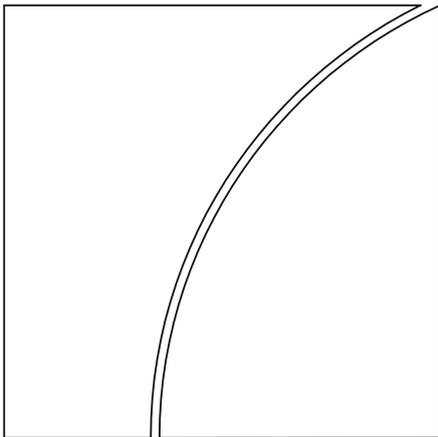




BANK FOR INTERNATIONAL SETTLEMENTS



## BIS Papers

No 122

# The monetary-fiscal policy nexus in the wake of the pandemic

Monetary and Economic Department

March 2022

JEL classification: E52, E58, E61, E62.

Keywords: fiscal policy; monetary policy; fiscal-monetary interaction; Covid-19; emerging market economies; banking system; central bank balance sheet.

Papers in this volume were prepared for a meeting of emerging market Deputy Governors held at the Bank for International Settlements on 24–25 February 2021. The views expressed are those of the authors and do not necessarily reflect the views of the BIS or the central banks represented at the meeting. Individual papers (or excerpts thereof) may be reproduced or translated with the authorisation of the authors concerned.

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ISSN 1682-7651 (online)  
ISBN 978-92-9259-531-9 (online)

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# The monetary-fiscal policy nexus in the wake of the pandemic

Konstantinos Tsatsaronis, Michael Chui, Tirupam Goel, Aaron Mehrotra

## Abstract

The Covid-19 pandemic cast the interaction between fiscal and monetary policy in a new light. The pandemic-induced recession made greater demands on both fiscal and monetary policy, triggered the need for closer domestic policy co-ordination, and led to a greater use of central bank balance sheets. This note discusses these issues, drawing on evidence from a survey of emerging market economy (EME) central banks. It first reviews the interaction between monetary and fiscal policy during the first phase of the Covid-19. It then explores the main factors that enabled EMEs to respond in a strongly countercyclical way to the pandemic shock. Finally, it discusses medium-term policy challenges given that high private and public sector debt levels will need to gradually decline and buffers will have to be built up as the economy returns to normality.

JEL classification: E52, E58, E61, E62.

Keywords: fiscal policy; monetary policy; fiscal-monetary interaction; Covid-19; emerging market economies; banking system; central bank balance sheet.

## Introduction

The Covid-19 pandemic casts the interaction between fiscal and monetary policy in a new light. The sudden and sizeable pandemic-induced recession has made greater demands on both fiscal and monetary policy, triggering the need for closer domestic policy co-ordination, and has led to a greater use of central bank balance sheets. The near-term macroeconomic challenges will likely persist, with growth expected to remain subdued even if the inflation outlook is more diverse across jurisdictions.

Going forward, a number of challenges loom large for the fiscal-monetary policy interaction in emerging market economies (EMEs). Although the inflation outlook is diverse across jurisdictions, monetary policy is expected to remain accommodative. Credibility issues and constraints on external funding are likely to limit fiscal policy space to a greater extent than in advanced economies (AEs). This can have adverse implications for financial conditions and growth. In some EMEs, large fiscal deficits, should they persist, could undermine price and financial stability. Much higher levels of public sector debt, coupled with political economy constraints, may complicate the conduct of monetary policy and the interaction between the two policies will be challenging, especially given the need to eventually raise interest rates and exit from balance sheet policies.

The note discusses these issues, drawing on evidence from a survey of EME central banks conducted for the meeting. It is organised in three sections. The first section reviews the interaction between monetary and fiscal policy during the first phase of the Covid-19. The second explores the main factors that enabled EMEs to respond in a strongly countercyclical way to this shock. The third focuses on medium-term policy challenges during the period when high private and public sector debt levels will need to gradually decline and buffers to be built up as the economy returns to normality.

### 1. Monetary-fiscal interaction during the Covid-19 crisis

In contrast to patterns during past crisis episodes, EMEs eased both fiscal and monetary policy in response to the Covid-19 shock. Moreover, a number of central bank actions, most prominently government bond purchases, had a clear fiscal dimension.

As elsewhere, fiscal policy played a central role in EMEs' response to the pandemic, strengthening health systems and protecting livelihoods.<sup>1</sup> On-budget fiscal stimulus amounted to 4.9% of GDP (simple average), with the largest expansions in emerging Asia and Latin America (Graph 1). Off-budget funding support averaged 0.9%. Credit guarantees, including fiscal backing for central bank programmes, were highest in central eastern Europe (CEE), as well as in Peru and Turkey. In general, the size of fiscal packages depended on the available fiscal space as well as on external financing pressures, with smaller budgetary measures implemented in countries where pre-crisis sovereign credit default swap spreads were higher.<sup>2</sup>

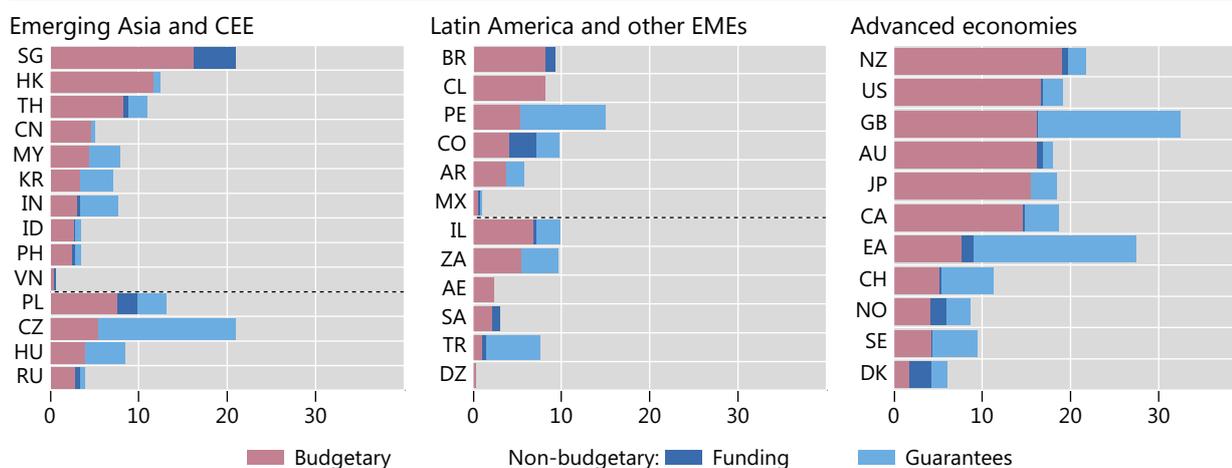
<sup>1</sup> See also E Alberola, Y Arslan, G Cheng and R Moessner, "The fiscal response to the Covid-19 crisis in advanced and emerging market economies", *BIS Bulletin*, no 23, 17 June 2020.

<sup>2</sup> See BIS, *Annual Economic Report 2020*, "A global sudden stop", Chapter I, June 2020.

## EME's fiscal response to Covid-19: sizeable but smaller than that in AEs<sup>1</sup>

As a percentage of GDP

Graph 1

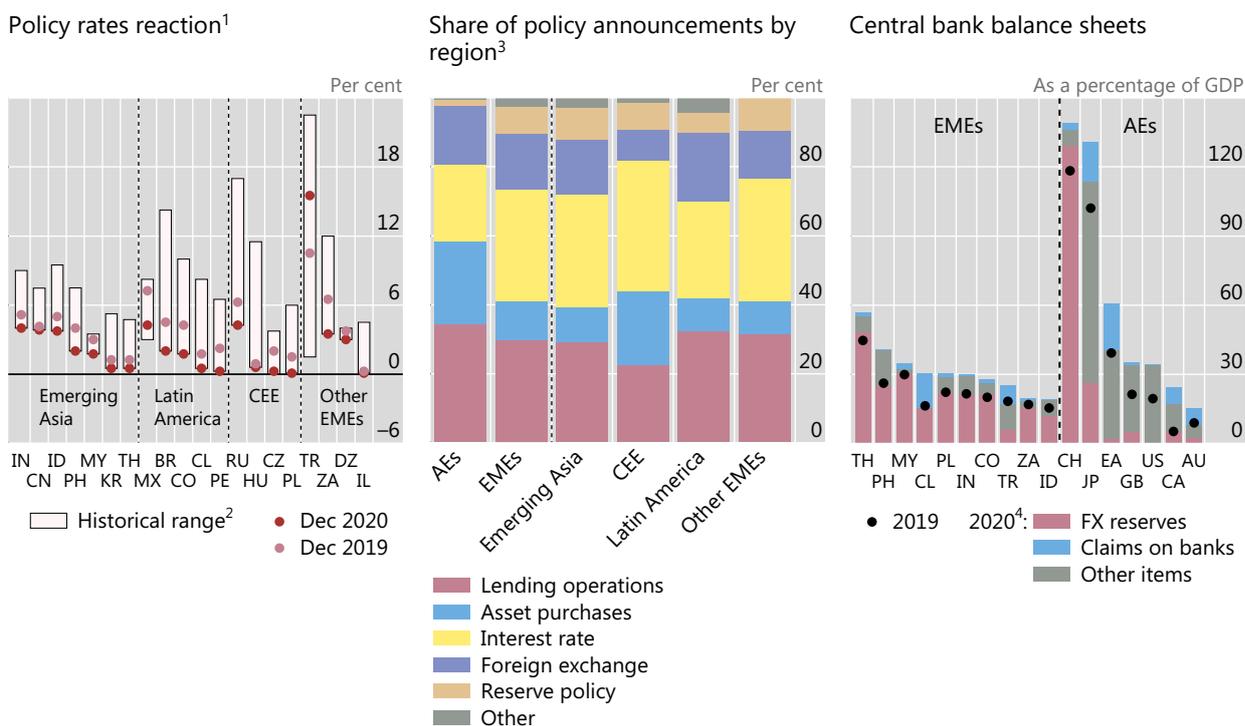


<sup>1</sup> 2020 response as estimated in the January 2021 IMF Fiscal Monitor update. Budgetary measures defined as any additional spending or foregone revenues. Funding measures defined as equity injections, loans, asset purchases or debt assumptions.

Sources: IMF, *Fiscal Monitor*, January 2021 update; BIS calculations.

Constraints on fiscal space stemmed in large part from past increases in public debt. Sovereign debt levels across EMEs had climbed by close to 10 percentage points from 2010 to an average of 48% of GDP in 2019, ranging from 39% in CEE to 57% in Latin America. Government budgets presented a mixed picture among EMEs in 2019. They were broadly balanced in CEE and parts of Asia, but deficits exceeded 4% of GDP in several economies in other regions.

The expansionary fiscal response went hand-in-hand with strong central bank actions. Most central banks had conventional policy space, with rates well above zero and limited signs of excessive inflation. This allowed them to cut rates, in most cases to historical lows or even close to zero (Graph 2, left-hand panel). Even so, interest rate-related policy announcements accounted for less than one third of the total measures taken (centre panel). Monetary authorities also implemented domestic lending operations (30% of new policy announcements), intervened in FX markets (16%), put in place asset purchase programmes (11%) and adjusted reserve requirements (8%). In a number of cases, the multi-pronged response led to a historically large expansion in central bank balance sheets (right-hand panel and Annex B).



<sup>1</sup> For China, the official 1-year lending rate is shown (from Aug 2019 onwards: 1-year Loan Prime Rate). <sup>2</sup> From January 2007 to present. <sup>3</sup> Covers all announcements between February and October 2020. "Other" category contains announcements on loan guarantee programmes, technical changes to facilities and changes to central banks' law. <sup>4</sup> October 2020 or latest available.

Sources: IMF, *International Financial Statistics*; Datastream; national data; C Cantú, P Cavallino, F De Fiore and J Yetman (2021), "A global database on central banks' response to Covid-19", *BIS Working Paper*, forthcoming; BIS calculations.

Many actions featured close interaction with fiscal policy. EME central banks' outright purchases of public sector securities played an important role. Thirteen of the central banks participating in this meeting report to have purchased these assets in response to Covid-19. In most cases, these purchases were implemented in order to ease impaired market functioning in local government bond markets and to avoid disruptions in the monetary transmission mechanism.<sup>3</sup> By preventing fire sale dynamics and increasing liquidity in the longer part of the yield curve, interventions de facto eased governments' borrowing costs and supported the fiscal expansion and the economy more generally.

Empirical evidence confirms non-negligible effects on sovereign yields from central bank asset purchases. Some estimates indicate that asset purchase announcements were associated with an average decline in yields of 20–30 basis points within two days; in the case of South Africa, high frequency data even suggest

<sup>3</sup> Impaired market functioning may give rise to an increased role for a liquidity channel of asset purchases; see A Bailey, J Bridges, R Harrison, J Jones and A Mankodi, "The central bank balance sheet as a policy tool: past, present and future", *Paper prepared for the Jackson Hole Economic Policy Symposium*, 27–28 August 2020. This would be especially the case for many EMEs, as liquidity premia in domestic markets tend to be larger than those in AEs.

