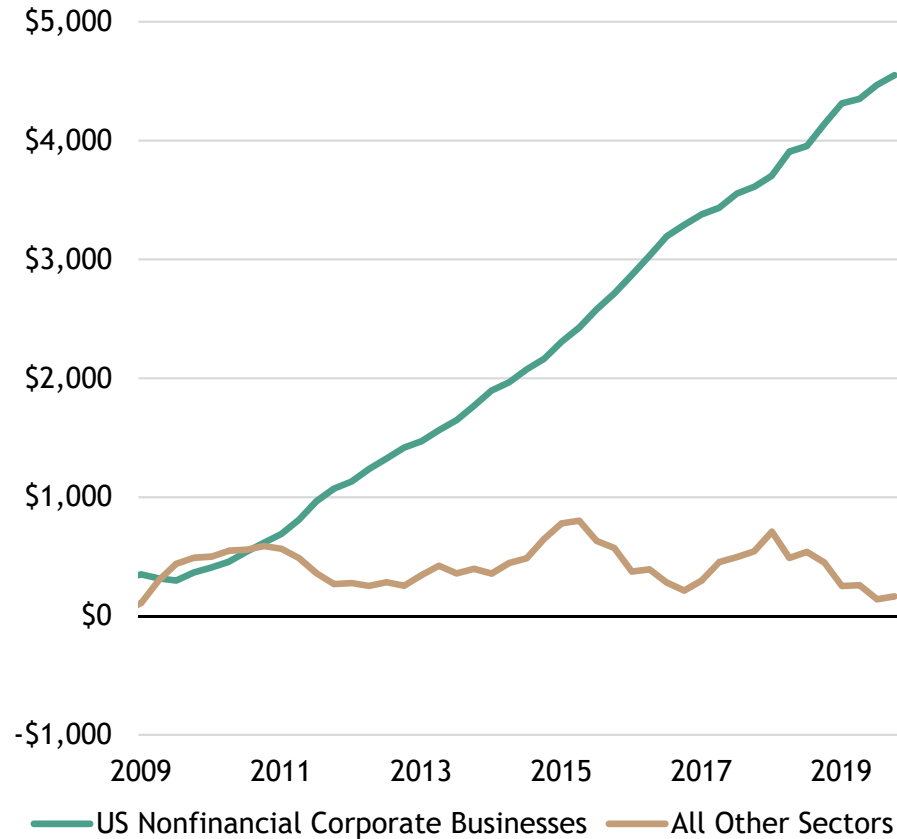
(1) Based on corporate profits after tax (seasonally adjusted annual rate), without inventory valuation or capital consumption adjustments.



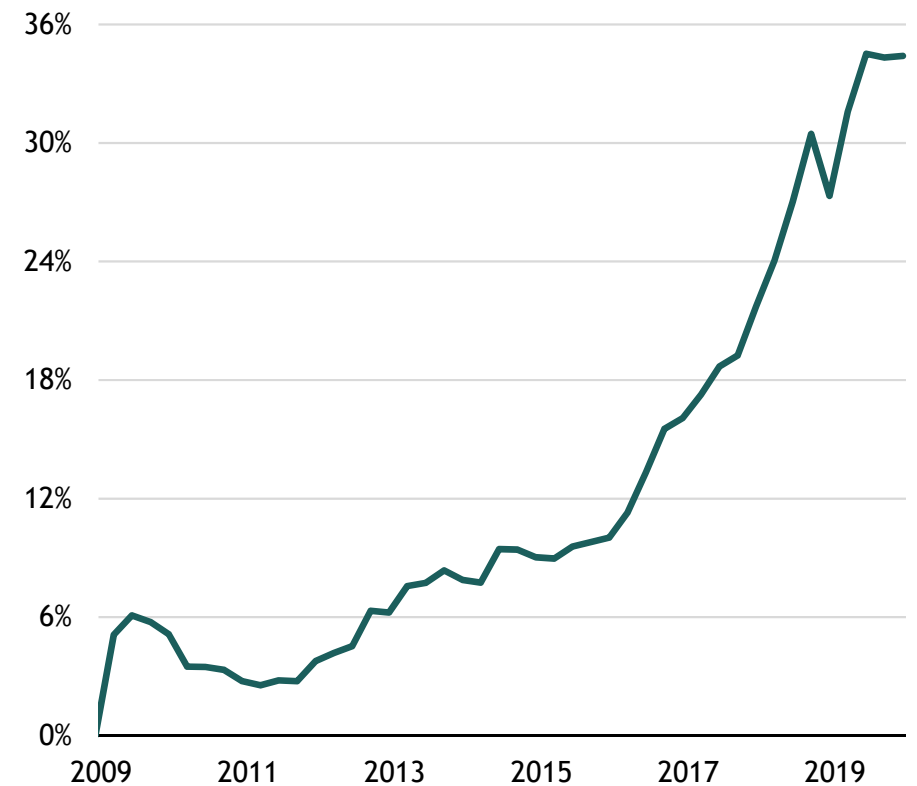
# From 2009 to 2019, corporate buybacks totaled over \$4.5T, accounting for a large proportion of EPS growth

