

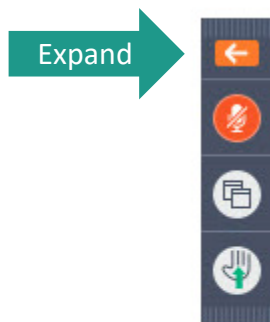


**PERSPECTIVES  
THAT DRIVE  
ENTERPRISE  
SUCCESS**

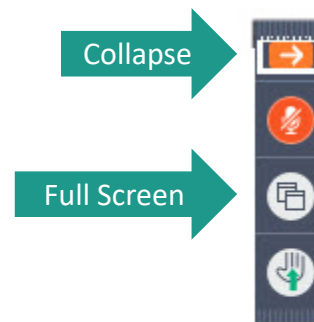
MARCH 17, 2020  
Market Update Webinar



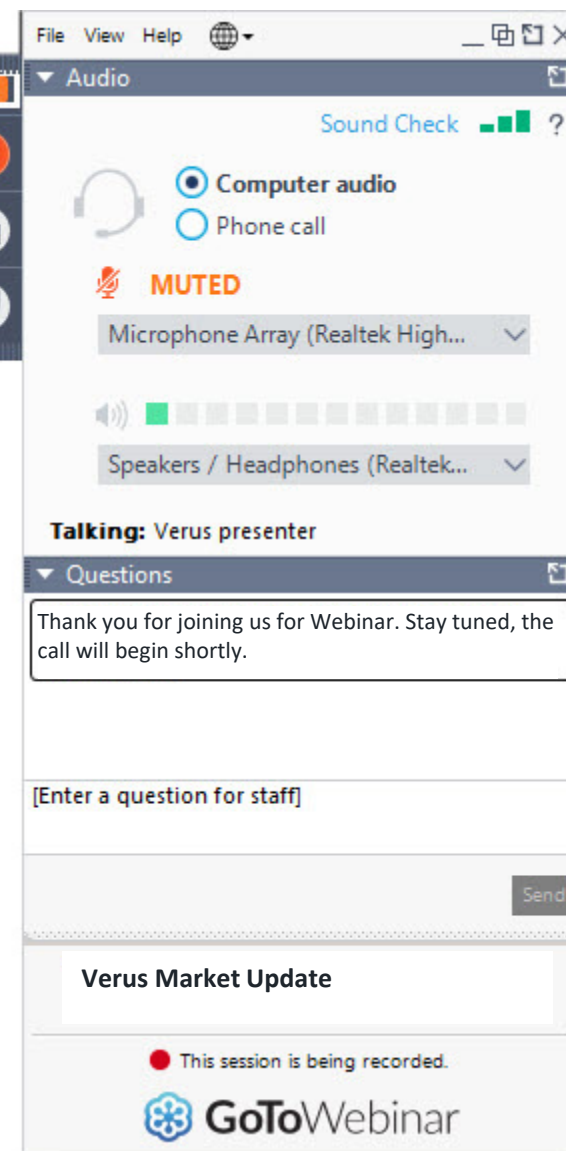
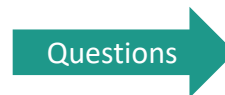
# Call instructions



Use the orange arrow to expand or collapse the control panel



Ask questions here



# Verus market update



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**Audio Options:** You may choose to listen through the webcast on your computer *or* dial in.

**Introduction by:** Jeffrey MacLean, Chief Executive Officer

**Presented by:** Ian Toner, CFA, Chief Investment Officer



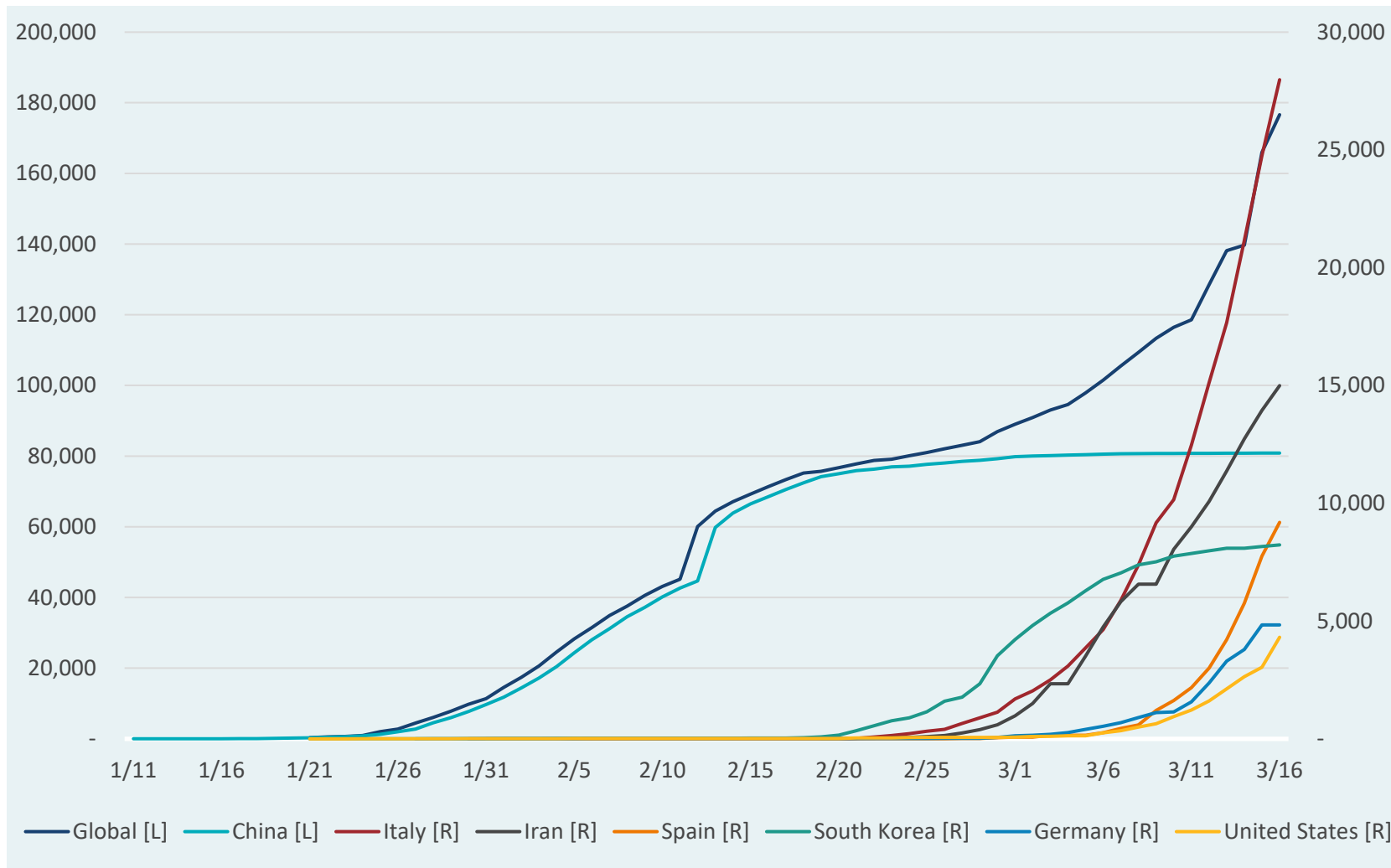
**Jeffrey J. MacLean**  
Chief Executive Officer



