

Webinar: COVID-19 and global financial markets

FEATURING
MARKUS BRUNNERMEIER, PRINCETON BCF
TORSTEN SLOK, DEUTSCHE BANK SECURITIES

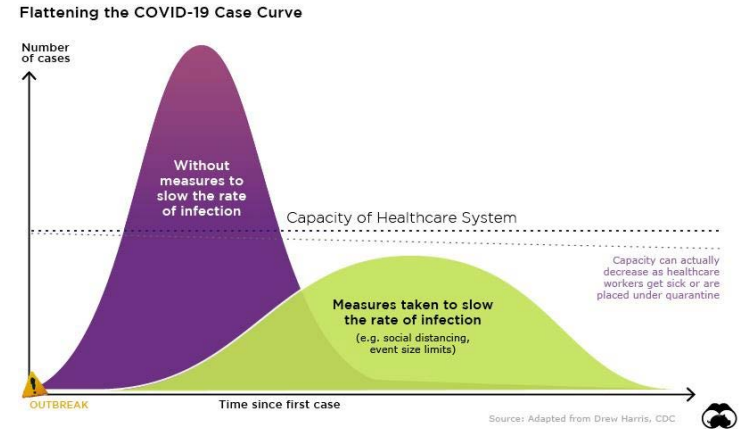
Thursday, March 19, 2020
12:00 PM ET

Limited Space Available
Registration Required



Intro

- What's happening to
 - People
 - Health contagion
 - Gaining time
 - Real economy



Scenario: **V** vs. **L**

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 - Supply chains
 - Hoarding



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- Q: What's the difference btw.
economic hoarding vs. financial run?
 - Hoarding food vs. hoarding money → collapse of system

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■ Financial markets

- Financial runs contagion

■ Q: What's the difference btw.

economic hoarding **vs. financial** run?

- Hoarding food vs. hoarding money → collapse of system
- A: Central bank can print money (at no cost), but not food

Shocks and Amplification

- **Nature** of the initial economic **shock**
 - Temporary vs. permanent (V, U, L-shaped)
 - Supply vs. demand (1970s)
 - Aggregate vs. idiosyncratic (finance)
 - ...
- **Nature of amplification**/feedback effects/spirals/non-linearities
 - Risk-on to risk-off
 - Flight-to-safety (safe asset = good friend indeed)
- Multiple equilibria

Financial Markets

- Stock market

Financial Markets

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- Credit/Funding Markets – Who funds gov./businesses/HH?
 - Via **capital markets** & shadow banks
 - Gov. / Corporate bonds (long-run)
 - Repo market = collateralized lending
 - Money market funds
 - Commercial paper (short-run)

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 - Loans
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- Foreign Exchange (FX) Market
 - Currencies
 - International capital flows - Flight-to-safety (risk-off)

Questions

- Do financial markets overact ... or simply react/correct?
- Does it matter? Why (not)?
- Should central bank care? About
 - Stock market?
 - Credit/funding markets?
 - Market making (US Treasury)?
- Should government restore funding by by-passing financial sector?
 - Loan: COVID-19 Liquidity Life Line Proposal (Europe)
 - Exploit that tax authorities can enforce payment as an add-on to taxes
 - Gift: \$1000-Check/Helicopter money (US/Hong Kong)





COVID-19 and Global Financial Markets

March 2020

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Outline

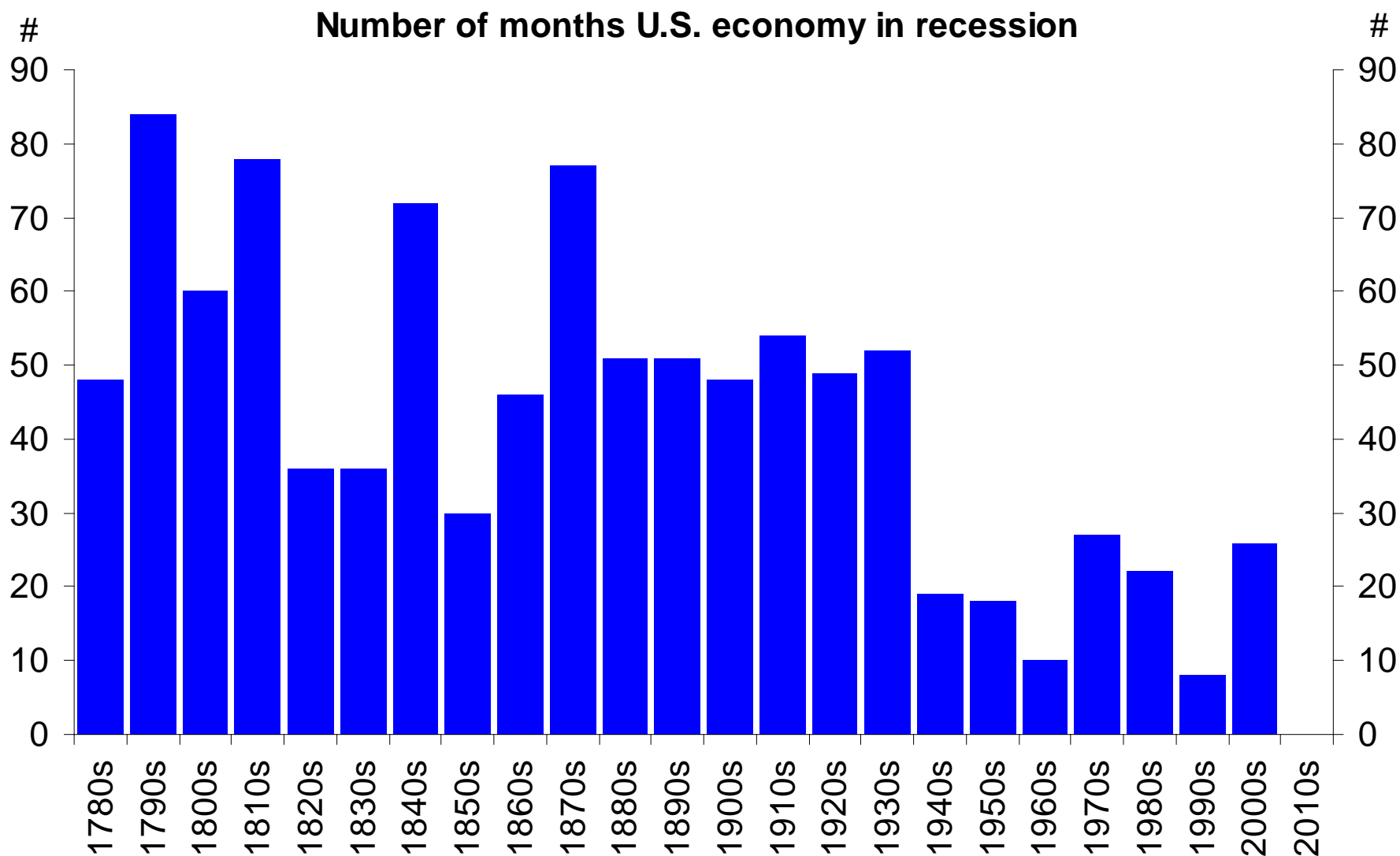


1. Before the virus
2. The virus
3. Financial market reaction to the virus
4. Fed and ECB reaction
5. Fiscal policy reaction
6. Macroeconomic implications



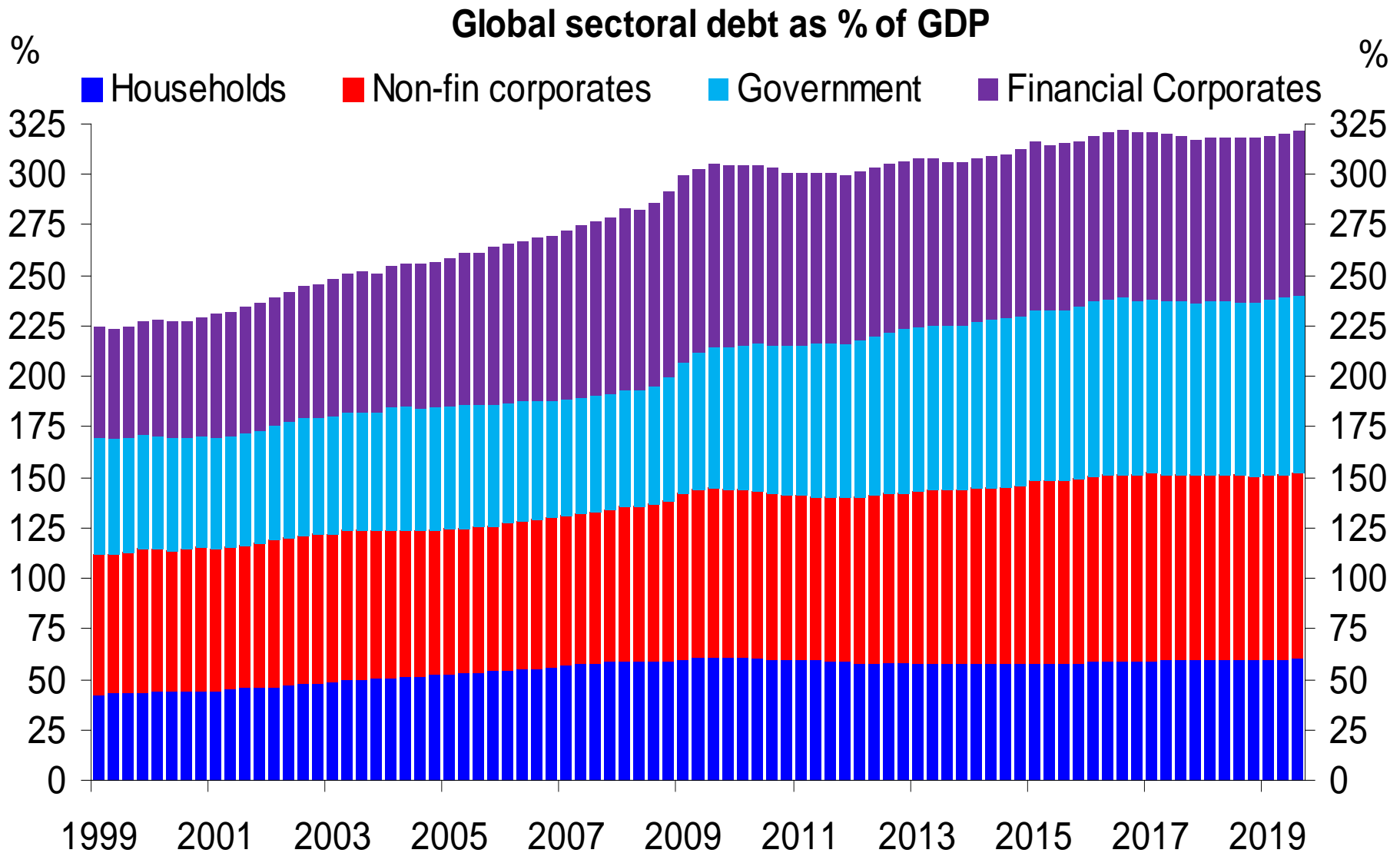
Before the virus

US: Since 1776 we have never before had a decade without a recession



Source: NBER, Wikipedia, DB Global Research

Global debt as a share of GDP

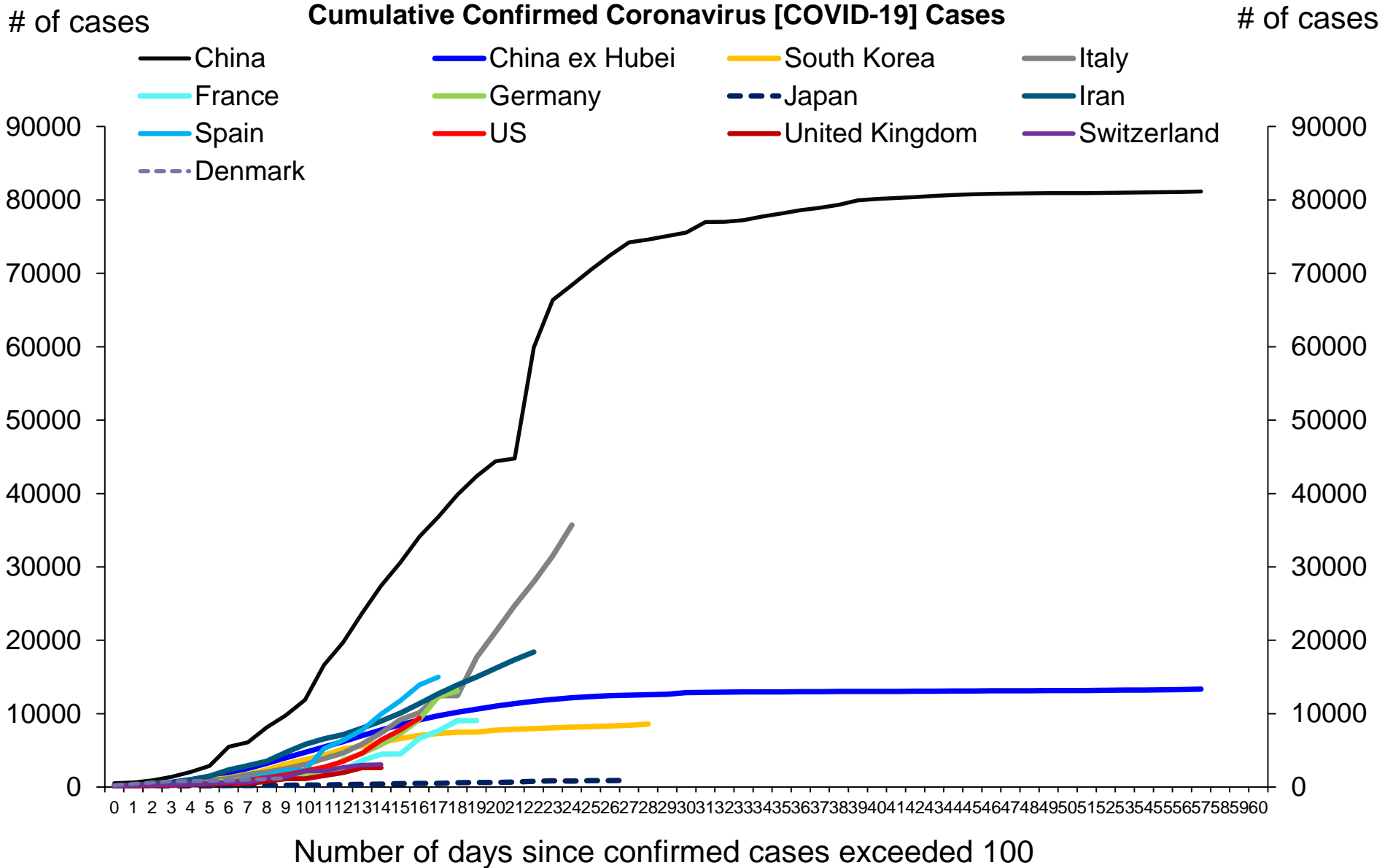


Source: IIF Global Debt Monitor, DB Global Research



The virus

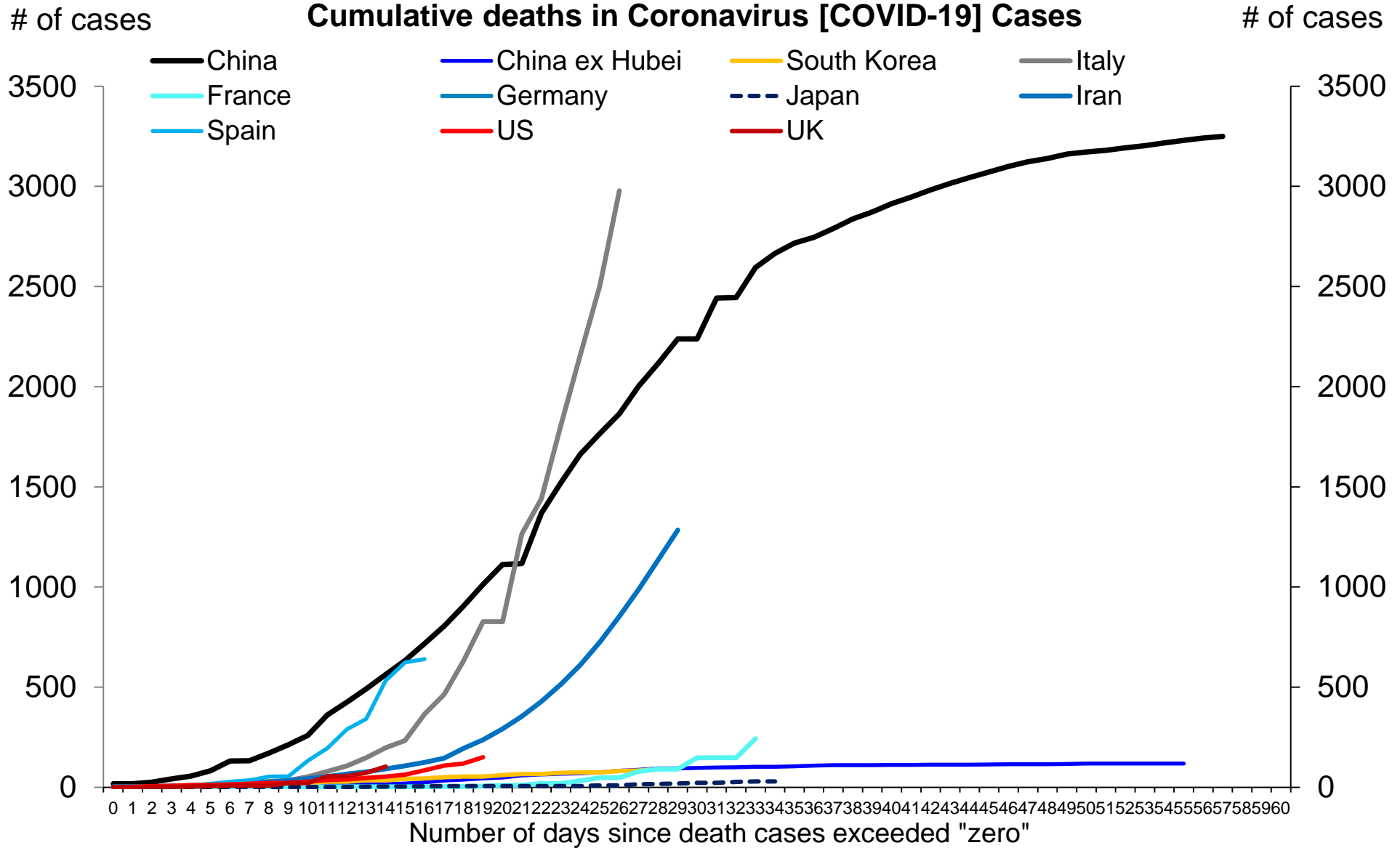
The second derivative is key for markets