## Cumulative US Equity Purchases<sup>(1)</sup>

(US\$ in billions)



## Cumulative S&P 500 EPS Growth in Excess of S&P 500 Net Income Growth



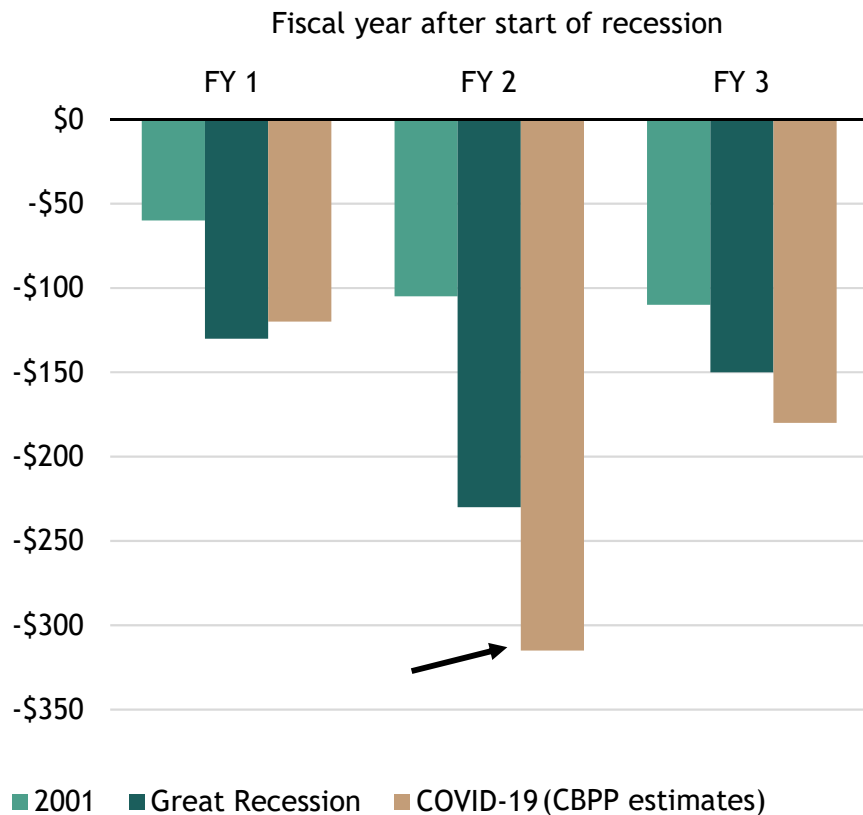
Source: Federal Reserve, Haver Analytics, Strategas Research Partners and Blackstone Investment Strategy, as of 12/31/19.

(1) "US Equity Purchases" represents all US corporate equities, including shares of exchange-traded funds, closed-end funds and real estate investment trusts. "All other sectors" includes all domestic sectors (ex-US nonfinancial corporate business) and foreign sectors.