**Ian Toner, CFA**  
Chief Investment Officer

# Where are we?

# Global confirmed COVID-19 cases



There appears to be a similar growth pattern wherever this disease appears

Source: Bloomberg, as of 3/16/20

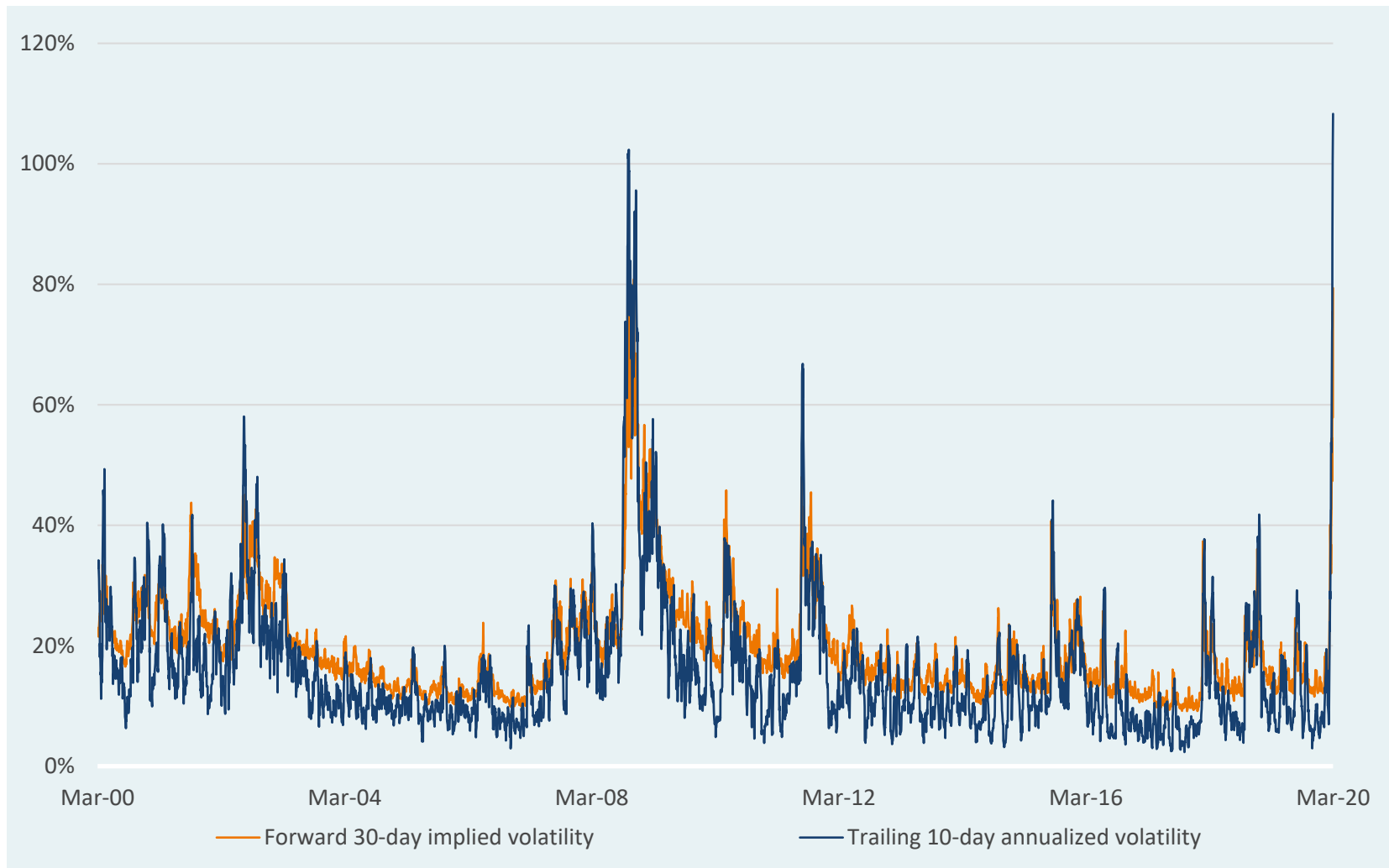
# S&P 500 short term



Short term  
market  
movements  
have felt  
dramatic

Source: Standard & Poor's, Bloomberg, as of 3/16/20

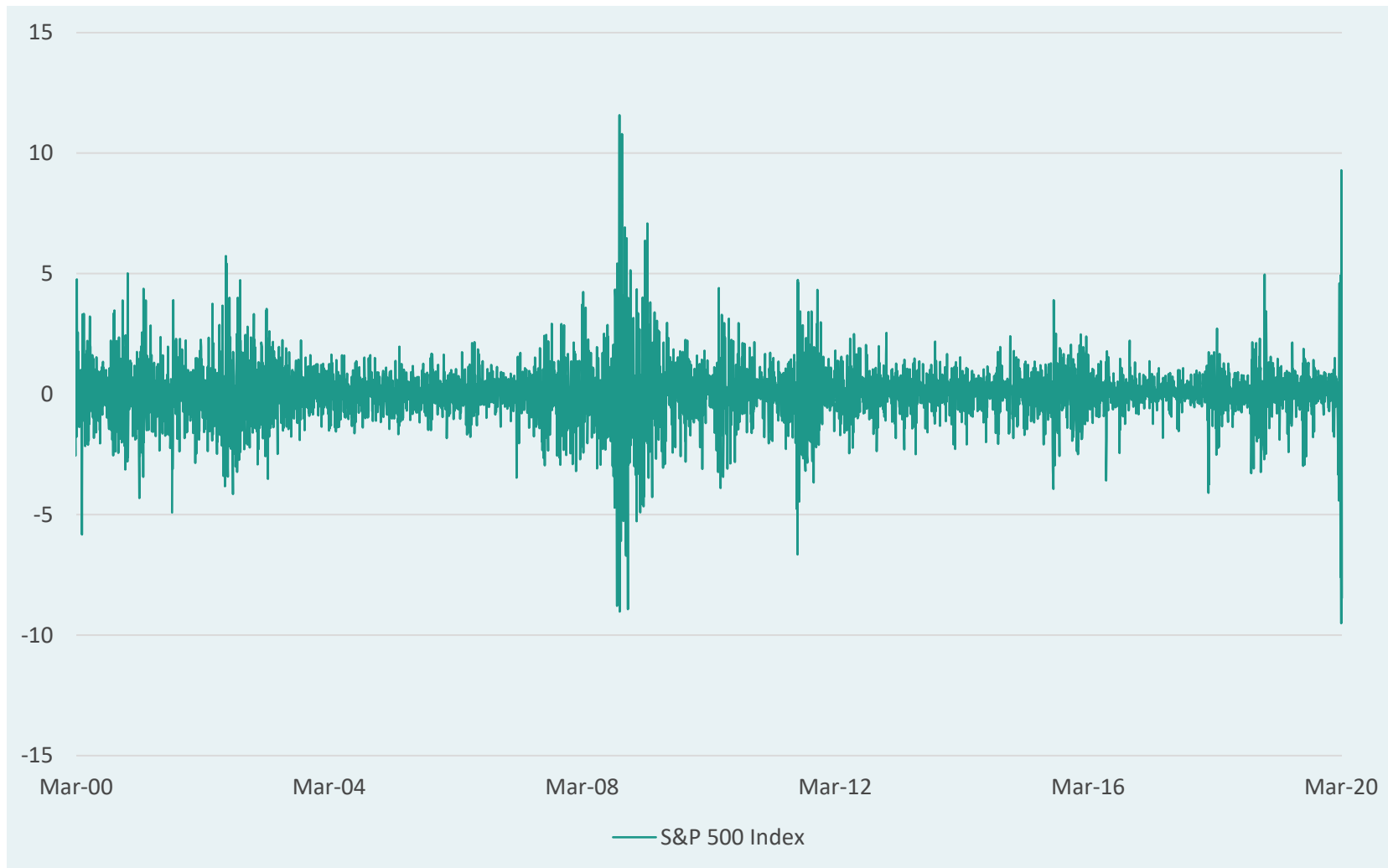
# S&P Volatility



Volatility is extremely high on a short term basis

Source: CBOE, Standard & Poor's, Bloomberg, as of 3/16/20

# S&P 500 1-day percentage change



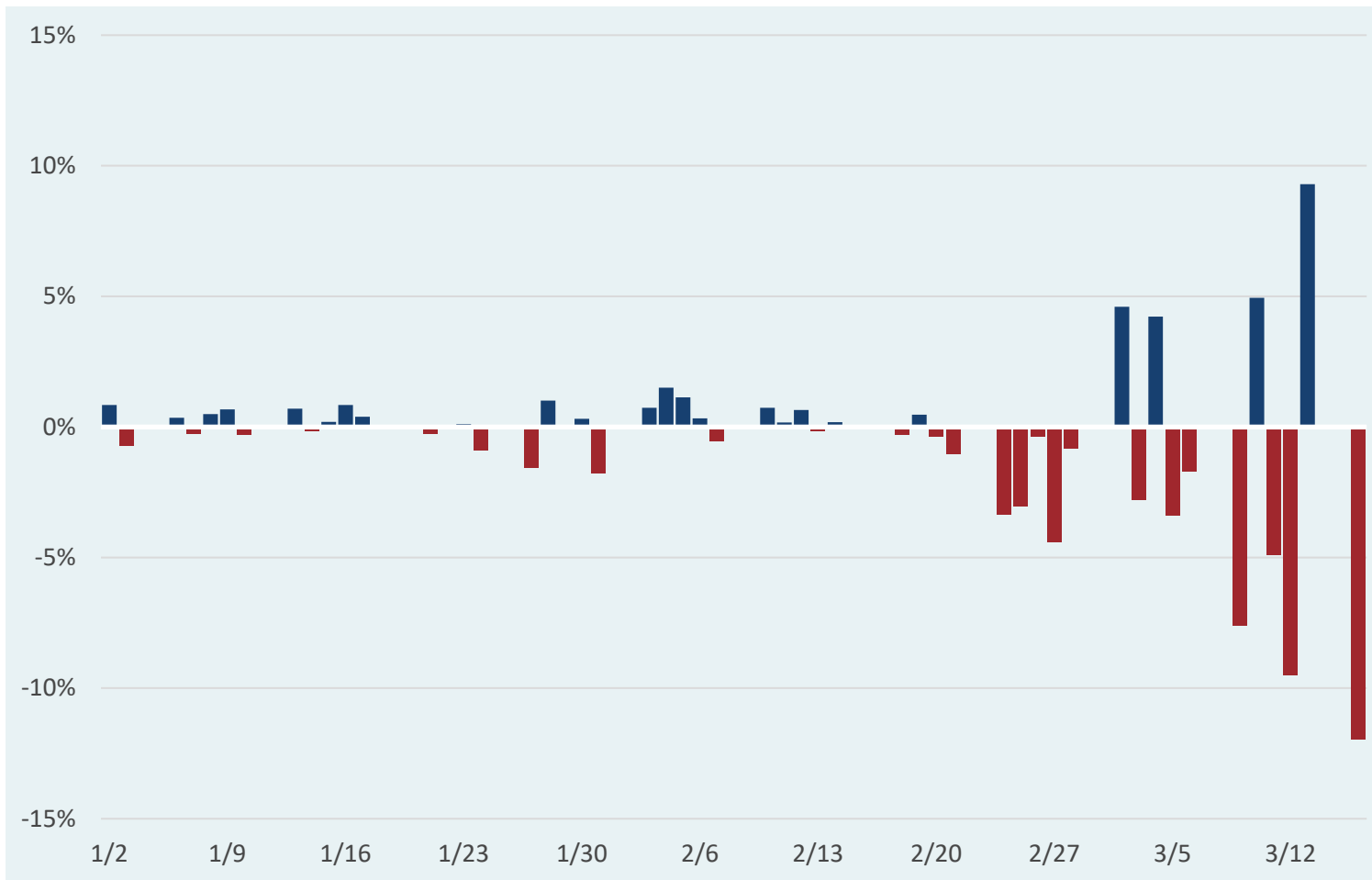
The size of one-day moves is much higher than usual

Source: Standard & Poor's, Bloomberg, as of 3/16/20



# Volatility remains at historic levels

S&P 500 INDEX: YEAR-TO-DATE 1-DAY PRICE RETURNS (%)



In the past three trading sessions, the S&P 500 has posted returns of -9.5%, +9.3%, and -12.0%

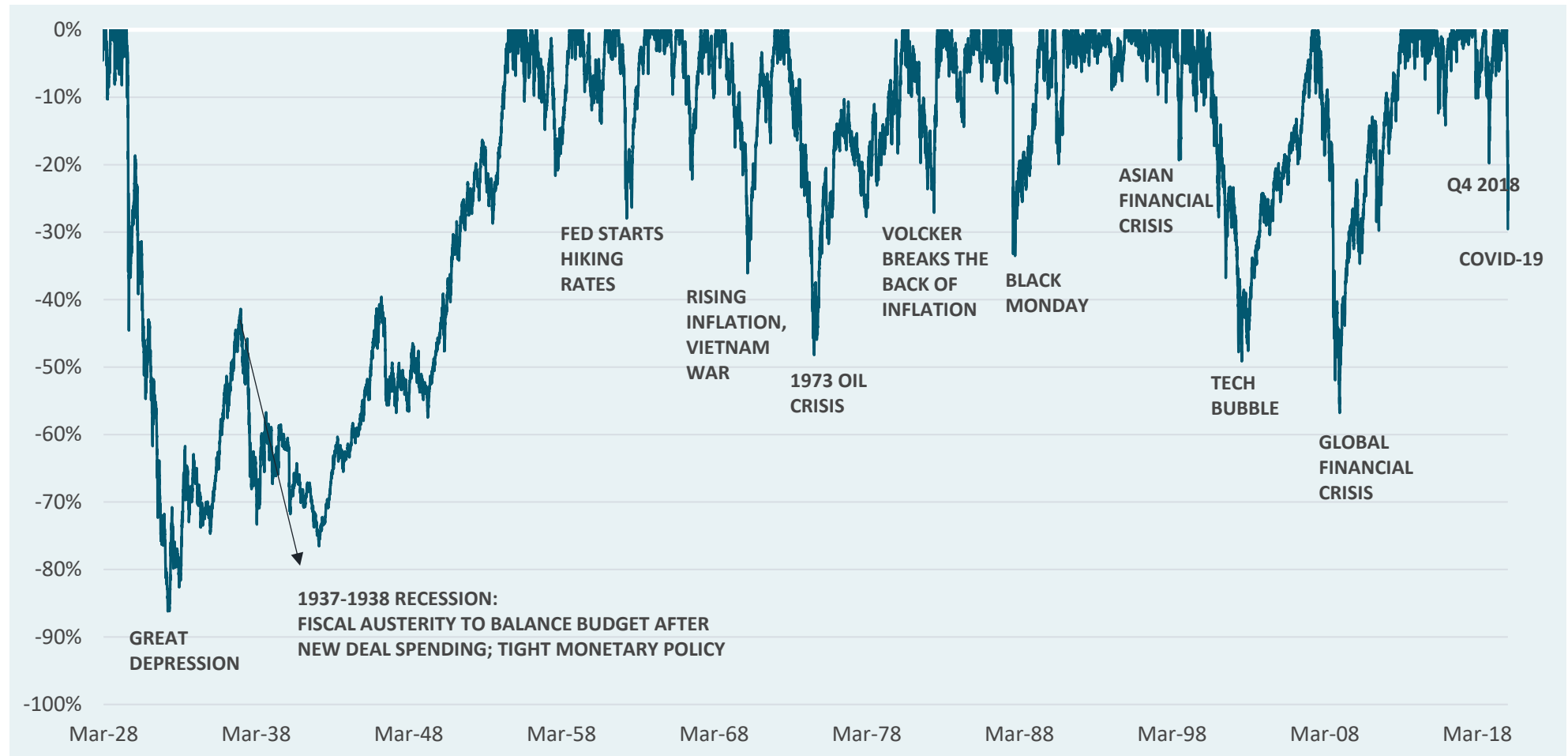
The last time the S&P 500 moved this much for three consecutive sessions was during the Great Depression

The benchmark posted price returns of -12.9%, -10.2%, and +12.5% between October 28<sup>th</sup> and October 30<sup>th</sup>, 1929

Source: Standard & Poor's, Bloomberg, as of 3/16/20

# Corrections do happen, sometimes worse

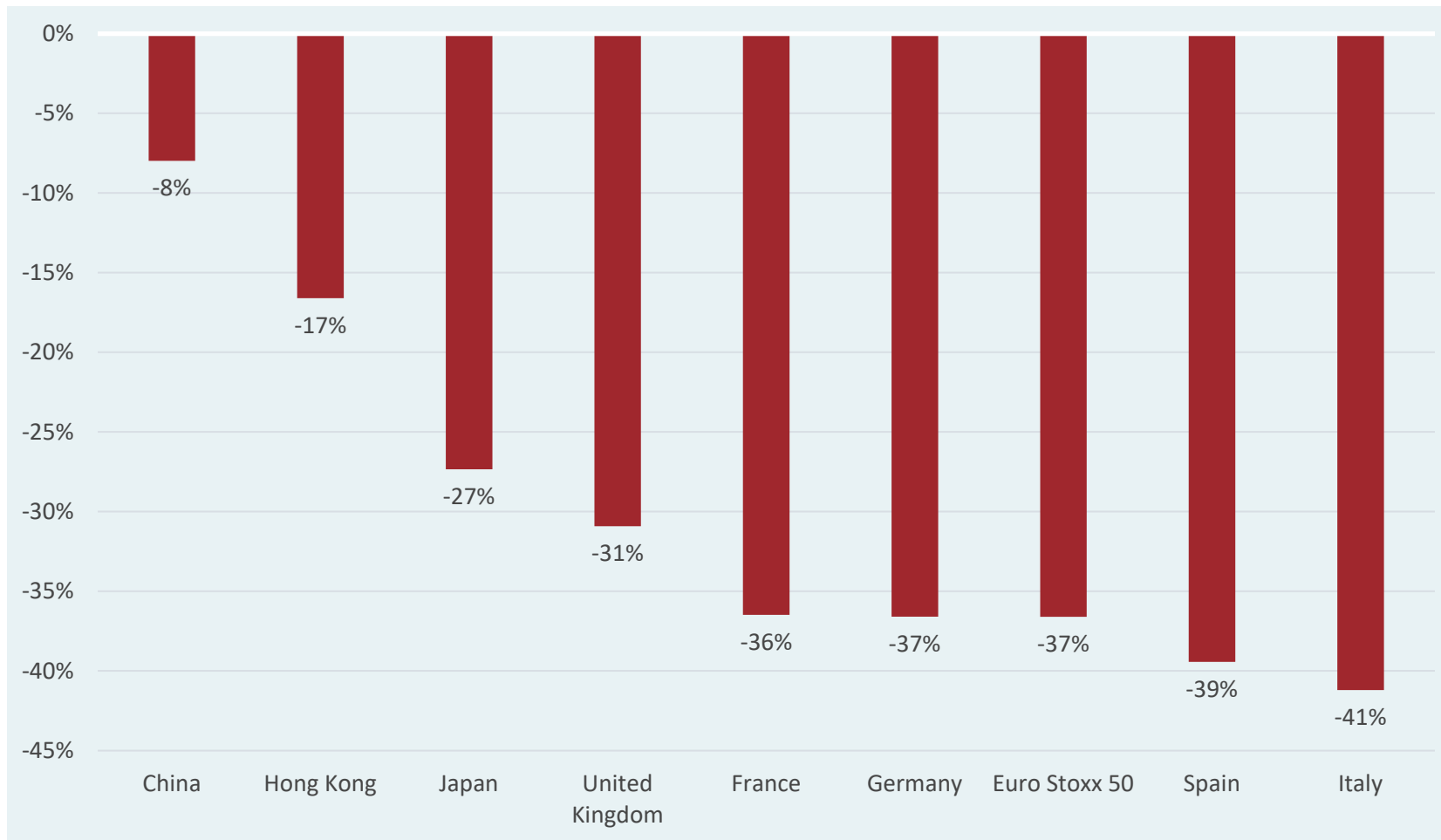
## MAX DRAWDOWN FROM PREVIOUS ALL-TIME-HIGH