Last Updated: 3/19/2020

Source: Johns Hopkins University, DB Global Research

The second derivative matters for markets



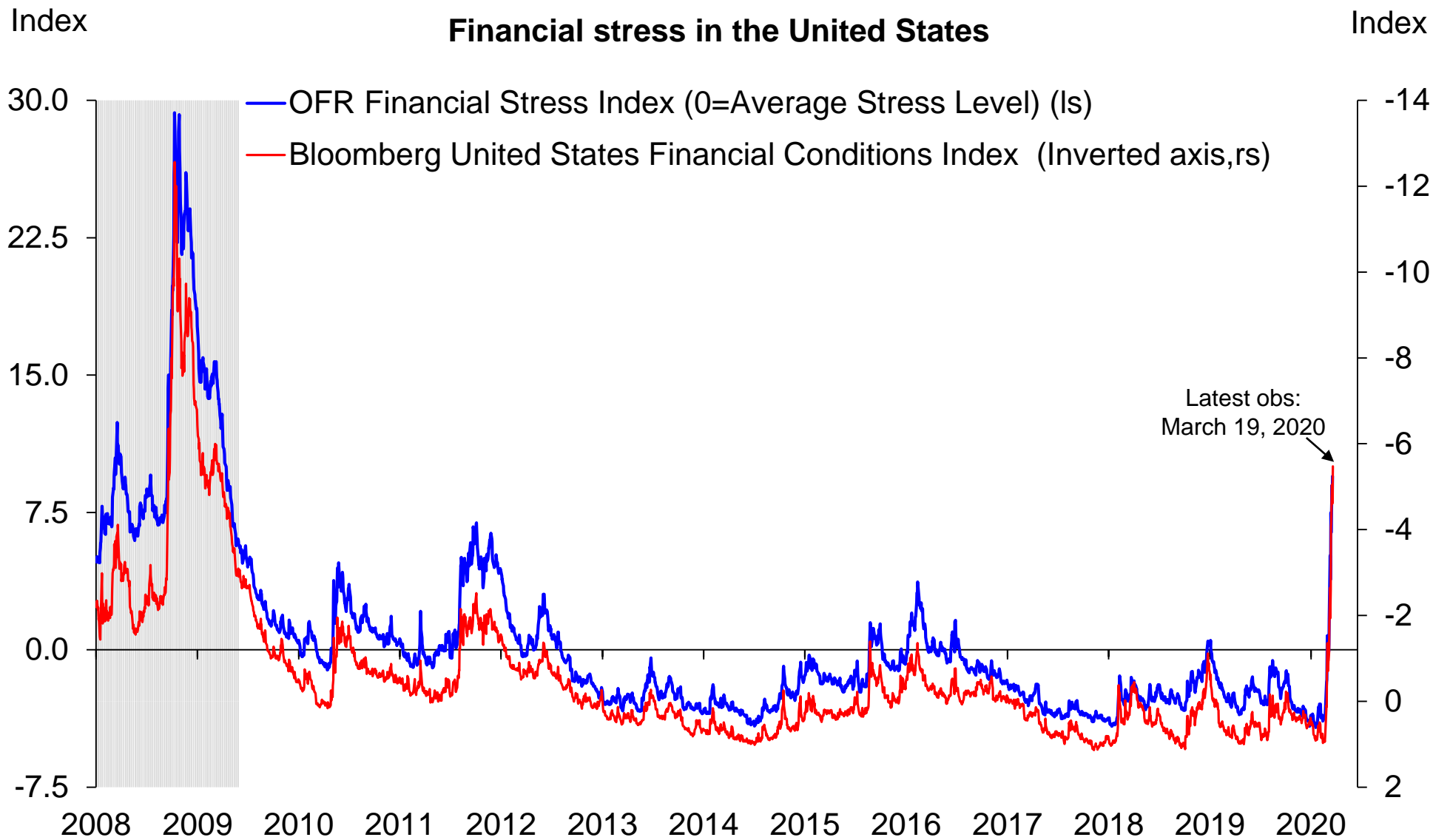
Last Updated: 3/18/2020

Source: Johns Hopkins University, DB Global Research



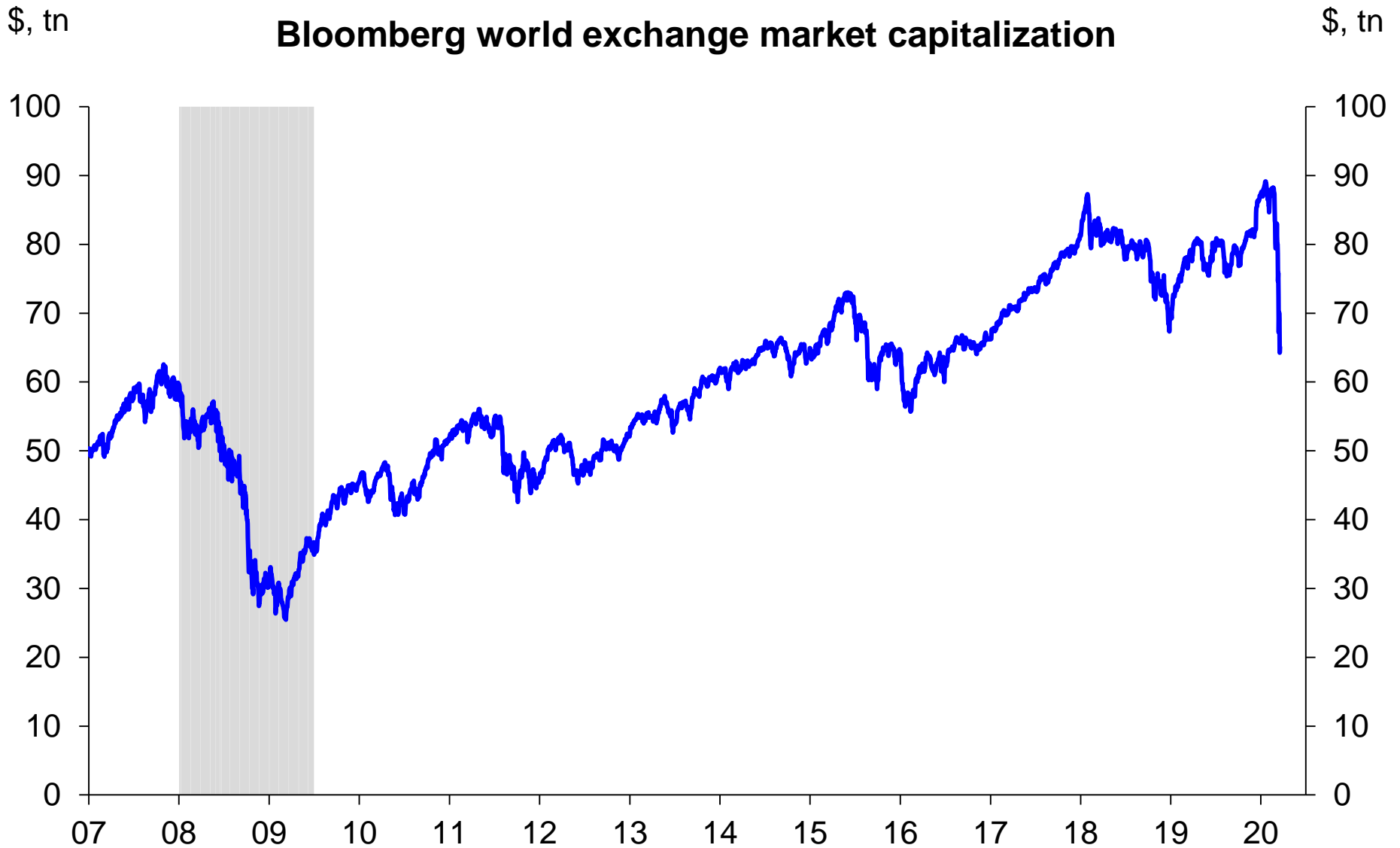
Financial market reaction to the virus

US financial stress somewhat above 2011 levels



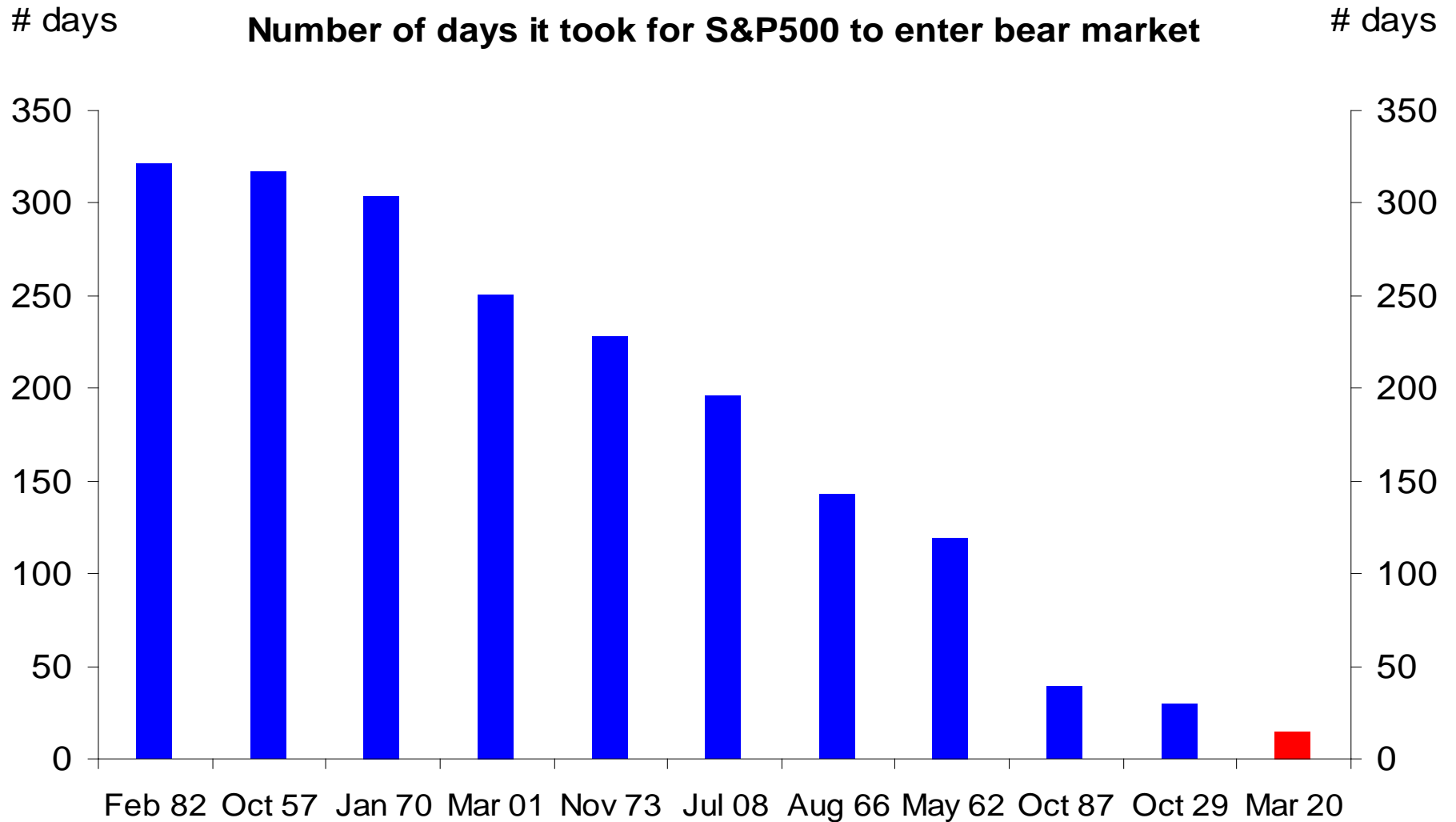
Source: OFR, Bloomberg Finance LP, Haver Analytics, DB Global Research

Global stock markets have lost \$25trn over the past month



Source: Bloomberg Finance LP, DB Global Research

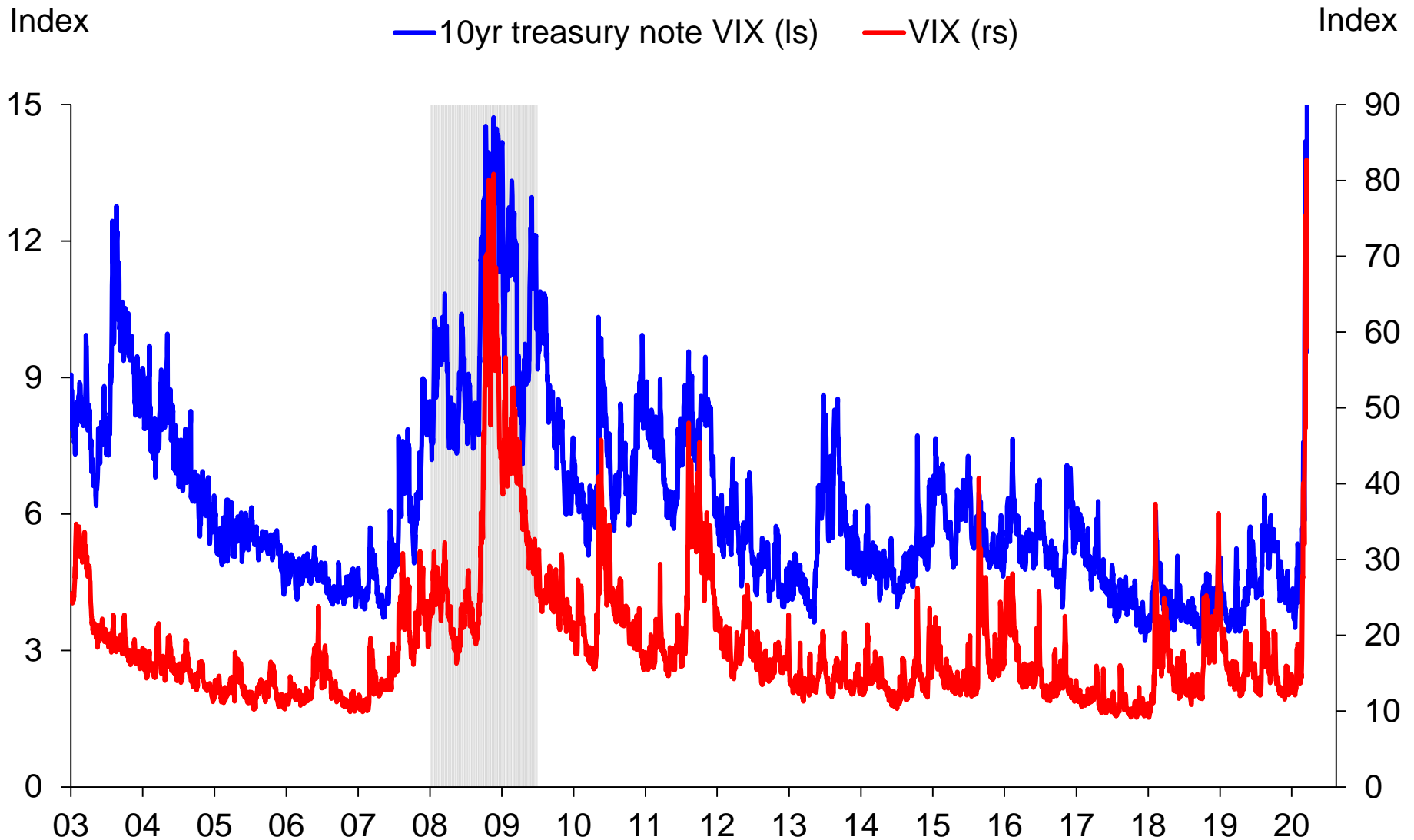
15 days: Fastest 20% correction in the S&P500 on record



Note: A bear market is when the index falls 20% from an all-time high in the last 52 weeks

Source: S&P, Bloomberg Finance LP, DB Global Research

Rates and equity vol at 2008/2009 levels



Source: CBOE, WSJ, Haver Analytics, DB Global Research

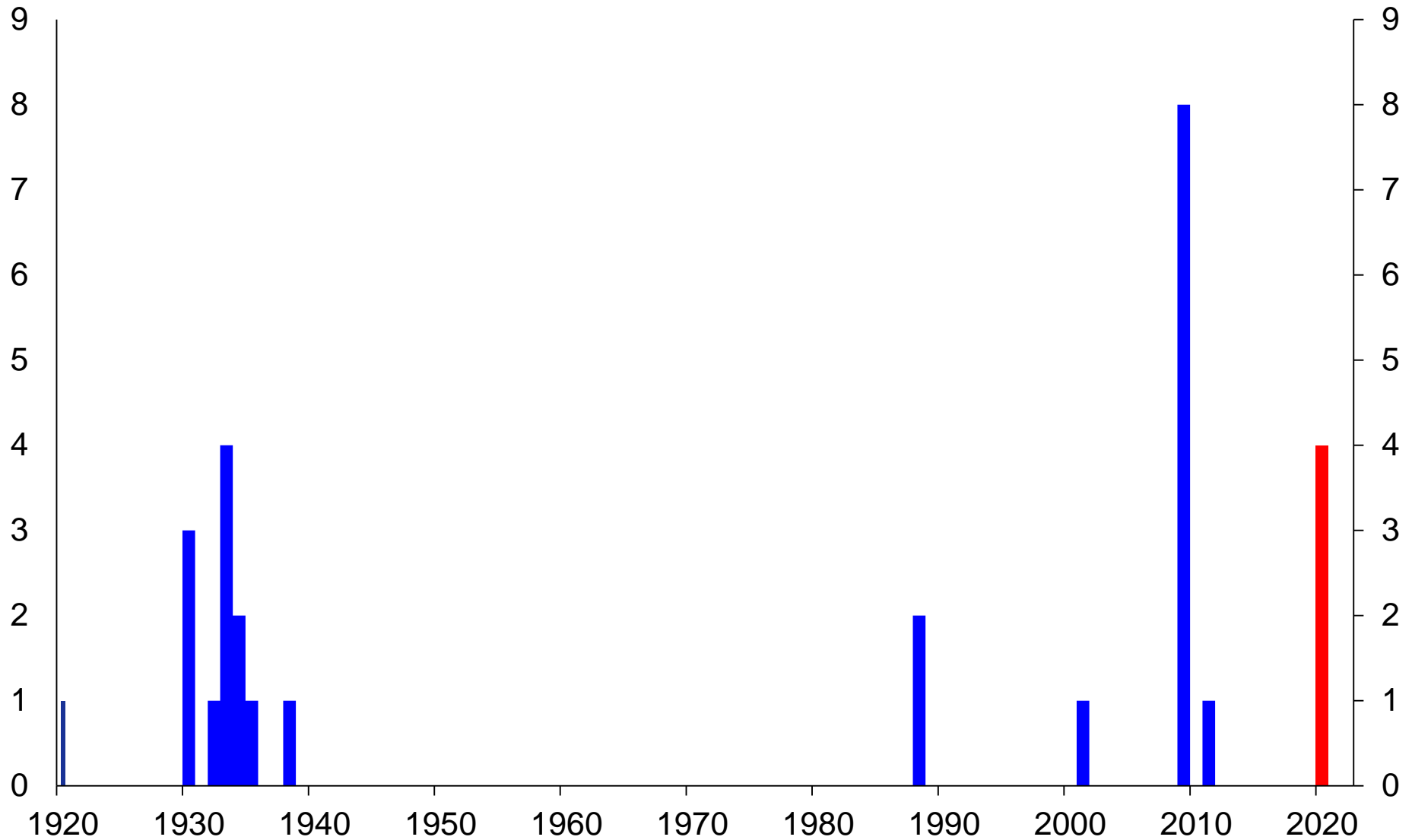
The number of circuit breakers



number

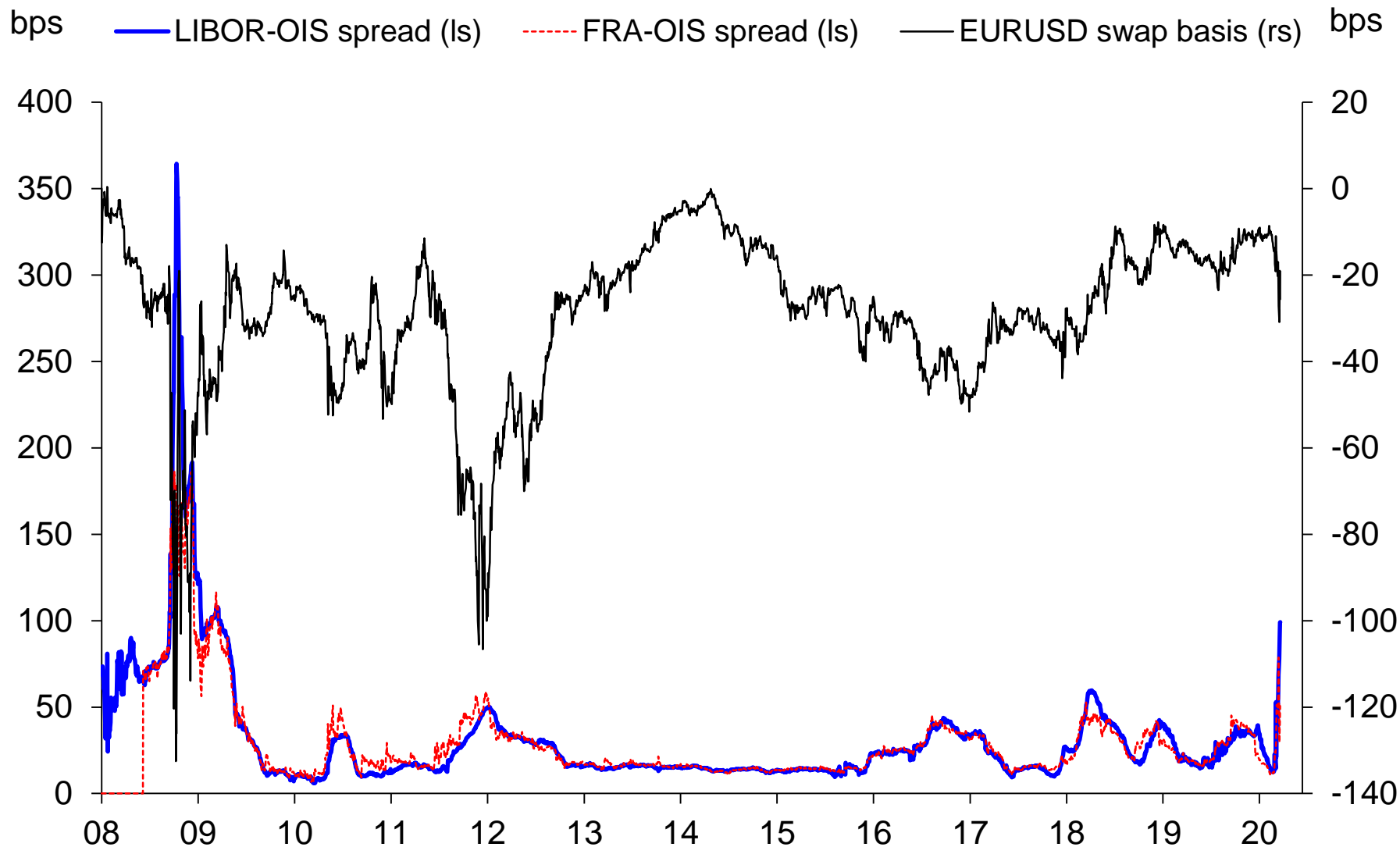
Number of times S&P 500 fell 7% and hit a circuit breaker

number



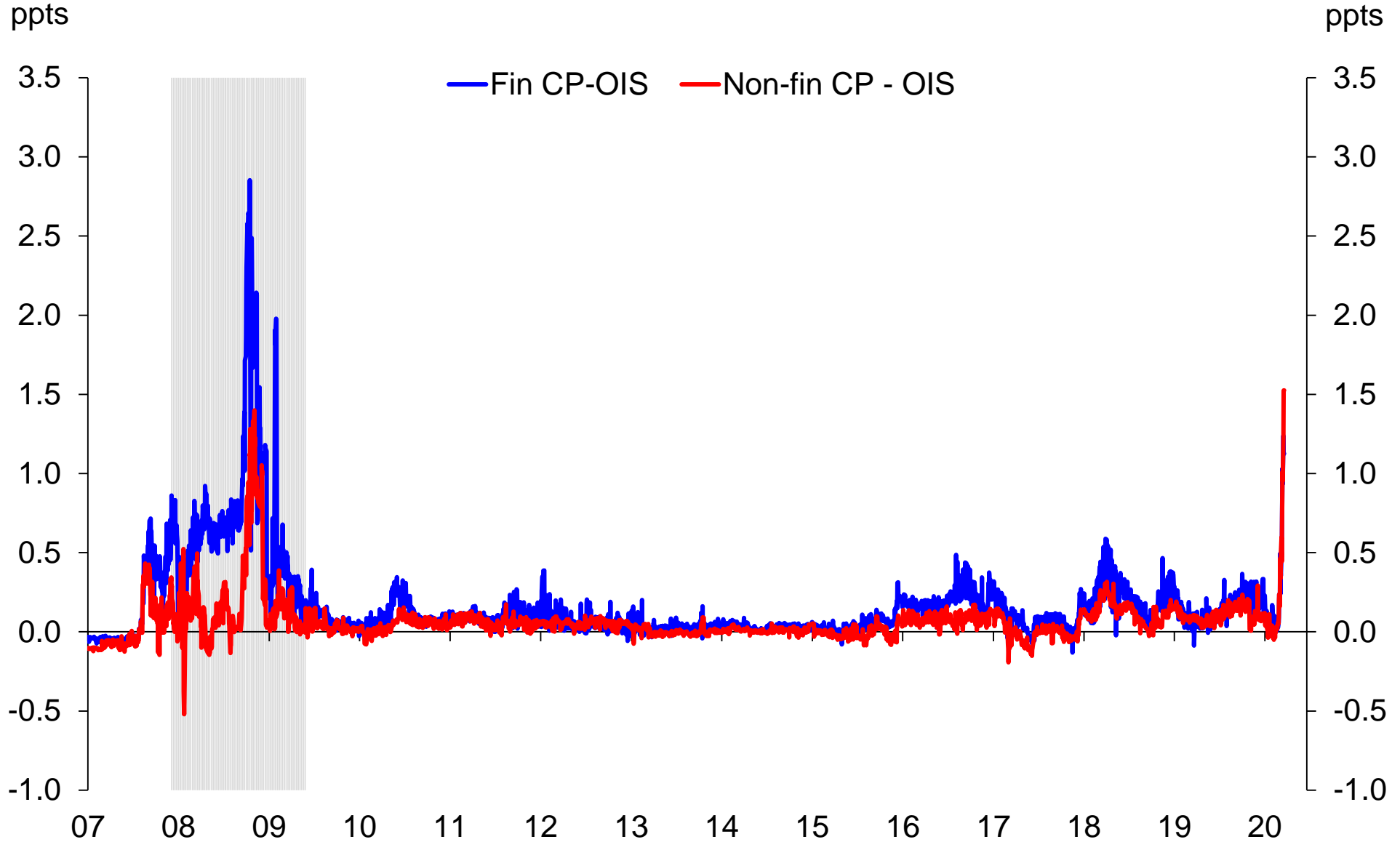
Source: Bloomberg Finance LP, DB Global Research