# COVID-19 state budget shortfalls could be the largest on record; huge revenue shortfalls also expected for cities

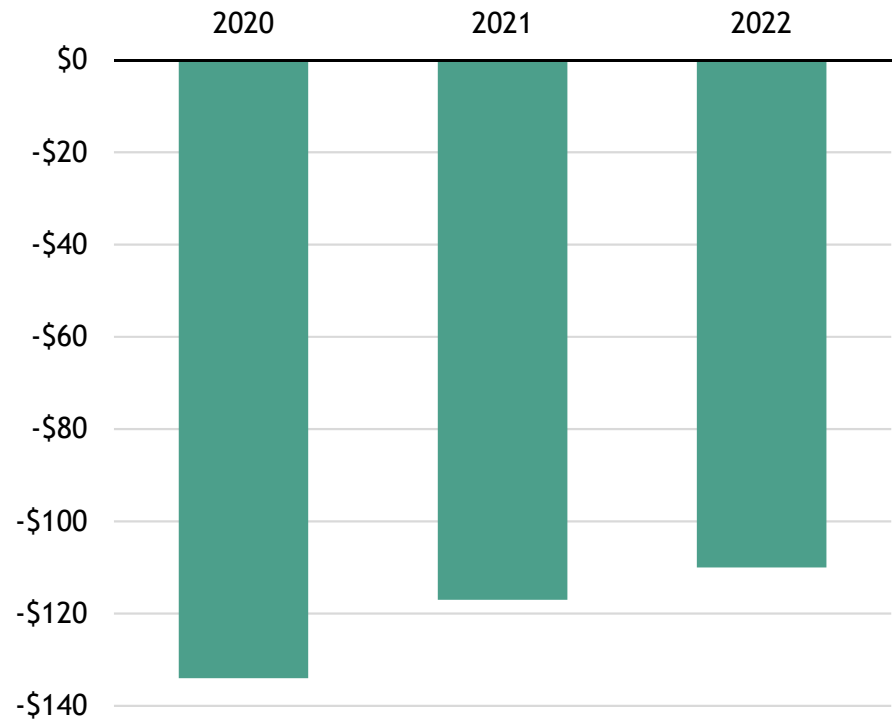
## State Budget Shortfalls After Recessions

(constant 2020 US\$ in billions)



## Estimated Municipal Budget Shortfalls

(US\$ in billions)

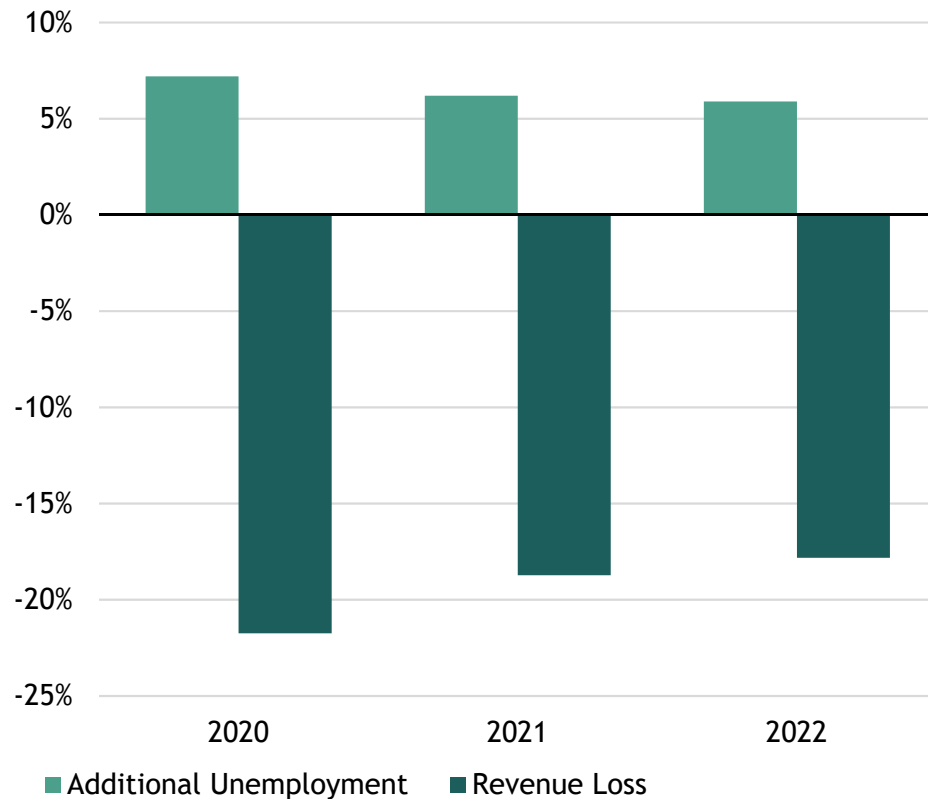


Source: Center on Budget and Policy Priorities and National League of Cities. State budget estimates as of 6/15/20, municipal budget estimates as of 6/08/20.