Source: Standard & Poor's, Bloomberg, as of 3/16/20

# International equity performance

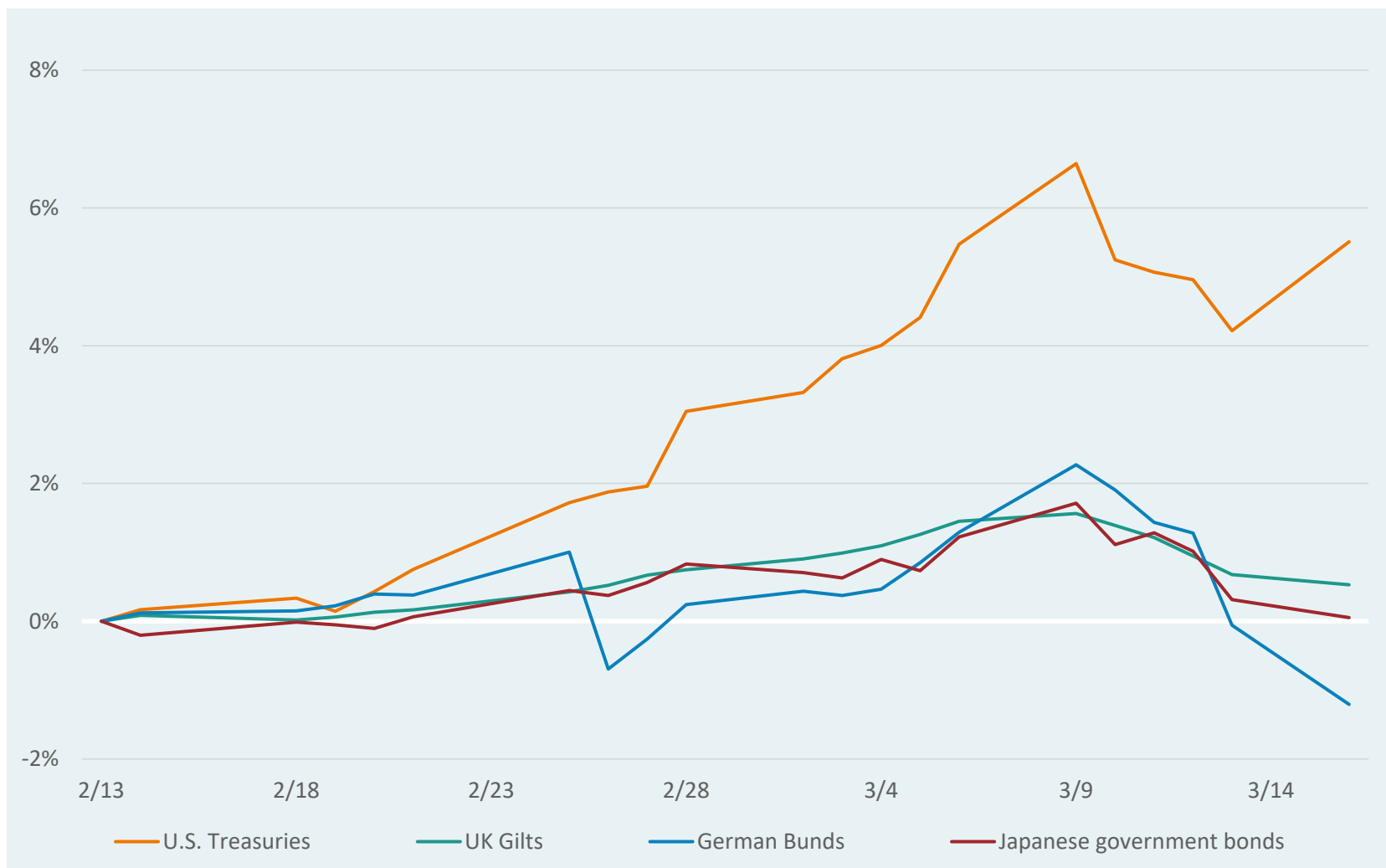
PERFORMANCE SINCE U.S. EQUITY MARKET PEAK: (2/19/20 - 3/16/20)