Signs of stress in funding markets



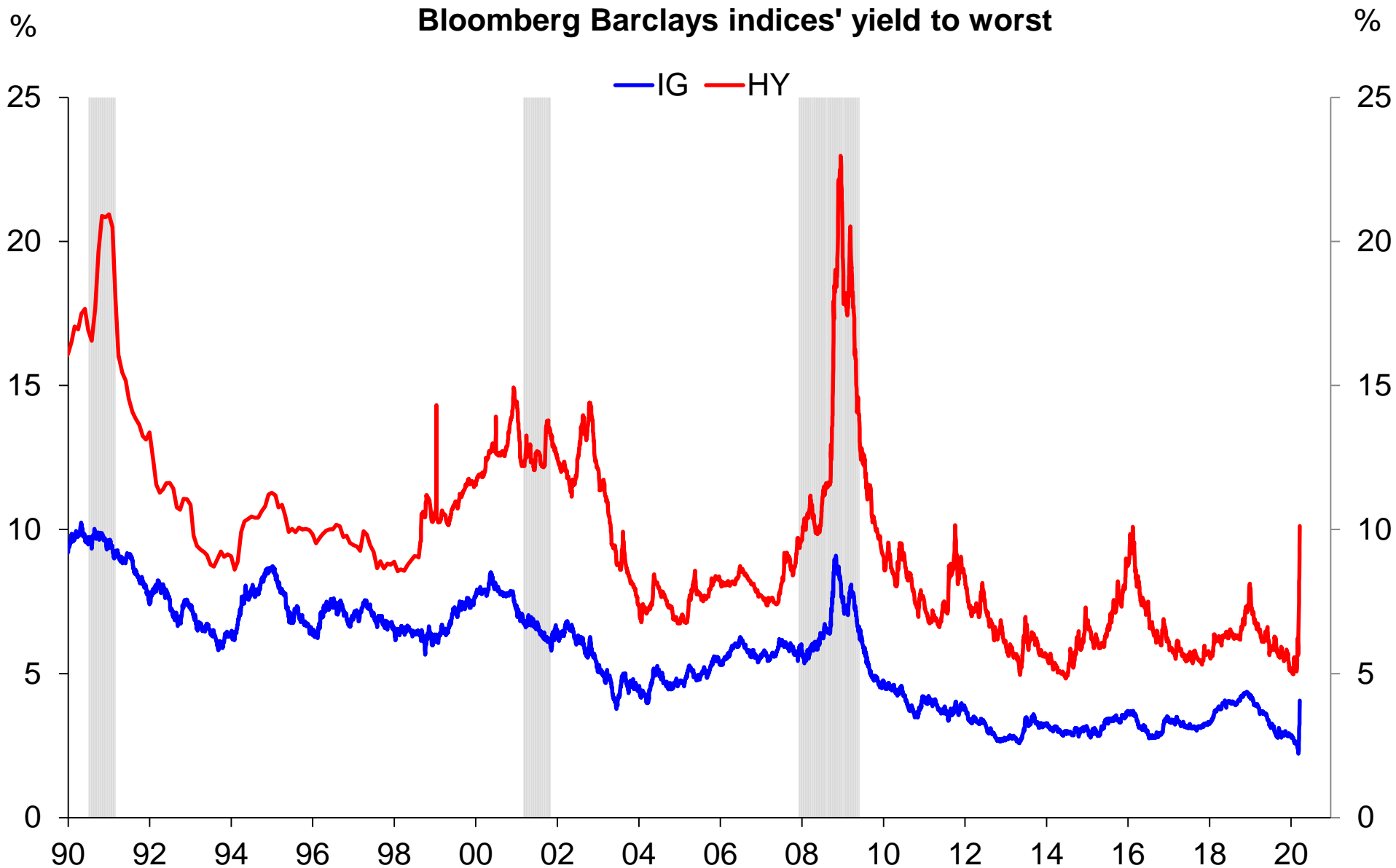
Source: Bloomberg Finance LP, DB Global Research

Commercial paper markets



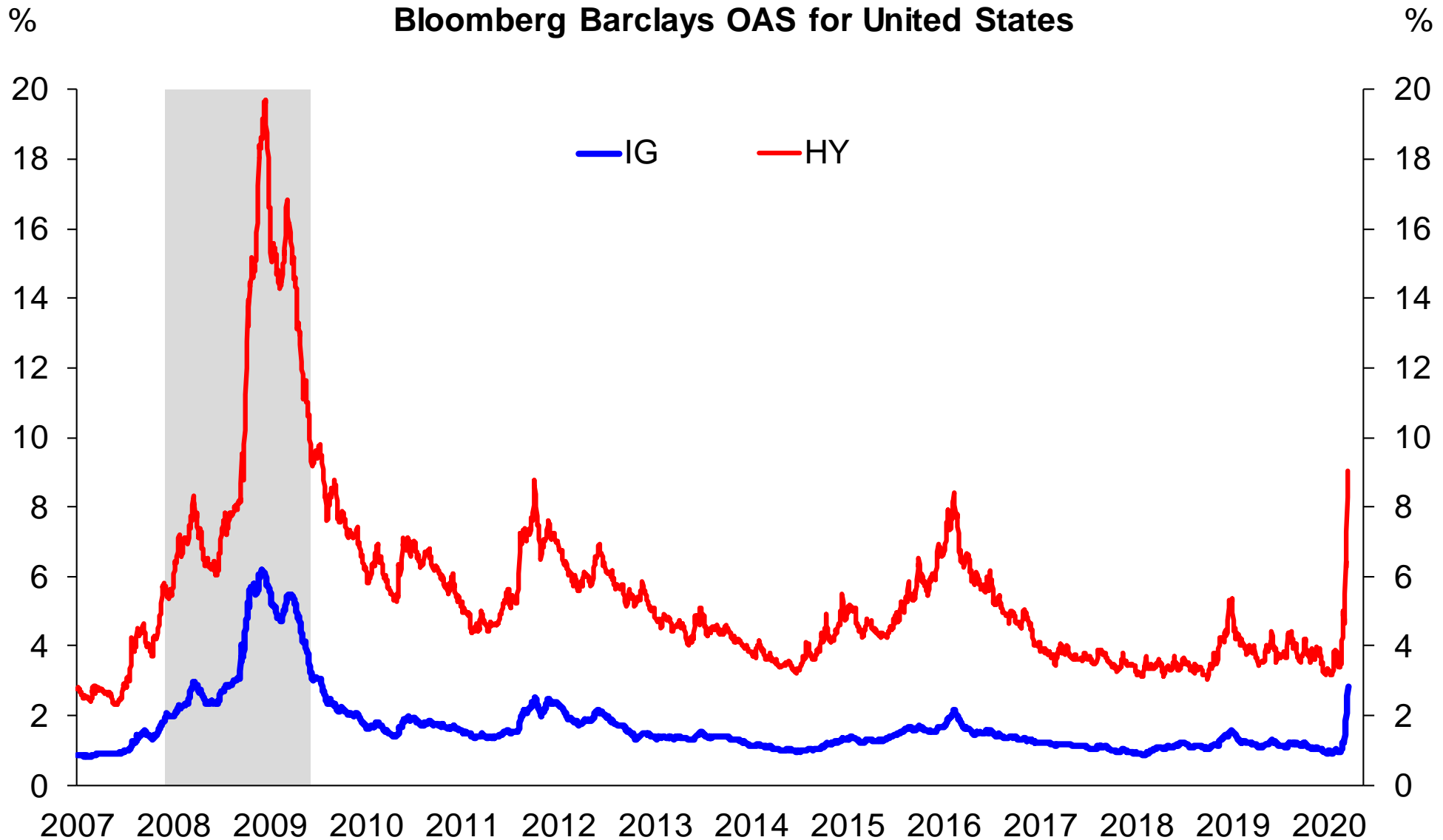
Source: Bloomberg Finance LP, DB Global Research

Yields on Investment grade and High yield corporate bonds



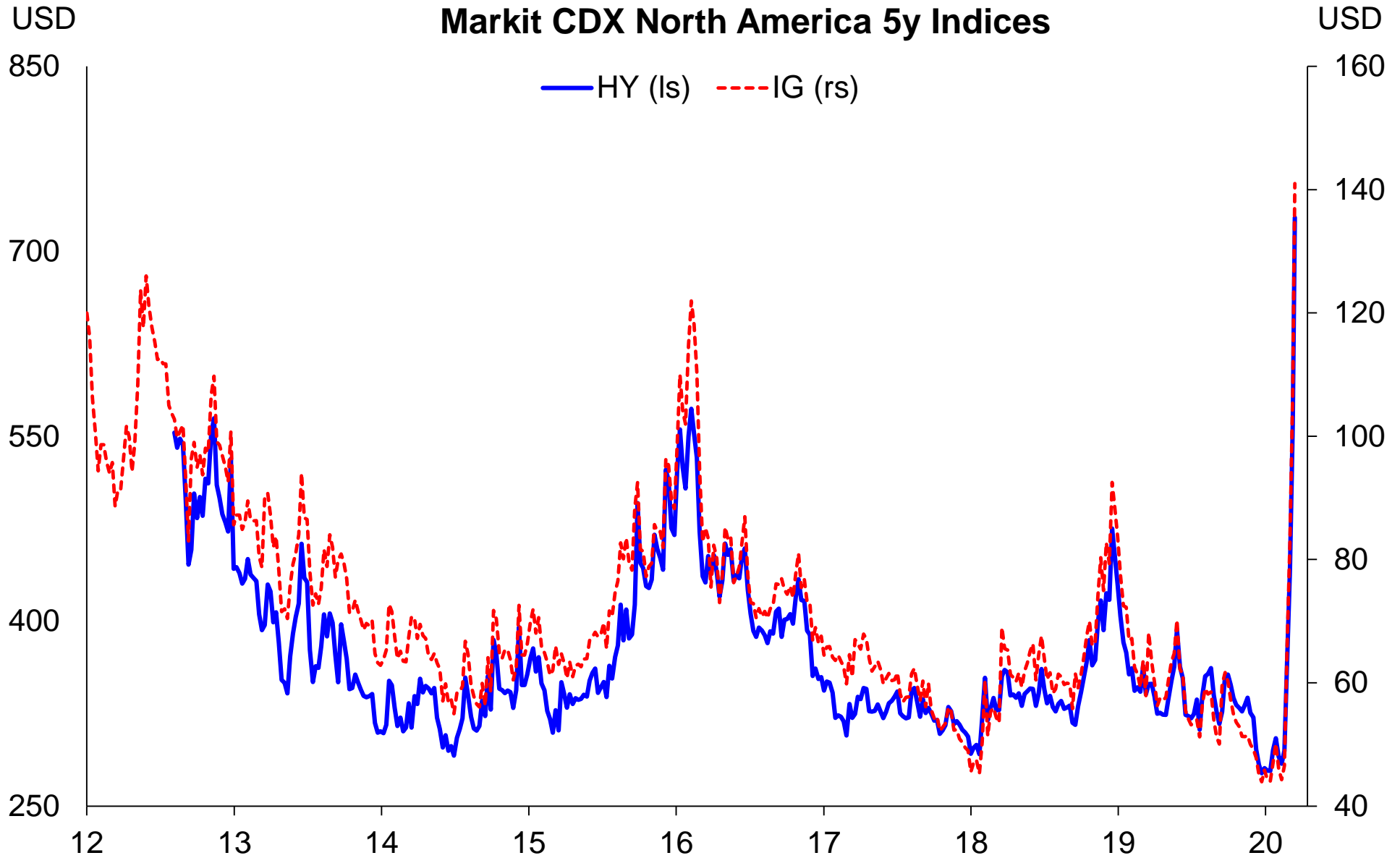
Source: Bloomberg Finance LP, DB Global Research

IG and HY spread



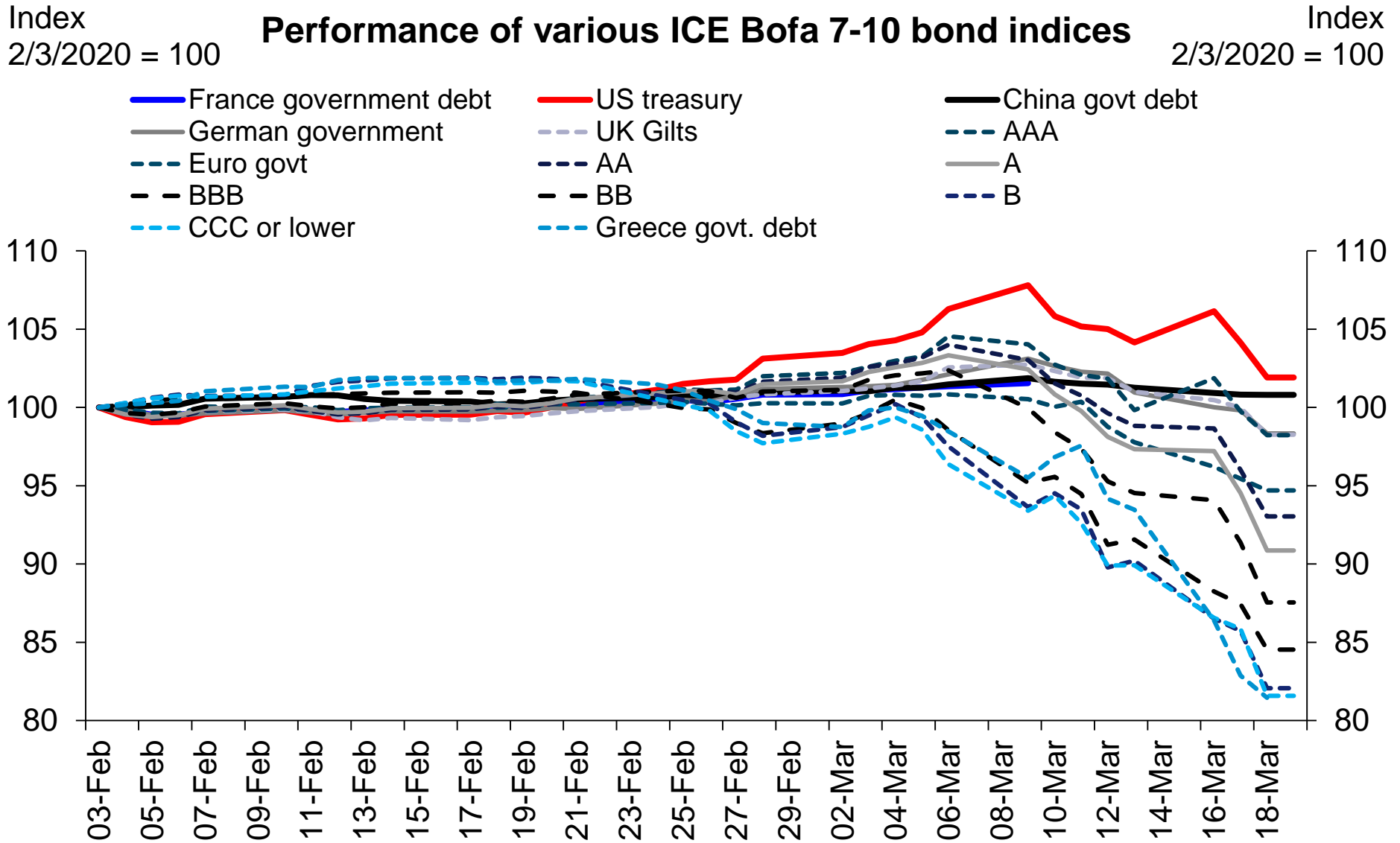
Source: Bloomberg Finance LP, DB Global Research

IG and HY CDS



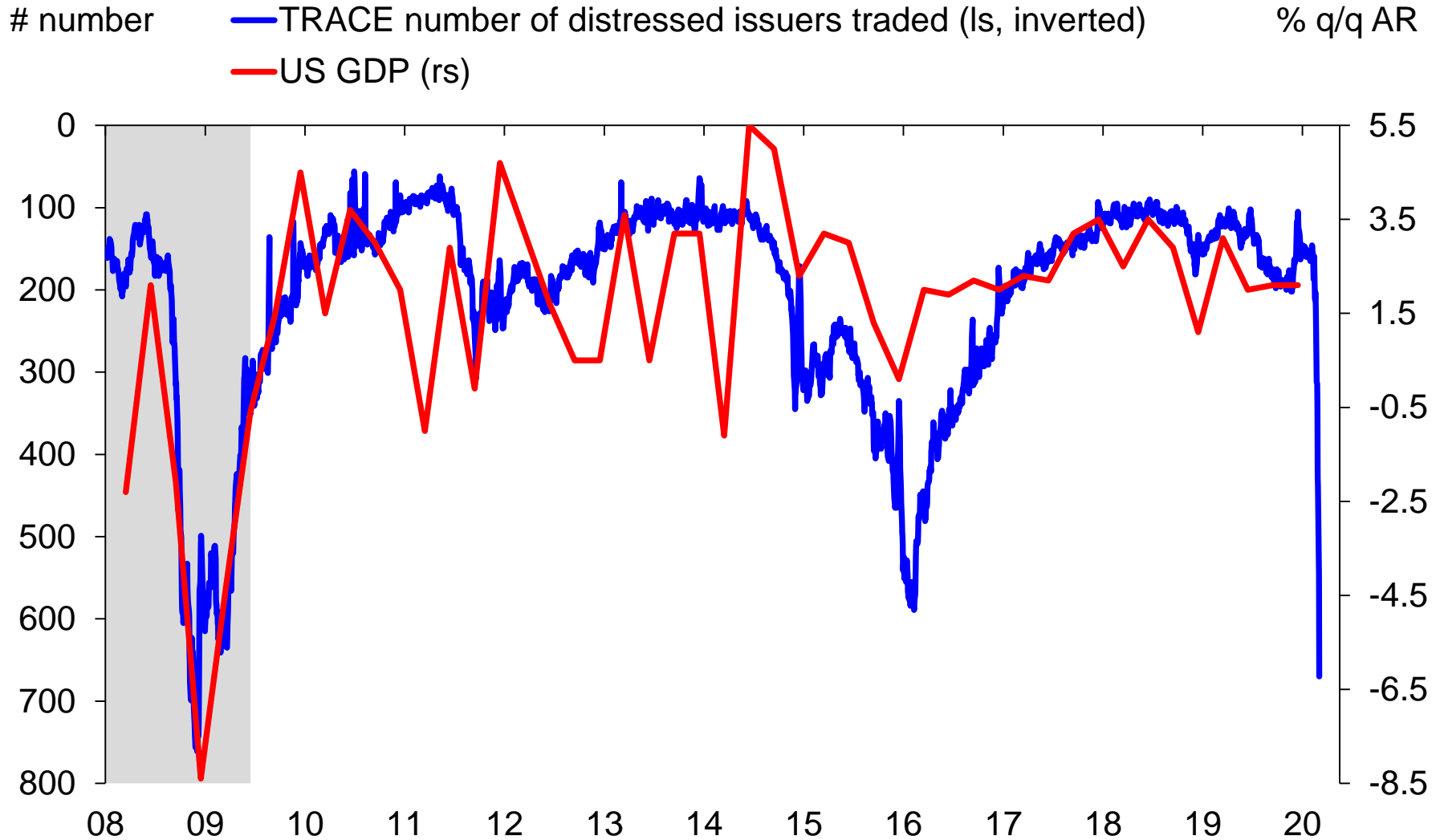
Source: Markit, Bloomberg Finance LP, DB Global Research