# For municipal governments, every 1% increase in the unemployment rate results in ~3% decrease in revenues

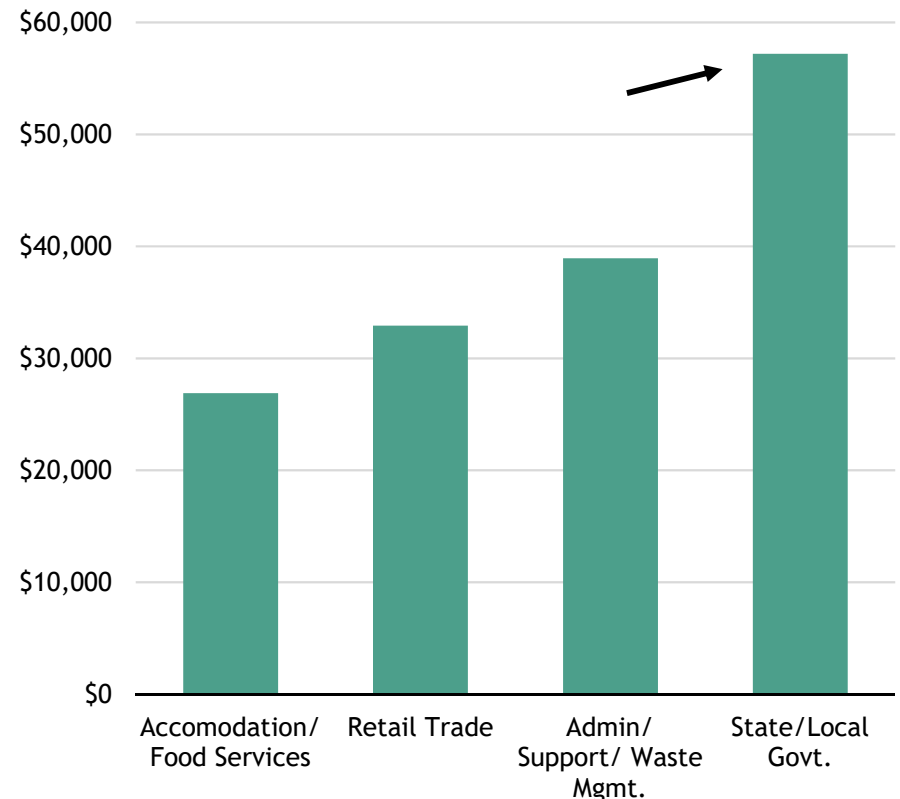
## Estimates for Unemployment Rate and Municipal Government Budget Shortfalls<sup>(1)</sup>

(represents change in estimates since March 2020)



## Average Annual Wage for State/Local Government vs. Selected Sectors<sup>(2)</sup>

(sectors with highest share of job loss from March 20 to May 20)



Source: National League of Cities, Bureau of Labor Statistics and Blackstone Investment Strategy.

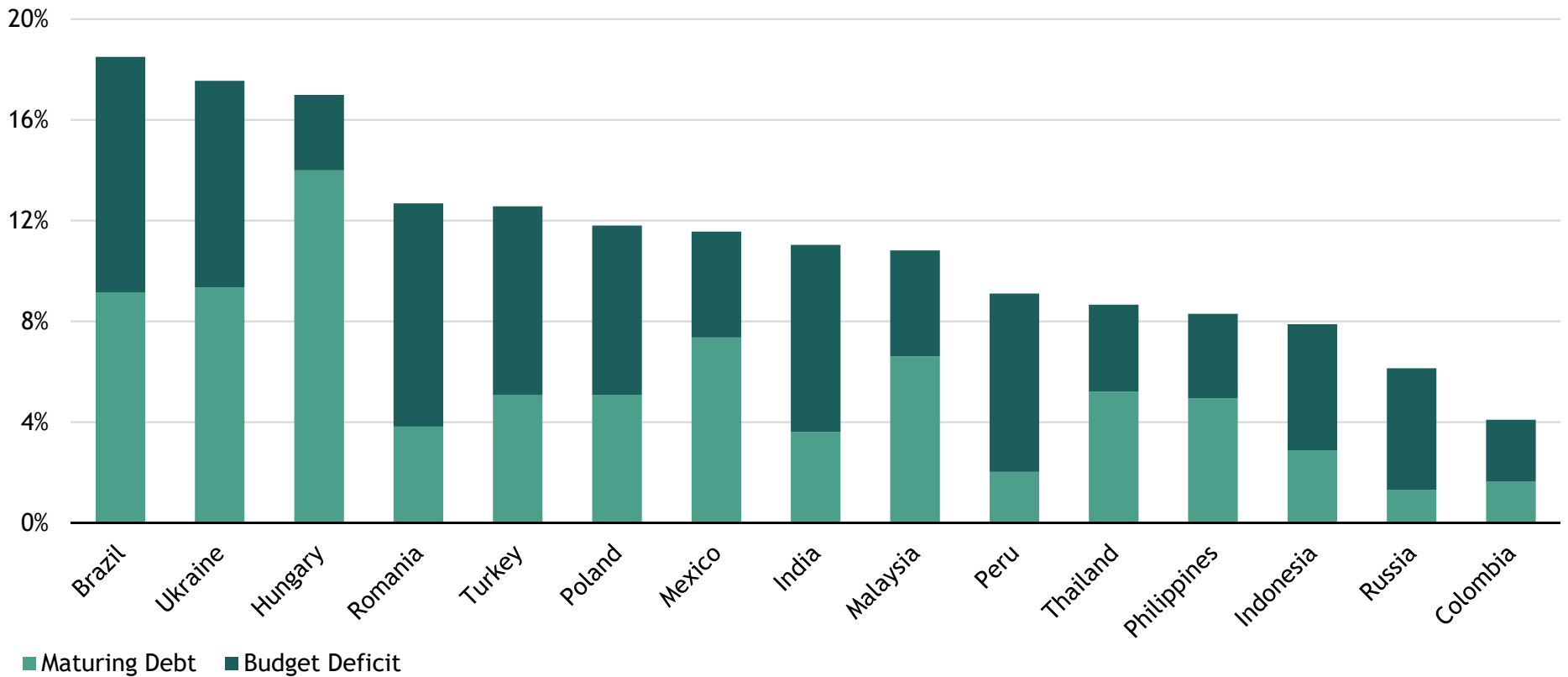
(1) Estimates as of 6/08/20.

