



# BIS Bulletin

No 21

Central banks' response to Covid-19 in  
advanced economies

Paolo Cavallino and Fiorella De Fiore

5 June 2020

BIS Bulletins are written by staff members of the Bank for International Settlements, and from time to time by other economists, and are published by the Bank. The papers are on subjects of topical interest and are technical in character. The views expressed in them are those of their authors and not necessarily the views of the BIS. The authors are grateful to Adam Cap, Burcu Erik and Taejin Park for excellent research assistance, and to Louisa Wagner for administrative support.

The editor of the BIS Bulletin series is Hyun Song Shin.

This publication is available on the BIS website ([www.bis.org](http://www.bis.org)).

© *Bank for International Settlements 2020. All rights reserved. Brief excerpts may be reproduced or translated provided the source is stated.*

ISSN: 2708-0420 (online)

ISBN: 978-92-9259-396-4 (online)

## Central banks' response to Covid-19 in advanced economies

### Key takeaways

- *Central banks in advanced economies reacted swiftly and forcefully to the Covid-19 pandemic, deploying the full range of crisis tools within weeks. The initial response focused primarily on easing financial stress and ensuring a smooth flow of credit to the private non-financial sector.*
- *The pandemic triggered complementary responses from monetary and fiscal authorities. Fiscal backstops and loan guarantees supported central bank actions. Asset purchases, designed to achieve central banks' objectives, helped contain the costs of fiscal expansions.*
- *The footprint of central banks' measures will be sizeable. Across the five largest advanced economies, balance sheets are projected to grow on average by 15–23% of GDP before end-2020 and to remain large in the near future.*

The outbreak of Covid-19 was a shock of unprecedented size and nature. Lockdowns and containment measures on a global scale led to a generalised sudden stop in economic activity. Workers' reduced income – particularly for precarious workers – exacerbated the fall in demand induced by distancing measures and contributed to an increase in the risk of delinquency on mortgages and consumer loans. Businesses suffered from collapsing productive activities and reduced cash flow, which was particularly acute in sectors such as automotive, retail and travel. Concerns about household and corporate liquidity, combined with heightened uncertainty, hampered the functioning of key financial market segments.

In March 2020, corporate spreads surged globally for high-yield as well as investment grade issuers. The markets for asset-backed and mortgage-backed securities froze in many countries. Commercial paper markets experienced strain in the United States, Canada and the euro area due to enhanced rollover risk. Equity markets came under stress, and implied volatilities jumped for a wide range of assets. The global dash-for-cash disrupted fixed income asset markets. The US Treasury market experienced a sharp sell-off leading to spikes in long-term yields (Schrimpf, Shin and Sushko (2020)). Pressures arose in the Japanese government bond (JGB) market, and sovereign spreads widened substantially in the euro area.

Central banks responded promptly and forcefully, consistent with their mandates, to preserve smooth market functioning and an effective transmission of monetary policy. This Bulletin reviews the response of the central banks of the United States, the euro area, Japan, the United Kingdom and Canada.

### A swift and forceful reaction

The overriding goal of central banks was to cushion the inevitable drop in economic activity by ensuring a smooth functioning of the financial system and facilitating the flow of credit to households and firms. In doing so, central banks performed their traditional crisis role as lenders of last resort to the financial sector. They extended it further to become providers of liquidity to the private non-financial sector.

Between March and April 2020, the five central banks under review deployed the full set of crisis management policies at their disposal (Table 1). They all offered new lending operations, and either extended or inaugurated asset purchase programmes. The Federal Reserve, the Bank of Canada and the Bank of England also cut interest rates. In addition, the Federal Reserve and, on a lesser scale, the ECB and the Bank of Japan increased the availability of their currencies abroad through swap lines.