Significant differentiation in credit markets at the moment



Source: ICE BofA, Bloomberg Finance LP, DB Global Research

Number of distressed issuers traded



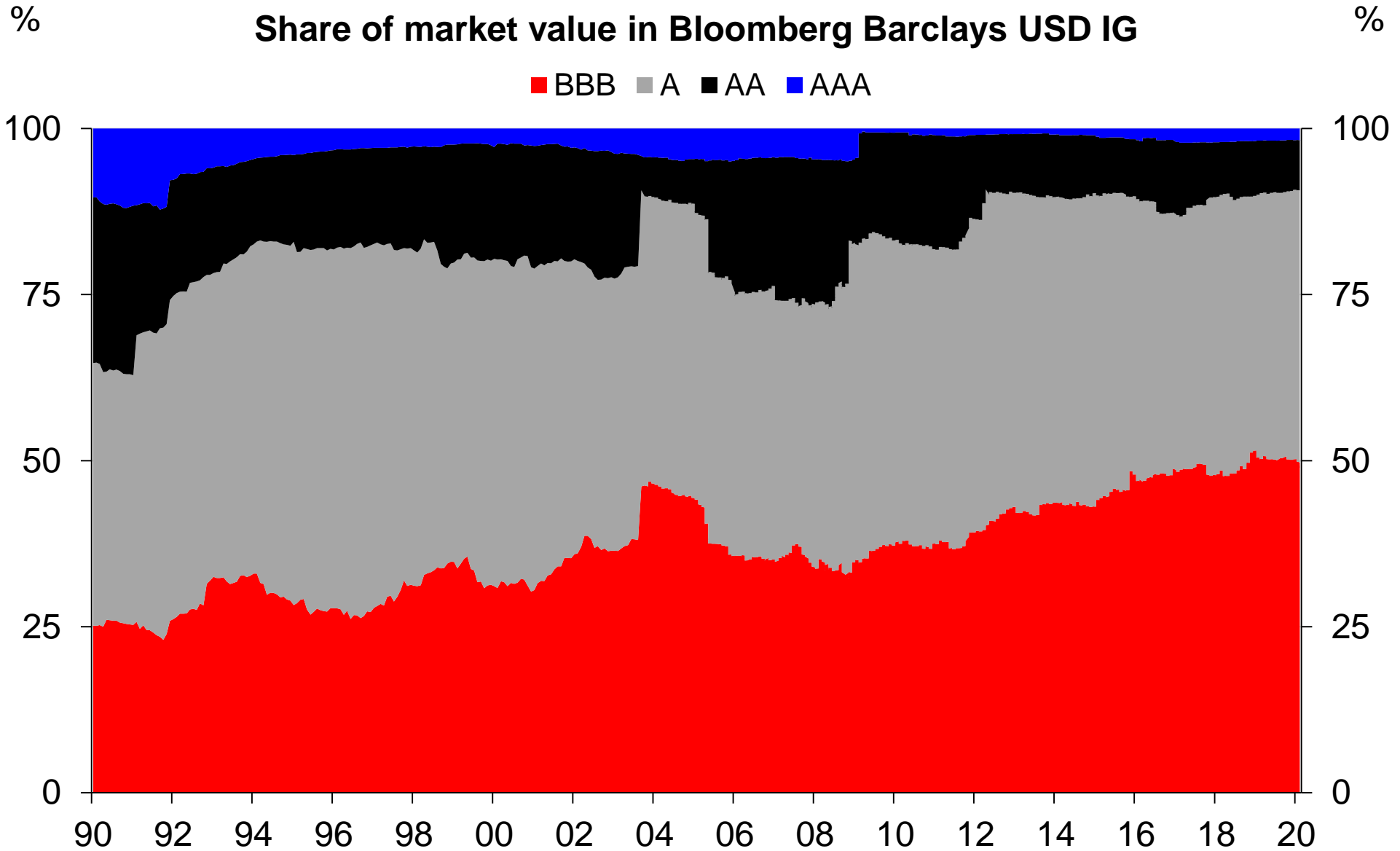
Note: Distressed bonds are bonds trading at more than 1000 basis points over the benchmark Treasury.

Source: BEA, Bloomberg Finance LP, DB Global Research



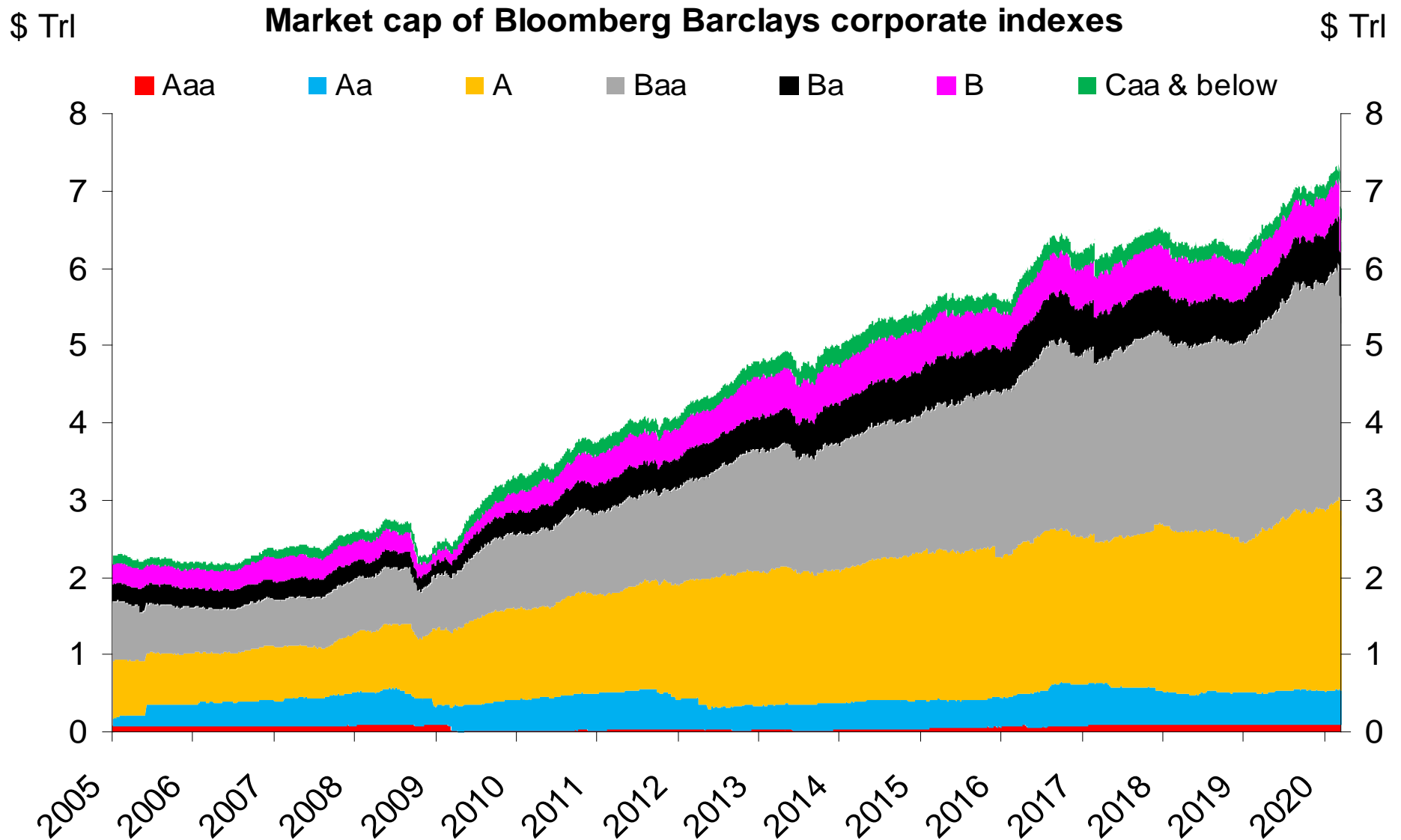
50% of the IG index is BBB

Share of market value in Bloomberg Barclays USD IG



Source: Bloomberg Finance LP, DB Global Research

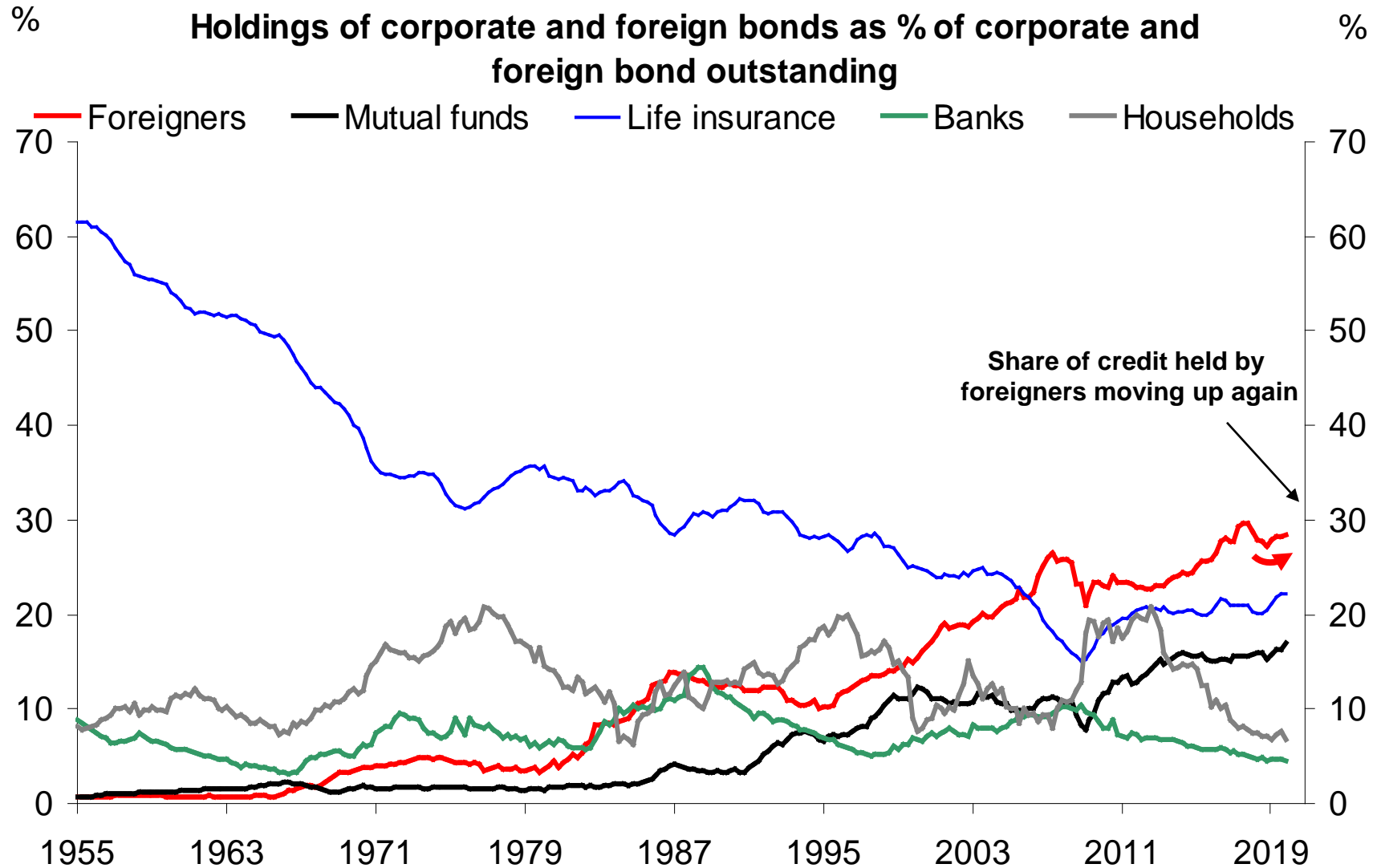
US credit markets have grown from \$2trn in 2008 to \$7trn today.
 All driven by much more BBB and single-A paper outstanding



Source: Bloomberg Finance LP, DB Global Research

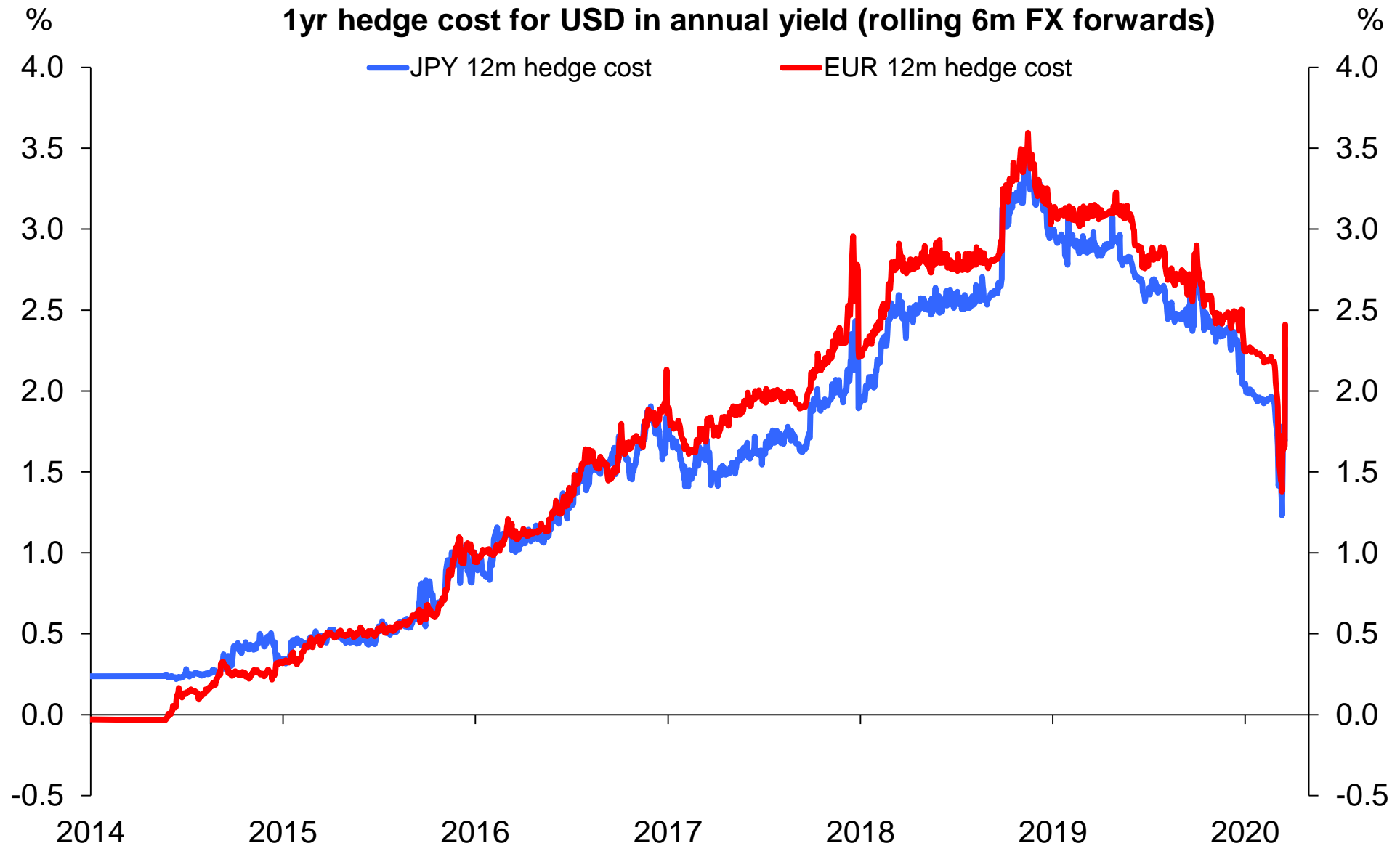


Foreign appetite for US IG and HY



Source: FRB, Haver Analytics, DB Global Research

Hedging costs coming down for European and Japanese investors who want to buy US fixed income