(2) Represents weighted average annual wage of state and local government workers, based on current Occupational Employment Statistics report (May 2019), as of 6/26/20.

# Emerging markets with large gross financing needs are at risk of a surge in refinancing costs

## Gross Government Financing Needs in 2020: Selected Emerging Markets

(% of each economy's respective 2020 GDP)

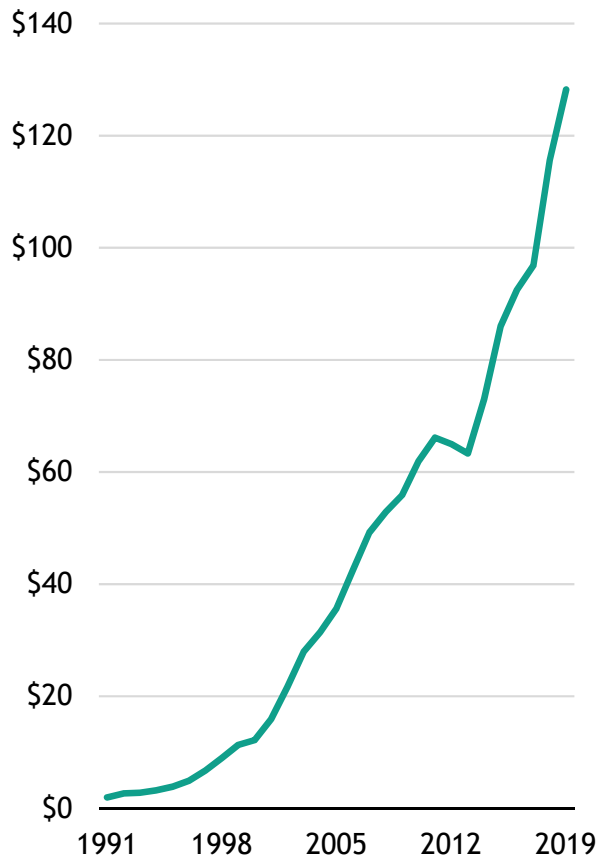


Source: International Monetary Fund and Blackstone Investment Strategy, as of April 2020.