## Central banks' response

Table 1

|                    |            | Bank of Canada          | Bank of England | Bank of Japan               | Eurosystem         | US Federal Reserve System |
|--------------------|------------|-------------------------|-----------------|-----------------------------|--------------------|---------------------------|
| Interest rate      |            | -1.5%                   | -0.65%          |                             |                    | -1.50%                    |
| Lending operations | short-term | TROs, STLF, CTRF        | CTRF, W&MF      | FSOs, ROs, SLF              | LTROs              | ROs, PDCF, MMLF           |
|                    | long-term  | TROs                    | TFSME           | SOCF, SOSME                 | TLTRO III, PELTROs | TALF, MSLP, PPPLF         |
| Asset purchases    | short-term | BAPF, PMMP, CPPP        | CCFF            | CPPs                        | APP, PEPP          | CPFF, MLF                 |
|                    | long-term  | CMBP, GCSPs, PBPP, CBPP | APF             | JGBPs, CBPs, ETFPs, JREITPs | APP, PEPP          | SOMA, PMCCF, SMCCF        |
| Foreign exchange   |            |                         |                 | YEN SL                      | EUR SLs            | USD SLs, FIMA RF          |

See tables in online appendix for definition of acronyms. In some jurisdictions, central banks have macroprudential and supervisory roles, and can additionally adjust regulation. This taxonomy comprises only monetary measures.

Source: Central bank websites.

The ability to draw on lessons learned from the Great Financial Crisis (GFC) of 2007–09 facilitated central banks' rapid intervention. Policy measures that were put in place between 2007 and 2015 required only a few weeks to be deployed in response to the pandemic (Graph 1). As is typical during crises, the first measure was a reduction of policy rates to ease funding costs and support aggregate demand. Except in Japan and the euro area, where they were already negative, rates were cut to reach the lower bound in less than a month – much faster than during the GFC (Graph 1, right-hand panel).

Lending operations promptly followed. Central banks expanded short-term operations to address initial liquidity shortages and to prevent market freezes (online appendix, Table A3). The Federal Reserve, the Bank of Canada and the Bank of Japan increased the amount of repurchase agreements offered and lengthened their maturity. The Fed also encouraged the use of its discount window and intervened to prevent funding strains for primary dealers, by lending against investment grade debt, and for money market mutual funds, by lending to depository institutions against assets purchased from those funds. The ECB provided banks with bridge liquidity operations until the June allotment of the Targeted Long-Term Refinancing Operation (TLTRO III). The Bank of England and the Bank of Canada activated their Contingent Term Repo Facilities (CTRFs) for the first time since their establishment in 2014 and 2015, respectively.

A key feature of central banks' response was the widespread deployment of long-term lending measures to support the flow of credit to households and non-financial corporations. The Federal Reserve, the Bank of Japan and the Bank of England established targeted lending programmes designed to provide funds to banks at favourable terms, conditional on loan extension to small and medium-sized enterprises (SMEs). The Federal Reserve reactivated the Term Asset-Backed Securities Loan Facility (TALF) – first established in late 2008 – to support the issuance of asset-backed securities. It also established the Paycheck Protection Program Liquidity Facility (PPPLF) to provide liquidity against payroll loans guaranteed by the Treasury. In the euro area, the ECB increased the size of TLTRO III by two thirds and reduced its cost. It also introduced additional Pandemic Emergency Longer-Term Refinancing Operations (PELTROs) to provide banks with long-term funds irrespective of their lending pattern. The Bank of Canada lengthened the maturity of its lending operations with repos of up to two years' maturity.