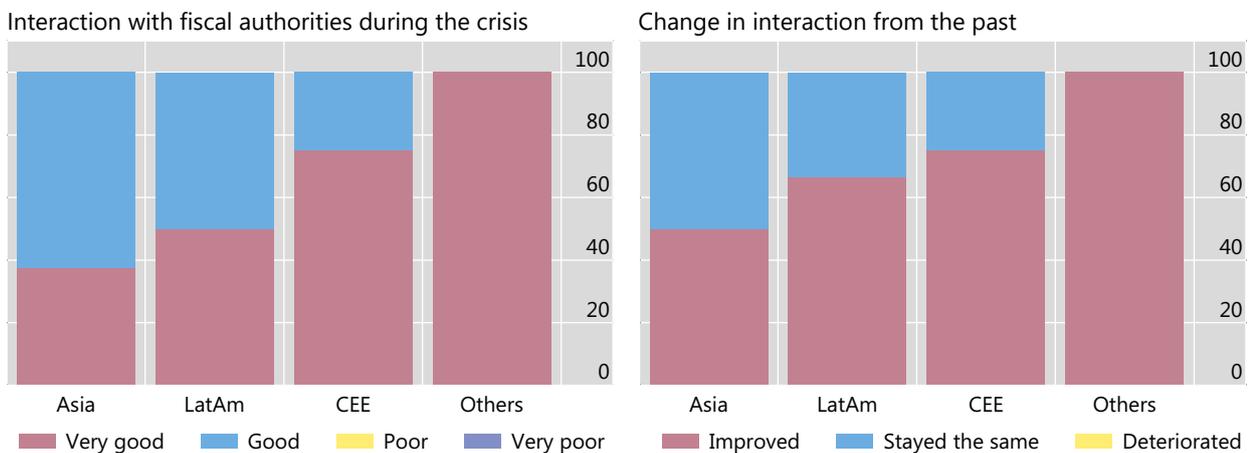
a decrease of 150 basis points in the hour after the announcement.<sup>4</sup> By contrast, the effects of conventional policy rate cuts on long-term yields were smaller and more transitory. International spillovers greatly helped, with the US Federal Reserve’s and the ECB’s bond purchases estimated to have reduced EME yields by 20 basis points within a week of the announcements. Exchange rates generally moved little, in particular in response to EME asset purchase announcements.

Another type of close interaction with fiscal policy took the form of lending operations. Monetary authorities introduced funding-for-lending schemes – direct or indirect central bank lending to support credit flows to targeted sectors – very often with explicit or implicit government guarantees. Other lending operations, such as broadening the list of eligible collateral or lengthening maturities, had less direct fiscal implications but could increase the credit risk borne by the central bank.

### Improved monetary-fiscal policy interactions

In per cent of respondents

Graph 3



Asia = CN, HK, ID, IN, KR, MY, PH, SG, TH and VN; LatAm = AR, BR, CL, CO, MX and PE; CEE = CZ, PL, HU and RU; Others = AE, IL, SA, TR and ZA.

Sources: BIS survey; BIS calculations.

The balance of responses between fiscal and monetary policies differed across EMEs and AEs. Monetary policy (at least as measured in terms of interest rate cuts) played a comparatively bigger role than fiscal policy in the former. This reflected to a considerable extent the greater distance of policy rates from the zero lower bound in EMEs, but also the markets’ more limited willingness to finance fiscal relief measures. Yet, in some cases, concerns with policy credibility and shallower capital markets limited the scope of unconventional central bank actions, such as public sector asset purchases.

Consistent with this discussion, EME central banks perceive that the interaction with fiscal authorities worked well during Covid-19 (Graph 3). In Israel, the central bank was closely involved in designing the fiscal response due to the Governor’s role

<sup>4</sup> See Y Arslan, M Drehmann and B Hofmann, “Central bank bond purchases in emerging market economies”, *BIS Bulletin*, no 20, 2 June 2020; International Monetary Fund, “Emerging and frontier markets: A greater set of policy options to restore stability”, *Global Financial Stability Report*, Chapter 2, October 2020; and World Bank, “Asset purchases in emerging markets”, *Global Economic Prospects*, Chapter 4, January 2021.

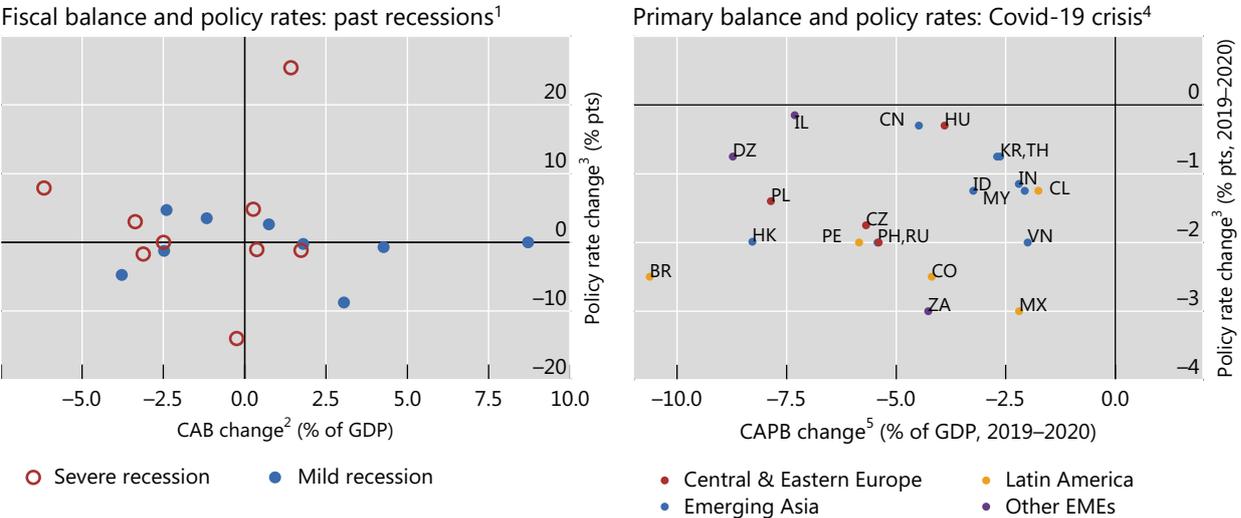
as the government’s economic adviser. In Malaysia, Saudi Arabia and South Africa, the frequency of interactions between the central bank and the fiscal authorities increased. Notably, in all regions except emerging Asia, most respondents report that the interactions improved compared with past crises (right-hand panel). In some countries, there were legislative changes. For instance, in Chile, the central bank’s charter was modified in order to allow the purchase of government bonds for financial stability reasons.

## 2. Factors that facilitated policy interactions

The countercyclical policy response to the Covid-19 shock stands in contrast to policy reactions in a number of past recessions (especially before the Great Financial Crisis (GFC)). In those cases, central banks increased interest rates in order to stem capital outflows and to support the exchange rate (Graph 4, left-hand panel). In many cases, governments faced with worsening financial conditions, often had to consolidate their finances amidst deep downturns (Annex A). In sharp contrast with past recessions, fiscal and monetary policy complemented each other in addressing the economic weakness and softened the economic blow from the Covid-19 shock. Conjunctural factors have facilitated this outcome, but a number of important improvements in EME fiscal and monetary policy frameworks have provided policymakers with space to act decisively.<sup>5</sup> In addition, more robust financial systems have boosted policy effectiveness.

Countercyclical policy response during Covid-19 is atypical

Graph 4



<sup>1</sup> The crisis responses plotted in the graph are calculated as the difference between the crisis start and end dates (peaks and troughs of GDP growth) using quarterly (policy rates) or annual data (CAB) for crisis episodes in EME countries occurring between 1994 and 2016, excluding the GFC in 2008–09. The 2000–01 severe recession in Turkey (policy rate change: -124% pts; CAB change: -3.3% of GDP) and 1998–2002 severe recession in Argentina (policy rate change: 76% pts; CAB change: -0.07% of GDP) are not shown. <sup>2</sup> CAB = Cyclically adjusted fiscal balance to potential GDP. <sup>3</sup> Policy rate changes calculated based on end-of period data and have been extended with short term interest rates to increase data availability. <sup>4</sup> Argentina (policy rate change: -17% pts; CAPB change 5% of GDP) and Turkey (policy rate change 5% pts; CAPB change 0.7% of GDP) not shown. <sup>5</sup> CAPB = Cyclically adjusted primary balance to potential GDP. IMF forecasts used for 2020.

Sources: IMF, *World Economic Outlook*, October 2020; World Bank; Datastream; national data; BIS calculations.

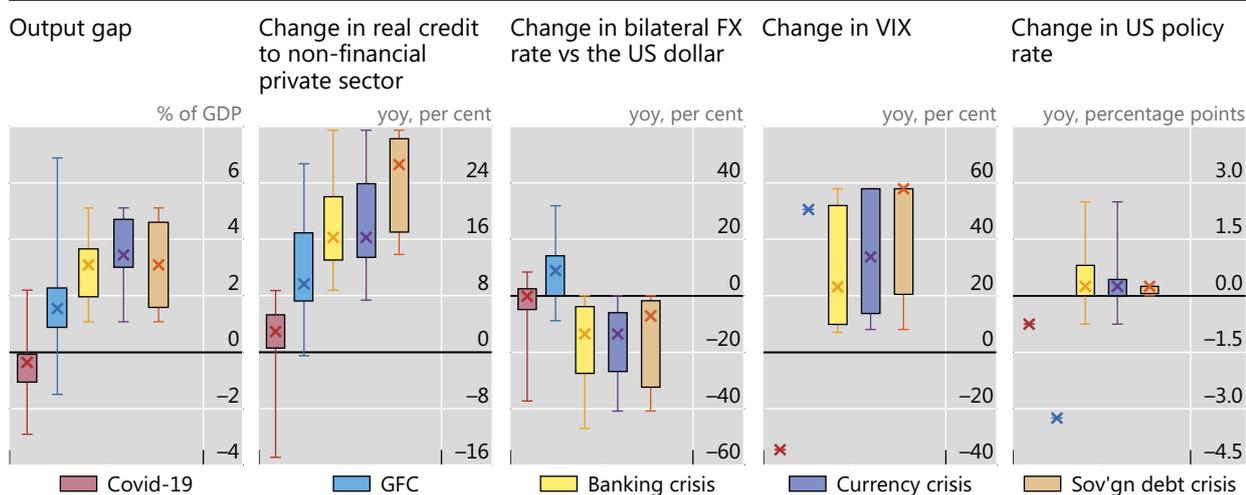
<sup>5</sup> See also A Aguilar and C Cantú, “Monetary policy response in emerging market economies: why was it different this time?”, *BIS Bulletin*, no 32, 12 November 2020.

## Conjunctural factors

One possible factor supporting such a strong countercyclical response is that EMEs entered the pandemic recession from a somewhat weaker cyclical position than in past recessions and crises (Graph 5, first and second panels).<sup>6</sup> For three quarters of EMEs, output gaps were negative in 2019, in particular in Latin America. CEE is an exception, with pre-Covid output 1.5% above potential. The earlier crises generally followed much stronger cyclical positions, with median output gaps above 3% in the years preceding the start of downturns associated with banking, currency and sovereign debt crises. The weak business cycle position had pushed near-term inflation expectations lower prior to the Covid-19 recession (see below). And credit growth was relatively subdued. At the end of 2019, growth in real credit to the private non-financial sector ranged from 0.8% yoy in CEE to around 3% in the other EME regions. This compares with median growth rates of 16% prior to banking crises, reflecting the different nature of the pandemic recession.

Initial domestic position and positive external conditions<sup>1</sup>

Graph 5



<sup>1</sup> The floating bars show the interquartile range, the cross represents the median and the poles mark the min-max range of the data. The summary statistics are calculated for each crisis type in the period before the crisis starts using quarterly or annual data. A particular crisis episode can be classified as more than one crisis type. The dataset only includes three sovereign debt crises.

Sources: IMF; Consensus Economics; Datastream; national data; BIS calculations.

A second possible factor concerns external conditions. Just prior to the Covid-19 shock global conditions were generally more accommodative than they had been in previous recessions and crises (Graph 5, third, fourth and fifth panels). During the year preceding earlier downturns, EME exchange rates depreciating against the dollar, global risk aversion (proxied by the VIX) had generally been rising, and US policy rates increasing. This backdrop had drastically reduced EME policymakers' room for manoeuvre.

A third possible factor relates to the nature of the shock. Its global character and intensity meant that international investors had nowhere to hide. In addition, the strong policy response in AEs cushioned the blow by boosting global liquidity. Finally, the fact that all countries followed a similar strategy eliminated the risk that made

<sup>6</sup> See Annex A for a more detailed description of the comparison across recessions and crisis episodes.

what would otherwise appear as unwarranted or extraordinary measures more acceptable.