The impact has  
been felt  
globally

Source: Bloomberg, as of 3/16/20

# Rates performance

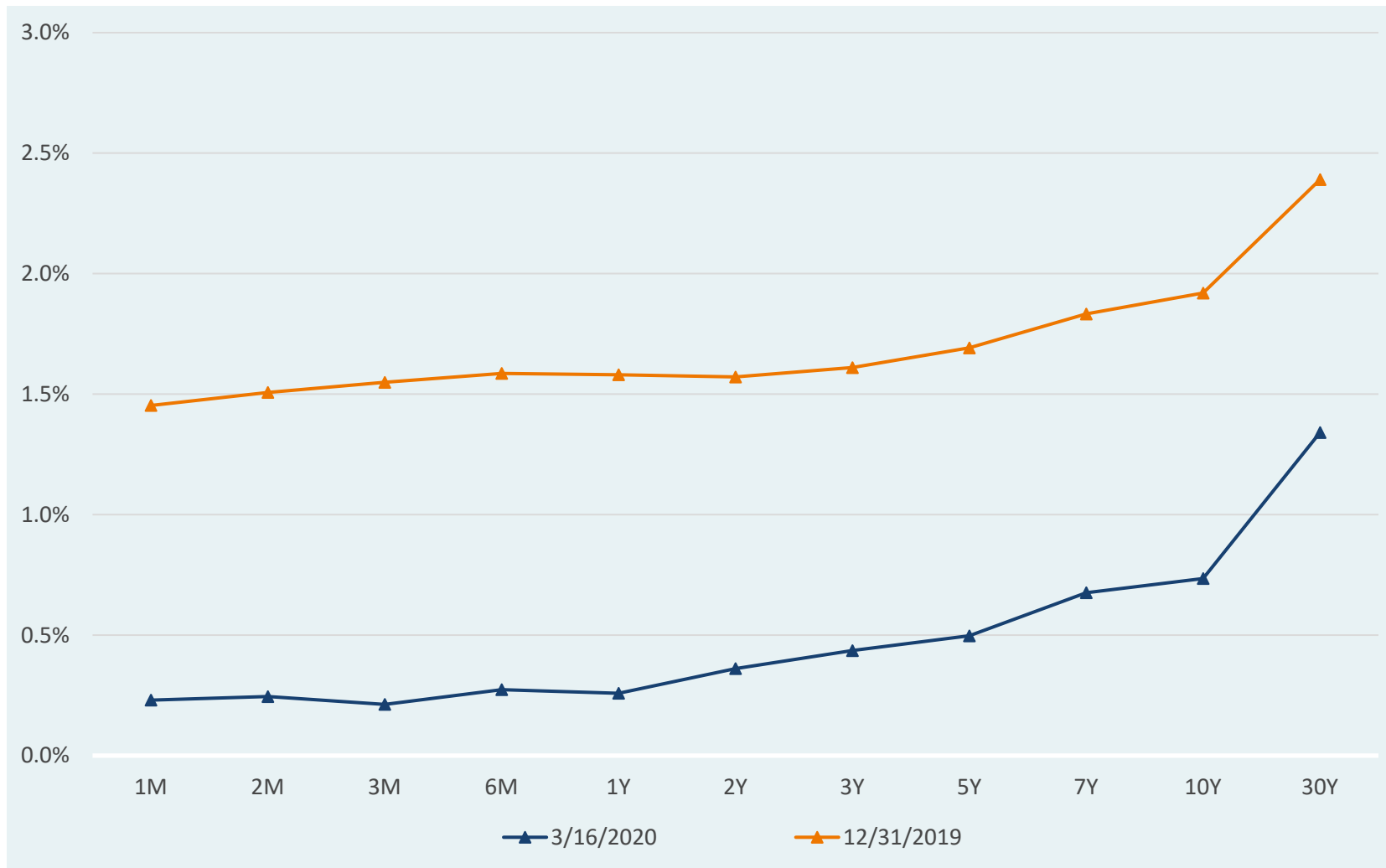


U.S.  
Government  
bonds have  
provided  
diversification

Source: Bloomberg, as of 3/16/20



# U.S. Treasury curve

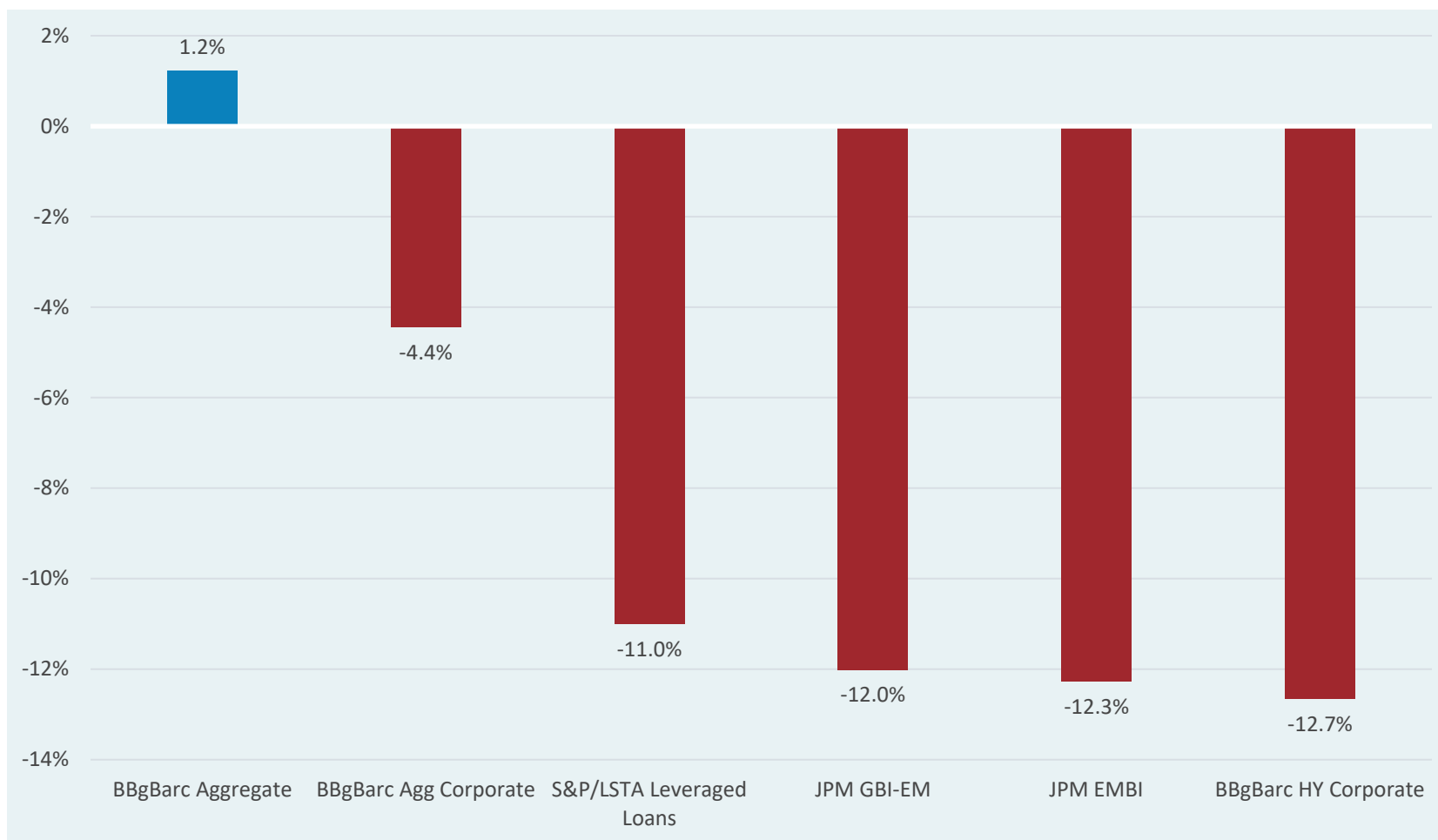


The curve has moved down markedly

Source: U.S. Treasury, Bloomberg, as of 3/16/20

# Credit performance

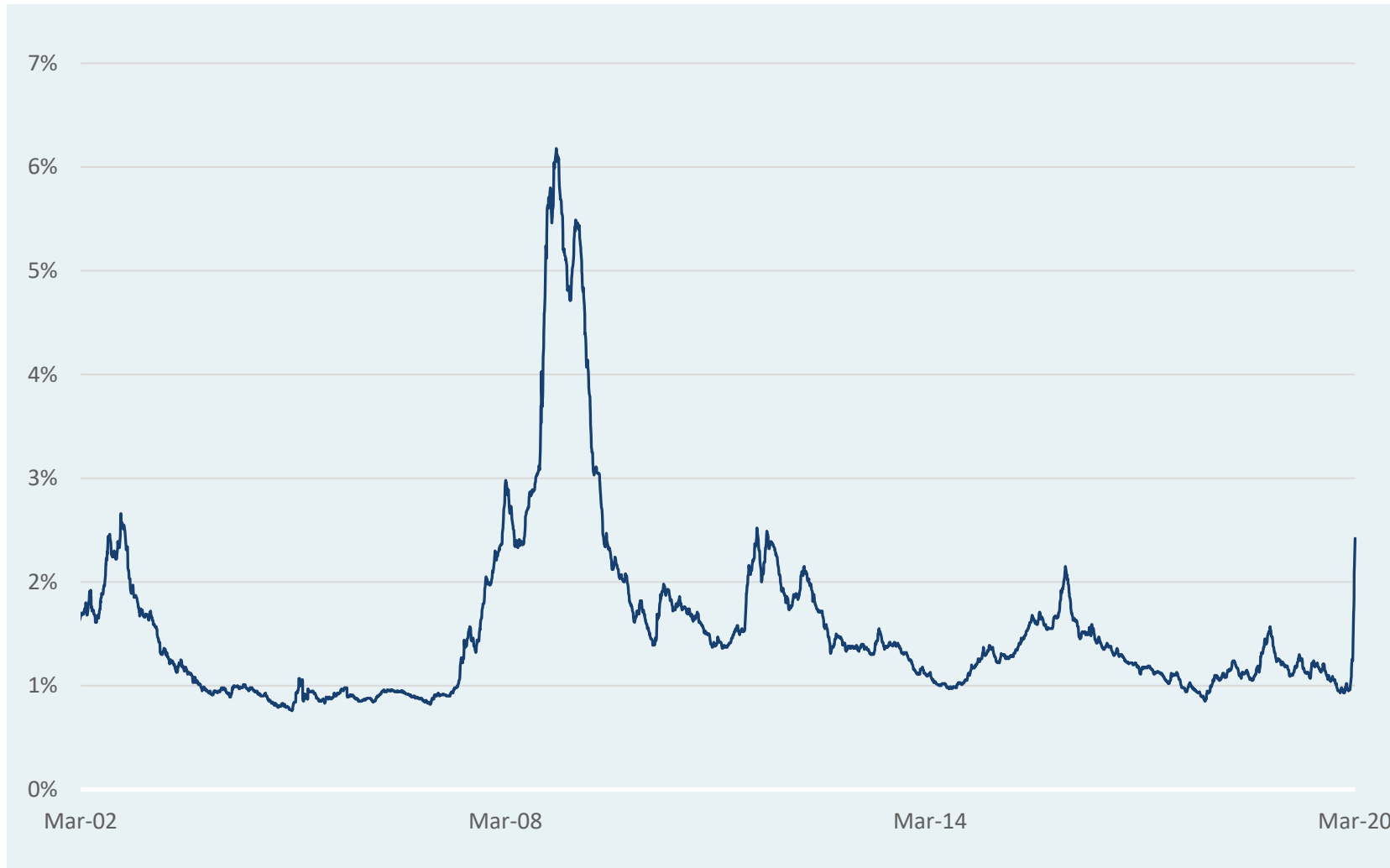
PERFORMANCE SINCE U.S. EQUITY MARKET PEAK: (2/19/20 - 3/16/20)



Credit fixed income has provided less effective diversification than rates

Source: Bloomberg, as of 3/16/20

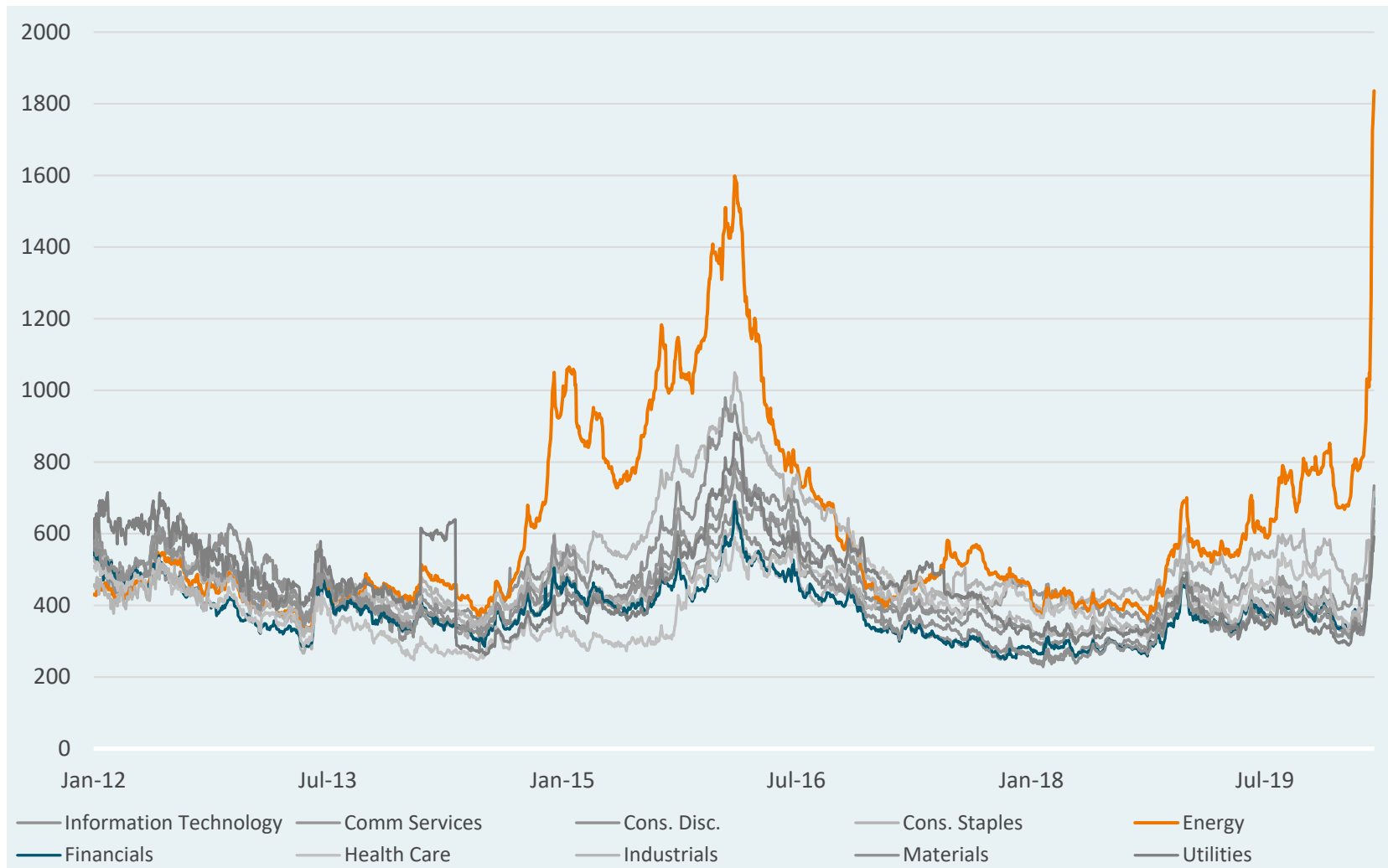
# Investment grade credit spreads



Credit spreads are significantly wider, but below peaks from the GFC

Source: Bloomberg, as of 3/16/20

# High yield spreads



High yield spreads have moved substantially, particularly in Energy

Source: Bloomberg, as of 3/16/20



# Remember the longer-term story

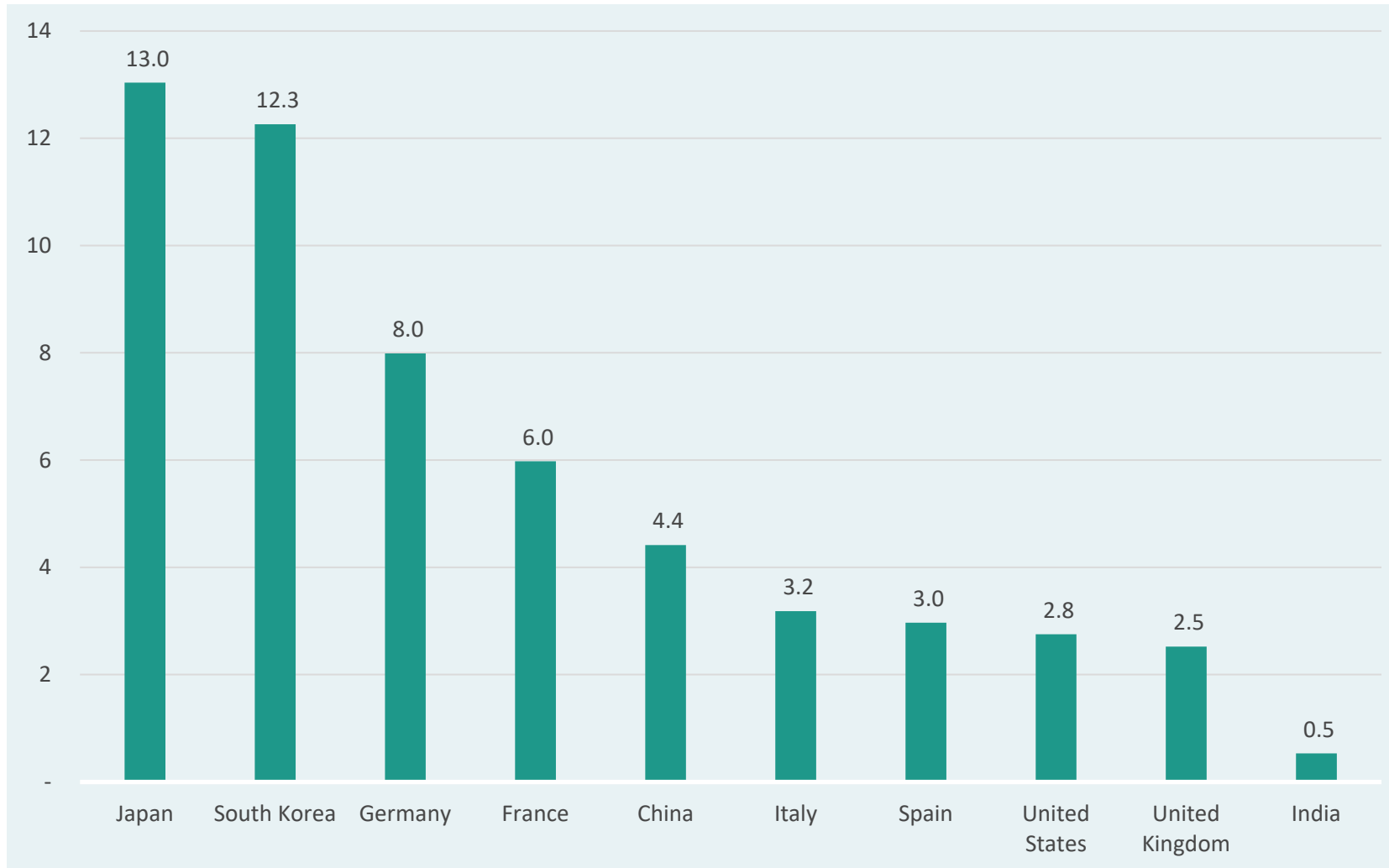
S&P 500 Price Index – log scale



Source: Standard & Poor's, Bloomberg, as of 3/16/20

# Health impact

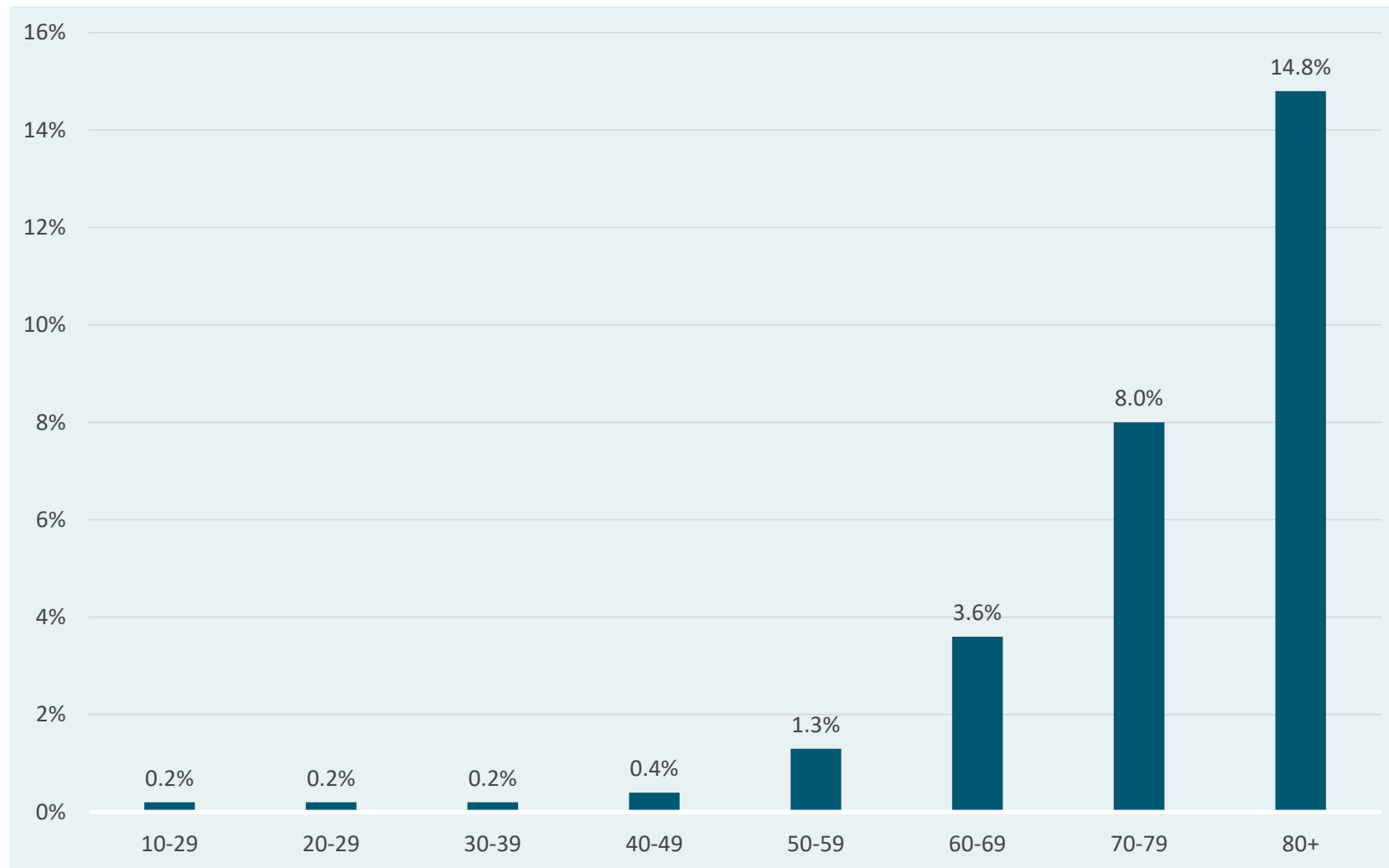
# Hospital beds per 1,000 inhabitants



Availability of hospital beds is the key determinant of successful management of the disease