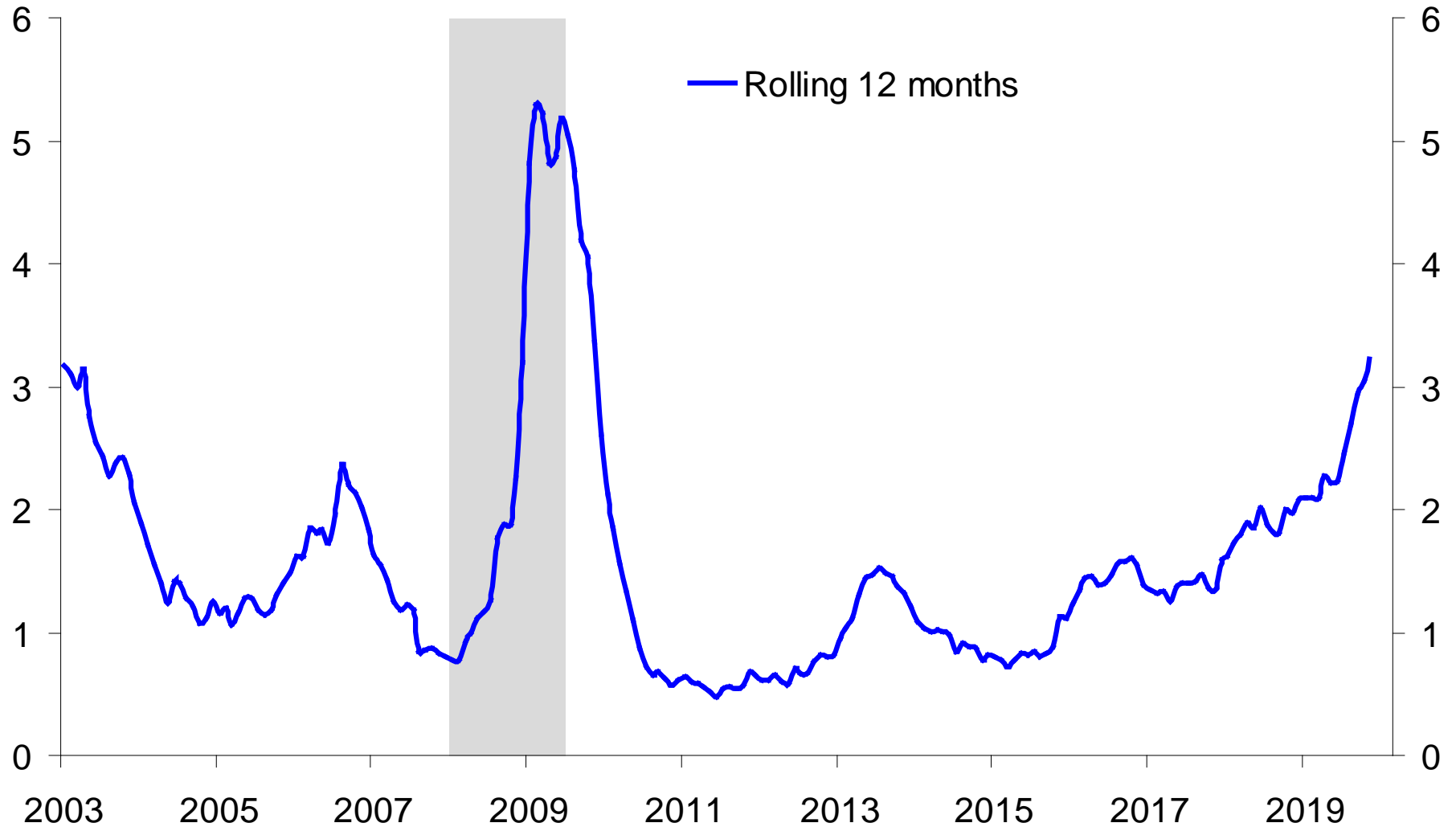


Source: Steven Zeng, Bloomberg Finance LP, DB Global Research

US leveraged loans: Recent acceleration in downgrades



US Leveraged loans: ratio of downgrades to upgrades

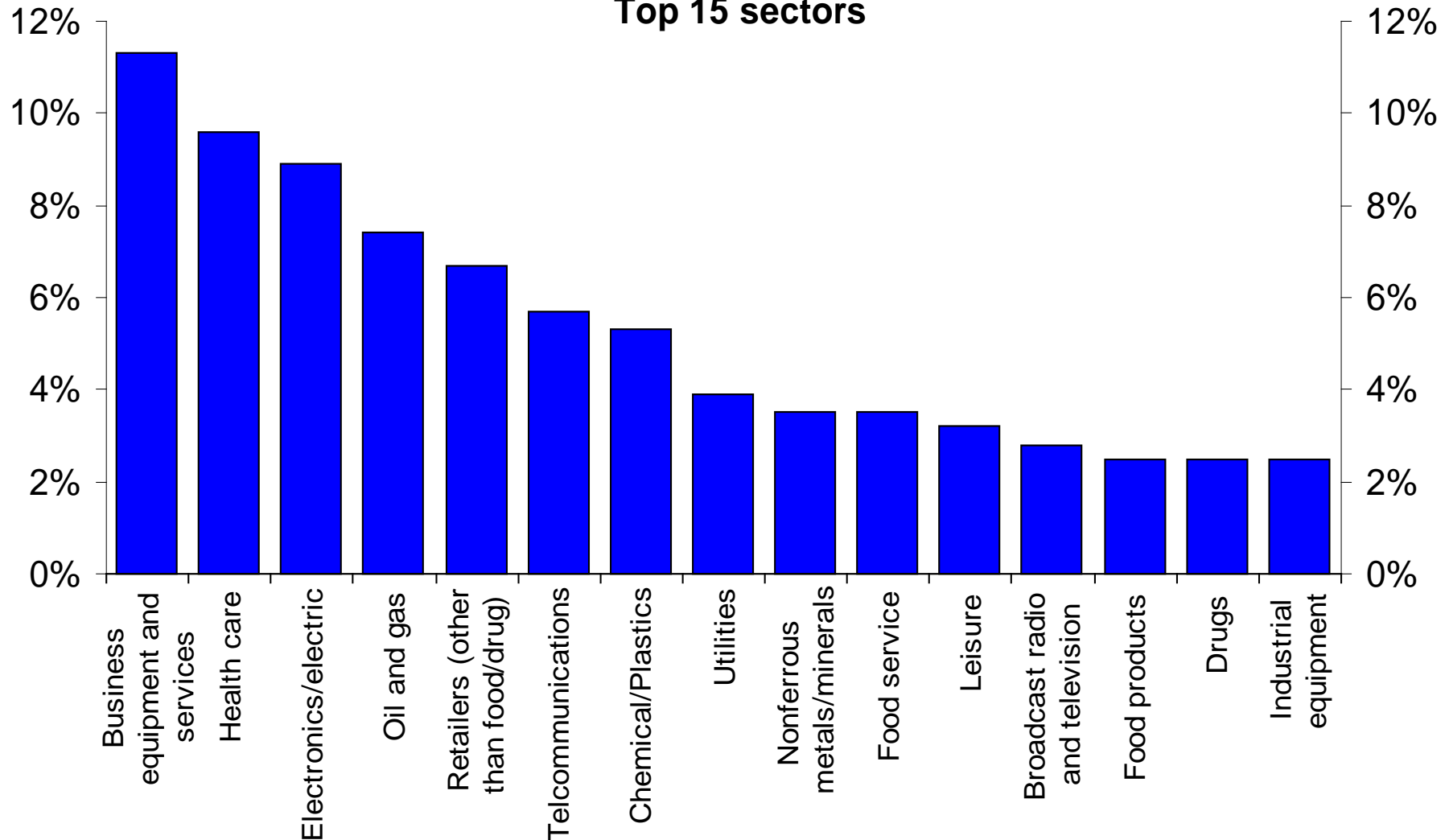


Source: S&P LCD/LSTA, Deutsche Bank Credit: Securitization CLO Research, DB Global Research



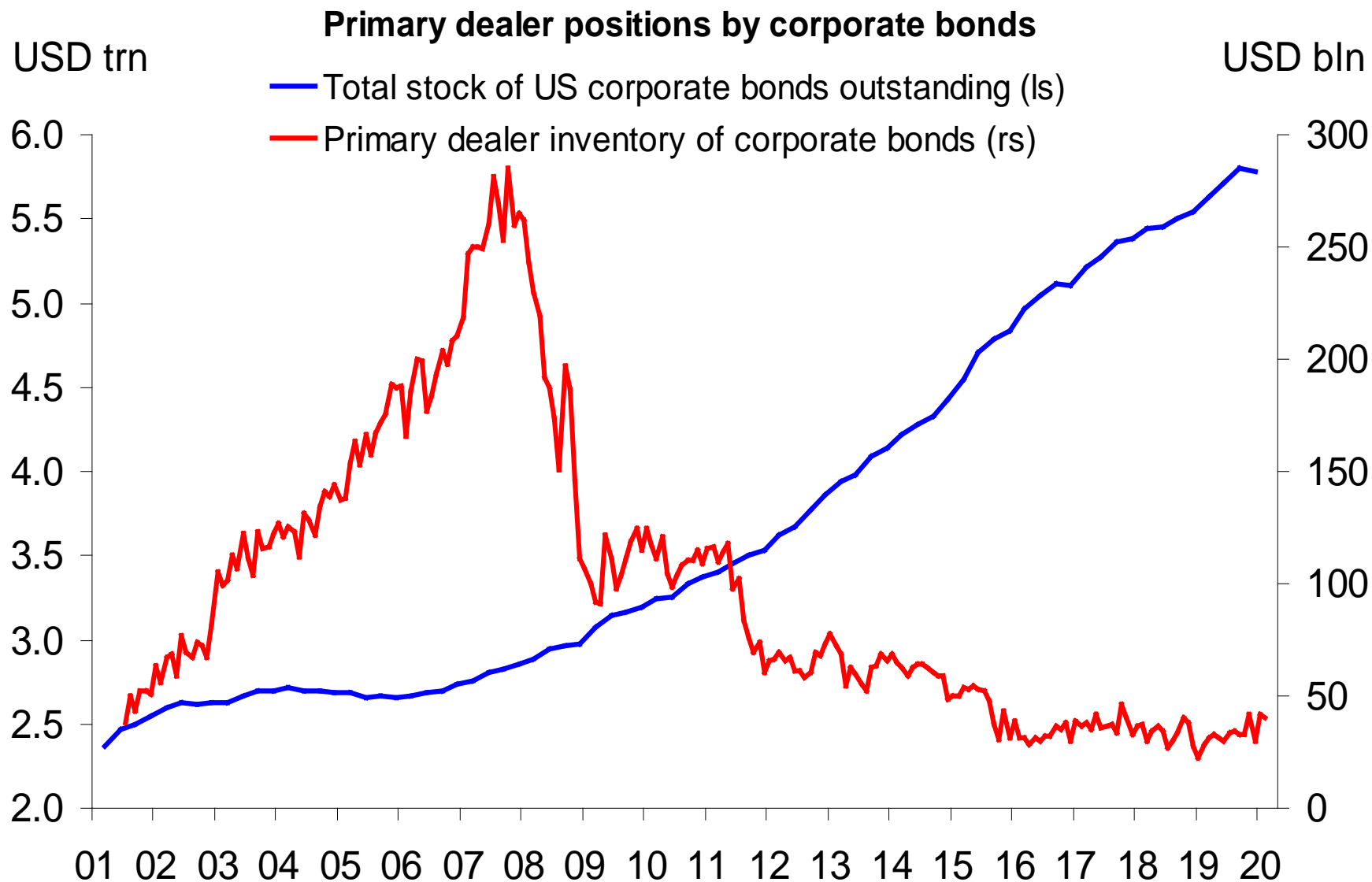
Industry distribution of downgrades of leveraged loans

2019 Leveraged loan downgrades, by industry Top 15 sectors



Source: S&P LCD, DB Global Research

Low primary dealer inventory of corporate bonds relative to the stock of IG and HY outstanding

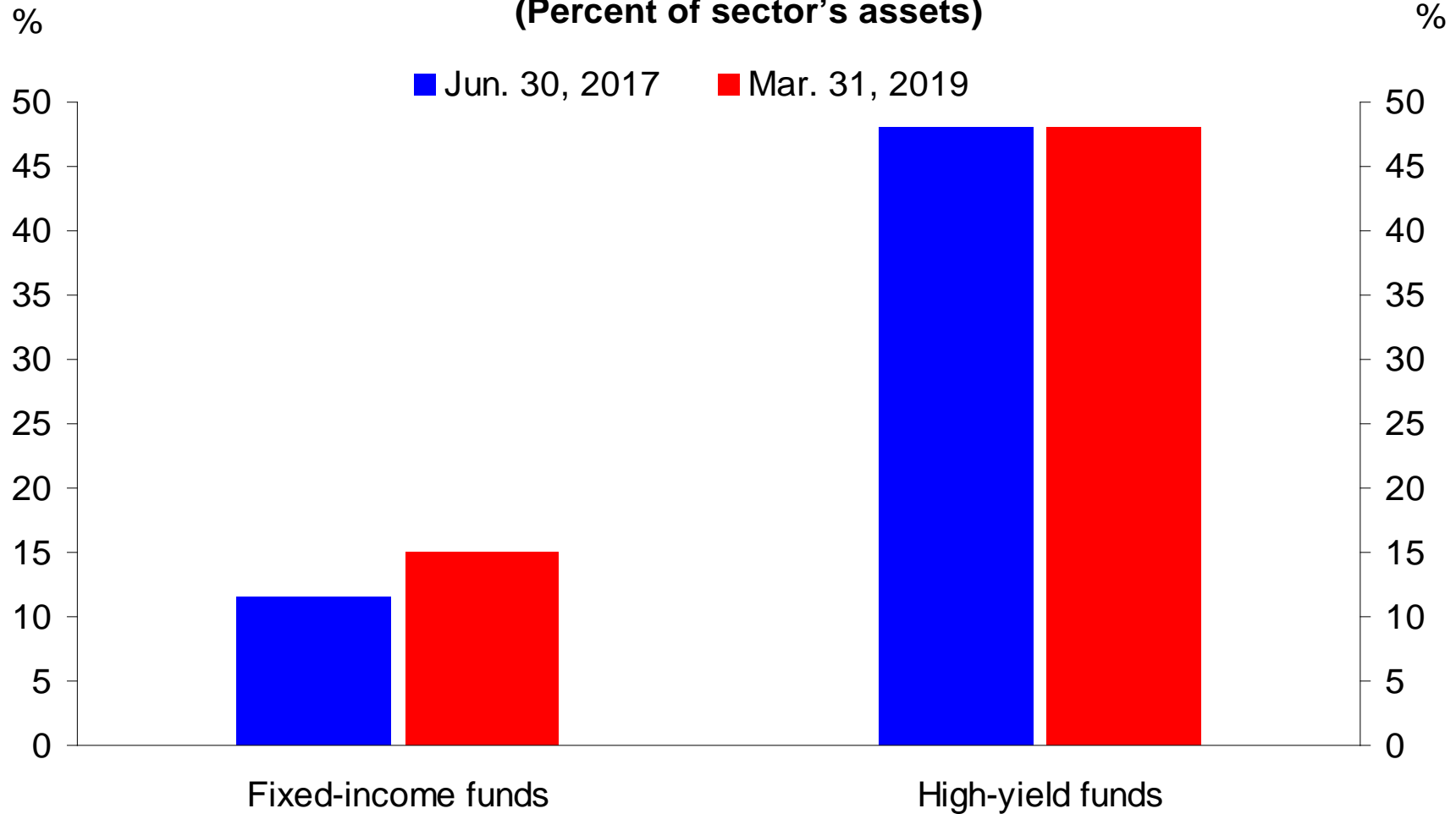


Source: FRB-NY, FRB, Haver Analytics, DB Global Research

How vulnerable are markets to a redemption shock? Funds with estimated liquidity shortfalls account for half of all high-yield fund assets



**Asset Share of Funds with HQLA Shortfalls
(Percent of sector's assets)**



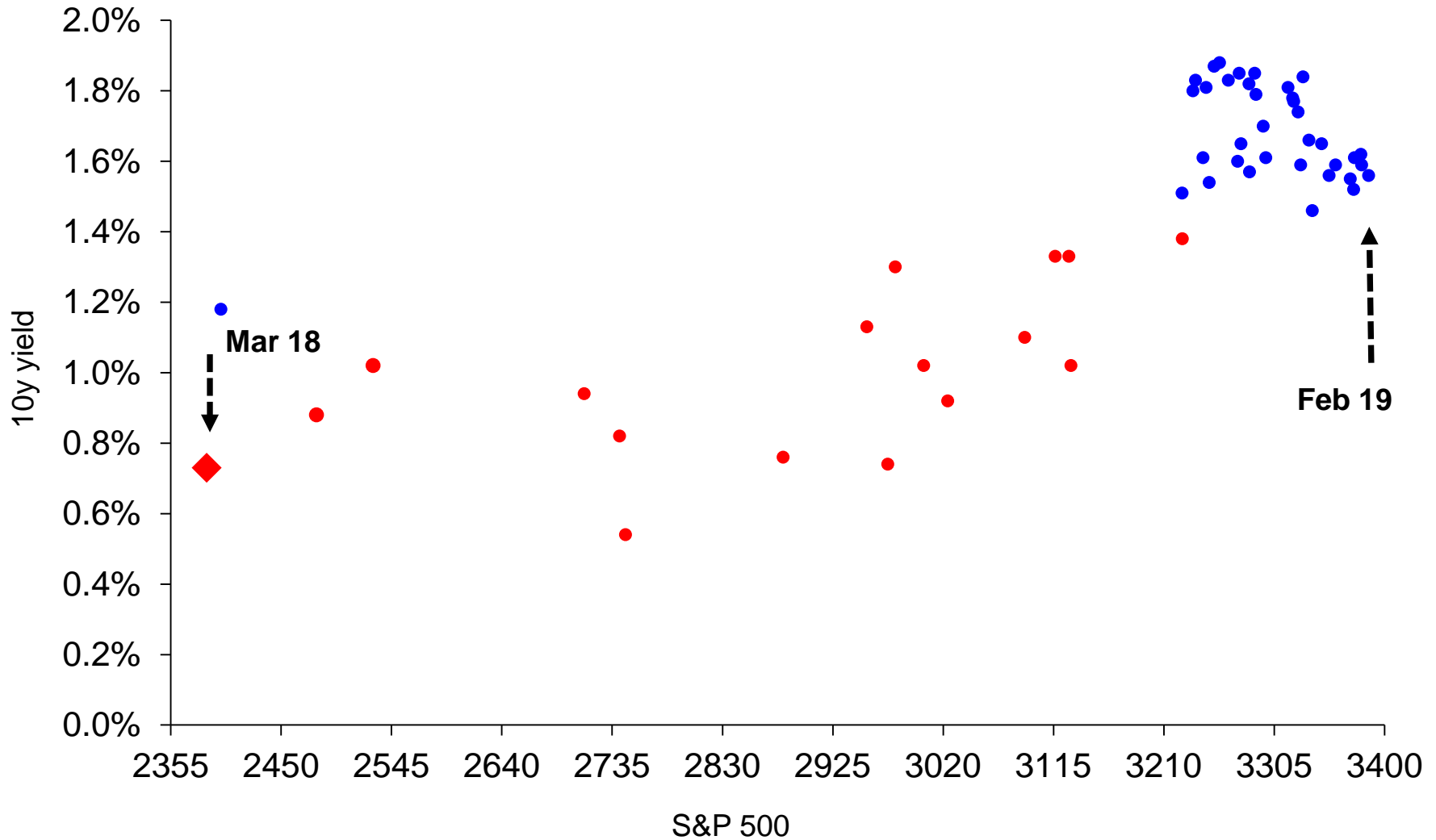
Note: Total AUM of funds analyzed: \$10.5trn. The exercise assumes that redemption shocks are equivalent to the worst percentile of funds' monthly asset outflows during 2000–19. If these shocks cannot be absorbed, funds suffer liquidity shortfalls.