### Strengthened monetary and fiscal policy frameworks

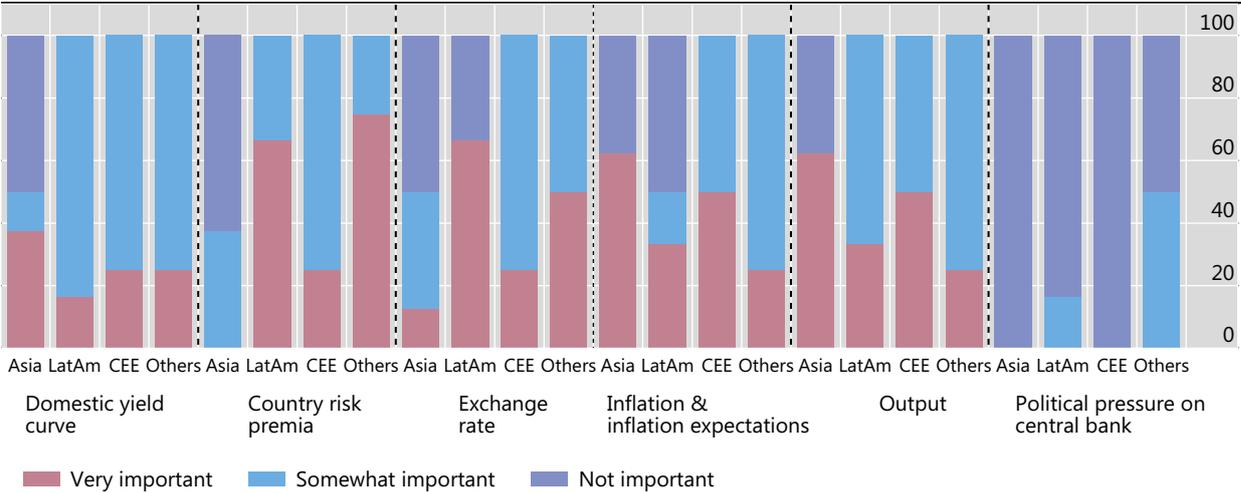
In addition to the specific conjunctural situation, a significant factor has to do with more robust, and highly complementary, monetary and fiscal policy frameworks in place in EMEs. Macroeconomic and financial stability require that both monetary and fiscal policy are conducted in a sustainable manner. The effective pursuit of low inflation by the central bank imposes discipline on public finances and reduces the risk of sharp increases in long-term interest rates that can derail government’s debt service burden. Keeping public finances on a sustainable path, in turn, helps avoid surges in country risk premia or sharp exchange rate depreciations, and reduces the risk of fiscal dominance over monetary policy objectives.

Such interactions are reflected in central bank responses to the questionnaire (Graph 6). Regarding the channels through which the state of public finances affects the monetary policy room for manoeuvre, most countries in Latin America and the group of other EMEs see the risk premia and the exchange rate channels as “very important”. In Asia these two channels are considered somewhat less relevant, arguably reflecting the relative fiscal strength of many economies in the region. Instead, in emerging Asia and CEE, central banks place greater emphasis on the effects of fiscal policy on output, inflation and inflation expectations. By contrast, there is little evidence in the central banks’ responses – from any region – of the state of public finances giving rise to political economy pressures on the central bank.

### Public finances affect monetary policy space through a number of channels<sup>1</sup>

Share of economies, in per cent

Graph 6



Asia: CN, HK, ID, IN, KR, MY, PH, SG, TH and VN; LatAm: AR, BR, CL, CO, MX and PE; CEE: CZ, PL, HU and RU; Others: AE, IL, SA, TR and ZA.

<sup>1</sup> Based on central bank responses.

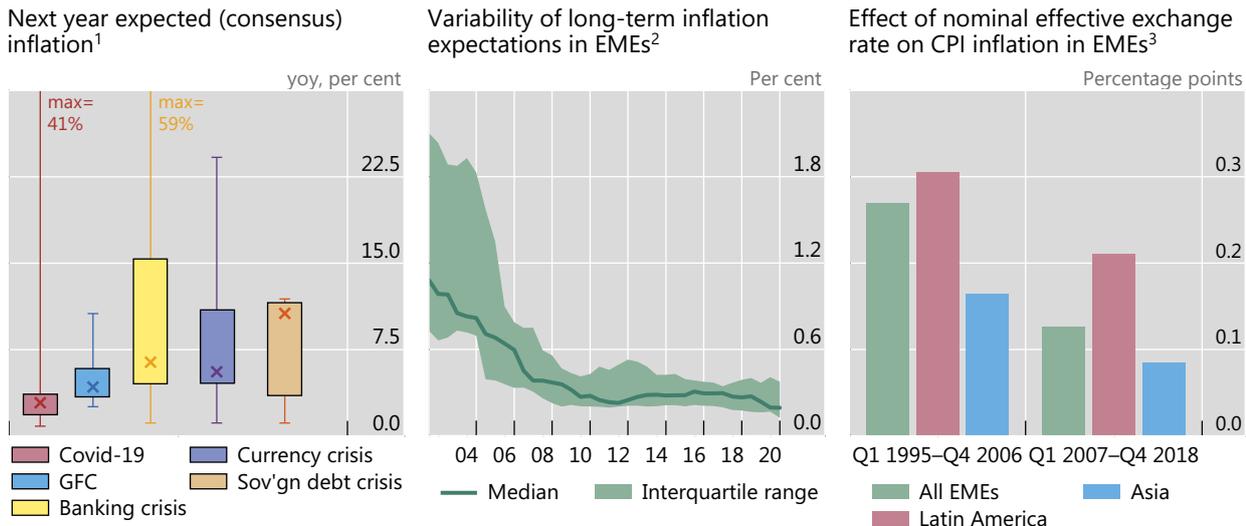
Sources: BIS survey; BIS calculations.

Considering each of the two policies in turn, improvements in monetary policy have been reflected in notable advances in inflation performance. Near-term inflation expectations were significantly lower prior to the pandemic shock than before previous downturns (Graph 7, left-hand panel). Pre-Covid 19, the median next-year

inflation expectations were at 2.2% in Asia and 3.4% in Latin America. While the subdued business cycle position played a role, long-term expectations were also significantly more stable than in the past (centre panel). Better anchoring of long-term inflation expectations has been facilitated by improvements in monetary policy transparency and independence, especially compared to the 1990s.<sup>7</sup> And the exchange rate pass-through was now lower, even as regional differences persist, with it being generally higher in Latin America than in emerging Asia (right-hand panel).

## Large improvements in EMEs' inflation performance

Graph 7



<sup>1</sup> The floating bars show the interquartile range, the cross represents the median and the poles mark the min-max range of the data. The summary statistics are calculated for each crisis type in the period before the crisis starts using quarterly or annual data. A particular crisis episode can be classified as more than one crisis type. The dataset only includes three sovereign debt crises. <sup>2</sup> Using long-term consensus inflation expectations. Variability defined as the median standard deviation of long-term inflation expectations over six-year rolling windows. The shaded area denotes interquartile ranges. The calculation excludes South Africa and the United Arab Emirates due to a lack of data. <sup>3</sup> Six-year rolling window estimates from the equation  $\pi_{it} = \alpha_i + \delta \pi_{it-1} - \sum_{j=0}^3 \gamma_j \Delta NEER_{it-j} + \sum_{j=0}^3 \phi_j \gamma_j gap_{it-j} + \sum_{j=0}^3 \tau_j \Delta com_{t-j} + \omega \Delta REER_{it-1} + \varepsilon_{it}$ . Sample starts in Q1 1995. Based on Jašová et al (2016).

Sources: M Jašová, R Moessler and E Takáts, "Exchange rate pass-through: what has changed since the crisis?", *BIS Working Papers*, no 583, September 2016; Consensus Economics; national data; BIS calculations.

A related piece of evidence is the much weaker effect of fiscal deficits on inflation. Empirical analysis shows that prior to 2000, higher budget deficits in EMEs led to a pronounced shift in the likelihood of higher inflation outcomes (Graph 8, left-hand panel).<sup>8</sup> By contrast, the effect of deficits on inflation outcomes has been much smaller and not statistically significant post-2000 (centre panel). Greater central bank independence appears to be playing an important role in the strength of this link as deficits lead to future inflation that is around three times higher in cases where central

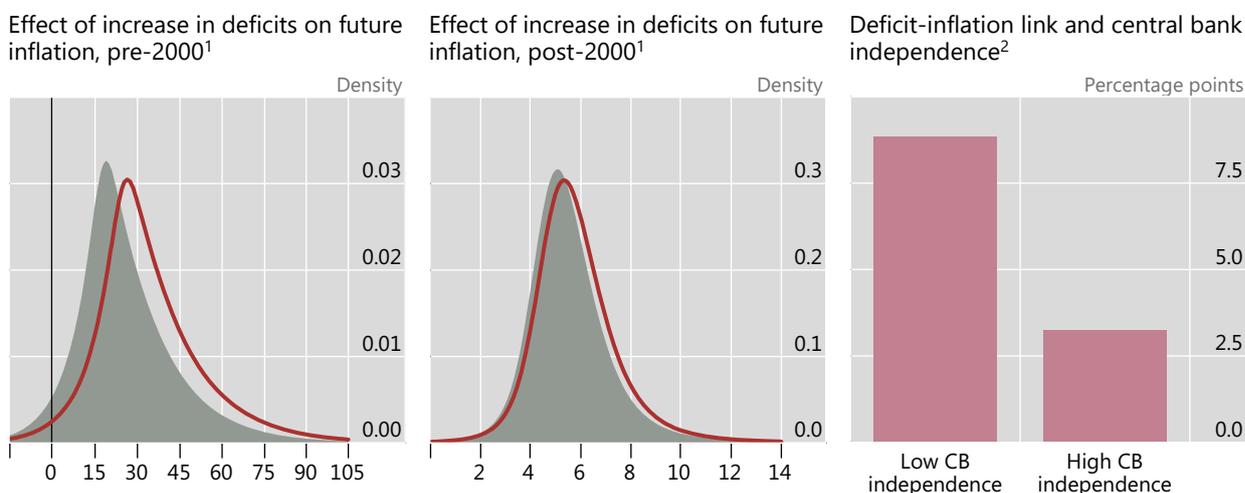
<sup>7</sup> See eg N Dincer and B Eichengreen, "Central bank transparency and independence: Updates and new measures", *International Journal of Central Banking*, vol 10, no 1, 2014, pp 189–253.

<sup>8</sup> The underlying "inflation at risk" model relates the one-year-ahead inflation distribution to a two-year-change in fiscal deficits, as well as output growth, current inflation, change in the bilateral exchange rate against the US dollar, oil price growth and a dummy variable for sovereign debt crises. The model is estimated by a flexible quantile panel regression framework using annual data for 23 EMEs and developing economies over 1960–2019, with the length of country-specific samples depending on data availability. For a description of the methodology, see R Banerjee, J Contreras, A Mehrotra and F Zampolli, "Inflation at risk in advanced and emerging market economies", *BIS Working Papers*, no 883, September 2020.

bank independence is lower than the sample average (right-hand panel).<sup>9</sup> Of course, the underlying fiscal policy setting is also likely to matter, notably whether primary balances are adjusted so that the level of public debt is stabilised over the long run.

### Fiscal deficits, inflation and central bank independence

Graph 8



<sup>1</sup> Change in one-year-ahead conditional inflation forecast distribution (change from grey to red) when there is a one standard deviation increase in deficits. To compute the distributions, all other variables are set at their means. The model is estimated for a panel of 23 EMEs and developing economies over 1960-2019. The shift in the pre-2000 distribution is statistically significant at conventional levels at the 25<sup>th</sup>, 50<sup>th</sup> and the 75<sup>th</sup> percentiles; the post-2000 shift is not statistically significant. <sup>2</sup> The effect of a one standard deviation increase in deficits over two years on one-year-ahead inflation, computed at the 50<sup>th</sup> percentile of the future inflation distribution. The methodology follows the left and centre panels and also includes an interaction variable between the level of central bank independence and the two-year change in deficits. Low (high) CB independence correspond to below (above) average CB independence. The interaction variable is statistically significant at the 5% level.

Source: BIS calculations.

Another improvement in the monetary policy dimension relates to higher FX reserves. These can act as buffers against capital flow reversals and sharp exchange rate depreciations, providing greater monetary policy headroom and improving the resilience of the economy. Moreover, FX reserves, and FX intervention more generally, can also be used in an active macroprudential fashion to insulate domestic from external financial conditions and lean against the build-up of financial imbalances. Prior to the pandemic recession, the stock of reserves ranged from 15% of GDP in Latin America to 24% in Asia, with a median of 20% across EMEs (Graph 9, left-hand panel). By contrast, prior to past currency crises, median reserves were only 8%.

The state of public finances has also improved along a number of dimensions. EME fiscal policy has become more countercyclical over time, as evident in the policy responses during the pandemic (Graph 4).<sup>10</sup> Relatedly, a number of EMEs have adopted fiscal rules, constraining spending during good times and boosting investor confidence. While sovereign debt increased in some EMEs over the past decade, debt maturities have increased, reducing rollover risks, with the median residual maturity

<sup>9</sup> The analysis uses the “inflation at risk” model, examining the impact on future inflation at the median of the distribution, and an index for central bank independence from A Garriga, “Central bank independence in the world: A new dataset”, *International Interactions*, vol 42, no 5, 2016, pp 849–68.