# Trend towards re-shoring supply chains in areas such as medical supplies could present significant opportunities

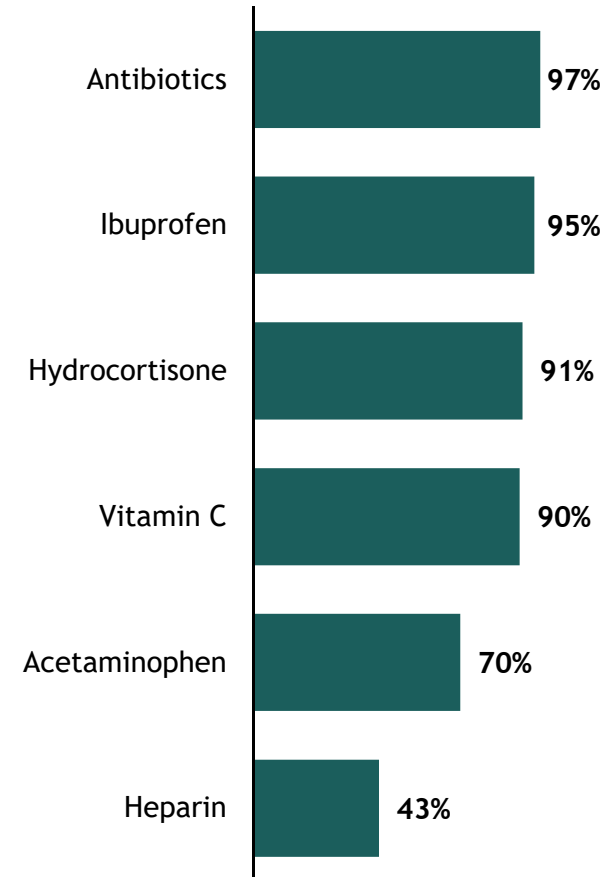
## US Pharmaceutical Imports

(US\$ in billions)



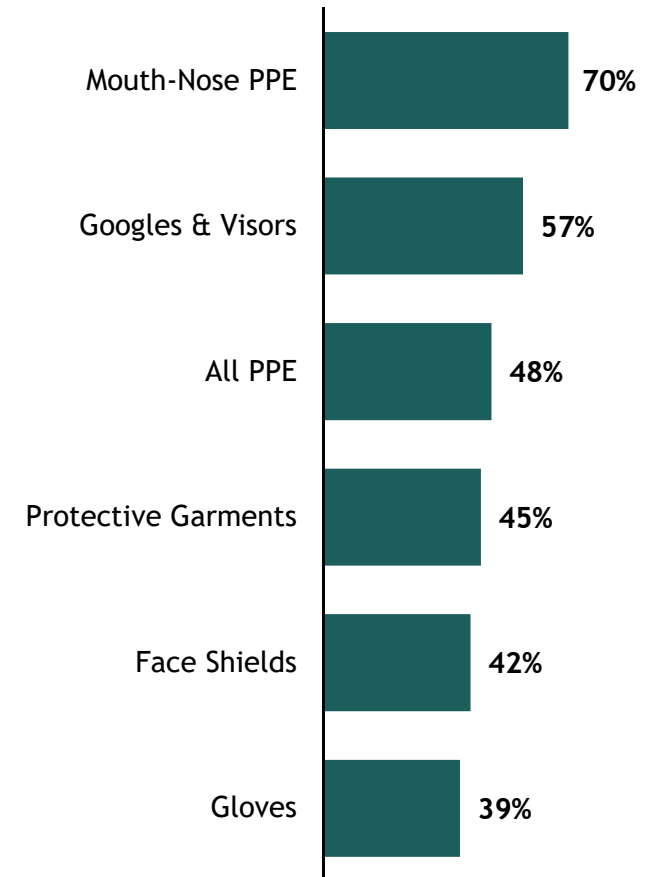
## China's Share of US Market

(Selected Pharmaceuticals Products)



## China's Share of US Market

(Selected Personal Protective Equipment)