Source: World Bank, as of 2017

# Mortality rates by age group

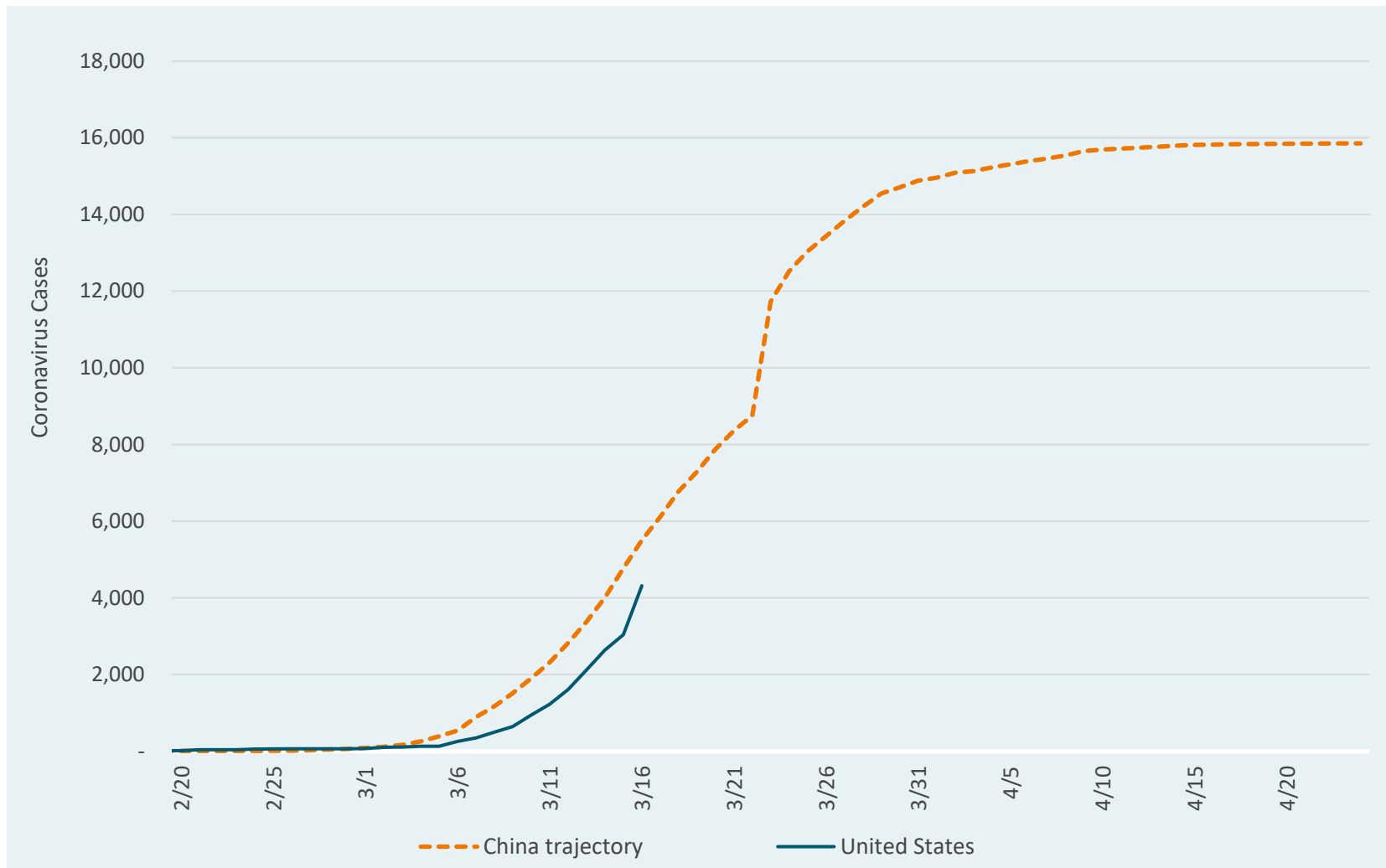


Initial evidence is that this focuses on the older population in terms of mortality – but younger people can still get materially ill

Source: Chinese Center for Disease Control & Prevention



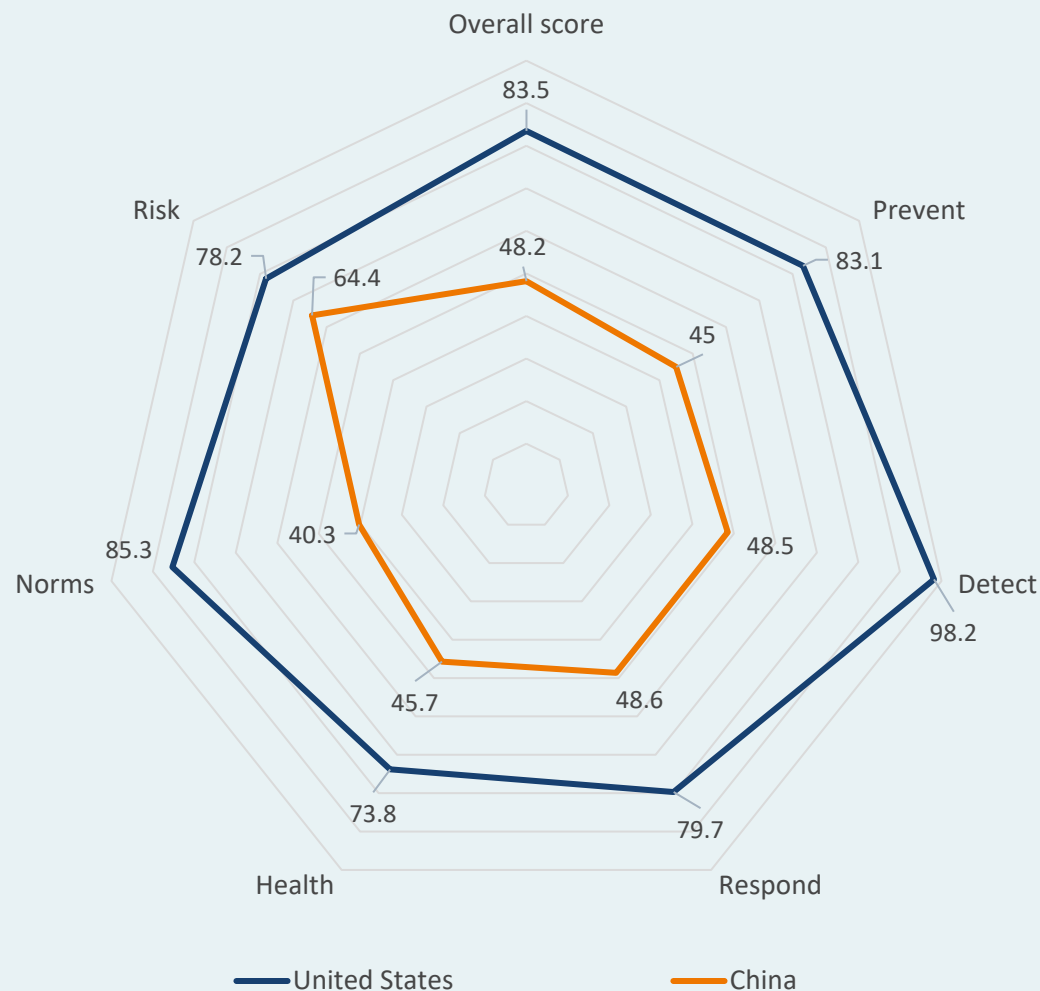
# U.S. vs China disease trajectory



Will the U.S. follow the trajectory that China took?