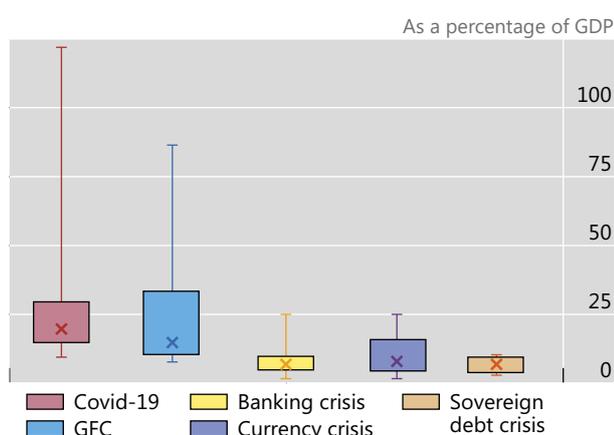
<sup>10</sup> See also J Frankel, C Végh and G Vuletin, “On graduation from fiscal procyclicality”, *Journal of Development Economics*, vol 100, issue 1, 2013, pp 32–47.

for central government debt securities rising from 4.2 years in 2003 to 6.9 years in 2019. And, with lower shares of FX debt, governments have reduced their currency exposures and developed local currency bond markets, attracting large foreign participation in some cases (Graph 9, right-hand panel). That said, this does not provide full insulation. The currency mismatches have partly shifted from borrowers' to lenders' balance sheets. As EME currencies typically depreciate at the same time as domestic bond yields increase, EMEs could be exposed to abrupt withdrawals of funds by unhedged foreign investors, triggering tighter financial conditions.<sup>11</sup>

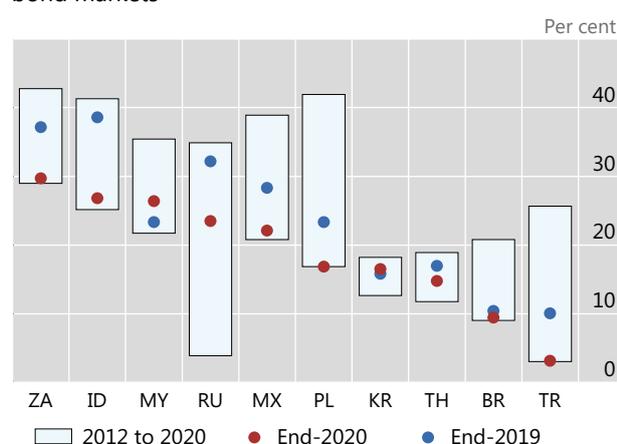
## FX reserves and international investors in EME bond markets

Graph 9

### FX reserves relative to past crises<sup>1</sup>



### Share of foreign investors in local currency government bond markets



<sup>1</sup> The floating bars show the interquartile range, the cross represents the median and the poles mark the min-max range of the data. The summary statistics are calculated for each crisis type in the period before the crisis starts using quarterly. A particular crisis episode can be classified as more than one crisis type. The dataset only includes three sovereign debt crises.

Sources: IMF; Datastream; Dealogic; Euroclear; Refinitiv; Xtrakter Ltd; national data; BIS calculations.

These improvements in public finances have also supported monetary policy. They have likely rendered monetary policy more effective by reducing average risk premia and, importantly, their sensitivity to external conditions. In addition, longer maturities have made the government's debt service burden less sensitive to changes in the policy rate. And lower shares of FX debt, in turn, have allowed exchange rates to work as shock absorbers to a greater extent than in the past.

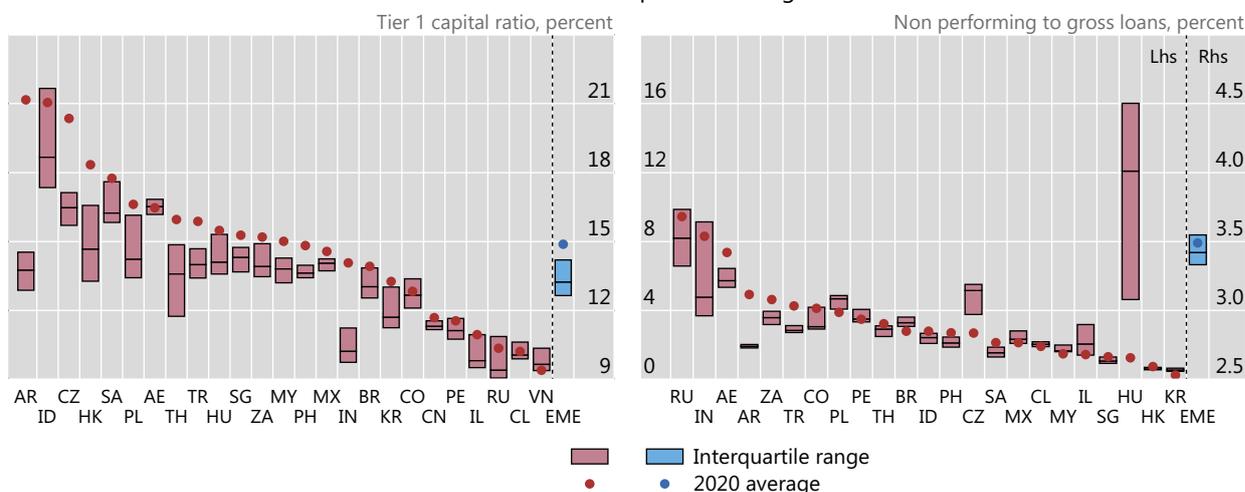
### Stronger banks in EMEs

A more robust banking sector has also facilitated the strong fiscal and monetary response to the pandemic-induced recession, boosting its efficiency. In contrast to some past episodes of stress, banking sectors have been part of the solution and not of the problem. Strong banks can better support the transmission and effectiveness of policy measures. Well-capitalised banks have a healthier appetite to take risk and provide credit at a time of higher default risks and uncertainty. Such banks can also transmit rate cuts, funding-for-lending programmes, and credit-guarantees more effectively. And, by preempting banking crises, they do away with a factor that can cripple public finances.

<sup>11</sup> See A Carstens and H S Shin, "Emerging markets aren't out of the woods yet", *Foreign Affairs*, 19 March, 2019, for the "original sin redux" hypothesis.

Banks capitalisation has increased across most EMEs<sup>1</sup>

Non-performing loan ratios have also declined since the peak following the GFC<sup>1</sup>



<sup>1</sup> The boxes show the interquartile ranges during 2011 to 2019, while the dots show the average during the first three quarters of 2020. In case no data is available for 2020, the latest data point available is plotted. "EME" corresponds to the simple average across EMEs.

Sources: IMF, *Financial Stability Indicators*; BIS calculations.

Indeed, EME banks had strengthened their balance sheets over the ten years since the GFC (Graph 10). In line with the global regulatory reforms, the average risk-weighted capital ratio had improved by close to 2 percentage points by the end of 2019. Non-performing loan (NPL) ratios had also generally declined from their peak immediately after the GFC, while profitability had remained stable (Graph 12, centre-panel below). And while the average return on assets of EME banks declined by close to 50 basis points between end-2019 and Q3 2020, this reflected to a considerable extent EME banks' ability to absorb large forward-looking loan loss provisions.

### 3. Policy interactions going forward

Looking forward, the interaction between fiscal and monetary policy will be influenced by the pandemic's evolution. In 2020 policy reactions were largely dictated by the size, suddenness and global breadth of the economic shock. Over the next few years, policymakers must reckon with a number of constraints that will partly depend on global developments but also, and importantly, on domestic factors. Given the depth and uncertain extent of the pandemic-induced recession, stabilisation policies will inevitably have to play close attention to the management of policy buffers.

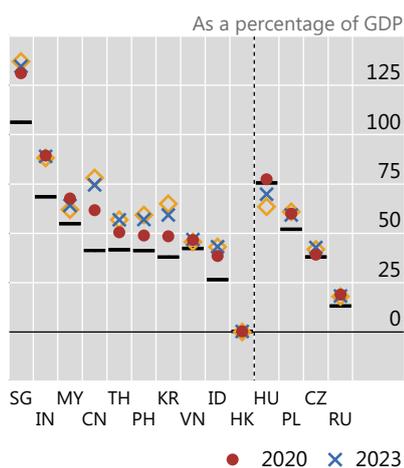
Monetary and fiscal policies will interact against the backdrop of a gradual, uneven and uncertain recovery. While the GDP drop so far has been lower than originally feared, the global recovery appears slower than anticipated and may slow down further if the health emergency persists. In addition, the pandemic has brought about, or accelerated, structural shifts in the organisation of production and distribution of trade that will require significant adjustments in labour and product markets. For many EMEs, these changes come on the heels of a secular decline in growth. Events that derail recovery globally or a sudden change in global financial conditions could have major repercussions.

Policymakers will have to face these challenges with smaller policy buffers at a time when many private sector buffers have also shrunk. With the exception of household saving rates (which have increased as spending has contracted), private debt has risen. Banks have maintained credit flows but not without lowering their capital cushions.

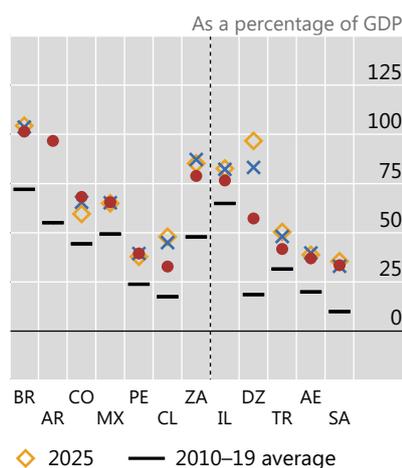
## High government debt

Graph 11

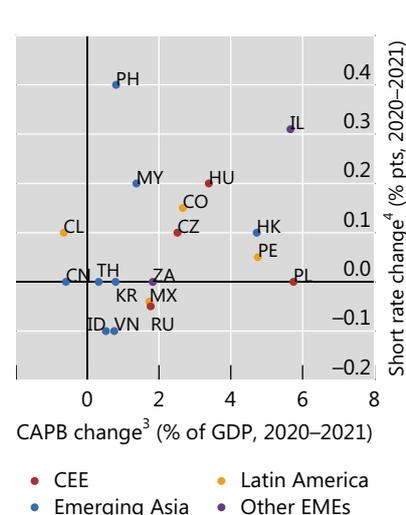
### Emerging Asia and CEE<sup>1</sup>



### Latin America and other EMEs<sup>1</sup>



### Primary balance and short term rate forecasts for 2021<sup>2</sup>



<sup>1</sup> Using IMF forecasts from the October 2020 World Economic Outlook report for 2020, 2023 and 2025. <sup>2</sup> Brazil (CAPB change: 8.5% of GDP; short rate change: 0.9% pts) and Turkey (CAPB change: -0.2% of GDP; short rate change: 1.15% pts) are not shown. <sup>3</sup> CAPB = Cyclically adjusted primary balance to potential GDP. IMF forecasts used for 2020 and 2021. <sup>4</sup> Consensus forecasts of short term rates (interbank, policy or government bills rates up to three months) used for end-2021, except for Israel, Saudi Arabia and South Africa where IMF forecasts are used.

Sources: IMF, *World Economic Outlook*, October 2020; Consensus Forecasts; national data; BIS calculations.

Global financial conditions have been a tailwind, but could turn sooner than expected. While the central scenario of strong and prolonged monetary policy accommodation in the core economies has not changed, recently the risk of a sharp increase in inflation in the United States, owing in part to a large fiscal package, has been noted. Combined with a surge in debt issuance, this has raised long-term yields in the core markets. It is possible that, if some of this continues, foreign investors may find EME asset classes less appealing.

Turning to domestic factors, the immediate response to the pandemic shock has consumed a sizeable portion of EME fiscal buffers, as reflected in currently high debt-to-GDP ratios for many economies (Graph 11, left-hand and centre panels). For practically all jurisdictions, ratios are now significantly higher than their past decade averages, and in many instances are expected to climb further. Arguably, the return of bond spreads and CDS premia to near their pre-Covid levels signals a greater credit risk tolerance by investors, at least compared to the past. However, the risk of a reversal in investor sentiment, or a fiscal derailment is material and so are its macroeconomic implications.

Over the next few years progress in the fiscal consolidation could be the main determinant of fiscal and monetary policy interactions. In a benign scenario, where recovery proceeds smoothly, monetary and fiscal policies could continue to operate

well in tandem. Projected fiscal policy responses so far appear consistent with such a scenario, reflecting a turn towards consolidation (Graph 11, right-hand panel). Cyclically-adjusted primary balances are expected to rise by 1.7 percentage points during 2021 (median), and by more than 5 percentage points in Brazil, Israel and Poland. Moreover, the negative effect of fiscal consolidation on growth may not be large. Previous literature suggests that the fiscal multiplier during consolidations is lower when monetary policy is accommodative (Annex Graph 2).<sup>12</sup> Indeed, current forecasts see short-term interest rates moving little during 2021 (Graph 11, right-hand panel).<sup>13</sup> A somewhat weakening currency could reduce the contractionary impact of consolidation by boosting external demand. As the overall macroeconomic situation improves, and as long as inflation remains under control, monetary policy can then gradually normalise and rebuild its buffers, provided that global liquidity conditions and monetary policy in anchor countries remain accommodative.

A question mark going forward concerns the state of the banking sector. Could banks start to suffer in a moderately adverse scenario, thus failing to support the recovery and reducing the fiscal and monetary room for manoeuvre? If stress intensifies explicit public support could not be ruled out, either granted to the banks themselves or to their borrowers. This would also force a delay in rate increases as long as inflationary pressures did not arise. Keeping rates low for too long would not only depress banks' margins, but also likely hamper monetary policy transmission.

The possibility of banking sector weakness should not be ruled out. Banks' non-performing assets are likely to rise as fiscal support to businesses and households is normalised in the near future. Historically, NPL ratios have typically peaked six to eight quarters after the onset of severe recessions in EMEs (Graph 12, left-hand panel). In addition, higher interest rates may become inevitable in EMEs where there are signs of rising inflation, weakening borrowers and generating mark-to-market losses. Forecasts suggest that by end-2021 profitability of EME banks may remain at much lower levels than before the pandemic (centre panel). Prudential policies, such as loan moratoria and/or dividend restrictions, can smooth the transition, but prolonged reliance on them can distort incentives and shift the solvency burden to the sovereign.