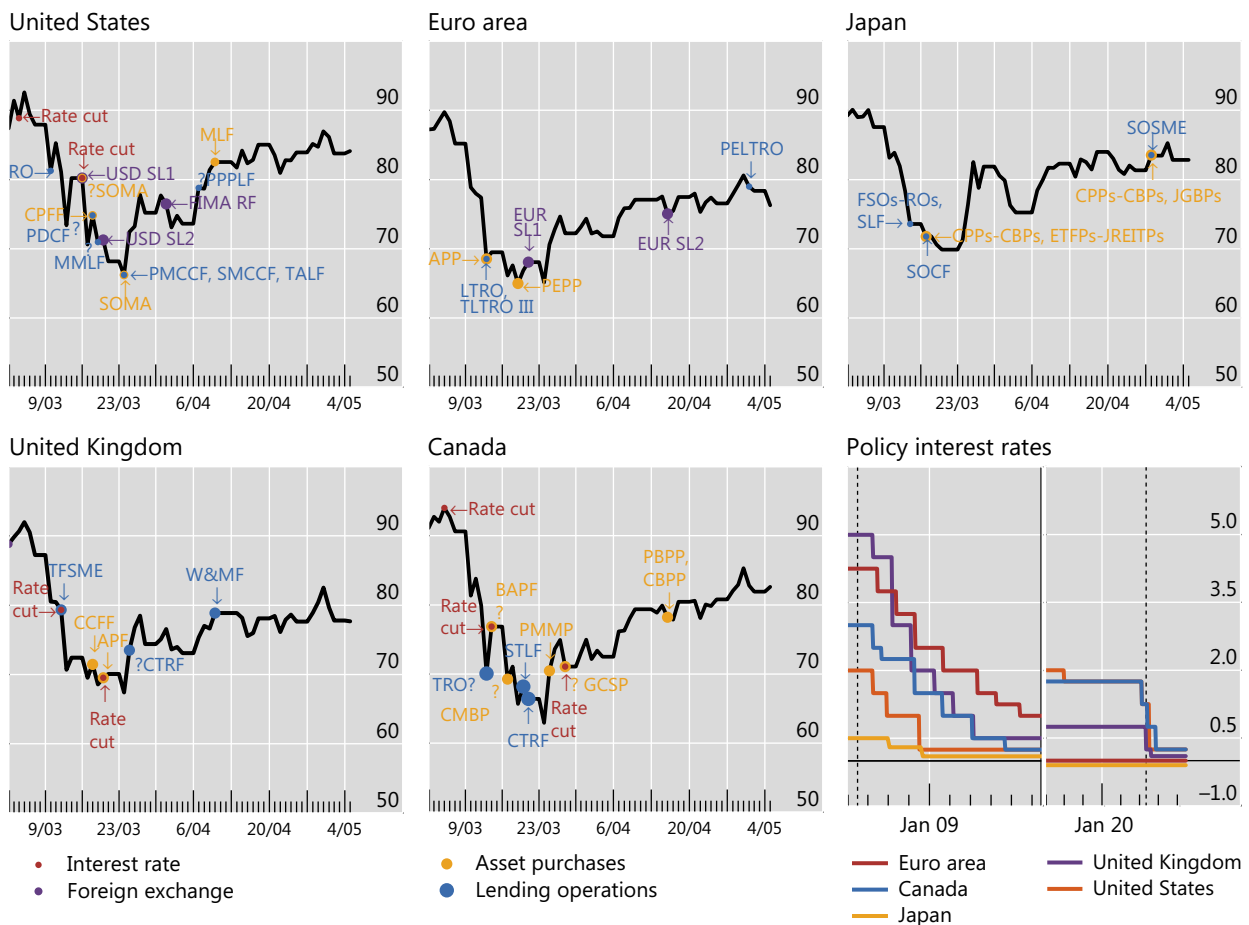
Asset purchase programmes played an equally important role in the set of crisis management measures, although they pursued different goals (online appendix, Table A4). In the United States, public sector asset purchases were instrumental in ensuring a smooth functioning of the US Treasury market and preserving its key role in the pricing of financial assets. Similarly, ECB purchases helped preserve the effective transmission of monetary policy by containing the widening of euro area sovereign spreads. An additional purpose of purchase programmes was to restore confidence and set the conditions for a quick rebound of aggregate demand at the end of the lockdown. The Federal Reserve and Bank of Japan

announced unlimited purchases of government bonds, while the Bank of Canada entered an asset purchase programme for the first time and only specified a lower bound of C\$5 billion a week. The ECB expanded the ongoing Asset Purchase Programme (APP) by committing to purchase an additional €120 billion in private and public assets by end-2020. Later, it allocated €1.35 trillion to private and public asset purchases under the newly established Pandemic Emergency Purchase Programme (PEPP). The Federal Reserve and the Bank of Canada established for the first time purchase programmes for assets issued by municipal entities and local public authorities.

## Monetary policy announcements and equity prices<sup>1</sup>

Index, 15 February 2020 = 100

Graph 1



See tables in online appendix for definition of acronyms. The dashed lines in the last panel indicate 15 September 2008 (Lehman Brothers bankruptcy) and 11 March 2020 (World Health Organization characterises Covid-19 as a pandemic).