Source: IMF GFSR October 2019, DB Global Research



Correlation breakdown: S&P500 vs 10s

S&P 500 vs US 10y yields in 2020



Source: S&P, FRB, Haver Analytics, DB Global Research

Correlation between gold and 10s



Source: FRB, WSJ, Haver Analytics, DB Global Research

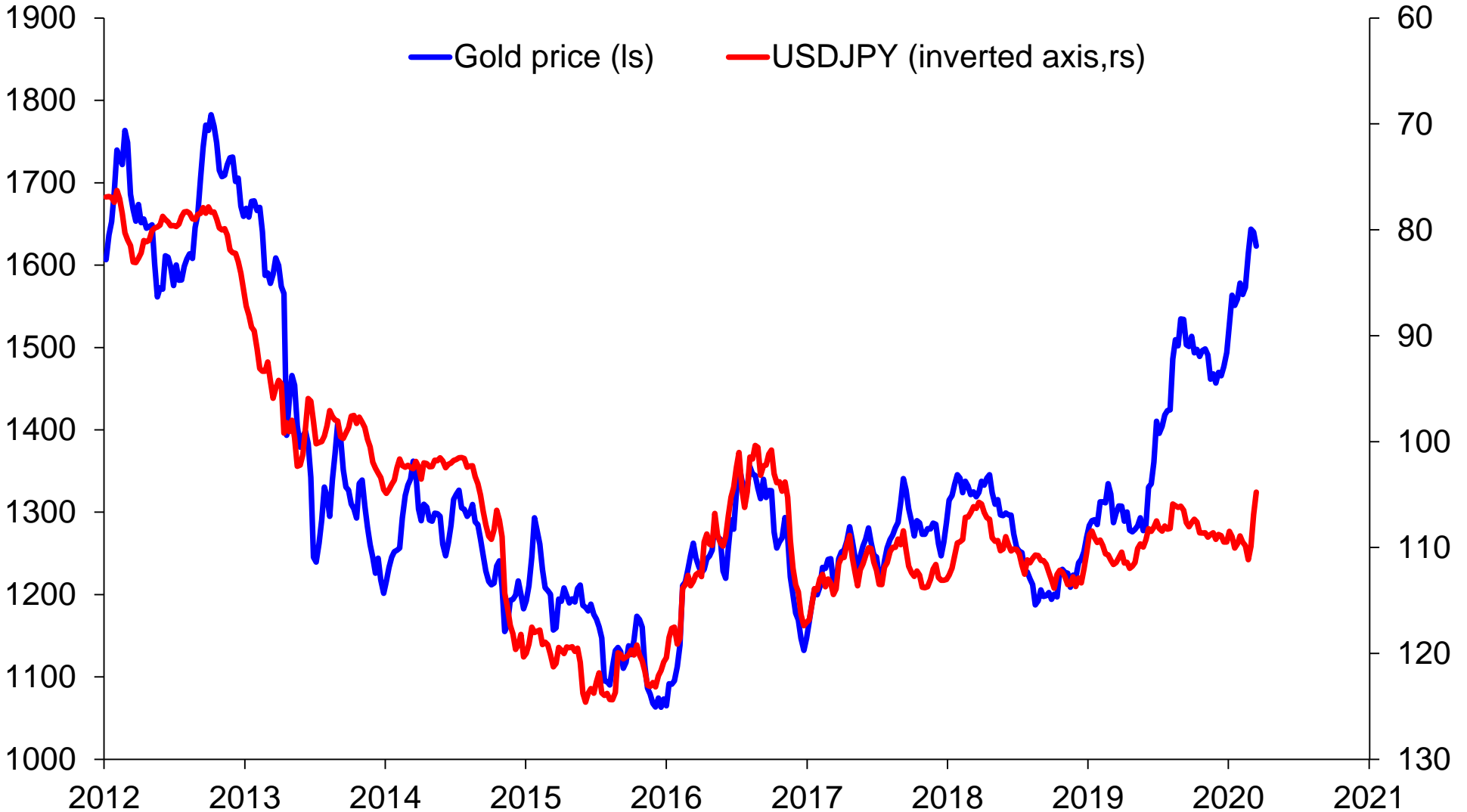


Correlation breakdown: Gold and JPY

\$/Troy Oz

United States: Gold vs USDJPY

Yen/US\$



Source: WSJ, FRB, Haver Analytics, DB Global Research

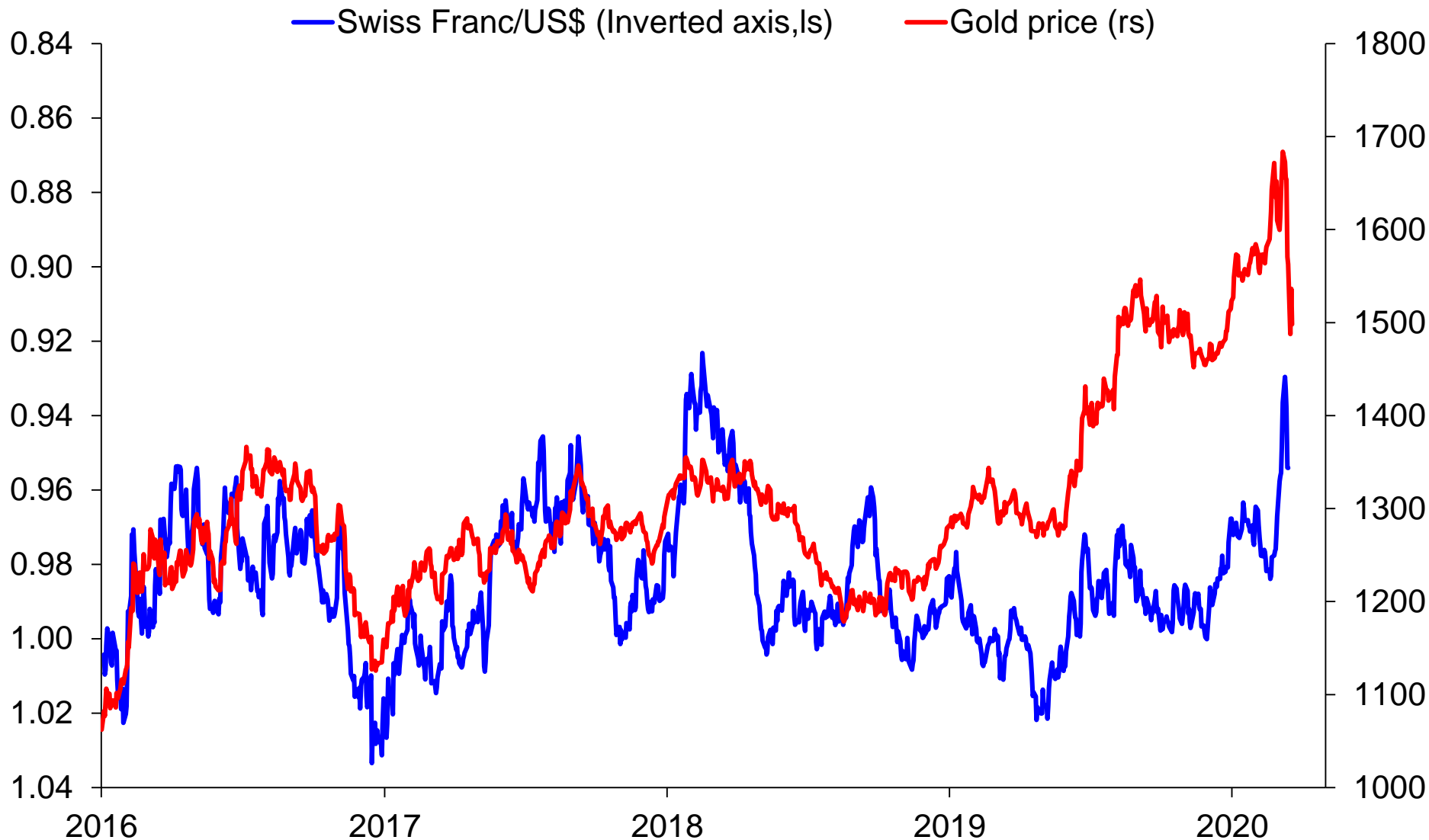
Correlation breakdown: Gold and CHF



Swiss Franc/US\$

United States: Gold price vs Swiss Franc/US\$

\$/Troy Oz



Source: WSJ, FRB, Haver Analytics, DB Global Research

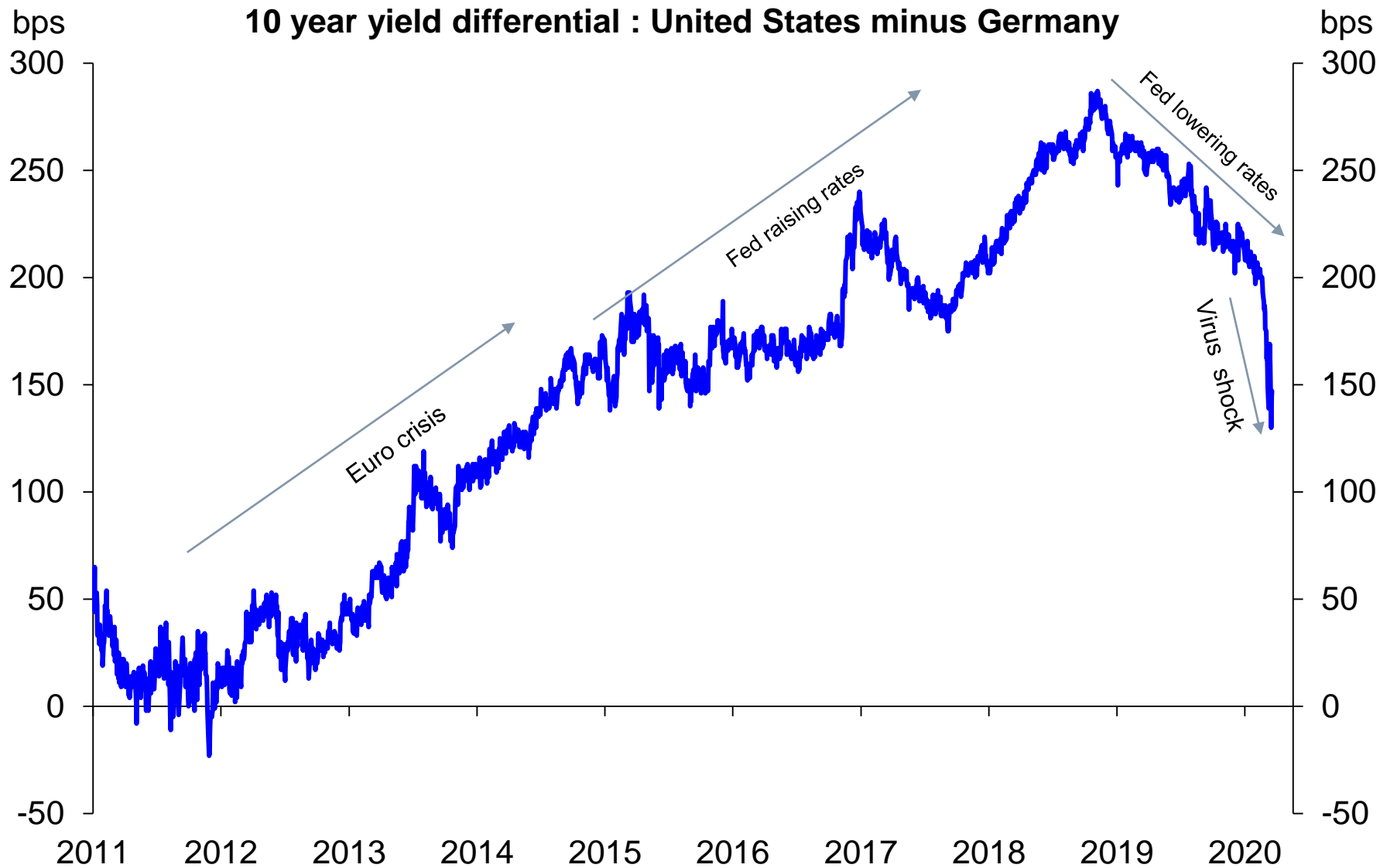


Fed and ECB reaction

10-year rates: Spread between Treasuries and Bunds narrowing

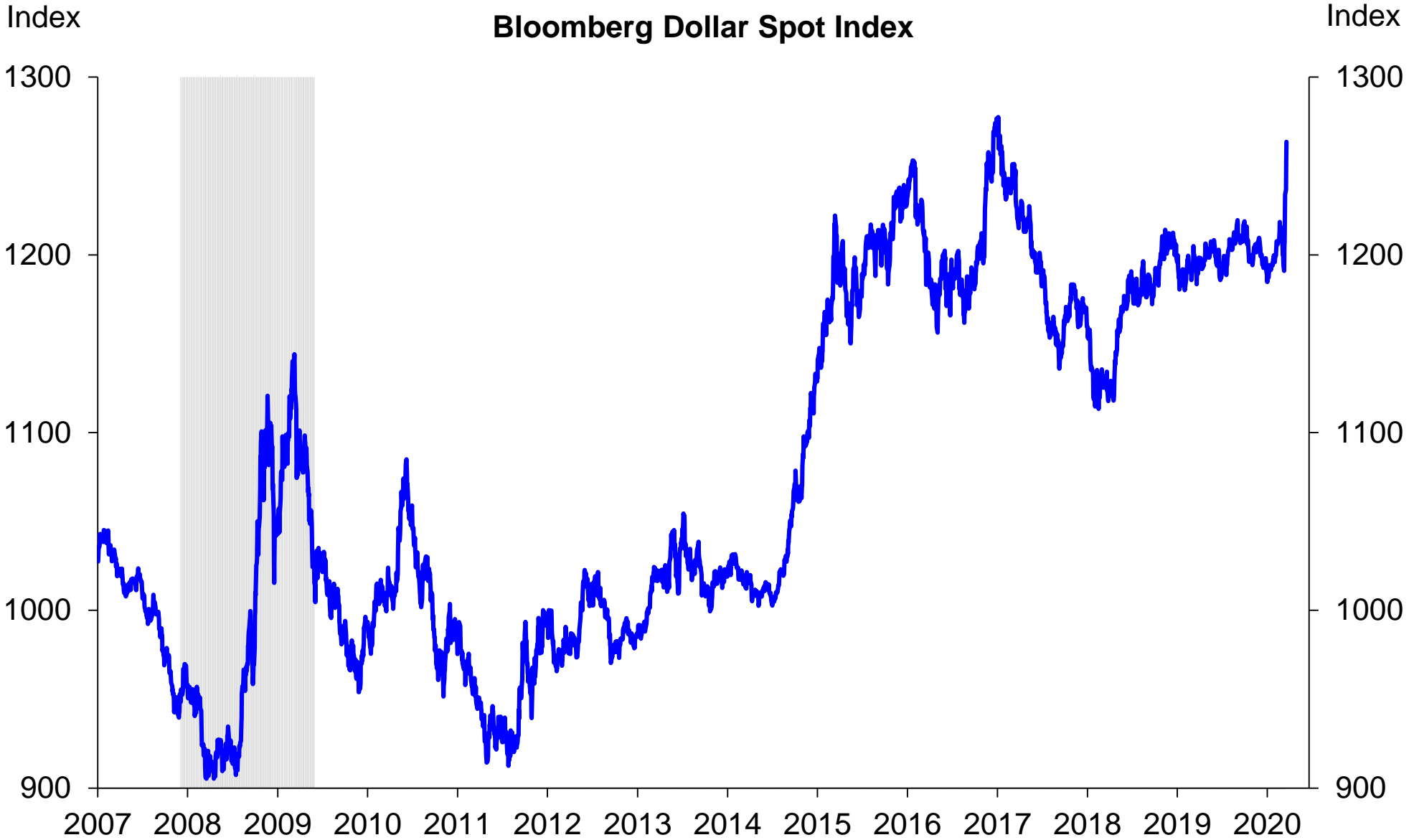


10 year yield differential : United States minus Germany



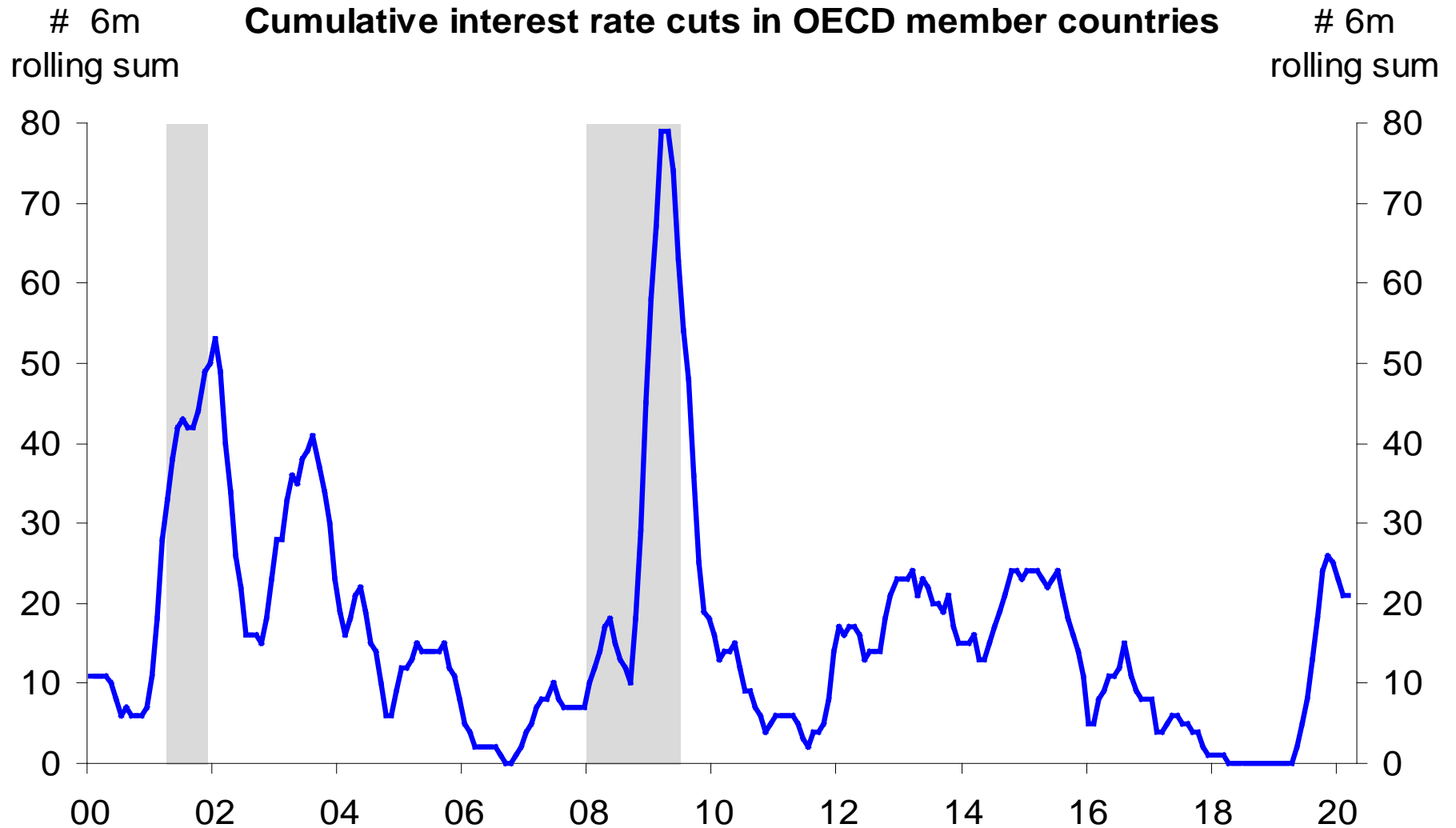
Source: US Treasury, Bbk, Haver Analytics, DB Global Research

Dollar index



Source: Bloomberg Finance LP, DB Global Research

Cumulative rate cuts in OECD countries



Source: Central Banks, Haver Analytics, DB Global Research

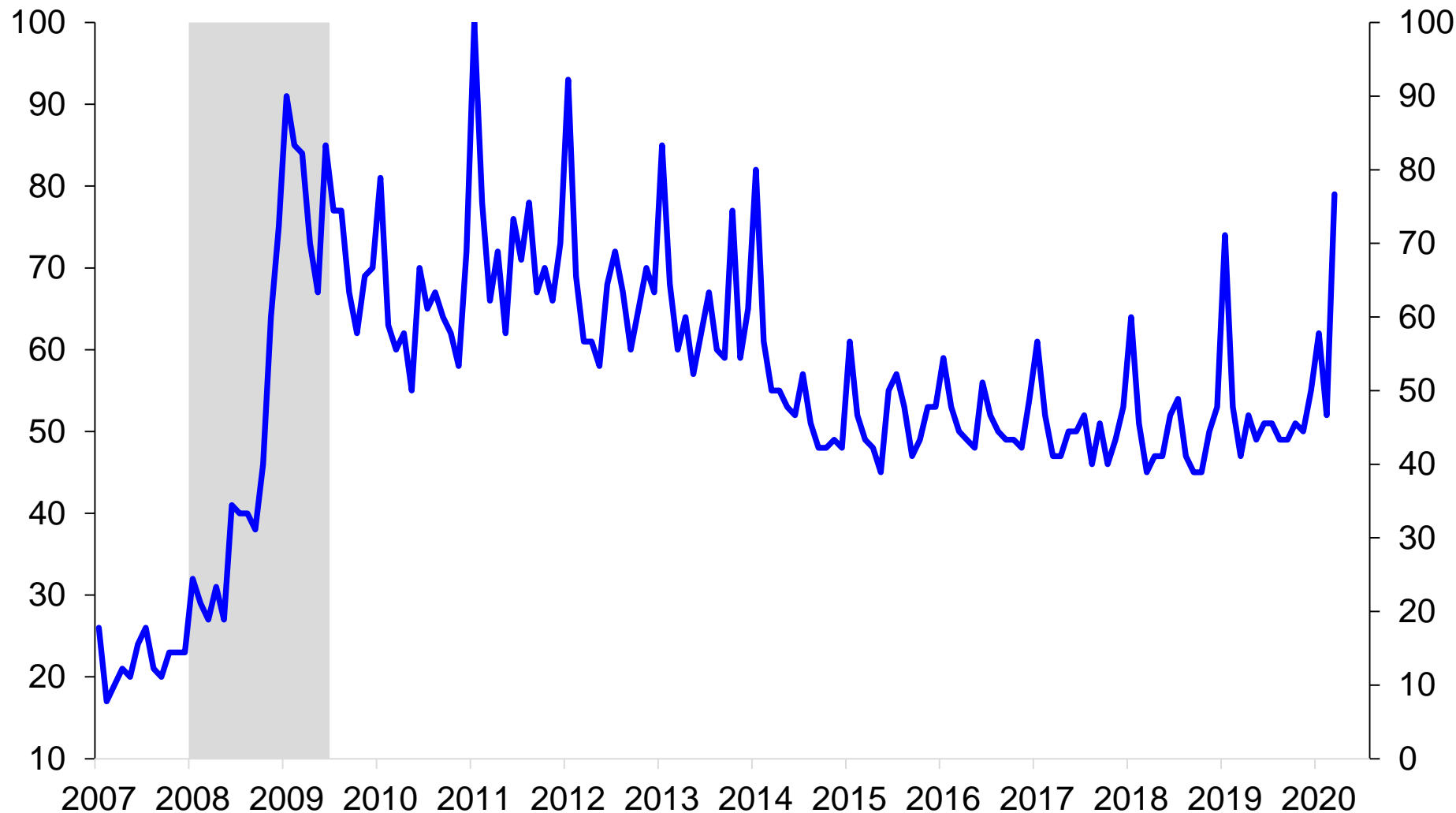


Fiscal policy reaction

Google searches for “file for unemployment”