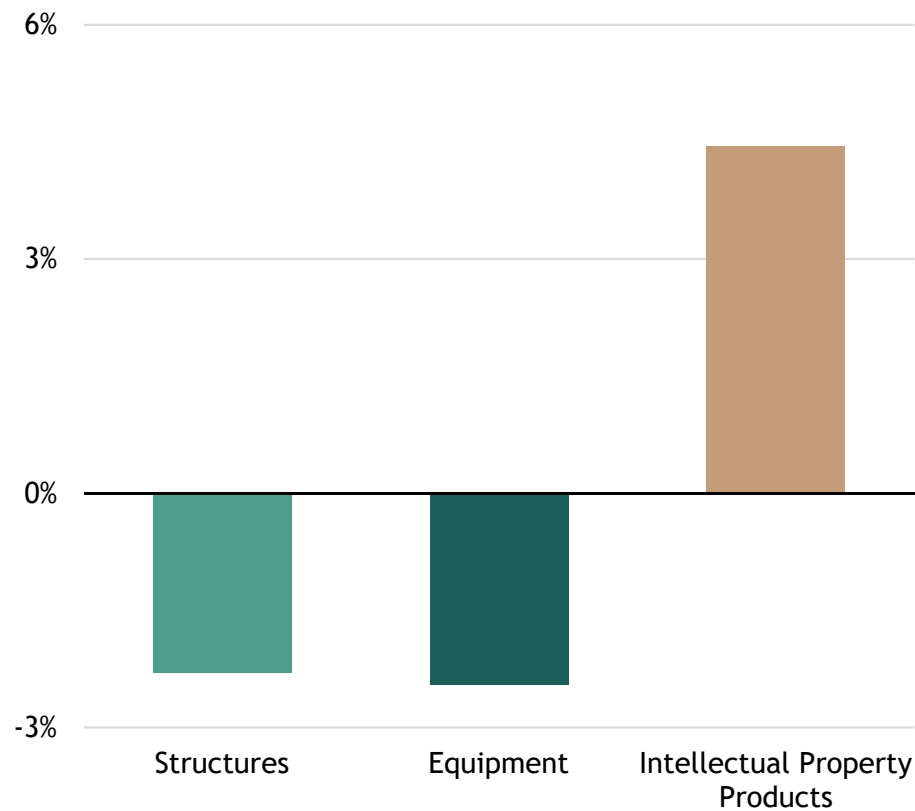


Source: UN COMTRADE, CFR, PIIE and Blackstone Investment Strategy. Imports data as of 2019. Market share data as of 2018.

# Capex on IPP (e.g. software, research & development) capturing greater share of spending

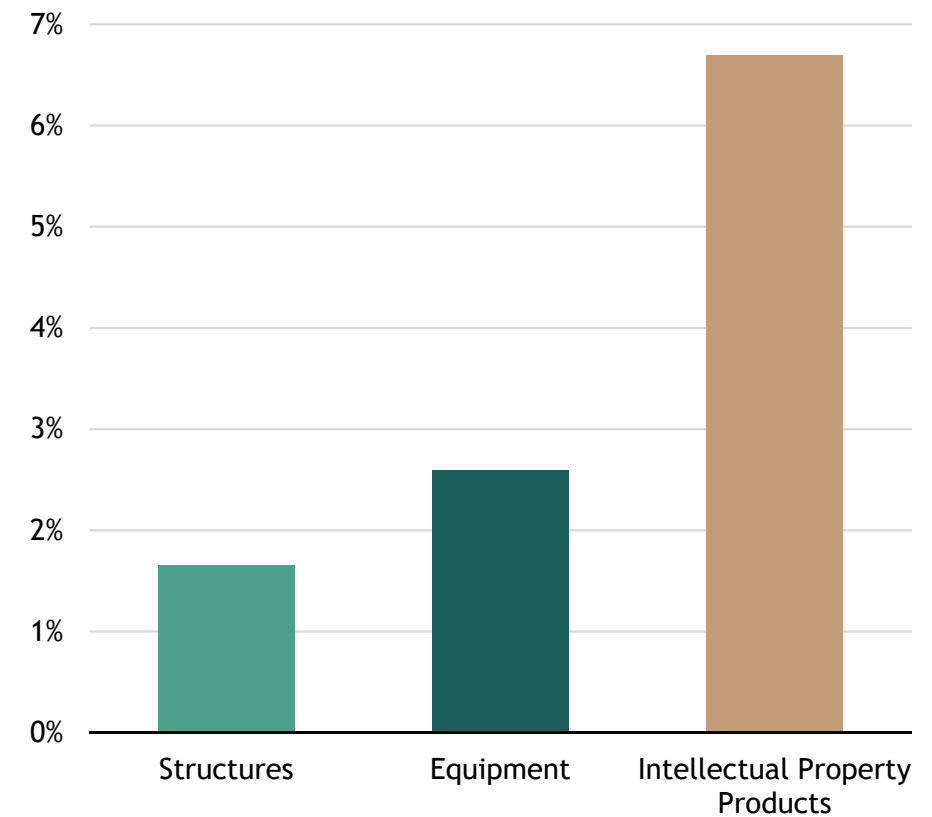
**Change in Share of Total Capex**

(2014 to 2019)



**CAGR in Capex, by Category**

(2014 to 2019)