In particular, the sovereign-bank nexus could be yet another possible vulnerability. On the one hand, should the fiscal position deteriorate, this would weaken banking systems with large holdings of government debt. On the other hand, weakness among banks could badly sap public finances.<sup>14</sup> Banks' sovereign debt holdings have risen sharply in some EMEs (Graph 12, right-hand panel).<sup>15</sup> In such a context, the central bank may either have to tighten monetary policy – if the external

<sup>12</sup> See R Banerjee and F Zampolli, "What drives the short-run costs of fiscal consolidation? Evidence from OECD countries", *Economic Modelling*, vol 82, 2019, pp 420–36; J Cloyne, O Jorda and A Taylor, "Decomposing the fiscal multiplier", *NBER Working Papers*, no 26939, September 2020.

<sup>13</sup> For instance, as mentioned in the country note for India, the Reserve Bank of India's Monetary Policy Committee stated in December 2020 that it would continue with the accommodative stance as long as necessary to revive growth on a durable basis.

<sup>14</sup> See eg C Borio, J Contreras and F Zampolli. "Assessing the fiscal implications of banking crises", *BIS Working Papers*, no 893, October 2020.

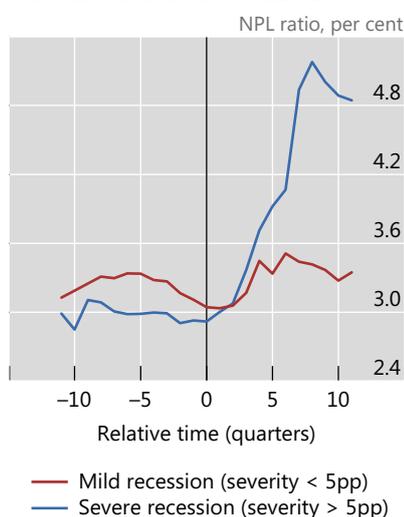
<sup>15</sup> It has been argued that the risk of sovereign-bank nexus generating adverse effects in EMEs on average was rising even before the pandemic hit; see E Feyen and I Zuccardi, "The sovereign-bank nexus in EMDEs: What is it, is it rising, and what are the policy implications?", *World Bank Policy Research Working Papers*, no 8950, July 2019. The Covid-19 crisis may have accelerated this trend in some EMEs.

constraint becomes seriously binding – or else come under pressure to relieve banks from their sovereign exposures.

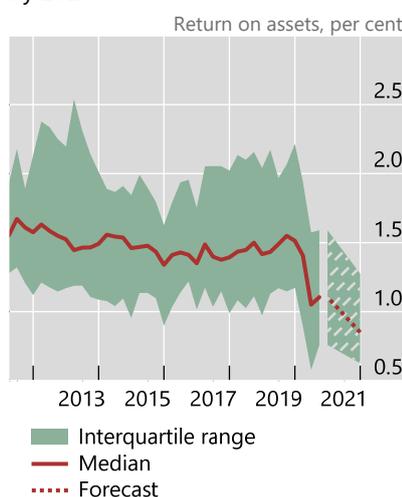
## Potential drag on the banking system going forward

Graph 12

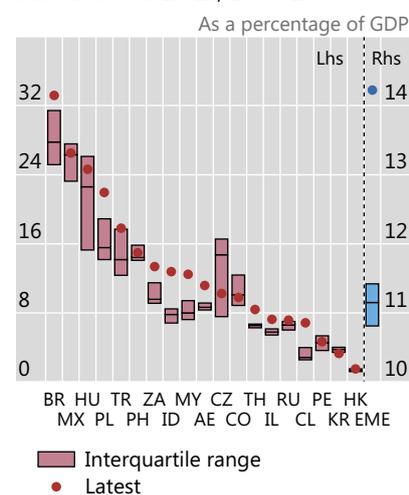
NPLs typically peak two years after the onset of severe recessions<sup>1</sup>



Bank profitability unlikely to recover by 2021<sup>2</sup>



Sharp increase in banks' sovereign debt in some EMEs, 2011-2019<sup>3</sup>



<sup>1</sup> A recession is defined as a sustained decline in GDP for at least 3 quarters, subject to the condition that the distance between subsequent business cycle peaks is at least 8 quarters. Due to lack of NPL data before 2007, recessions only after that date are considered. Among the recessions identified, those with a cumulative decline in GDP (ie severity) between the peak and the trough is more than 5pp are classified as a severe recession, while the rest are classified as mild. Simple average across EMEs for which NPL data is available and a recession is identified. <sup>2</sup> Bank profitability forecasts for end-2021 are based on the S&P BIRCA report. <sup>3</sup> The boxes show the interquartile ranges and median during 2011 to 2019, while the dots show the latest data point available, typically the third quarter of 2020. "EME" corresponds to the simple average across EMEs.

Source: IMF, Financial Stability Indicators; International Financial Statistics; S&P BIRCA; BIS calculations.

In particular, the sovereign-bank nexus could be yet another possible vulnerability. On the one hand, should the fiscal position deteriorate, this would weaken banking systems with large holdings of government debt. On the other hand, weakness among banks could badly sap public finances.<sup>16</sup> Banks' sovereign debt holdings have risen sharply in some EMEs (Graph 12, right-hand panel).<sup>17</sup> In such a context, the central bank may either have to tighten monetary policy – if the external constraint becomes seriously binding – or else come under pressure to relieve banks from their sovereign exposures.

### The state of public finances

All this suggests that the state of public finances is indeed key. Not surprisingly, central banks consider it as having an important influence on monetary policy, through a variety of channels (Graph 6, above). From this perspective, the issue whether fiscal positions could weaken the sovereign's creditworthiness significantly

<sup>16</sup> See eg C Borio, J Contreras and F Zampolli. "Assessing the fiscal implications of banking crises", *BIS Working Papers*, no 893, October 2020.

<sup>17</sup> It has been argued that the risk of sovereign-bank nexus generating adverse effects in EMEs on average was rising even before the pandemic hit; see E Feyen and I Zuccardi, "The sovereign-bank nexus in EMEs: What is it, is it rising, and what are the policy implications?", *World Bank Policy Research Working Papers*, no 8950, July 2019. The Covid-19 crisis may have accelerated this trend in some EMEs.

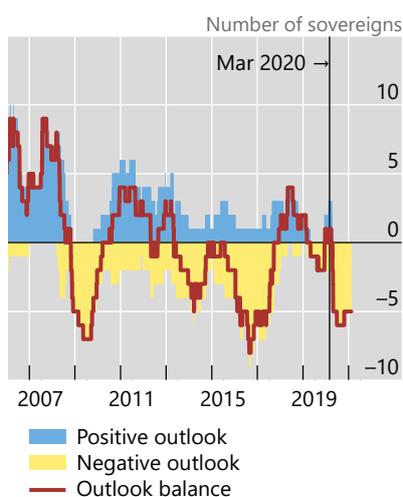
or remain on a firm sustainable path is probably the main domestic factor influencing the monetary policy headroom.

Sovereign credit ratings have been fairly stable but ratings' outlooks have turned more negative (Graph 13, left-hand panel). This is because the positive effects of government spending on the pandemic-struck economy have been counterbalanced by the build-up of debt. S&P has assigned higher average risk scores to EMEs' sovereign debt (centre panel). Fiscal consolidation will be required to put the debt trajectory back on a sustainable path in some economies. The task would be less challenging if global interest rates remained low and population immunisation eventually released pent-up demand and boost growth. Under such circumstances, S&P expects that most EMEs would be able to stabilise government debt by 2023 (right-hand panel). However, for some EMEs, low potential growth could mean extra fiscal consolidation efforts. It is the largest fiscal adjustments that are projected to fall short (points above the 45° line). There are also downside risks to these projections. Global interest rates may rise earlier than expected, if AE growth is better-than-expected or inflation picks up sooner. In addition, debt projections do not take into account contingent public liabilities.

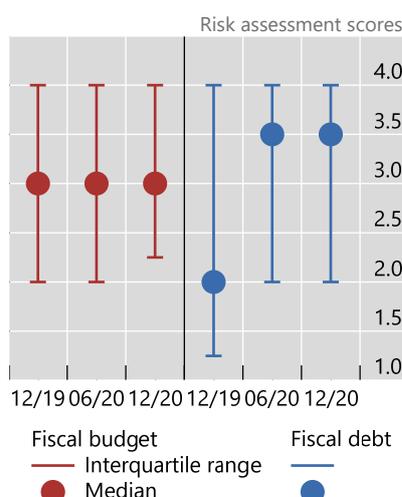
## Outlook for fiscal risks

Graph 13

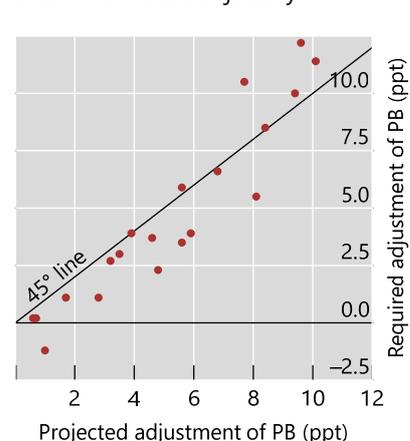
EME sovereign rating outlook distribution<sup>1</sup>



Sovereign rating risk-assessment scores for EMEs<sup>1,2</sup>



Required adjustment of primary balance (PB) by 2023 to attain sustainable debt trajectory<sup>3</sup>



<sup>1</sup> EMEs include AR, BR, CL, CN, CO, CZ, HK, HU, IN, ID, IL, KR, MY, MX, PE, PH, PL, RU, SA, SG, ZA, TH, TR and VN. <sup>2</sup> S&P "Sovereign Rating Strengths And Weaknesses scores", range from 1 to 6, with larger value represents higher risk. <sup>3</sup> Debt sustainable primary balance =  $(\text{debt}/\text{GDP})_{t-1} * (i - g)/\text{GDP}_i$ ; see S&P (2021), "Sizing sovereign debt and the great fiscal unwind", *S&P comments*.

Sources: IMF, *Fiscal Monitor*; Refinitiv; S&P Global Ratings.

## Monetary policy space

Concerns about fiscal sustainability will invariably have an impact on the room for monetary policy manoeuvre. For instance, over the past year fiscal risks played out in FX markets as countries that reported the largest fiscal deficits have seen largest currency depreciations in 2020. In Asia, which generally have strong current account surpluses and lower fiscal debt, their currencies have been more resilient. Responses to the central bank survey are broadly in line with the idea that while providing some short-term headwinds, in a number of economies, less fiscal accommodation would

be welcome. That said, most central banks currently view the likelihood of fiscal policy constraining monetary policy as low (Graph 14). Only in Latin America more than half of the respondents see such an outcome as “somewhat likely”.

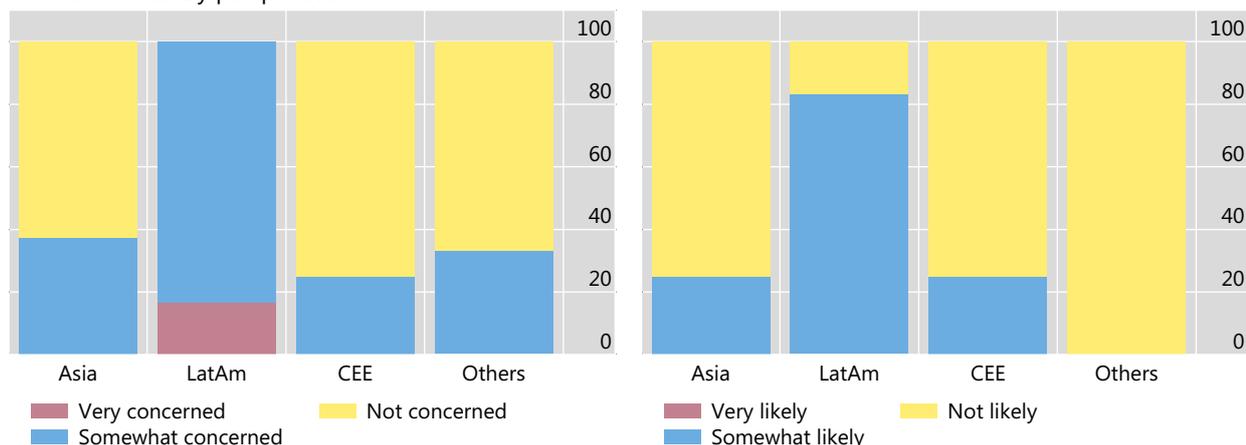
## Central bank views on fiscal risks<sup>1</sup>

Share of economies, in per cent

Graph 14

Concern about the sustainability of the fiscal position, from the monetary perspective

Likelihood of fiscal policy constraining monetary policy



Asia: CN, HK, ID, IN, KR, MY, PH, SG, TH and VN; LatAm: AR, BR, CL, CO, MX and PE; CEE: CZ, PL, HU and RU; Others: AE, IL, SA, TR and ZA.

<sup>1</sup> Based on central bank responses.

Sources: BIS survey; BIS calculations.

The risks of headwinds, be they global or due to weakened fiscal positions, raise the question of whether monetary policy can do more, if necessary. Given that conventional policy space has become more limited, would greater use of balance sheet tools provide a credible complementary instrument?

Central bank balance sheet policies can help alleviate some of the trade-offs policymakers face. Balance sheet policies can enhance monetary policy space. And to the extent that they raise GDP and do not encourage further government borrowing, they can also improve the path of debt-to-GDP ratios.<sup>18</sup> While generally motivated by market functioning considerations, the previous analysis suggests that central bank purchases of government debt in EMEs have indeed kept long-term yields low.