Google trends : interest over time
search term : file for unemployment

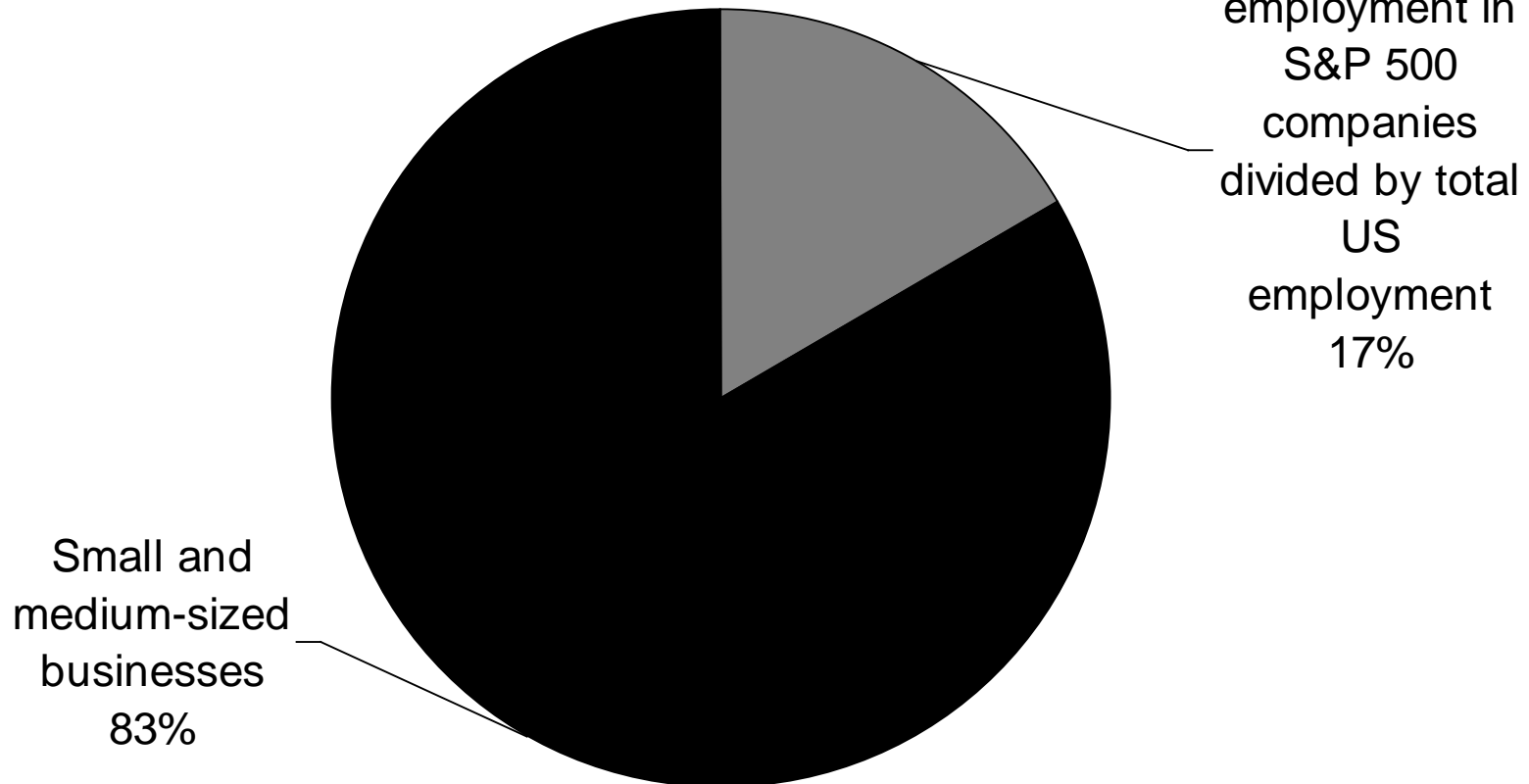


Source: Google trends, DB Global Research

Small and medium-sized companies play a very important role in the US economy



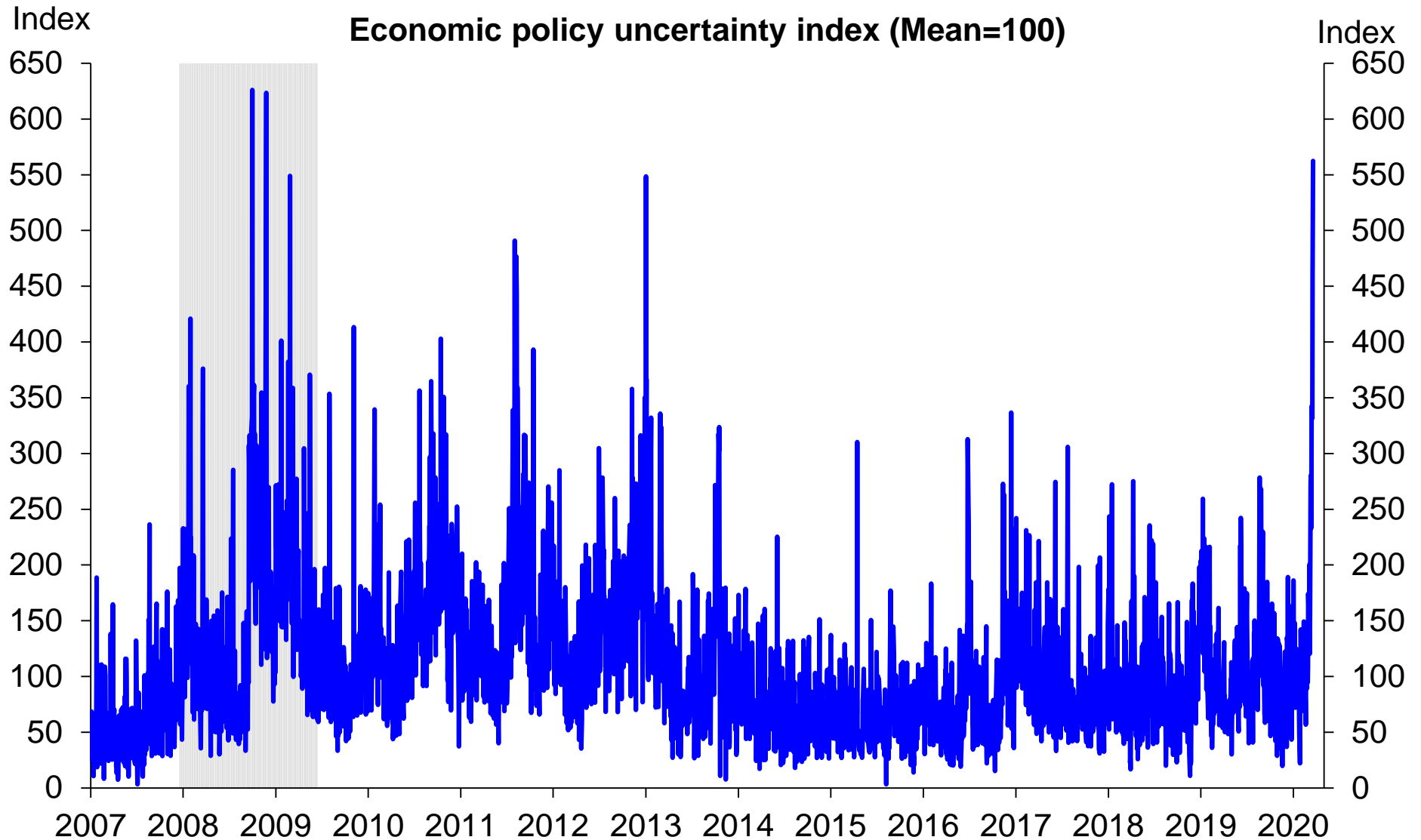
Global employment in S&P500 companies is only 17% of US nonfarm payrolls*



* Data as of February 2020

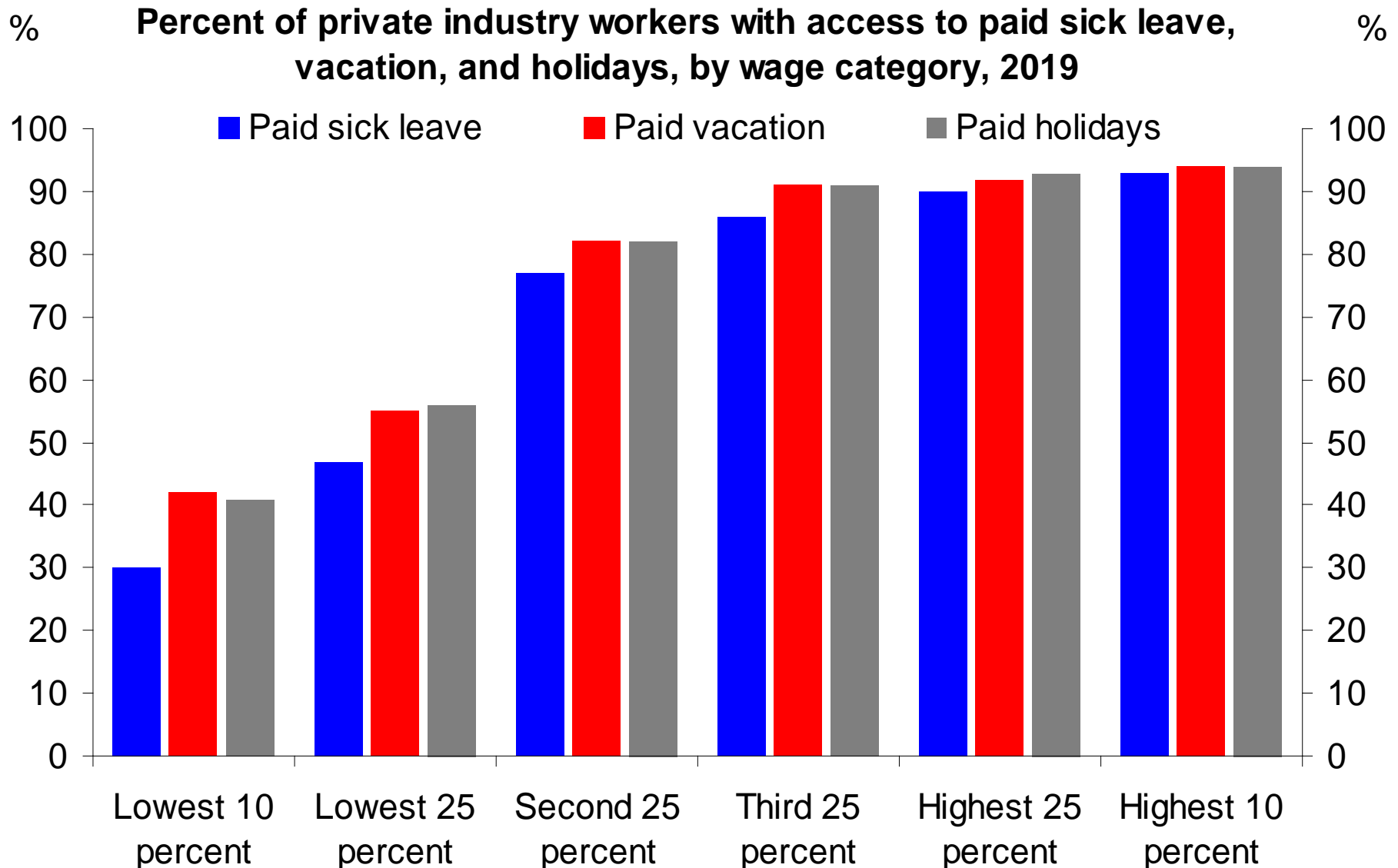
Source: Bloomberg Finance LP, BLS, Haver Analytics, DB Global Markets Research

Economic policy uncertainty at highest level since the financial crisis



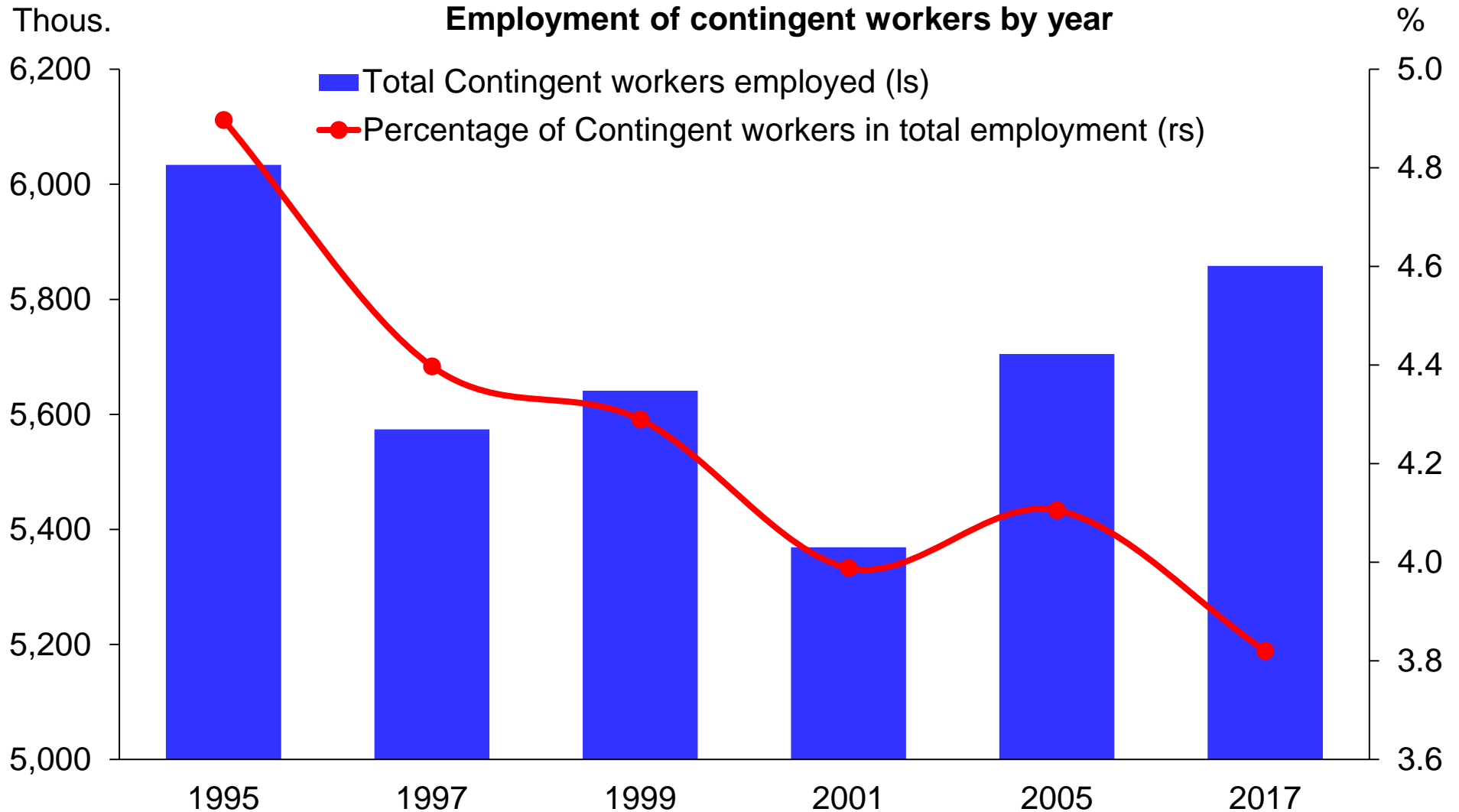
Source: PolicyUncertainty.com, Haver Analytics, DB Global Research

US: Coronavirus likely to have bigger impact on low-income groups



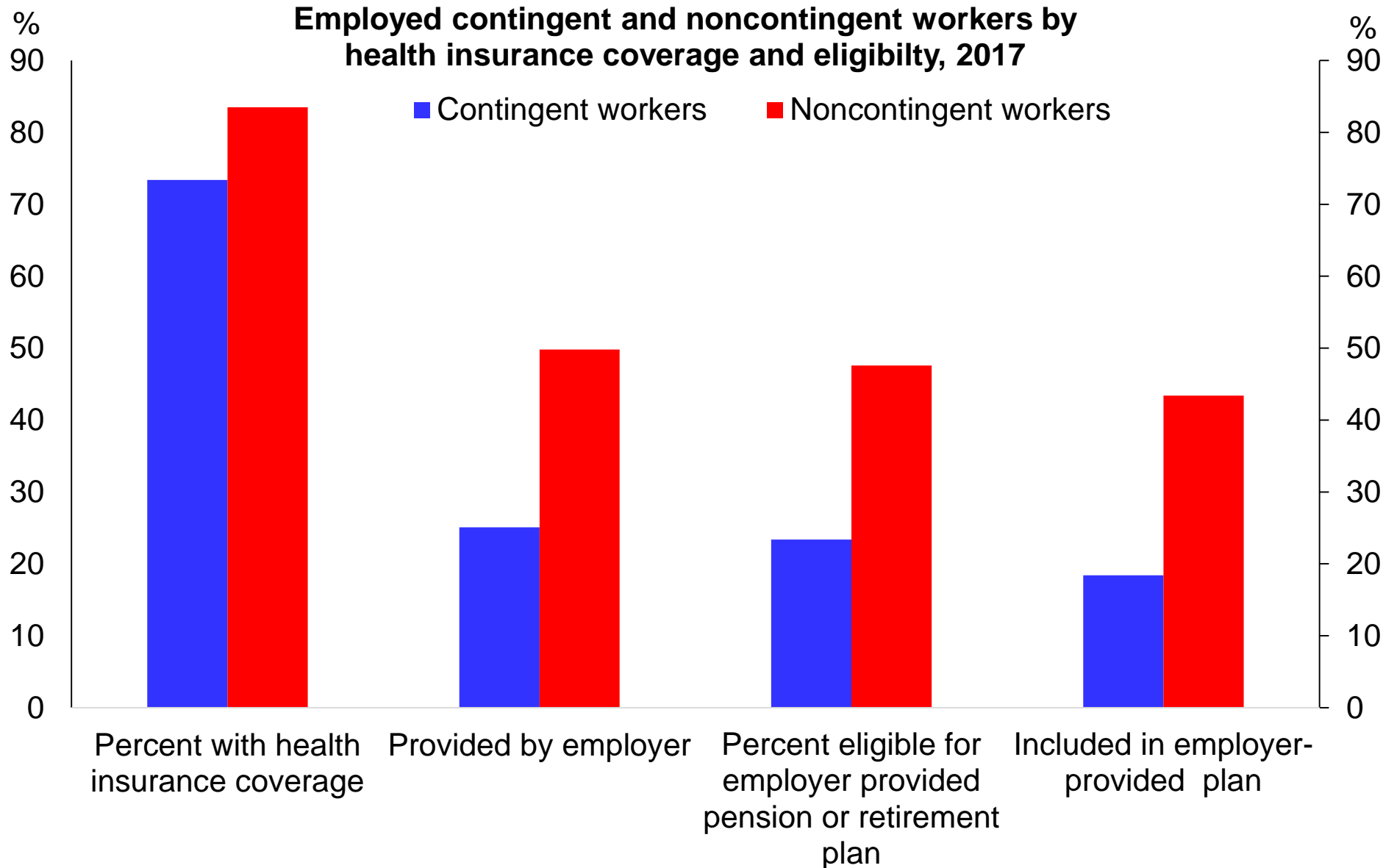
Source: Bureau of Labor Statistics, National Compensation Survey, DB Global Research

There are 5.8mn gig workers in the US economy



Source: BLS, DB Global Research

Many gig workers don't have health insurance



Source: BLS, DB Global Research

Fiscal packages announced



IMF	US
<ul style="list-style-type: none"> • The IMF said it “stands ready” to use its \$1 trillion lending capacity to help countries. • For low-income countries: Rapid-disbursing emergency financing of up to \$10 billion (50 % of quota of eligible members) that can be accessed without a full-fledged IMF program. • Other members can access emergency financing through the Rapid Financing Instrument. This facility could provide about \$40 billion for emerging markets that could potentially approach IMF for financial support. • Also have the Catastrophe Containment and Relief Trust – the CCRT – which provides eligible countries with up-front grants for relief on IMF debt service falling due. 	<ul style="list-style-type: none"> • A \$750 to \$800 billion package has been mentioned • Deferring tax payments for individuals and businesses affected by the virus, this would add US\$200 billion to the economy, and the Small Businesses Administration will provide emergency capital to certain firms. • A US\$7.8 billion emergency spending bill to fund response to the outbreak, was signed on March 6. • Lawmakers are set to vote on a package of measures including paid sick leave for hourly workers staying at home.
Italy	UK
<ul style="list-style-type: none"> • Government is ready to spend as much as 25 billion euros (US\$28.3 billion) on virus-related stimulus; provisions could include aid for workers facing temporary layoffs and compensation for affected firms. • Finance Minister Roberto Gualtieri said the Cabinet is likely to approve a first package worth about 12 billion euros bn. 	<ul style="list-style-type: none"> • A 12 billion-pound (US\$15.3 billion) virus package was announced as part of a 30 billion-pound budget, including 5 billion pounds for a National Health Service emergency response fund, statutory sick pay for those self-quarantined, and aid for businesses. • Under discussion: Help for workers facing temporary layoffs, boosting a guarantee fund for loans to small- & medium-sized firms, compensation for firms whose turn over fell more than 25% & some form of moratorium for business & personal mortgage repayments.

Source: IMF, Bloomberg, various media sources, DB Global Research

Fiscal packages announced



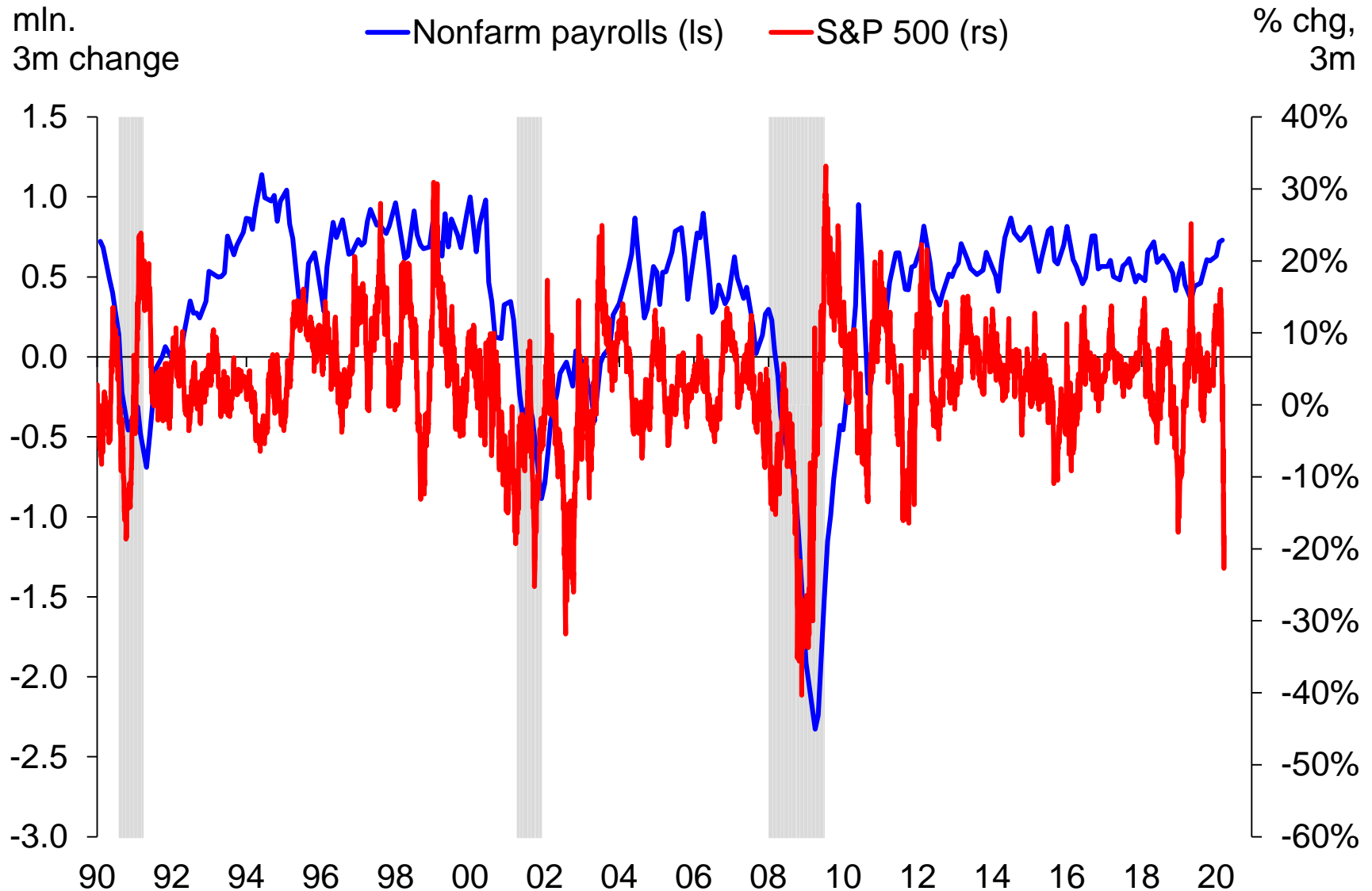
Japan	South Korea
<ul style="list-style-type: none"> • Abe's administration rolled out a second package to tackle virus effects, bringing the total allocation since last month to 2.03 trillion yen (US\$19.6 billion) • The latest measures include 1.1 trillion yen in loan support and 430.8 billion yen in aid for medical professionals and those affected by school closures. That adds to 500 billion yen allocated last month in low-cost loans to companies affected by the virus. • Some ruling-party members are calling for an extra budget of 30 trillion yen in coming months. 	<ul style="list-style-type: none"> • 11.7 trillion won (US\$9.7 billion) was allocated in a special budget to aid medical response, businesses and households; Yonhap News reports officials are discussing expanding the amount. • Tax breaks, rent subsidies announced Feb 28.
Australia	New Zealand
<ul style="list-style-type: none"> • Fiscal stimulus worth A\$17.6 billion (US\$11.4 billion) includes A\$1.3 billion to safeguard jobs of 120,000 apprentices. • One-time cash payments to welfare recipients and lower-income households; wage subsidies for small- and medium-sized firms. • A\$1 billion fund set up to help tourism operators and some China-exposed exporters. 	<ul style="list-style-type: none"> • Government has announced a spending package equivalent to 4% of GDP. • It includes covering wages for people who are required to self-isolate but cannot work from home, or those caring for relatives who are sick with the virus, even if they are not sick or do not test positive for Covid-19. • The NZ\$12.1bn stimulus includes wage subsidies, bolstering the healthcare sector's response to the virus, more money for low-income families and those on social welfare, and changes to business tax.