<sup>1</sup> Dots of more than one colour indicate multiple measures. Equity price as measured by S&P/TSX Composite Index for Canada; STOXX Europe 600 Index for the euro area; Nikkei 225 Index for Japan; FTSE 100 Index for the United Kingdom; and S&P 500 Index for the United States.

Sources: Central bank websites; Bloomberg; BIS.

Central banks also activated private sector asset purchase programmes designed to directly support the flow of credit to non-financial firms. All five central banks established or increased the size of their commercial paper and corporate bond purchase programmes, while the ECB extended eligibility to non-financial commercial paper. The Federal Reserve purchased investment grade bonds for the first time and later extended eligibility to subsequently downgraded bonds – the so-called “fallen angels” – either directly or through exchange-traded funds (ETFs). The ECB likewise extended eligibility to downgraded bonds against appropriate haircuts. The Bank of Japan quadrupled its purchases of commercial paper (CP)

and corporate bonds (CBs), while the Bank of England announced that at least 10% of the GBP 200 billion of additional purchases under its Asset Purchase Facility (APF) would involve corporate bonds.

Foreign exchange liquidity measures played a key role in alleviating strains in foreign currency markets (online appendix, Table A2). Increasing dollar liabilities, combined with an appreciating US dollar, left the market for dollar funding under tight pressure (Avdjiev, Eren and McGuire (2020)). The Federal Reserve responded by reducing the cost and extending the maturity of standing swap lines with five central banks. Later, it reopened swap lines with nine other countries that were activated during the GFC. A complementary measure that increased the availability of US dollars for countries without access to swap lines, while providing a backstop to the US Treasury sell-off, was the FIMA Repo Facility, where foreign and international monetary authorities could obtain dollars by pledging US Treasuries as collateral.

## Reaching the last mile: credit to households and NFCs

The distinguishing feature of central banks' response to Covid-19 was the use of measures designed to support the flow of credit to households and non-financial corporations. Their deployment was more direct and far-reaching than during the GFC (Graph 2). Conversely, while liquidity support to the financial sector was sizeable during the GFC, it has played a more limited role so far during the Covid-19 pandemic. These differences are partly a reflection of the different nature of the two crises. The GFC hit financial markets first and then slowly propagated to the real economy, negatively affecting confidence and tightening credit conditions for businesses and households. In contrast, the Covid-19 pandemic imposed severe containment measures that hit the real economy first and then propagated to the financial sector.

Against this background, all five central banks, with the exception of the Bank of Canada, offered funding-for-lending schemes during the Covid-19 pandemic. The Bank of England and the Bank of Japan had established similar programmes in the aftermath of the GFC, while the ECB introduced its first targeted lending programme only in 2014. The Federal Reserve covered the last mile to reach SMEs during the Covid-19 crisis with the Main Street Lending Program, which provided four-year loans to firms that were in good financial standing before the crisis. For the first time, the Federal Reserve and the Bank of Canada announced corporate bond purchase programmes. Despite some of the facilities not being active yet, amounts projected for end-2020 based on current announcements are larger than those observed during the GFC (Graph 2, left-hand panel). The Bank of Japan, which had been buying commercial paper and corporate bonds, announced purchases of ¥20 trillion, double the amount bought during the GFC, while the announced purchase programme of the Bank of England was approximately 10 times larger. A notable exception is the Fed, whose announced support to credit markets was large but with current levels still below those observed during the GFC – when purchases of mortgage-backed securities (MBS) had amounted to more than 8% of GDP. Overall, measures designed to provide credit to the non-financial private sector during the Covid-19 pandemic are expected to increase central banks' balance sheets by 6.3% of GDP on average, compared with around 2.5% during the GFC.

Emergency liquidity lending to banks, which represents the traditional lender of last resort role of central banks, has so far been on a smaller scale than during the GFC. While central banks quickly established facilities to provide liquidity and short-term funding, the overall take-up was small when compared with the GFC (Graph 2, centre panel). Back in November 2008, the liquidity operations of the Federal Reserve peaked at 5.1% of GDP. In March 2020, at the height of the Covid-induced dash-for-cash, this value was 2.2% and has fallen since. Similar pictures emerge for the other central banks, with the exception of the Bank of Canada, where most of the recent increase, roughly 6.4% of GDP, is accounted for by the issuance of long-term repos.