Source: Verus, adjusted for population size differences

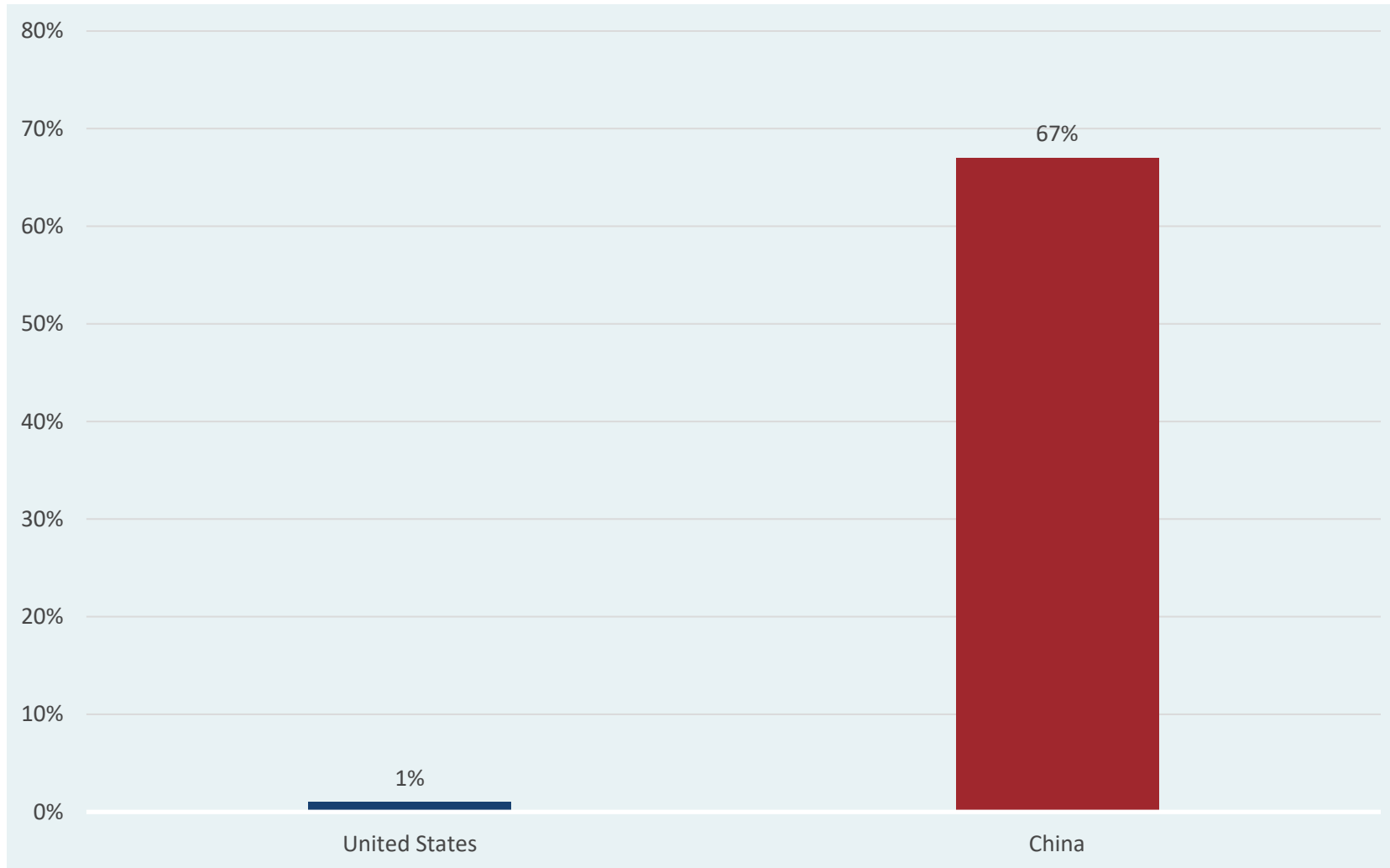
# Global health security index scores



China and the U.S. are not the same in terms of health care systems

Source: Global Health Security Index, as of 2019

# Population facing movement restrictions



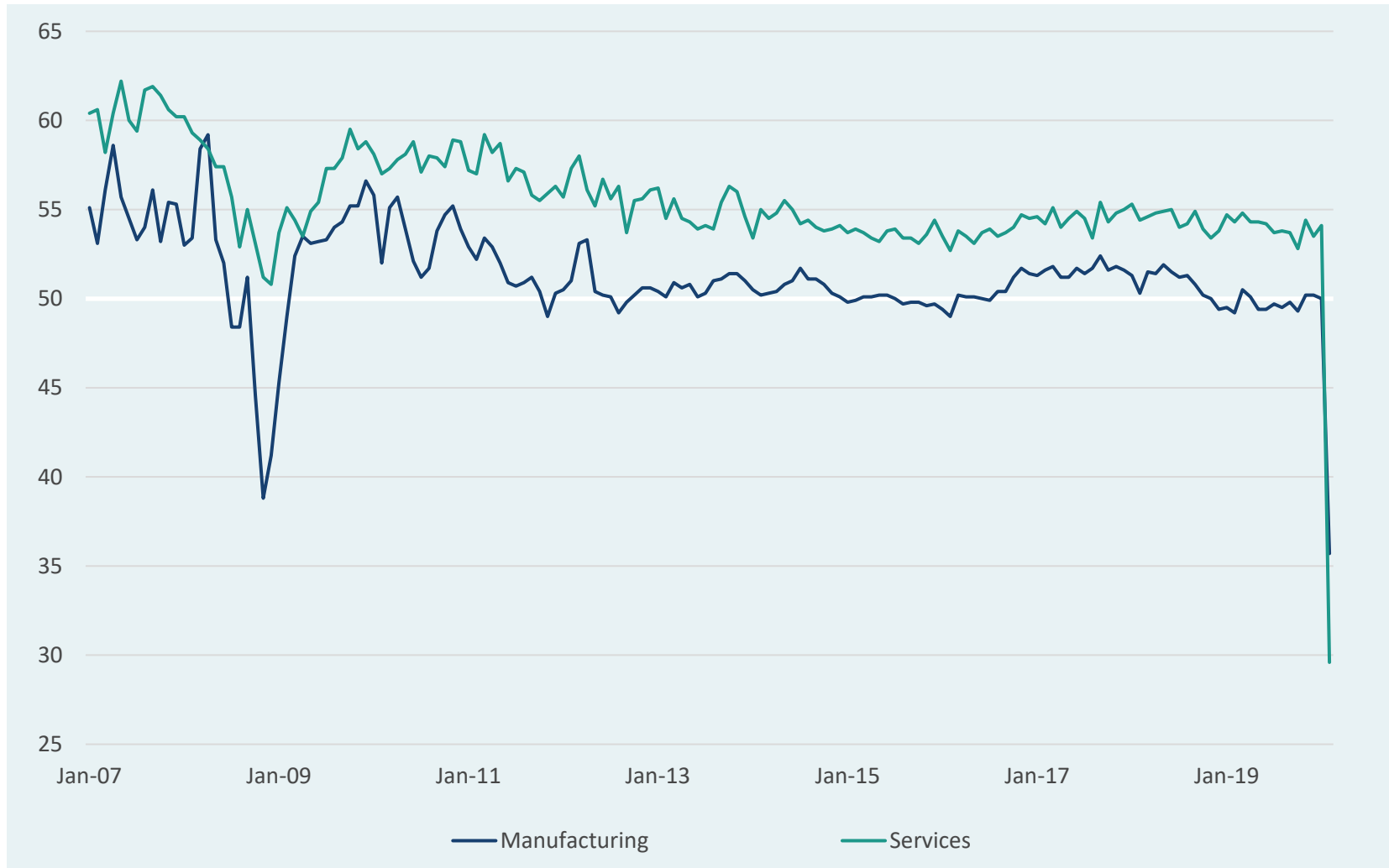
China is more able to perform extreme social control measures than the U.S. and other developed countries

Source: Verus, as of 3/16/20

# Economic impact



# Chinese purchasing managers index



The economic effect in China has been sudden and dramatic

Source: China Federation of Logistics and Purchasing, as of 2/29/20

## Countries with travel bans

The travel environment has changed very materially

Source: GeoNames, HERE, MSFT, Microsoft, Navinfo, Thinkware, Extract, Wikipedia, as of 3/16/20

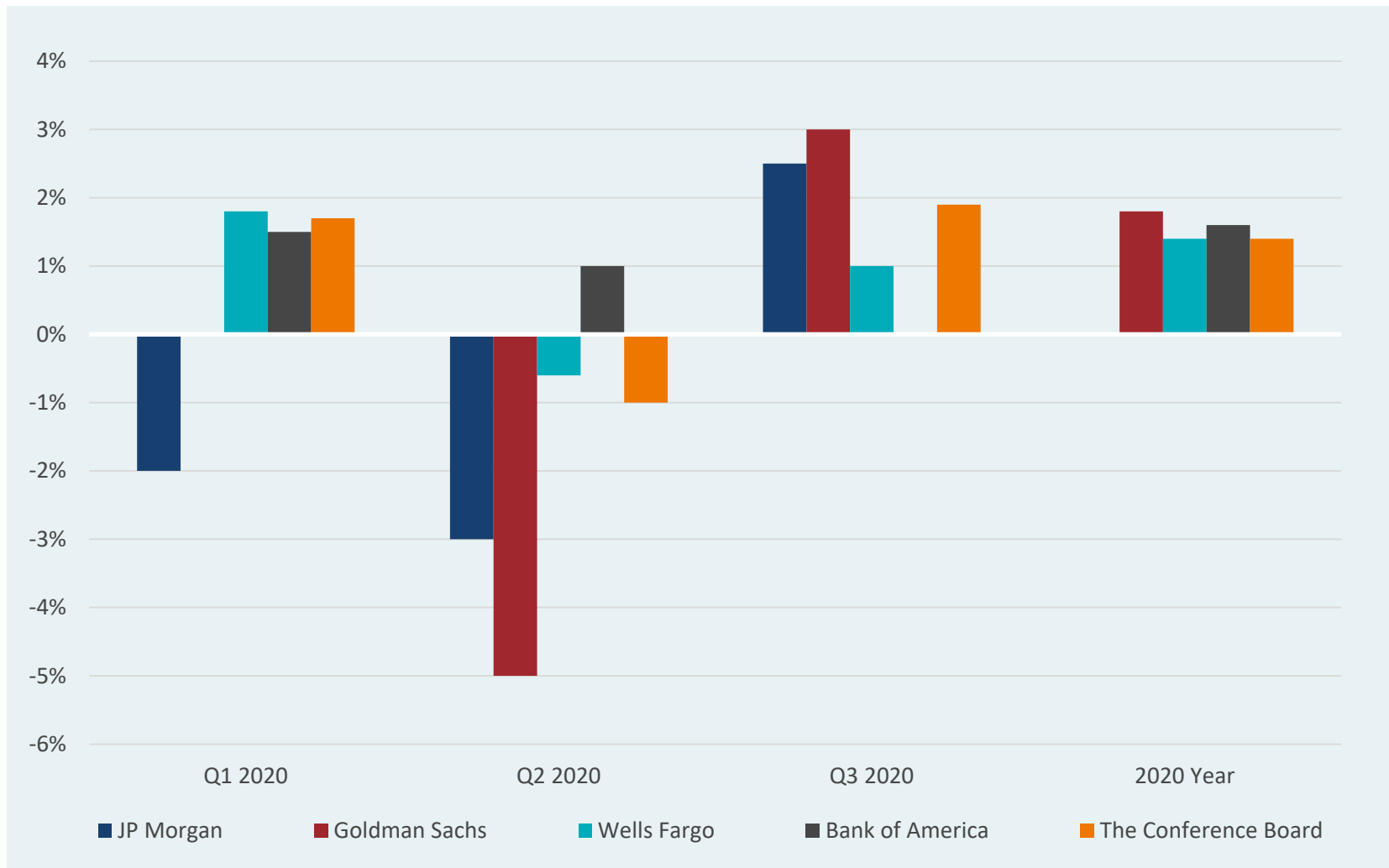
# Travel stocks challenged



Markets have been pricing in the new environment. Impact will take time to assess, and in the short term there will likely be capital losses in portfolios

Source: Bloomberg, as of 3/16/20

# U.S. GDP growth projections

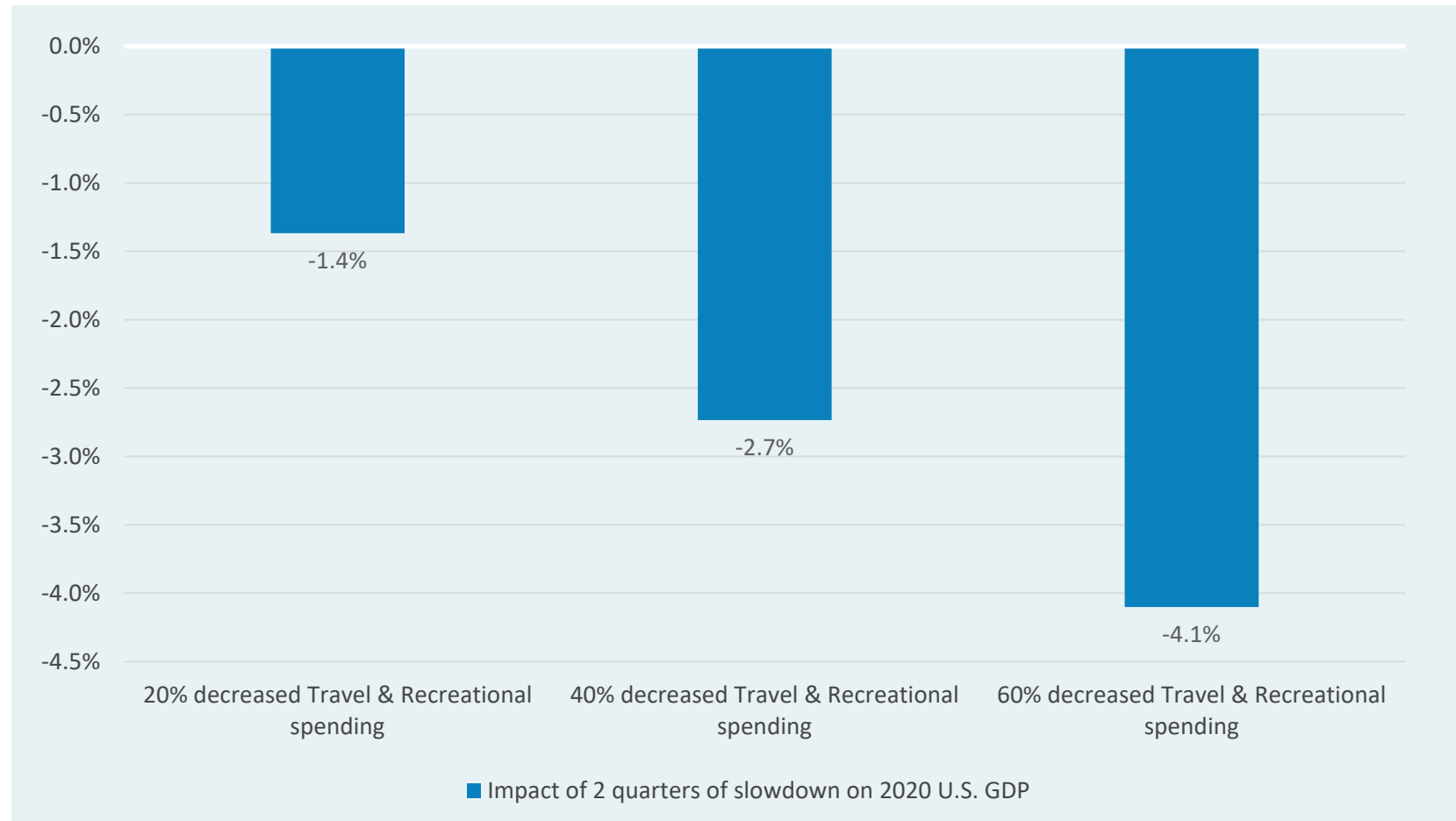


Economists are beginning to flesh out the economic impact. There seems to be an assumption of rapid recovery.

Source: Various, as of 3/16/20

# Growth & economic activity

## ESTIMATING GDP GROWTH IMPACT



A 20% fall in spending would be roughly the equivalent of Connecticut's economy disappearing for one year

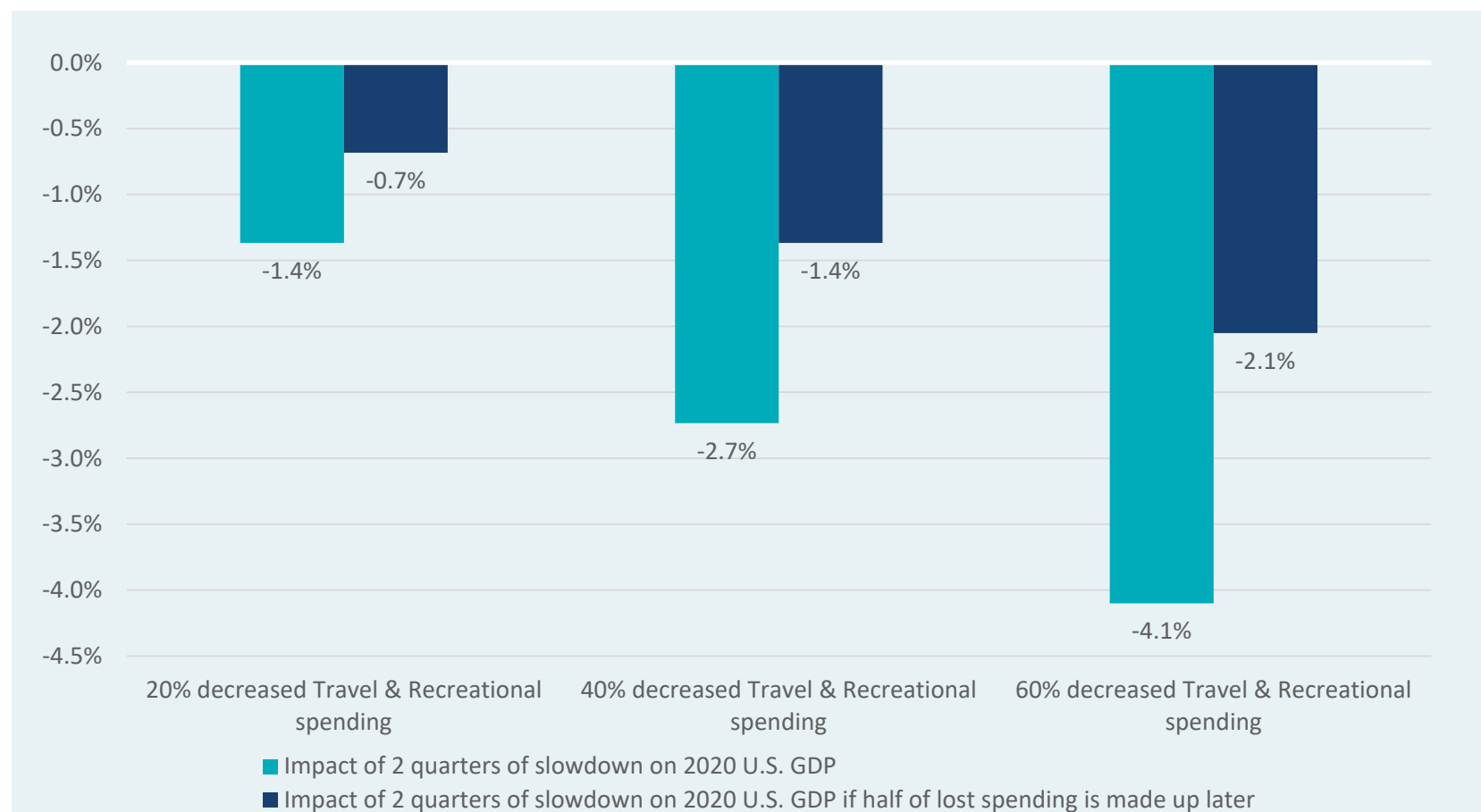
A fall of 40% would equal the loss of Massachusetts for one year