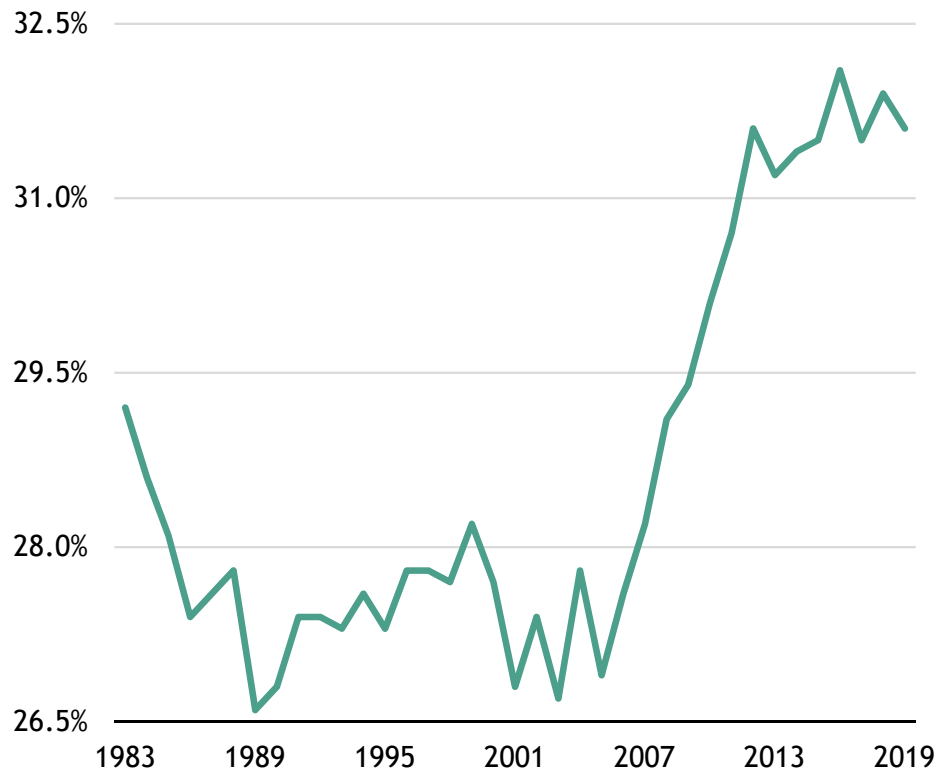


Source: Bureau of Economic Analysis, Haver Analytics and Blackstone Investment Strategy, as of 12/31/19.

# Long-term fundamentals may provide secular tailwind for housing markets

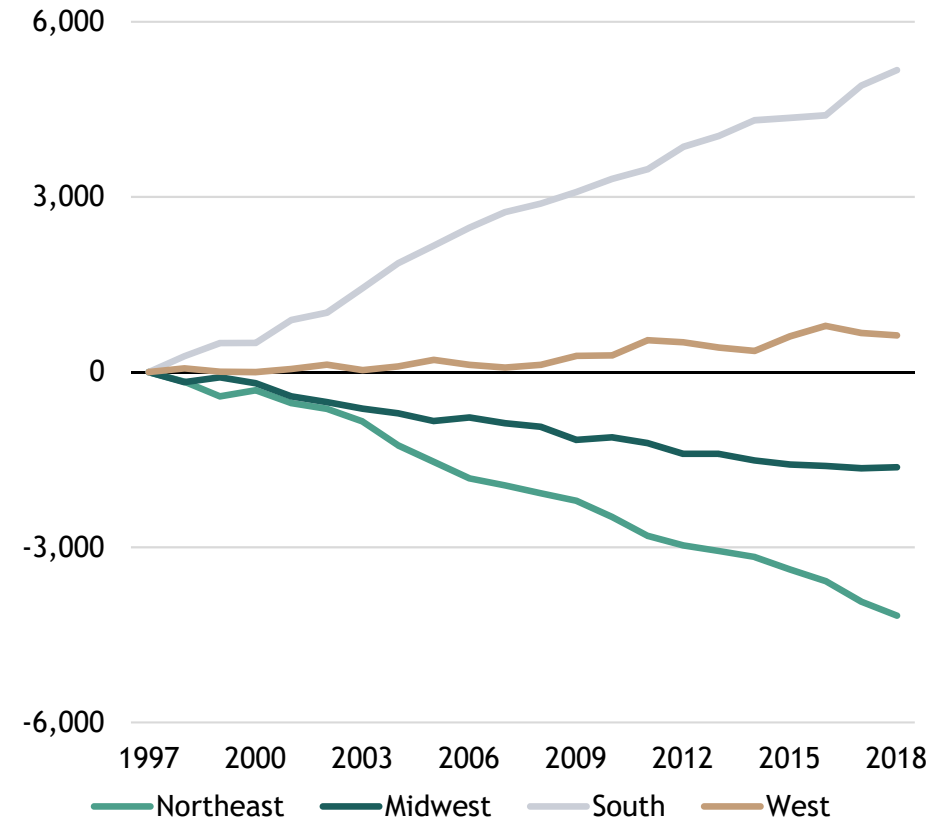
## US Young Adults Living at Home<sup>(1)</sup>

(share of total population aged 18-34)



## Domestic Net Migration by Region<sup>(2)</sup>

(in millions, 1997=0)



Source: Census Bureau, Haver Analytics and Blackstone Investment Strategy

(1) As of 12/31/19. Represents adult children of householders.

(2) As of 12/31/18.

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