Source: IMF, Bloomberg, various media sources, DB Global Research



Macroeconomic implications

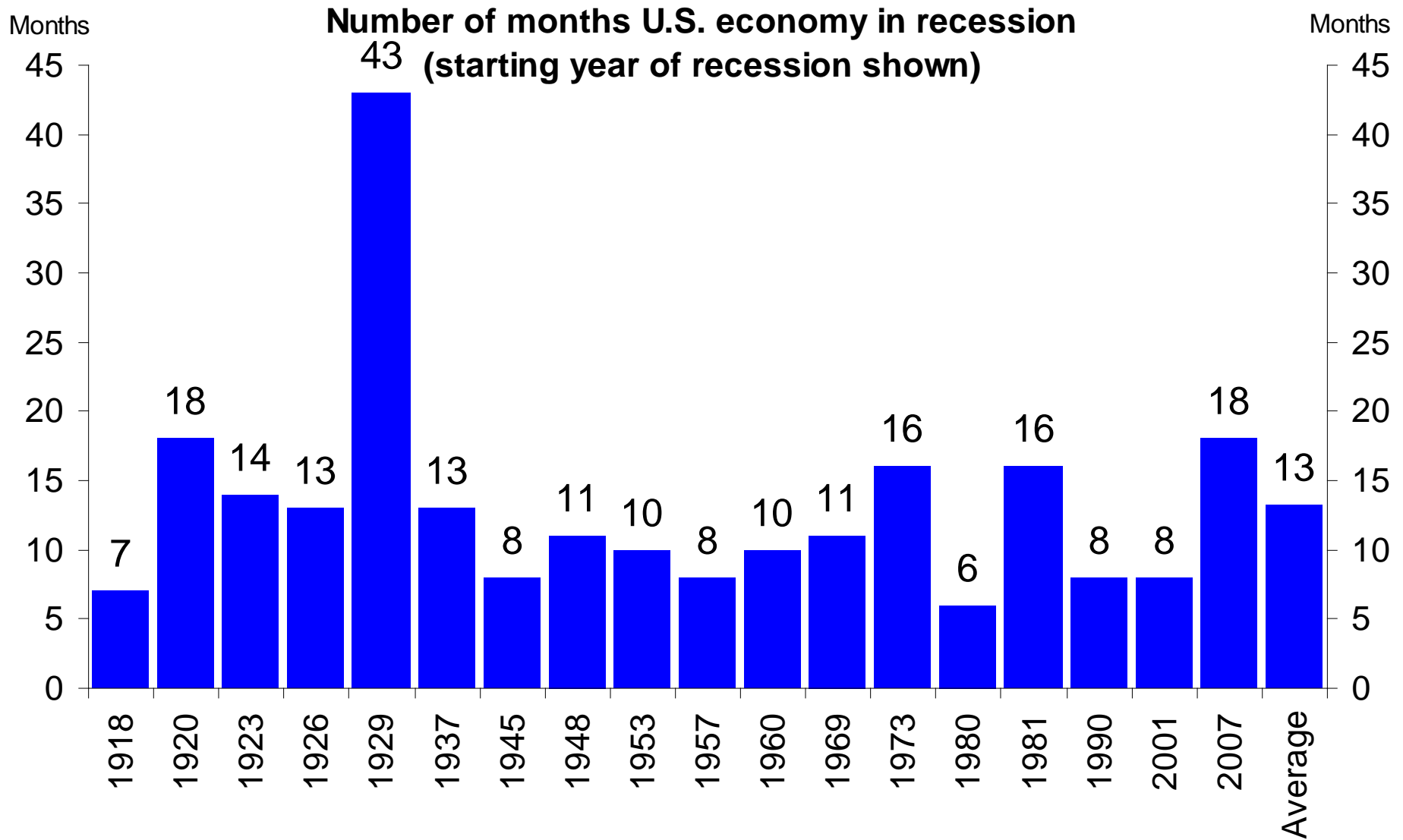
Stock market declines point to a significant drop in nonfarm payrolls over the coming three months



Source: S&P, BLS, Haver Analytics, Bloomberg Finance LP, DB Global Research

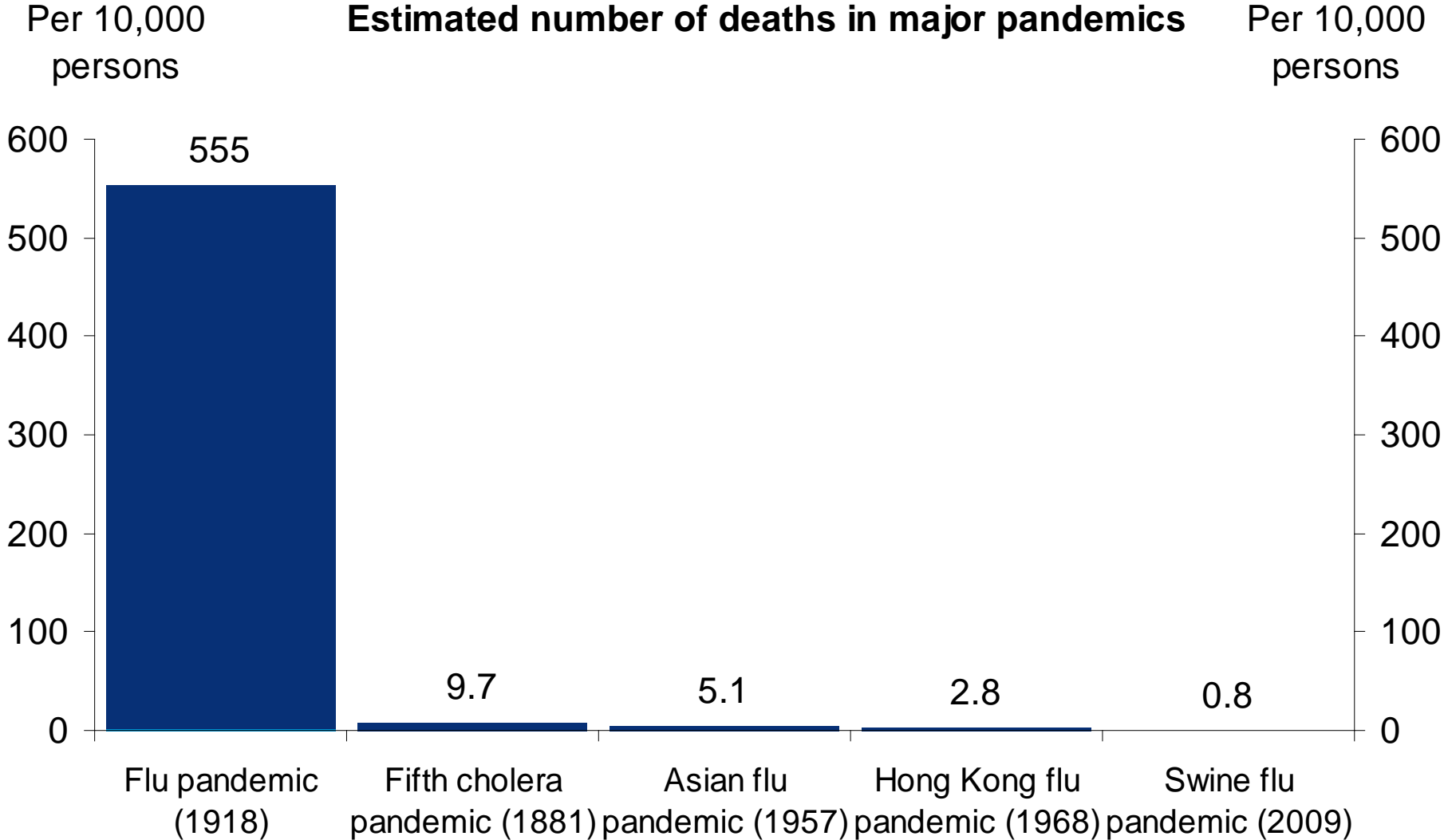


The 1918-1919 recession lasted 7 months



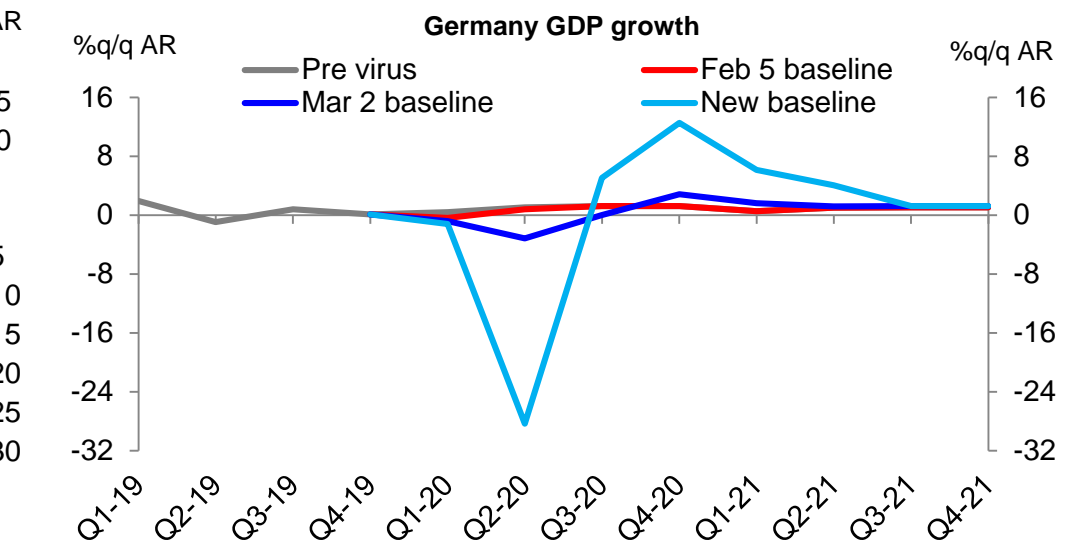
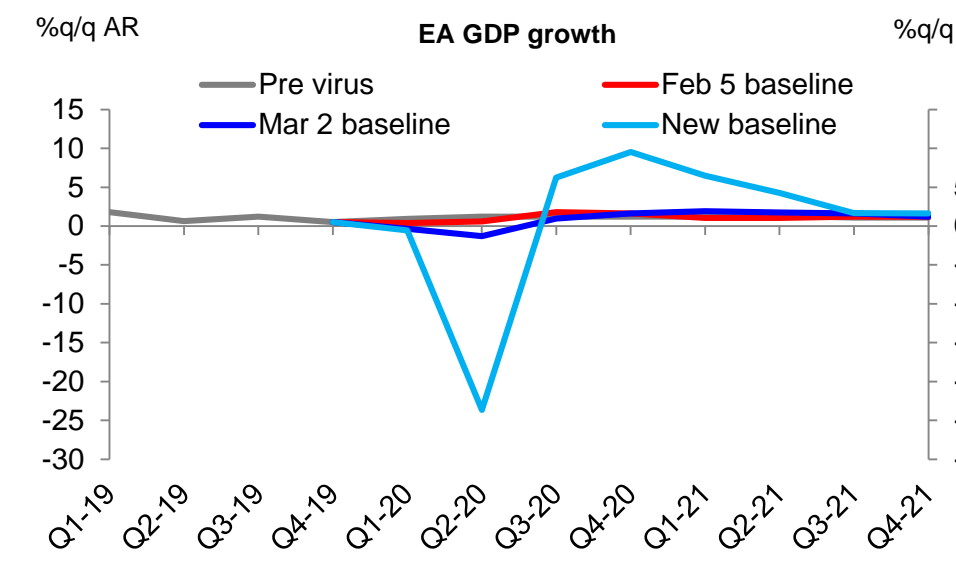
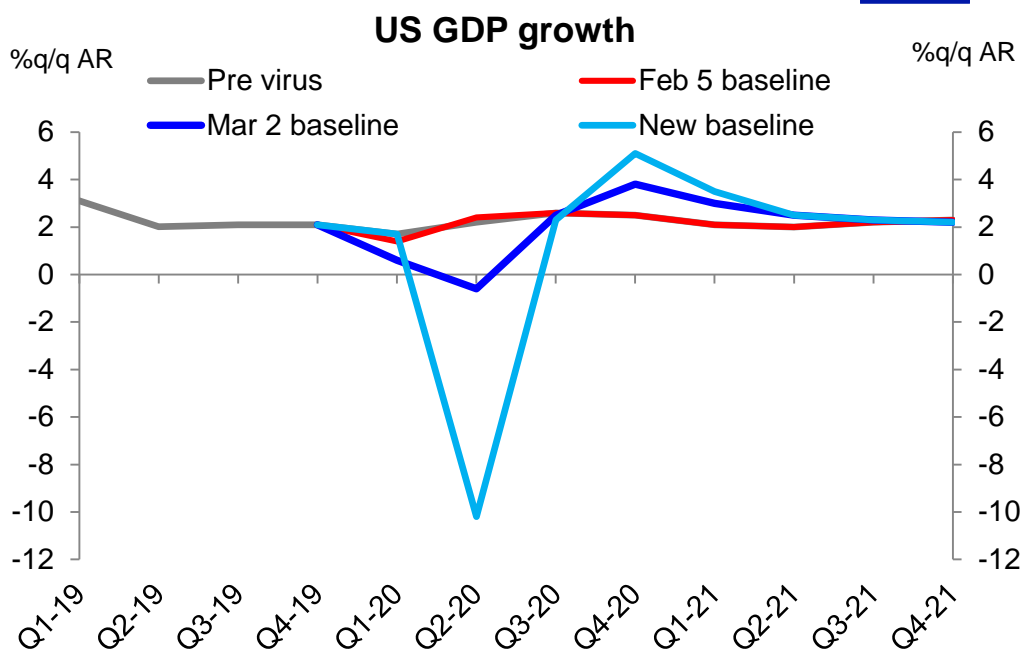
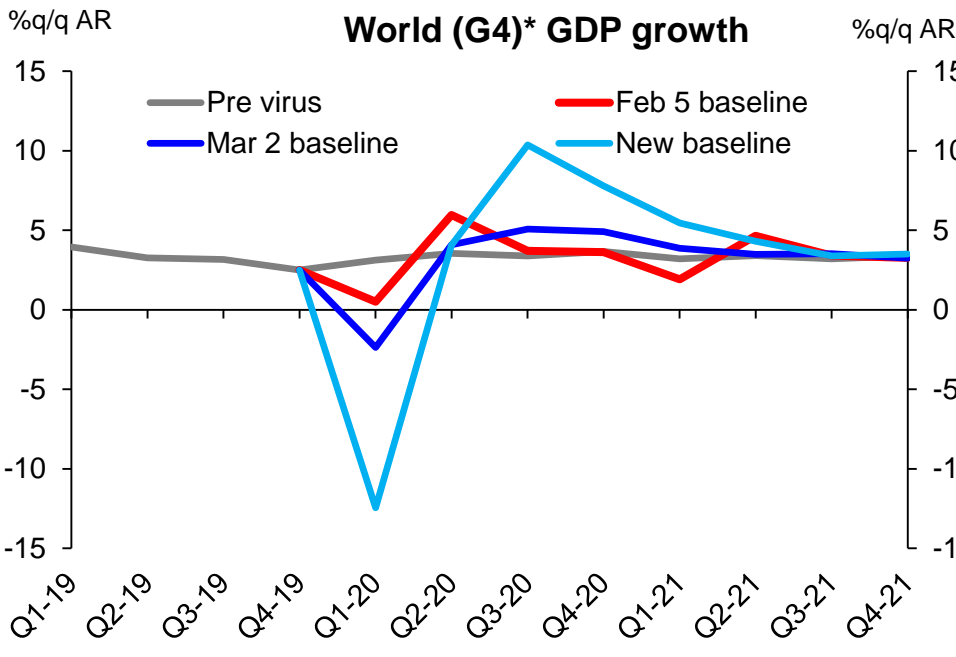
Source: NBER, Wikipedia, DB Global Research

Mortality rate in areas impacted by major pandemics



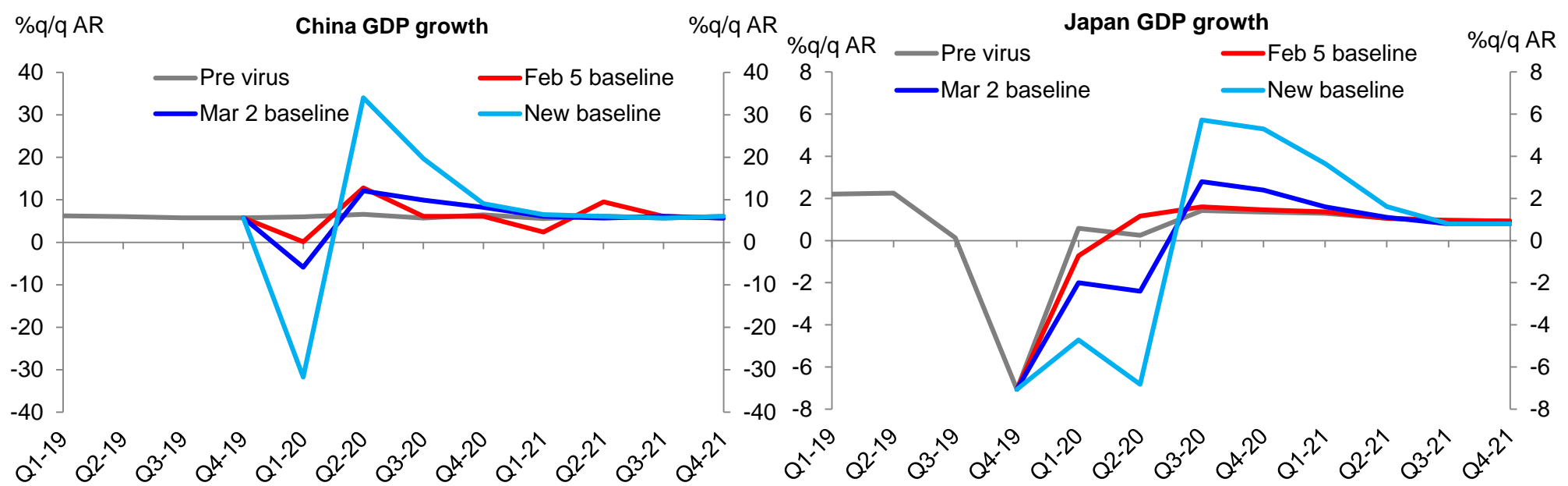
Source: Patel, V., D. Chisholm., T. Dua, R. Laxminarayan, and M. E. Medina-Mora, editors. 2015, NCBH, DB Global Research

Global growth outlook



Source: DB Global Research

Global growth outlook



Source: DB Global Research



Torsten Slok, Ph.D.

- **Chief Economist, Managing Director**
- **Deutsche Bank Securities, Inc.**
- **Torsten Slok joined Deutsche Bank Securities in the fall of 2005.**
- **Mr. Slok's Economics team has been top-ranked by Institutional Investor in fixed income and equities since 2010, including #1 in 2019.** Slok currently serves as a member of the Economic Club of New York
- Prior to joining the firm, Mr. Slok worked at the OECD in Paris in the Money and Finance Division and the Structural Policy Analysis Division. Before joining the OECD he worked for four years at the IMF in the Division responsible for writing the World Economic Outlook and the Division responsible for China, Hong Kong, and Mongolia.
- Mr. Slok studied at University of Copenhagen and Princeton University. He has published numerous journal articles and reviews on economics and policy analysis, including in Journal of International Economics, Journal of International Money and Finance, and The Econometric Journal.



Appendix 1

Important Disclosures

*Other Information Available upon Request

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