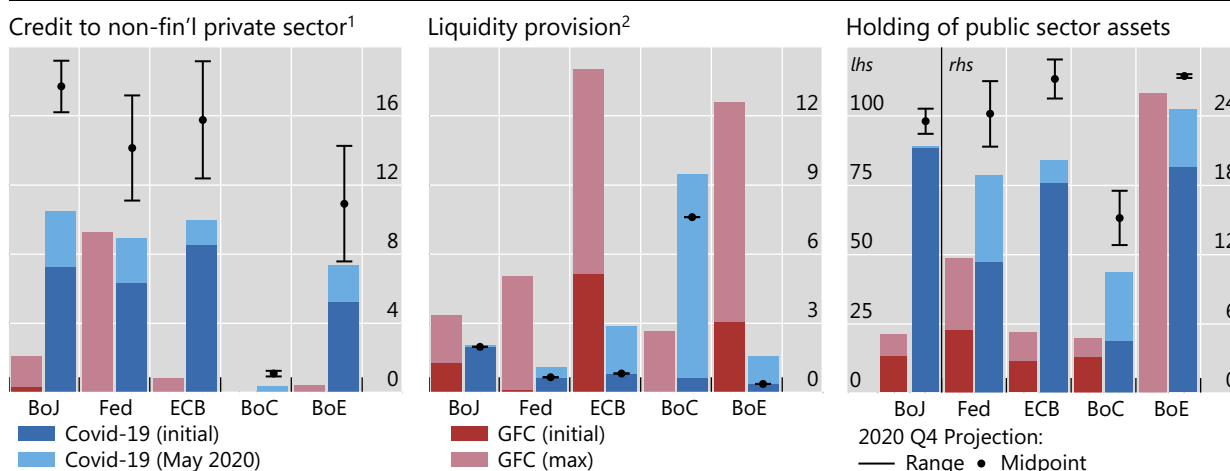
At the same time, the amount of public sector assets to be purchased by end-2020 is generally projected to be larger than the amount purchased during the entire course of the GFC (Graph 2, right-hand panel). The exception is the Bank of England, whose announced extension of its purchase programme amounts to 7.4% of GDP, about a quarter of total purchases during the GFC.

Finally, foreign exchange operations were more far-reaching during the Covid-19 pandemic than during the GFC, although their actual volume was smaller. While the size of the US dollar swap lines was increased and their conditions made more favourable, the overall usage peaked at \$450 billion compared with \$580 billion during the GFC.

## GFC vs Covid-19 crisis

As a percentage of pre-crisis GDP

Graph 2



GFC period defined as Q3 2007 to Q4 2012; Covid-19 period defined as March to December 2020. Pre-crisis GDP is Q2 2007 GDP for GFC and Q4 2019 GDP for Covid-19.

<sup>1</sup> Targeted lending operations and central bank holding of private sector assets. <sup>2</sup> Non-targeted lending operations.

Sources: Central bank websites; BIS; authors' calculations.

## Monetary and fiscal policy complementarities

The dramatic impact of the pandemic on the real economy triggered an independent, yet complementary, response from central banks and fiscal authorities (Alberola, Arslan, Cheng and Moessner (2020)). Fiscal authorities supported central banks' actions through multiple channels (Graph 3, left-hand panel). In some cases, governments offered fiscal backing to the newly established central bank programmes. The US Treasury provided a backstop to various Federal Reserve programmes for an overall amount of \$454 billion (with \$195 billion being already allocated), or 2.1% of GDP. The UK Treasury offered a guarantee of 100% of the stock of commercial paper purchased by the Bank of England through its Covid Corporate Financing Facility (CCFF). In several jurisdictions, governments also extended guarantees to private non-financial sector loans. In some cases, when combined with measures that extended collateral eligibility, these loan guarantees resulted in additional indirect backing of lending operations and helped central banks expand their supply of credit to borrowers. For instance, by extending its collateral framework to include government-guaranteed loans, the ECB allowed banks to pledge loans that would otherwise not have qualified as eligible for lending operations. Overall, by addressing credit risk concerns, fiscal support complemented monetary policies directed at sustaining credit to the non-financial private sector.