At the same time, asset purchases, of government debt in particular, give rise to political economy challenges for central banks. The coordination between monetary and fiscal authorities was crucial to tame the turbulence. Their interests were fully aligned. But it is not prudent to count on this going forward. Indeed, easy access to central bank financing could encourage further borrowing. And this could constrain monetary policy further, either because of the induced greater vulnerability of the economy or through more direct political economy pressures – fiscal dominance. This would threaten central banks’ independence and damage their credibility.

<sup>18</sup> See Committee on the Global Financial System, “Unconventional monetary policy tools: a cross-country analysis”, *CGFS Papers*, no 63, October 2019; and B Hofmann, M Lombardi, B Mojon and A Orphanides, “Fiscal-monetary policy interactions in a low interest rate world”, *mimeo*, December 2020.

The recourse to unconventional measures in EMEs implies trade-offs due to different factors. First, these measures may expose central bank balance sheets to higher credit and interest risks. Second, the institutional set up may make central banks more vulnerable to political economy pressures, fostering undue market perceptions of monetary financing and fiscal dominance. Those with relatively short track records of stable inflation are particularly vulnerable. Third, the higher vulnerability to external financial conditions reduces the ability to influence yields, which are more prone to abrupt adjustments. Finally, owing to the relatively small size of EME domestic markets, central banks can easily end up owning an overwhelming share of the stock of government bonds. This would deprive the private sector of safe and liquid assets that can be sold during distress.

More generally, an important question for central banks relates to the extent they may rely on balance sheet tools in the future, and with what specific purpose. As noted above, the majority of surveyed central banks pointed out that balance sheet policies were deployed with a more modest objective and actual implementation has been much smaller in EMEs than in AEs (Graph B2, Annex B).<sup>19</sup> In local currency terms, the expansion in many central banks' balance sheets during the past year reflects the increase in FX rather than domestic asset holdings (Annex B). In general, EME central banks tend to perceive less favourably the risk-benefit calculus related to the use of balance sheet instruments as a means of providing monetary stimulus than their AE peers. This is especially true when there is conventional policy space available.

<sup>19</sup> Only central banks in Israel, Hungary and Poland report that they purchased public sector assets to influence the stance of monetary policy.

## Issues for discussion

### Session 1

1. How did the Covid-19 crisis influence the interaction between monetary and fiscal policy? Did the extraordinary circumstances make the coordination between policies easier? What, if any, have been sources for tension?
2. What were the key factors that led to greater use of the central bank balance sheet and in particular to large-scale domestic asset purchases in the context of the response to Covid-19? What have been the effects on financial conditions and the macroeconomy so far? Have asset purchases affected the room for fiscal policy manoeuvre?

### Session 2

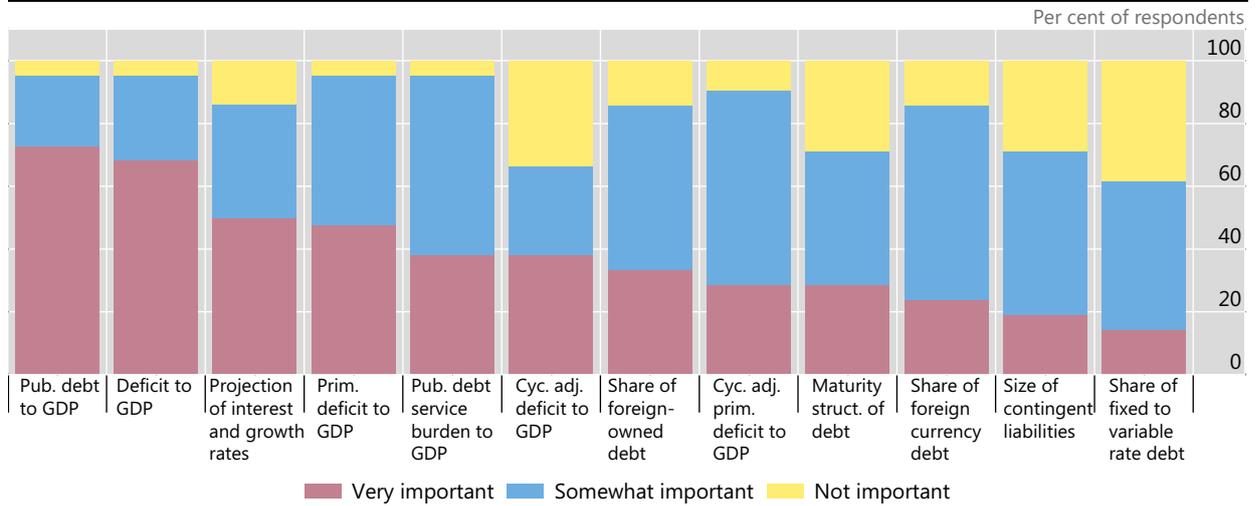
3. Do large-scale domestic asset purchases make the exchange rate more vulnerable to confidence crises? Could they increase the risk of higher inflation? Under what conditions?
4. Does the increase in fiscal deficits and public debt raise macroeconomic and financial stability risks? Is monetary policy likely to be constrained by fiscal policy going forward? Through what channels? How important is the threat of fiscal dominance, including because of political economy channels?

## Annex graphs

### Debt and deficit metrics considered key for debt sustainability and macro risks

Central bank responses to survey

Annex Graph 1

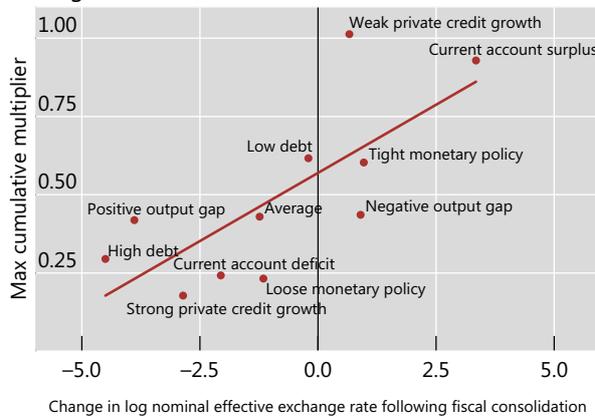


Sources: BIS survey, BIS calculations.

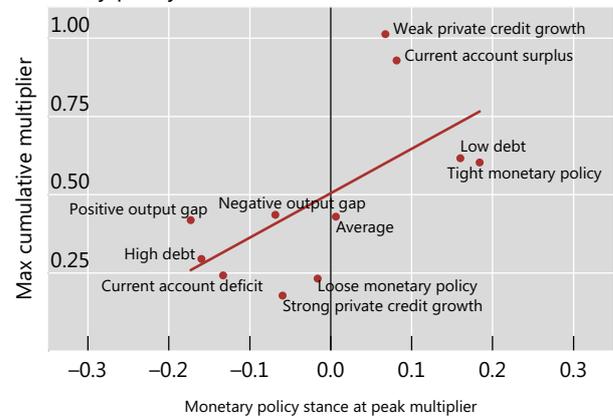
### External adjustment and looser monetary policy lower fiscal multipliers

Annex Graph 2

Exchange rate offsets fiscal consolidations



Monetary policy offsets fiscal consolidations<sup>1</sup>



<sup>1</sup> Monetary policy stance measured as the deviation of nominal interest rates from an estimated Taylor rule. Higher values indicate tighter monetary policy stance, given GDP and inflation outcomes.

Source: R Banerjee and F Zampolli, "What drives the short-run costs of fiscal consolidation? Evidence from OECD countries", *Economic Modelling*, vol 82, 2019, pp 420–36.

## Annex A: Covid-19 vs other downturns – initial conditions and policy responses

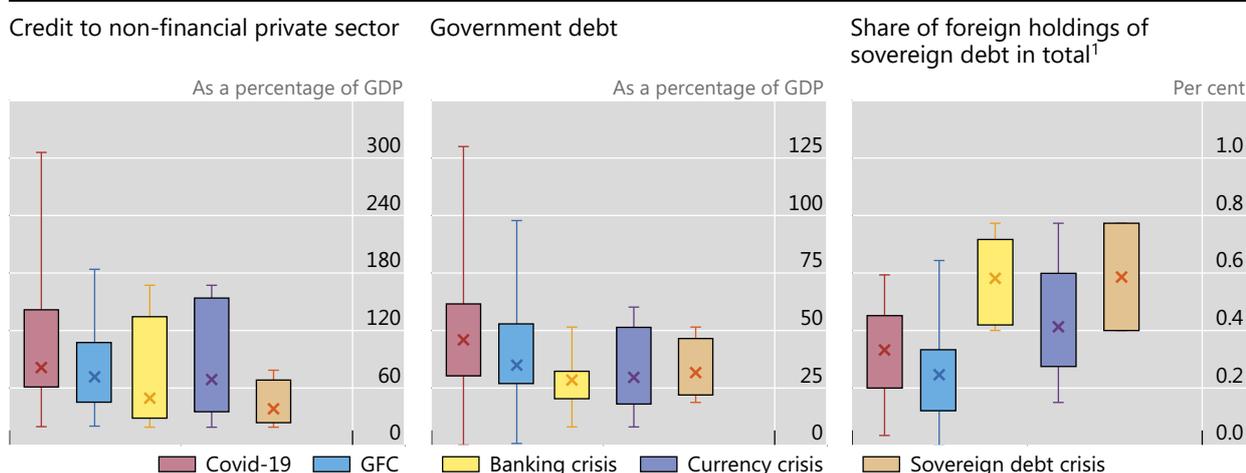
The macro-financial conditions preceding Covid-19, as well as the fiscal and monetary policy responses to the shock, differed in a number of ways from previous crises. Below we compare the current crisis with the GFC and a number of other EME crises since 1994. Some of the panels in Graphs 5, 7 and 9 in the main text provide a similar comparison for macro-financial indicators not discussed in this Annex.

In the analysis, initial conditions and policy adjustments during crises are considered for all EMEs for the two global crises, Covid-19 and the GFC. To identify the other, more economy-specific downturns, a recession-dating algorithm is applied, setting as the downturn the time period from peak-to-trough in the level of real GDP for a given economy. All episodes where the cumulative drop in real GDP during the downturn is less than 4% are excluded. The remaining 15 more severe downturns are further identified as associated with a banking, currency or sovereign debt crises (or more than one simultaneously).<sup>20</sup> The graphs show the interquartile ranges (bars), the medians (crosses) and the full ranges (lines) for a number of macro-financial and policy variables.

The levels of private and public debt were generally higher prior to the pandemic recession than before previous downturns (Graph A1, left-hand and centre panels). The median levels of both private (81%) and public (46%) debt to GDP were at historical pre-crisis highs, with private debt particularly elevated in EME Asia (157%) and CEE (85%). As a comparison, before banking crises in the past, the median private debt to GDP was at 50%.

Initial private and public debt levels and foreign holdings of sovereign debt

Graph A1



The floating bars show the interquartile range, the cross represents the median and the poles mark the min-max range of the data. The summary statistics are calculated for each crisis type in the period before the crisis starts using quarterly or annual data. A particular crisis episode can be classified as more than one crisis type. The dataset only includes three sovereign debt crises.

<sup>1</sup> Only five banking, four currency and two sovereign debt crises are considered due to limited data availability.

Sources: IMF; Consensus Economics; Datastream; national data; BIS calculations.

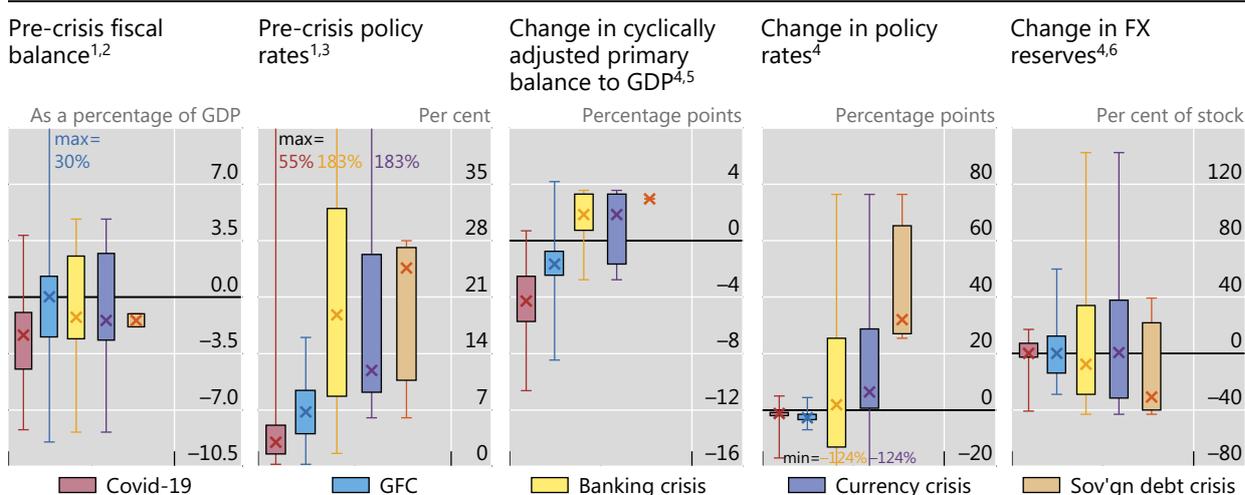
<sup>20</sup> Eleven downturns are associated with banking crises, 9 with currency and only 3 with sovereign debt crises, using the database in L Laeven and F Valencia, "Systemic banking crises revisited", *IMF Working Papers*, no 18/206, September 2018. There are also three EME downturns in the sample – recessions in Hong Kong SAR, Peru and Singapore – with a larger than 4% cumulative drop in GDP but that are not associated with any of the three crisis types. These are excluded from the analysis.