A 60% fall would equal losing Illinois & Vermont for a year

Source: Verus, Bureau of Economic Analysis. Our assumption above is that consumer spending relating to Travel & Recreation is impacted negatively by COVID-19 by either 20%, 40%, or 60%. These categories include: Recreational Goods & Vehicles, Gasoline & Energy Products, Transportation Services, Recreational Services, Food Services & Accommodations. We assume that these types of spending are impacted for 2 quarters.

# Growth & economic activity (con't)

## ESTIMATING GDP GROWTH IMPACT



However, we may expect that much of this spending is “made up” later if Americans delay, rather than cancel, their vacation and spending plans

Source: Verus, Bureau of Economic Analysis. Our assumption above is that consumer spending relating to Travel & Recreation is impacted negatively by COVID-19 by either 20%, 40%, or 60%. These categories include: Recreational Goods & Vehicles, Gasoline & Energy Products, Transportation Services, Recreational Services, Food Services & Accommodations. We assume that these types of spending are impacted for 2 quarters. The second scenario above assumes that half of this lost spending is made up as consumers simply delay (rather than cancel) their vacations and travel until after the COVID-19 risks ease.



# Discounted future earnings

$$\text{Value of Stock Market} = \frac{\text{Expected Earnings}}{\text{Required Return on Equity} - \text{Earnings Growth}}$$

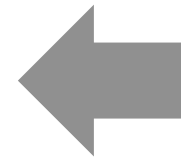
# Discounted future earnings

## S&P 500 Required Return on Equity at February high

$$3386 = \frac{180}{7.4\% - 2.1\%}$$

## S&P 500 Required Return on March 16<sup>th</sup>

$$2386 = \frac{180}{9.6\% - 2.1\%}$$

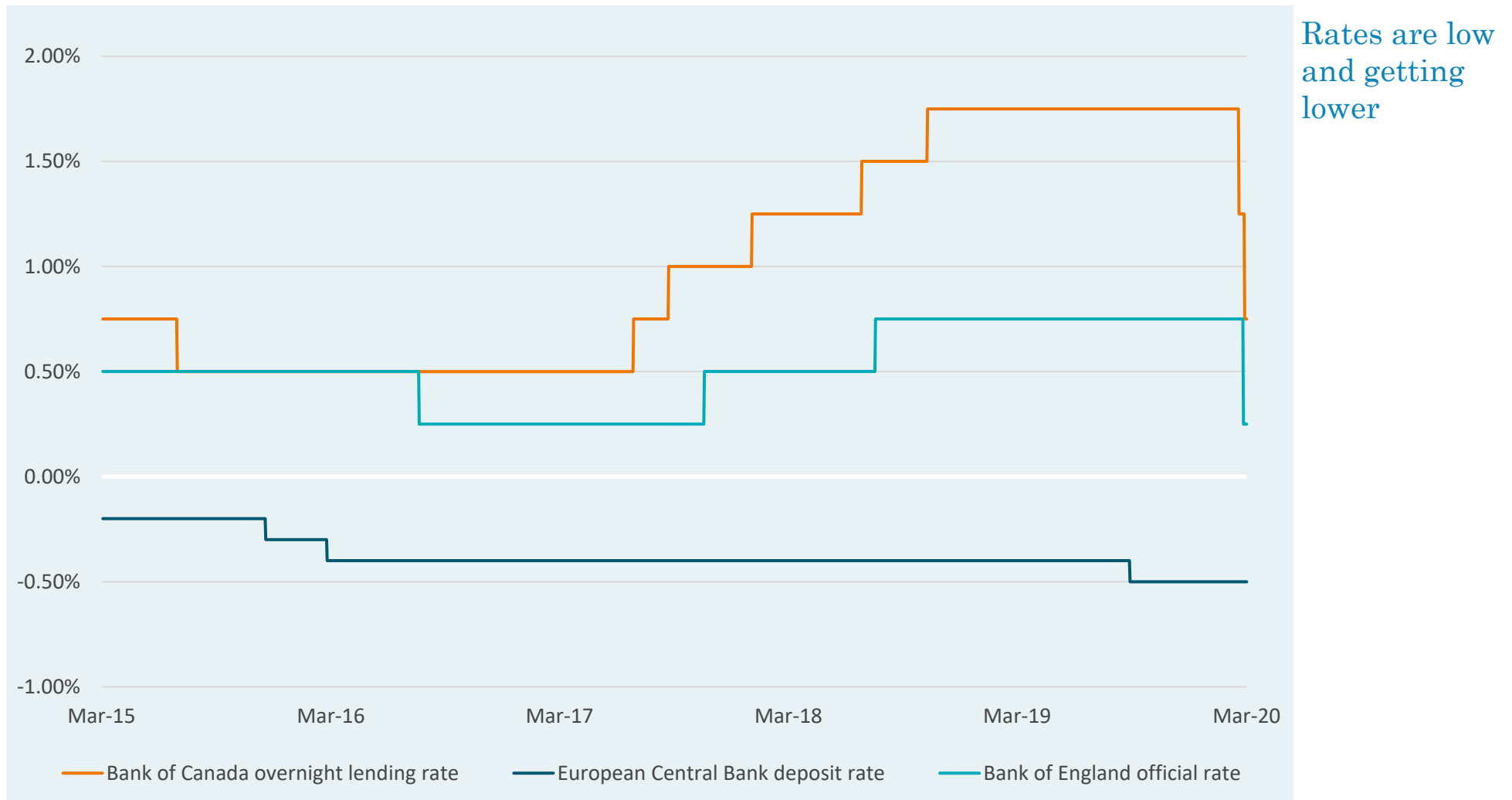


This adjustment towards higher required return is even more impressive, considering the large drop in interest rates

*Assumptions: Next period corporate earnings in-line with Q4 2019 earnings, and a terminal earnings growth rate of 2.1% after inflation (equal to long-term average growth rate)*