Central banks in turn indirectly supported the fiscal expansion of many governments, since measures undertaken to ensure achievement of their goals compressed the costs of raising and servicing private and public debt. Interest rate cuts, lending operations and public asset purchase programmes were all instrumental in this respect. These measures also ensured that large-scale issuance of government bonds would not impair the proper functioning of sovereign bond markets.

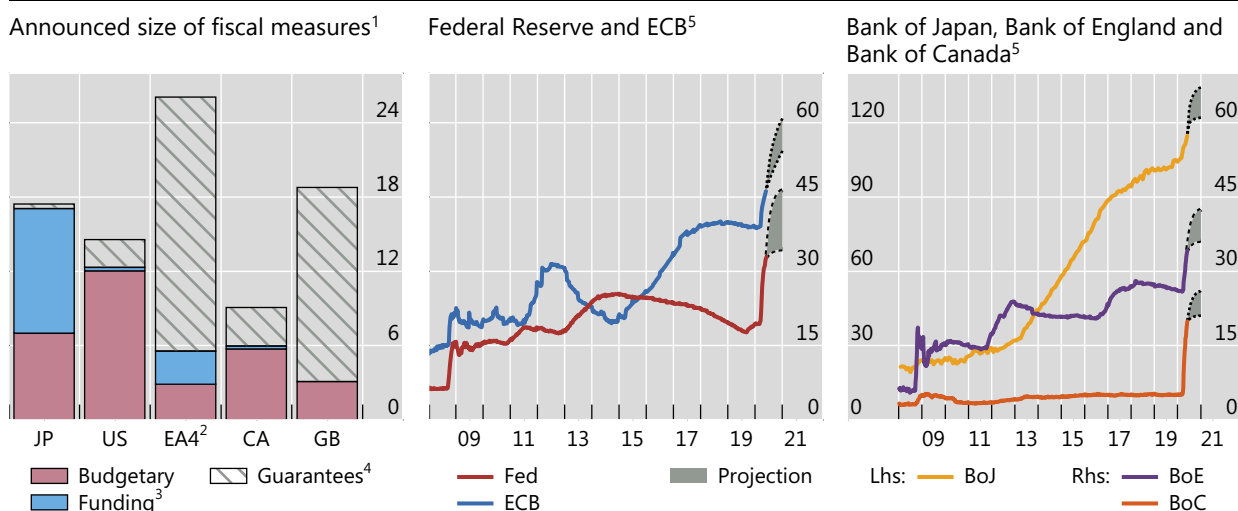
Overall, fiscal and monetary policy supported each other in the pursuit of macroeconomic stability, an objective which typically lies at the centre of central banks' mandate. A case in point is the Ways and

Means Facility introduced by the Bank of England, which temporarily extended the previous limit of £400 million on the Treasury’s overdraft to an unlimited amount. This facility was set up to enable unexpected and urgent expenditures in health care while confining the financing at the central bank to a very limited horizon. The Treasury was required to repay the loan before the end of the year.

## Fiscal measures and central bank footprints

In percentage of GDP

Graph 3



<sup>1</sup> Data as of 13 May 2020 and taken from IMF (2020a) and IMF (2020b). The data might not be complete due to uncertainty about the actual fiscal spending. <sup>2</sup> Weighted averages of DE, ES, FR and IT based on GDP and PPP exchange rates. <sup>3</sup> Equity injections, asset purchases, loans, debt assumptions, quasi-fiscal operations and use of extra-budgetary funds. <sup>4</sup> Guarantees on loans and other contingent liabilities, including fiscal backing for central bank programmes. <sup>5</sup> Balance sheet projections are until end-2020 and are expressed as percentages of Q4 2019 GDP. Scenarios are based on central bank announcements up to 4 June 2020 and on the assumptions reported in Table A1 in the online appendix.

Sources: IMF; central bank websites; BIS; authors’ calculations.