The picture concerning foreign holdings of sovereign debt is less clear-cut (Graph A1, right-hand panel). Pre-pandemic, median holdings were higher (about one-third of outstanding amounts) than prior to the GFC (closer to one-quarter). This was the case in particular in Latin America (47%) and in the group of other EMEs (38%). That said, in these recent cases foreign holdings of sovereign debt stood below those in more distant crisis episodes.

The weak cyclical position and accommodative external conditions – as discussed in the main text – facilitated a countercyclical fiscal and monetary policy response, in contrast to past crises (Graph A2).<sup>21</sup> This occurred despite more limited policy space, as measured by overall fiscal balances (which is also affected by the economy’s cyclical position) and the distance of policy rates from the ZLB. For the median EME, the cyclically adjusted primary balance is estimated to have declined by 4 percentage points in 2020 and by only 1.6 points during the GFC (between 2007 and 2009) whereas it had increased during previous crises.<sup>22</sup> FX intervention in response to the historically large capital outflows early on in the pandemic did lead to a decline in reserves in the group of other EMEs and Latin America, but in most economies the declines were small as a share of the overall stock. By the end of Q2 2020, FX reserves had actually increased in Asia. Lengthening the window further to Q4 would result in much more prominent increases in reserves in many economies (see Annex B).

Pre-crisis policy space and policy changes during crises

Graph A2



The floating bars show the interquartile range, the cross represents the median and the poles mark the min-max range of the data. A particular crisis episode can be classified as more than one crisis type. The dataset only includes three sovereign debt crises.

<sup>1</sup> The summary statistics are calculated for each crisis type in the period before the crisis starts using quarterly or annual data. <sup>2</sup> Only two sovereign debt crises are considered due to limited data availability. <sup>3</sup> Policy rates data extended with short term interest rates to increase data availability. <sup>4</sup> The summary statistics are calculated for each crisis type as the difference at the crisis start and end dates using quarterly or annual data. <sup>5</sup> Only six banking and currency crises and one sovereign debt crisis are considered due to limited data availability. <sup>6</sup> For FX reserves the end of the Covid-19 episode is set to Q2 2020.

Sources: IMF; Datastream; national data; BIS calculations.

<sup>21</sup> See eg G Kaminsky, C Reinhart and C Végh, “When it rains, it pours: procyclical capital flows and macroeconomic policies”, *NBER Macroeconomics Annual*, vol 19, 2004, pp 11–53; M Obstfeld, “Trilemmas and trade-offs: living with financial globalisation”, *BIS Working Papers*, no 480, January 2015.

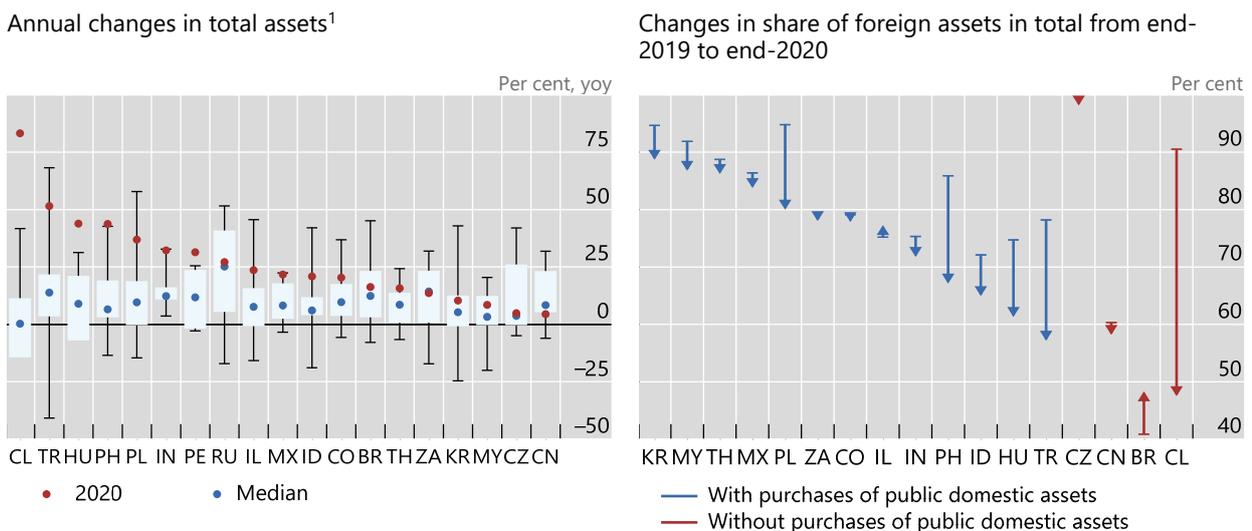
<sup>22</sup> As a caveat, cyclically adjusted primary balances are available only for six banking and six currency crises and one sovereign debt crisis.

## Annex B: Recent EME central bank balance sheet developments

Prompt unconventional policy responses by EME central banks to the Covid-19 shock have led to significant changes in their balance sheets' size. Asset purchases, expanded lending operations and FX interventions have all played an important role.

Many EME central banks' balance sheets expanded and shifted towards domestic assets in 2020. Asset purchases and lending operations contributed to an exceptional expansion of the balance sheets. In many cases, the pace was much faster than historical averages (Graph B1, left-hand panel). These operations also led to a shift of central bank asset composition towards domestic assets, even though the shift was relatively small in most cases. FX reserves still accounted for more than 70% of total assets, apart from in Brazil, China, Chile and Turkey (right-hand panel). The significant fall in the share of foreign assets was a result of the central bank's purchases of debt securities, including bank bonds, to restore market functioning and ensure banks with abundant liquidity.

Central bank balance sheets expanded and most shifted towards domestic assets Graph B1



<sup>1</sup> Box-whisker plot shows the following five parameters (minimum, maximum, first quartile, median and third quartile) over the period between January 2002 (or the earliest available) and Dec 2019.

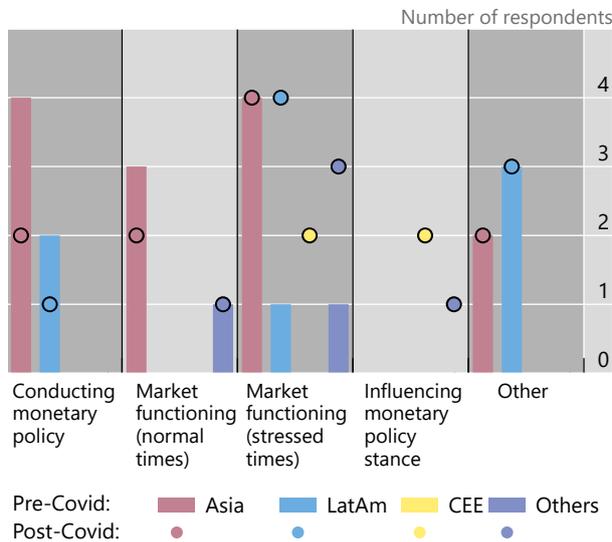
Sources: national authorities; IMF, International Financial Statistics.

The small shift towards domestic assets could reflect the “financial stability” nature of asset purchases. This is because the interventions required are generally smaller. According to central bank survey for this meeting, thirteen central banks report implementing asset purchases of public debt in response to Covid-19 (Graph B2, left-hand panel). Nearly all central banks purchasing government debt did so to improve market functioning during periods of stress. Only three central banks (Hungary, Israel and Poland) implemented asset purchases also in order to influence the monetary policy stance, whereas none reported having done so in the past. Consequently, most central banks' holdings of government securities remained within the historical range (right-hand panel).

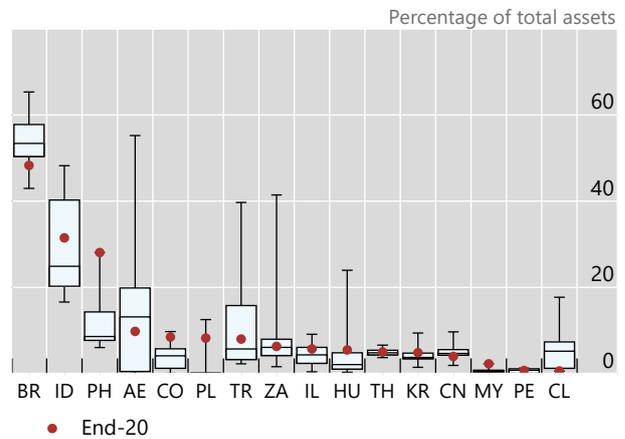
## Government debt purchases mainly aimed at market functioning and thus not a main driver of balance sheet expansion

Graph B2

Number of respondents who reported implementing asset purchases for the following objectives<sup>1</sup>



Central bank claims on central government<sup>2</sup>



<sup>1</sup> Asia: IN, ID, KR, MY, PH, SG and TH. LatAm: AR, CO, MX and PE. CEE: HU and PL. Others: IL, SA, ZA and TR. BR, CN, CZ, HK, RU, SA and AE did not implement purchases of public securities. <sup>2</sup> Box and whisker plot represents the following five parameters (minimum, maximum, 1st quartile, median and third quartile).

Sources: BIS survey; IMF, *International Financial Statistics*; national authorities; BIS calculations.

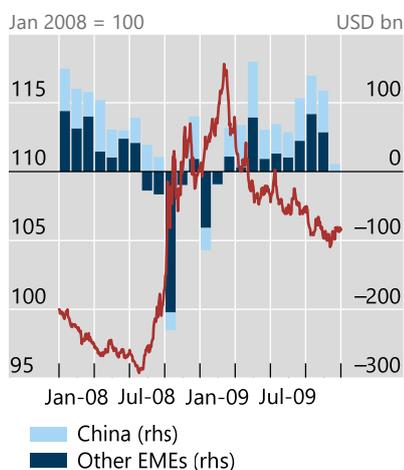
Besides asset purchases, lending operations also contributed to balance sheet expansion. These operations come in various forms. For example, in its contribution to the meeting, the Monetary Authority of Singapore (MAS) mentions the facility to support bank lending to SMEs at reduced interest rates, underpinned by the government's risk-sharing scheme. In China, the Ministry of Finance and the People's Bank of China jointly set up special purpose vehicles to provide financial incentives to banks granting access to finance for micro and small businesses. The Reserve Bank of India conducted Targeted Long-Term Repo Operations (TLTROs) to provide financing up to three years to sectors and entities experiencing liquidity constraints and/or obstacles to market access.

At the same time, most central banks have started to accumulate FX reserves after the heavy interventions in March 2020. During the initial stage of the pandemic, EME central banks sold FX reserves to provide dollar liquidity to domestic agents and to smooth out the volatile FX movements due to a global dollar shortage. While the scale of interventions in March was comparable to that during the GFC, the decline in EME FX reserves as a share of the balance sheet was much smaller in March than during the GFC (Graph B3). This reflected the resolve of many central banks to build up FX reserves as a self-insurance against external shock over the years and greater willingness to allow the exchange rate to depreciate. The ample reserves coupled with the core central banks' actions helped allay investor fears and overcome the global dollar shortage. Since then, EME central banks have started to replenish their FX reserves. By end-2020, excluding China, total EME FX reserves were up by more than \$400 billion from the previous year.

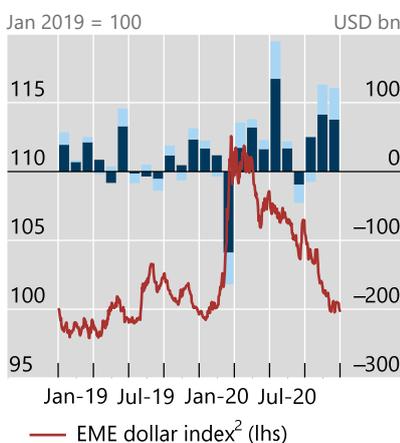
# Ample FX reserves helped smooth out volatile exchange rate movements<sup>1</sup>

Graph B3

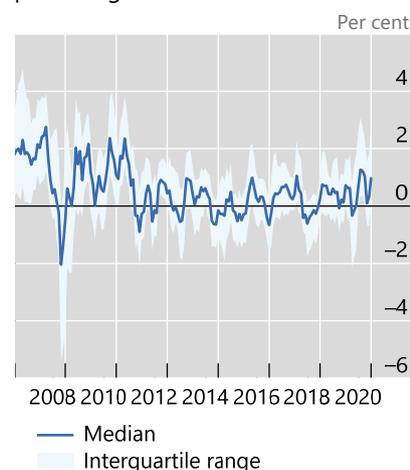
Changes in FX reserves during GFC



Changes in FX reserves during Covid



Changes in EME FX reserves as a percentage of total<sup>3</sup>



<sup>1</sup> Argentina, Brazil, Chile, China, Colombia, the Czech Republic, Hong Kong SAR, Hungary, India, Indonesia, Israel, Korea, Malaysia, Mexico, the Philippines, Poland, Russia, Saudi Arabia, Singapore, South Africa, Thailand and Turkey. <sup>2</sup> Higher value represents a stronger dollar. <sup>3</sup> 3-month moving average.

Sources: IMF; Federal Reserve Board of Governors.