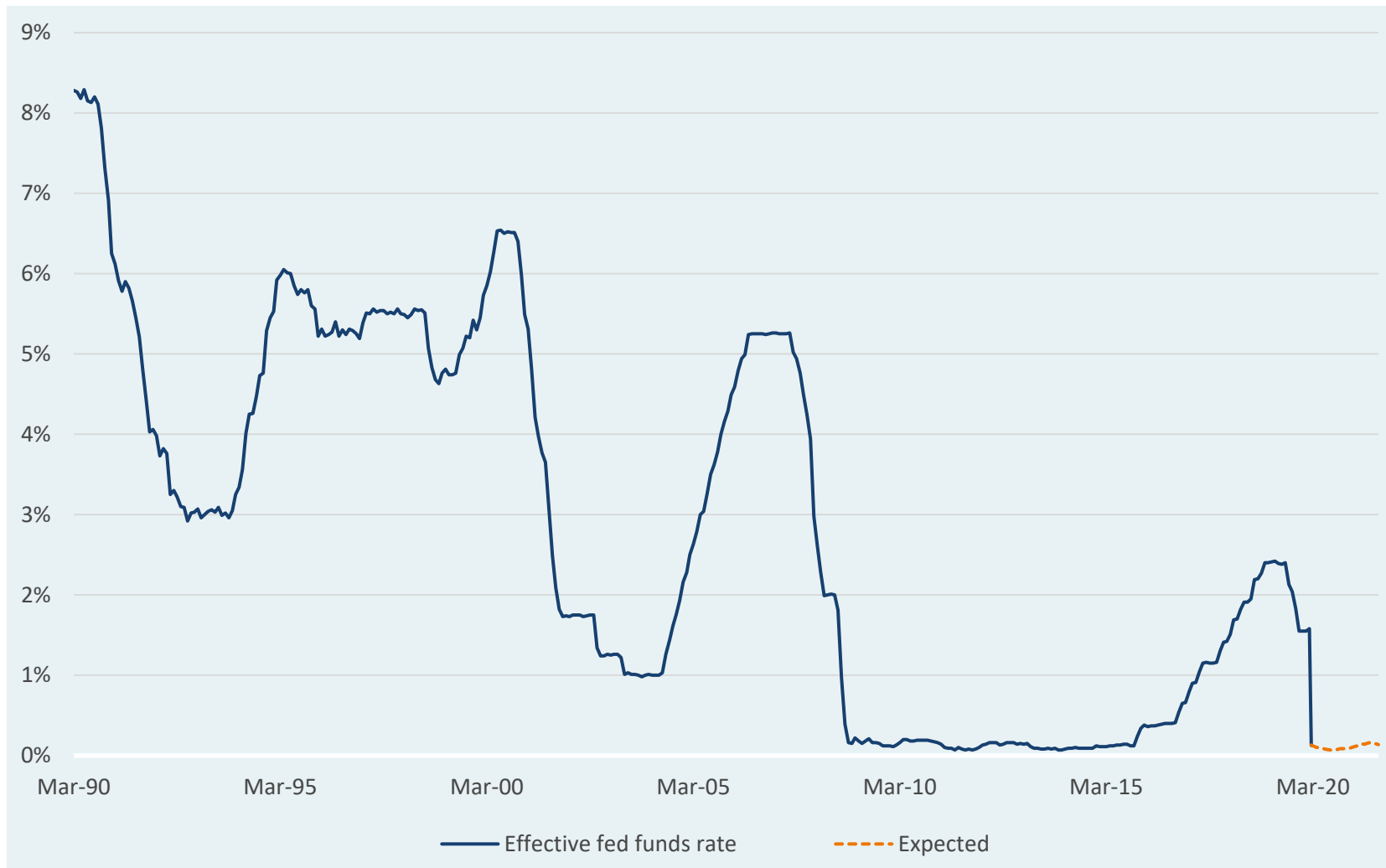
# Responses

# G7 Central bank rates



Source: Bloomberg, as of 3/16/20

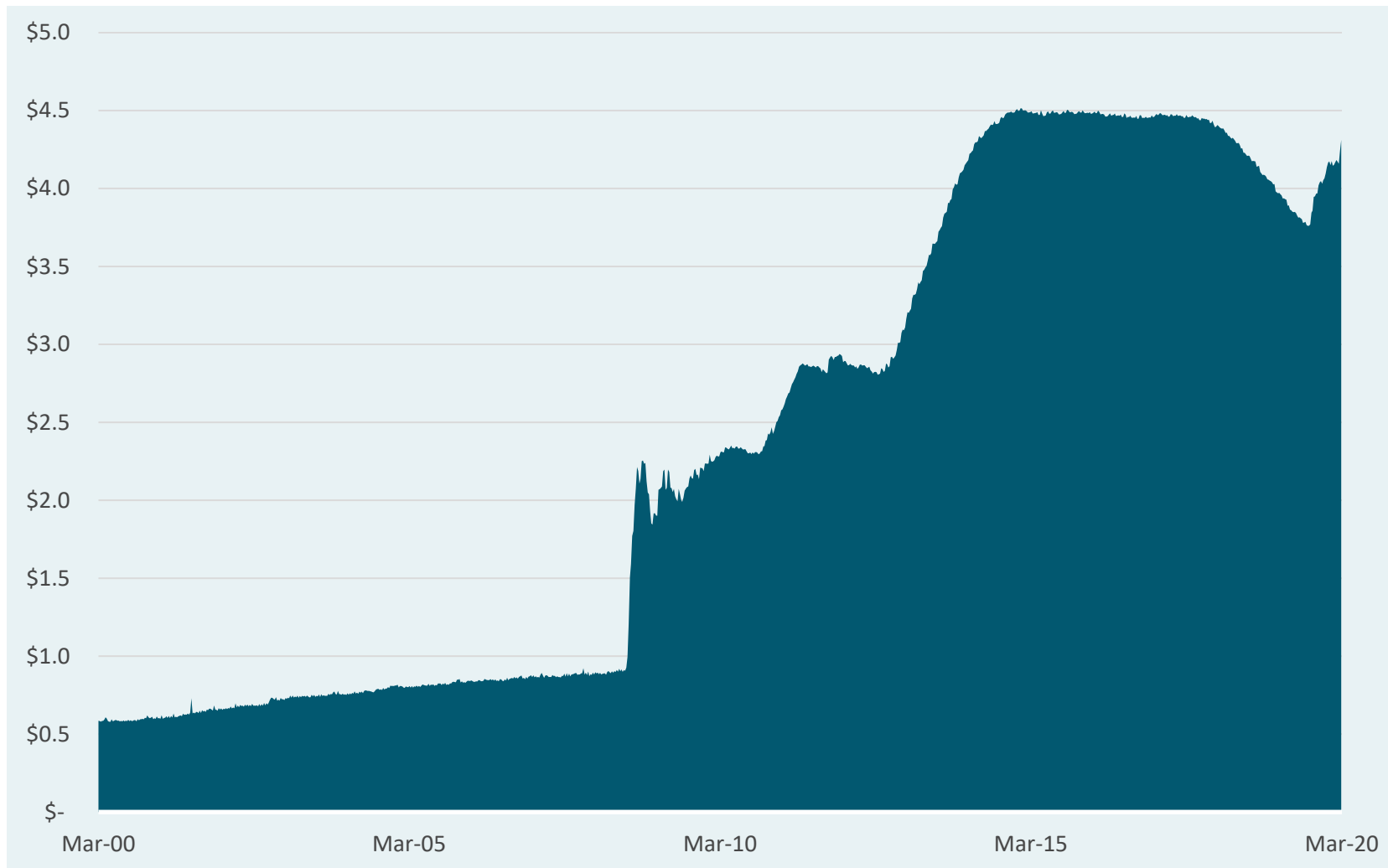
# Effective Fed funds rate



The Fed has responded rapidly in terms of rates

Source: Bloomberg, as of 3/16/20

# Federal Reserve balance sheet (\$ trillions)



The Fed balance sheet remains a core tool for response

Source: Federal Reserve, as of 3/11/20

# U.S. fiscal response

## **Families First Coronavirus Response Act:**

- 10 sick days to full-time workers, prorated for part-time workers. This legislation applies to most U.S. workers, though some restrictions exist.
- Food support for low-income families increased through programs such as: increased SNAP coverage for jobless and poor Americans, emergency food allotments, and guaranteed school lunches

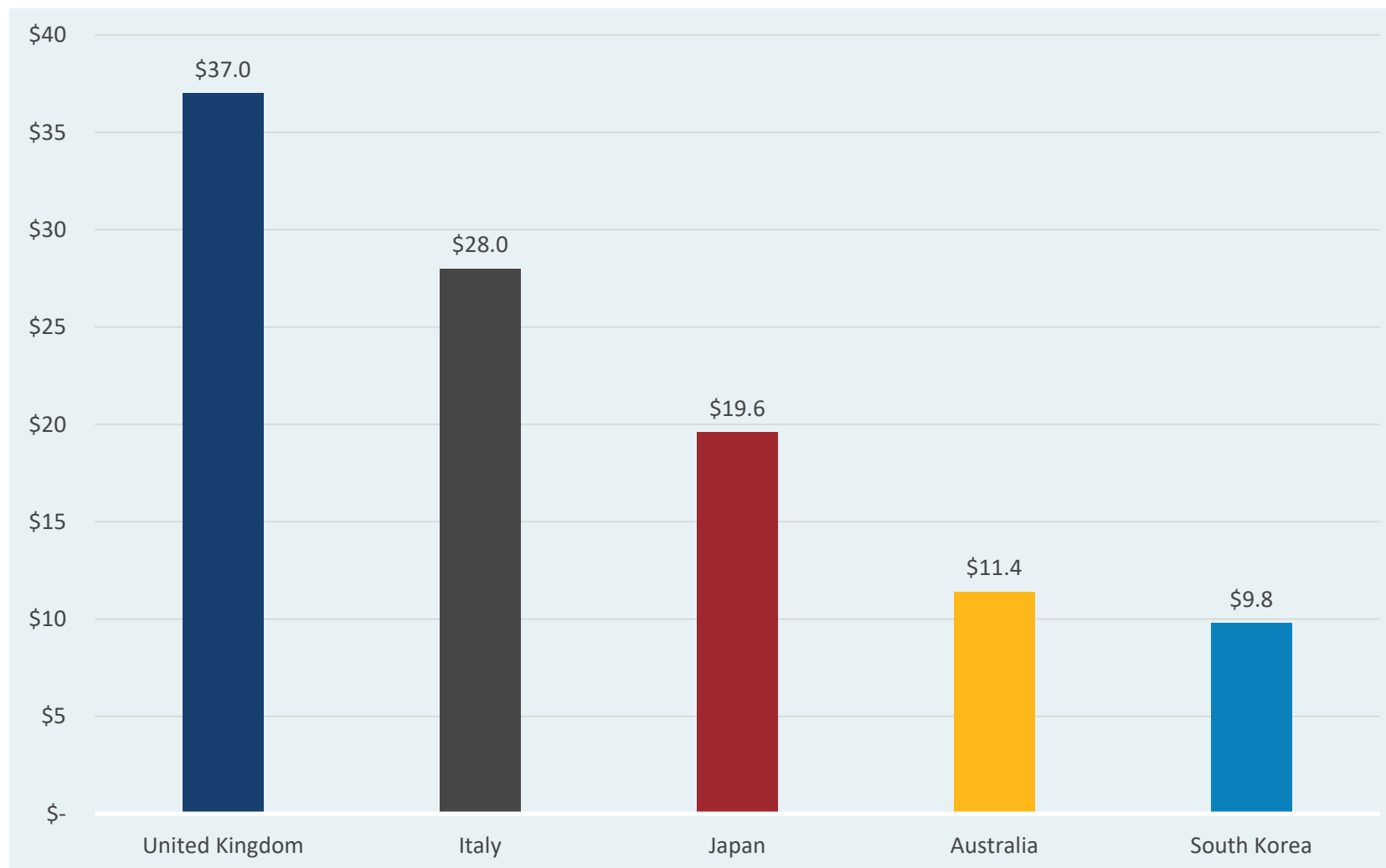
## **Family and Medical Leave Act:**

- This existing act has been amended to provide paid leave for employees of businesses with fewer than 500 staff in size.
- For workers who still require time off after the first two weeks, this act will cover these employees for up to 14 weeks.

## **Additional Discussions Underway:**

- Lawmakers have reportedly discussed a range of additional fiscal measures, such as a cut to payroll taxes, small business loans, and targeted support for airlines, cruise lines, and industries most impacted by the virus.
- Outright payments to all Americans has also been proposed by pundits, also known as “helicopter money”

# Fiscal support packages (U.S. \$ billions)



This is the start. It is likely not the end.

Source: Verus, as of 3/16/20



# Private markets

# Private equity: Buyout

- Pause in investment activity and exits
- Write-down of portfolio companies impacted, primarily in the following sectors:
  - Travel
  - Retail / Consumer / Restaurants
  - Services
  - Financial services (some)
  - Energy
- Write-up of companies that benefit:
  - Healthcare
  - U.S. manufacturing: benefit from supply chain disruptions
  - Consumer good (short term increase, offset by mid-term decrease)
- Smaller companies impacted more than large companies, especially if they have high levels of debt

Generally slower write-down of existing investment valuations than public equity

# Private equity: Venture capital

- Pause in investment activity, exits and IPOs
- Write-off of companies that run out of cash
- Write-down of companies impacted by the market downdraft:
  - Recently listed public companies
  - Late-stage VC
- Write-up of companies that benefit – example:
  - AbCellera (DCVC portfolio company): delivered the world's largest panel of anti-SAR-CoV-2 antibodies (hundreds), moved into functional testing, and signed a co-development agreement with Eli Lilly to develop the anti-body therapy

Late-stage  
risks begin to  
materialize

# Private credit

- Direct lending: lower yields due to the drop in LIBOR to less than 75 bps. (100 bps. lower than 1 month ago and 200 bps. lower than last year).
  - We continue to monitor the cost of leverage and the availability of bilateral financing.
  - Upper-middle market will see amend-and-extend. Upper-middle market will also see borrowers from syndicated market turning to them for new capital. But for lower-middle market companies, direct lenders may be more inclined to take the keys and seek return through equitization.
- Covenant-lite documents will extend borrower flexibility, but a prolonged shutdown will introduce further liquidity needs. The need for capital will bring private equity back to the table and allow syndicated lenders another bite at the apple
- Increased demand for rescue capital by industries that have been at risk for some time: energy, travel and leisure, consumer and retail. Rescue likely via DIP loans
- Greatest distressed opportunity when liquidity issues extend beyond at-risk sectors into the broader credit leveraged credit universe – i.e. a U-shaped recovery, not V-shaped

Yields move lower

Increased opportunity for rescue capital providers and distressed investors

# Real estate

## — Sectors best able to withstand a downturn:

- Multi-family residential
- Industrial properties, especially those supporting last-mile logistics

## — Impacted properties:

- Retail: largest impact. The sector was already under pressure from shifting trends in consumer purchasing.
- Hospitality: large short-term impact though it's a fairly small component of the commercial real estate market.
- Office: depending on how long and deep the downturn goes, office will be impacted in the normal course of a recession.
  - Fallout due to energy wars in and around Houston
  - Possible longer-term trend: the need to work from home is that companies realize they don't need to staff offices full-time. Downsizing of office footprints

Real estate properties tied to sectors of economy most impacted by the pandemic are at greatest risk

# Real assets

## — Infrastructure:

### ▪ Impacted sectors:

- Transportation infrastructure, such as airports, ports, toll roads and rail
- Energy midstream

### ▪ More resilient sectors:

- Data / telecom infrastructure
- Utilities (though repricing may occur)
- Social infrastructure, such as student housing, senior living, hospitals

## — Energy upstream / downstream: combination of falling demand and rising supply to continue the downturn of prospects for private energy companies

## — Mining: while bullish on mining, industrial metals expected to be weak as economic activity declines. Gold and precious metals may rally. Long-term trends intact as demand picks up once economic activity stabilizes.

## — Agriculture: on a relative basis, sector to hold up better than more GDP sensitive markets. Repricing of the sector would be welcome to deploy capital.

Energy and  
transport  
assets most  
impacted

Other  
infrastructure  
assets to  
perform well on  
a relative basis

# What should we do?

# Three things to do

**Investors need to focus on three major things as these challenges unfold:**

— People

- Your (and our) staff will have stress due to markets and concerns over their family and themselves
- They are the most important concern for us all to focus on

— Portfolio

- Are the elements of the portfolio behaving in the way expected?
- What has worked well? What has not worked?

— Plans

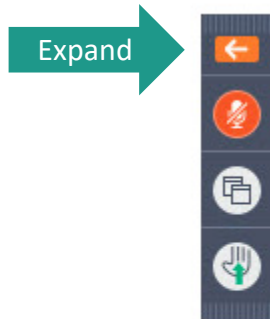
- This will pass. Where does your portfolio need to be when it does?
- How will you communicate what has happened after the fact? Will you be happy with it when you do so?





# Thank you

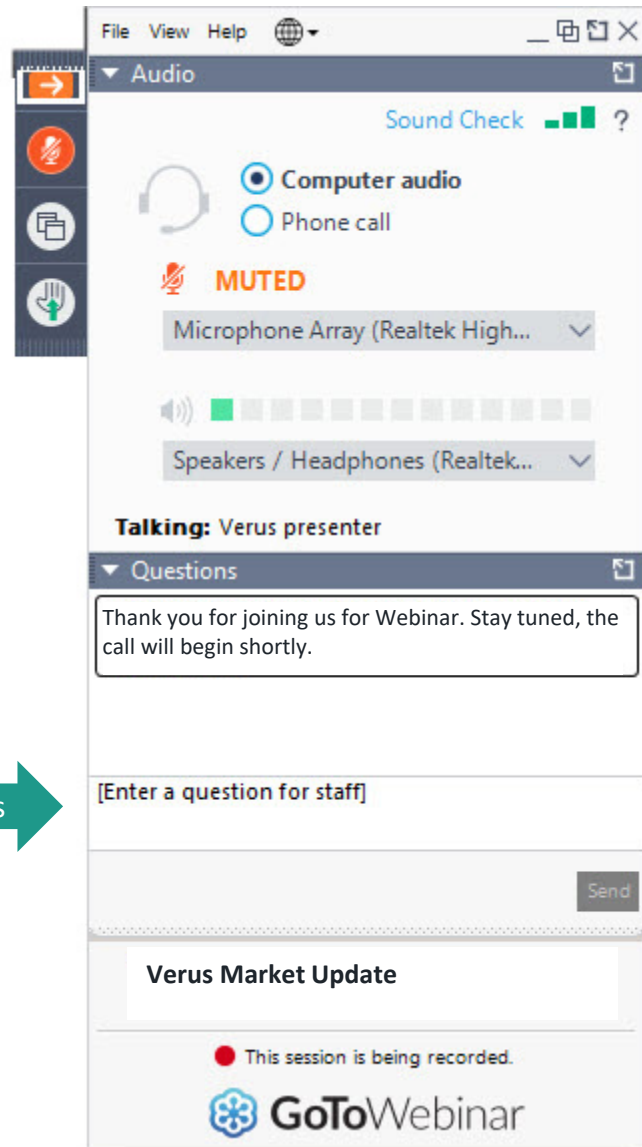
# Q&A



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Ask questions here

Questions



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