Looking ahead, the footprint of central banks’ measures on their balance sheet are likely to be seen for a prolonged period. While liquidity and short-term lending programmes can be easily reabsorbed at the time of the recovery, assets purchased are typically held to maturity. Under conservative assumptions about the share of outstanding assets purchased by central banks under each programme, and a plausible take-up and rollover of lending operations, we project the size of central banks’ balance sheets to expand in 2020 at a faster pace than ever before (Graph 3, centre and right-hand panels). Balance sheets increased, on average, by 10% of GDP during the first three months of the crisis. Reasonable scenarios entail an overall increase of between 15–23% of GDP before the end of 2020 (detailed assumptions are reported in the online appendix). With the outbreak of Covid-19, earlier hopes of ending up in a pre-GFC environment characterised by lean central bank balance sheets over the near future have faded away.

## References

- Alberola, E, Y Arslan, G Cheng and R Moessner (2020): “The differential fiscal response to the coronavirus crisis in advanced and emerging market economies”, *BIS Bulletin*, forthcoming.
- Avdjiev, S, E Eren and P McGuire (2020): “Dollar funding costs during the Covid-19 crisis through the lens of the FX swap market”, *BIS Bulletin*, no 1, 1 April.
- International Monetary Fund (IMF) (2020a): *Fiscal Monitor*, April.
- (2020b): “Tracking the \$9 trillion global fiscal support to fight COVID-19”, *IMF Blog*, 20 May.
- Schrimpf, A, H S Shin and V Sushko (2020): “Leverage and margin spirals in fixed income markets during the Covid-19 crisis”, *BIS Bulletin*, no 2.



## Previous issues in this series

|                        |   |  |
|------------------------|---|--|
| No 20<br>2 June 2020   | Central bank bond purchases in emerging market economies                                    | Yavuz Arslan, Mathias Drehmann and Boris Hofmann                             |
| No 19<br>22 May 2020   | Dealing with Covid-19: understanding the policy choices                                     | Frederic Boissay, Daniel Rees and Phurichai Rungcharoenkitkul                |
| No 18<br>20 May 2020   | EME bond portfolio flows and long-term interest rates during the Covid-19 pandemic          | Peter Hördahl and Ilhyock Shim   |
| No 17<br>19 May 2020   | On health and privacy: technology to combat the pandemic                                    | Carlos Cantú, Gong Cheng, Sebastian Doerr, Jon Frost and Leonardo Gambacorta |
| No 16<br>15 May 2020   | Covid-19 and regional employment in Europe  | Sebastian Doerr and Leonardo Gambacorta                                      |
| No 15<br>13 May 2020   | US dollar funding markets during the Covid-19 crisis – the international dimension          | Egemen Eren, Andreas Schrimpf and Vladyslav Sushko                           |
| No 14<br>12 May 2020   | US dollar funding markets during the Covid-19 crisis – the money market fund turmoil        | Egemen Eren, Andreas Schrimpf and Vladyslav Sushko                           |
| No 13<br>11 May 2020   | The CCP-bank nexus in the time of Covid-19  | Wenqian Huang and Előd Takáts  |
| No 12<br>7 May 2020    | Effects of Covid-19 on the banking sector: the market's assessment                          | Iñaki Aldasoro, Ingo Fender, Bryan Hardy and Nikola Tarashev                 |
| No 11<br>5 May 2020    | Releasing bank buffers to cushion the crisis – a quantitative assessment                    | Ulf Lewrick, Christian Schmieder, Jhuvesh Sobrun and Előd Takáts             |
| No 10<br>28 April 2020 | Covid-19 and corporate sector liquidity   | Ryan Banerjee, Anamaria Illes, Enisse Kharroubi and José María Serena        |
| No 9<br>24 April 2020  | Buffering Covid-19 losses – the role of prudential policy                                   | Mathias Drehmann, Marc Farag, Nikola Tarashev and Kostas Tsatsaronis         |
| No 8<br>21 April 2020  | Identifying regions at risk with Google Trends: the impact of Covid-19 on US labour markets | Sebastian Doerr and Leonardo Gambacorta                                      |
| No 7<br>17 April 2020  | Macroeconomic effects of Covid-19: an early review  | Frederic Boissay and Phurichai Rungcharoenkitkul                             |
| No 6<br>14 April 2020  | The recent distress in corporate bond markets: cues from ETFs                               | Sirio Aramonte and Fernando Avalos   |

All issues are available on our website [www.bis.org](http://www.bis.org).