# The Covid-19 crisis response, monetary and fiscal policy interactions: the case of Argentina<sup>1</sup>

Central Bank of Argentina

## Abstract

The Covid-19 crisis brought fiscal and monetary policy interactions back to the fore. In Argentina extraordinary fiscal and monetary policy interventions, in both quantity and quality, have played a major role in containing the impact of the pandemic. The policy response was heavily conditioned by the situation prior to the shock, which reinforced the key role of the central bank, in particular, to finance an adequate fiscal policy response to cushion household and business income. The challenge now is to normalise fiscal and monetary policy in a gradual and sustainable way, moving towards a balanced fiscal position, price stability and inclusive growth. One crucial element is to develop domestic capital markets to finance both public and private sector investment needs. The crisis may also have more general lessons for EME monetary authorities. To cope with more frequent episodes of high volatility, they will need to develop new tools, including an enhanced monetary policy toolkit. However, domestic policies are not enough on their own and international cooperation will be essential to ensure adequate liquidity at a global level.

JEL classification: E52, E58, E62, E63.

Keywords: Argentina, Covid-19, crisis response, fiscal policy, monetary policy.

<sup>1</sup> Central Bank of Argentina. Note prepared for presentation at the BIS meeting of Emerging Market Deputy Governors, Basel, 24–25 February 2021. Unless otherwise indicated, all figures correspond to data available at the time of the meeting

## Introduction

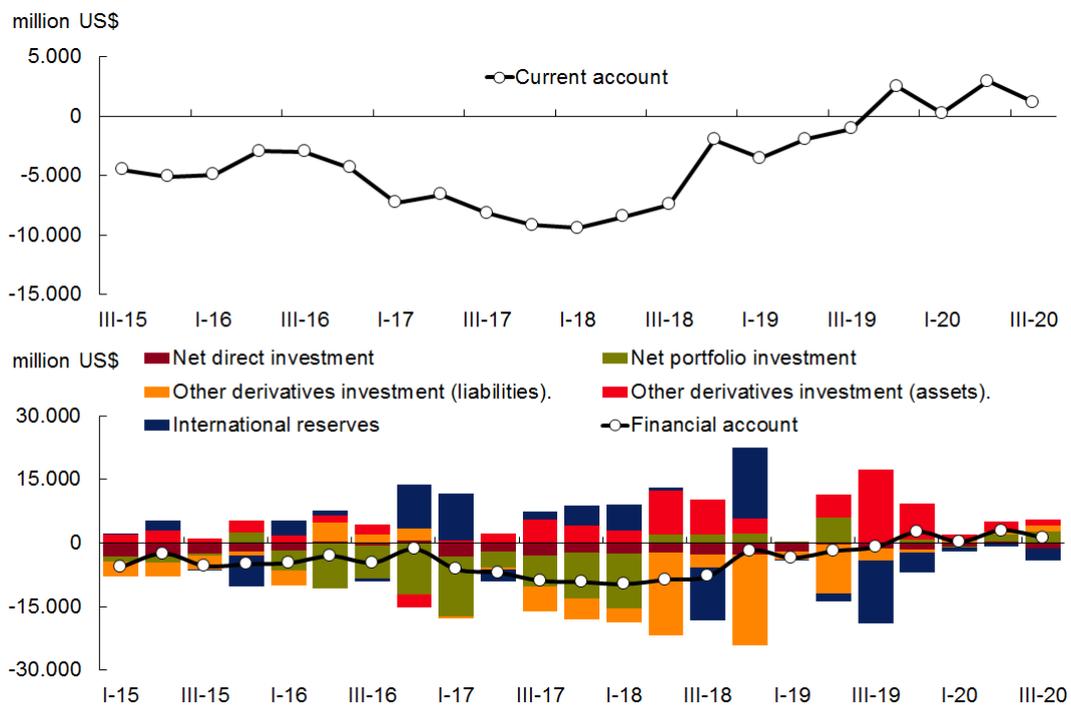
The Covid-19 crisis brought fiscal and monetary policy interactions back to the fore. As part of the response, both advanced and emerging market economies (EMEs) embarked on programmes that involved both fiscal and monetary authorities. This note reviews how Argentine economic policy responded to the crisis, considering the challenging pre-pandemic conditions; what the response implied in terms of fiscal expansion and monetary financing; how the central bank managed side effects and potential trade-offs; and the challenges ahead.

## The economic impact of the Covid-19 pandemic

The Argentine economy was in a critical situation before the pandemic, with two years of recession – partially linked to the 2018 balance of payment crisis (see Graph 1) – an annual inflation over 50%, the unemployment rate at 10%, a poverty rate of 35.5%, and unsustainable public debt (see Graph 2). On top of the challenge of normalising the economic and social situation, the Covid-19 crisis made the task much more difficult.

Argentina pre-pandemic conditions – balance of payments

Graph 1



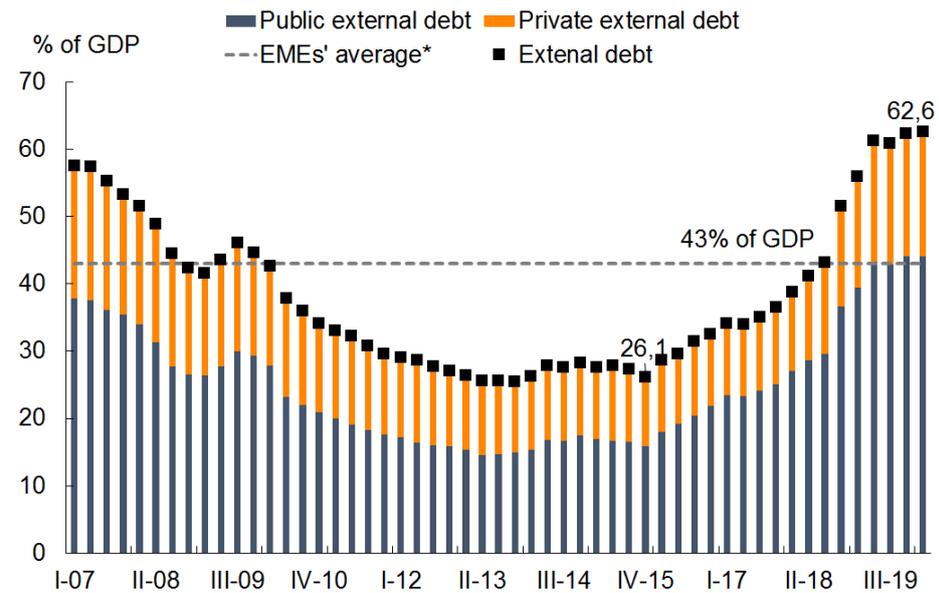
Source: INDEC.

In order to prepare the domestic health system for the pandemic, the Argentine government imposed a tight lockdown from 20 March 2020. Due to the combination of supply and demand shocks, economic activity bottomed out in April 2020, when output dropped 17% year on year. From May onwards, as restrictions were gradually

lifted, all low and high-frequency indicators began reflecting a steady recovery (Graph 3). This has tended to concentrate in sectors such as industry, construction and commerce. Other activities, mainly services such as hotels, entertainment, tourism and transport, have seen a more persistent negative impact. By December 2020, the economic activity index (a monthly proxy of GDP) stood at 2.9% below pre-crisis levels, and activities representing 70% of the index had already reached pre-pandemic output. GDP fell 9.9% in 2020 and is expected to return to pre-pandemic output levels between late 2021 and 2022.

Argentina pre-pandemic conditions – external debt

Graph 2



\*EMEs' unweighted average

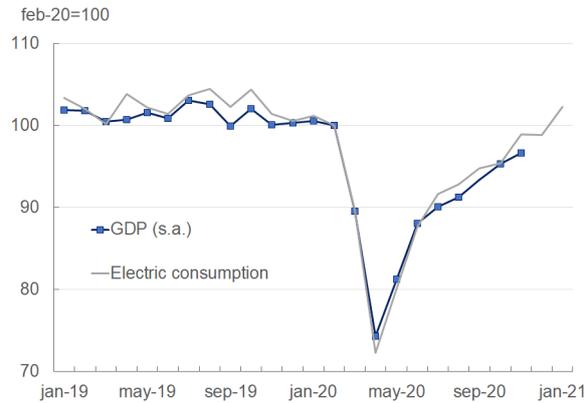
Source: Central Bank of Argentina.

Inflation has been falling from very high levels, reaching 36.1% year on year in December 2020, significantly below the 53.8% year on year recorded in December 2019. Gradual deceleration of the inflation rate was due to several factors: the managed floating exchange rate regime implemented by the central bank, which was instrumental in curbing exchange rate instability and thereby contributed to anchoring inflation expectations; retail price dynamics, affected by social distancing measures; limited wage rises; and the temporary freezing of utility prices and price controls over a basket of first-need products. At the beginning of 2021, consumer inflation increased due to the recovery of profit margins with the reopening of the economy, certain supply constraints and higher commodity prices. Since several of these factors are transitory in nature, inflation is expected to begin a process of gradual and sustained deceleration during the rest of the year.

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## Argentina: economic activity

Graph 3a

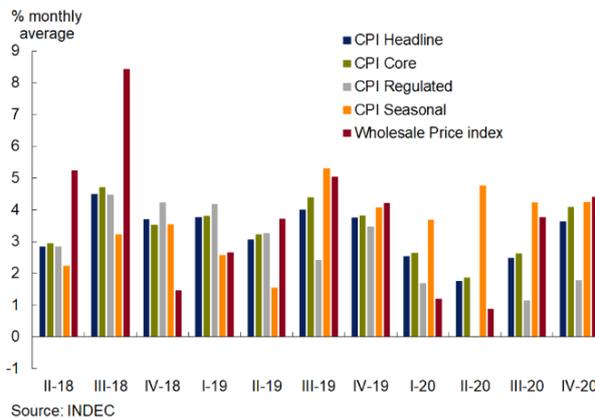


Source: INDEC.

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## Argentina: inflation

Graph 3b



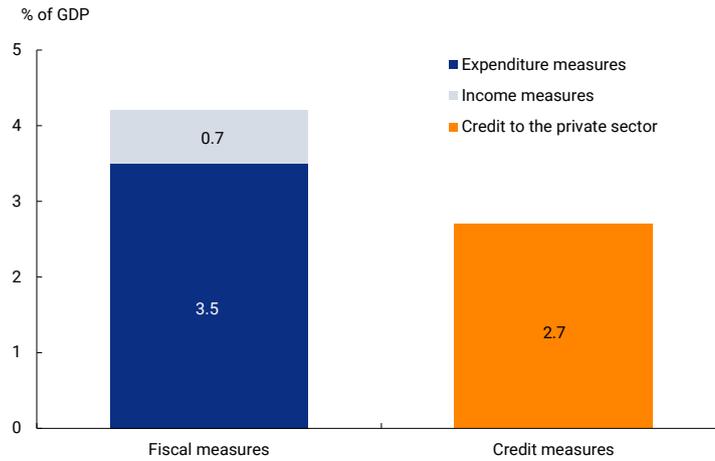
Source: INDEC

Source: INDEC.

## Policy response

Extraordinary fiscal and monetary policy interventions, in both quantity and quality, have played a major role in containing the impact of the pandemic. In Argentina, the policy response to Covid-19 was heavily conditioned by the situation prior to the shock, as described above. The conventional trade-offs that monetary policy faces were made worse by these initial conditions, limiting monetary policy headroom.

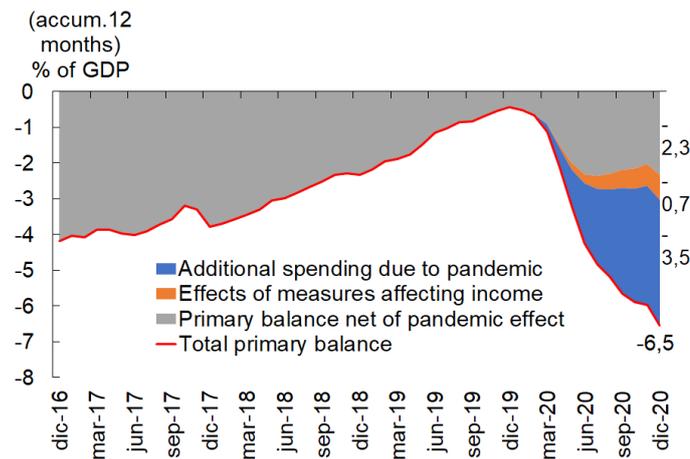
The fiscal policy measures to deal with the pandemic have amounted to additional government spending of around 5% of GDP. In a short time, new direct transfers to households and companies were designed and implemented to sustain basic consumption and income (Graph 4). This sent the primary fiscal deficit soaring to almost 6% of GDP (Graph 5).



Source: BCRA  
 \*Income-Expenditure policies with data up to Dec-20 and credit measures with data up to Jan-21

Source: Central Bank of Argentina.

In turn, the central bank played a key role in the policy response, focusing its efforts on adapting the functioning of the financial system to the lockdown put in place in March; alleviating the financial situation of firms and households; protecting the households savings of the latter in domestic currency, ensuring positive real interest rates; boosting credit to the productive sector; and providing funds to the Treasury to finance countercyclical policies, given its restricted access to international and domestic credit markets.



Source: Central Bank of Argentina from Ministerio de Economía and INDEC.

The central bank’s measures to alleviate the financial situation of households and companies included the following: credit card balances were refinanced, and unpaid installments were transferred at the end of the credit life, without additional costs beyond the contractual interest rate; mortgage instalments were no longer adjusted for inflation; Temporarily bank debtors were not reclassified on the basis of their

creditworthiness. Other measures included the suspension of bank account closures and the extension of cheque maturities.

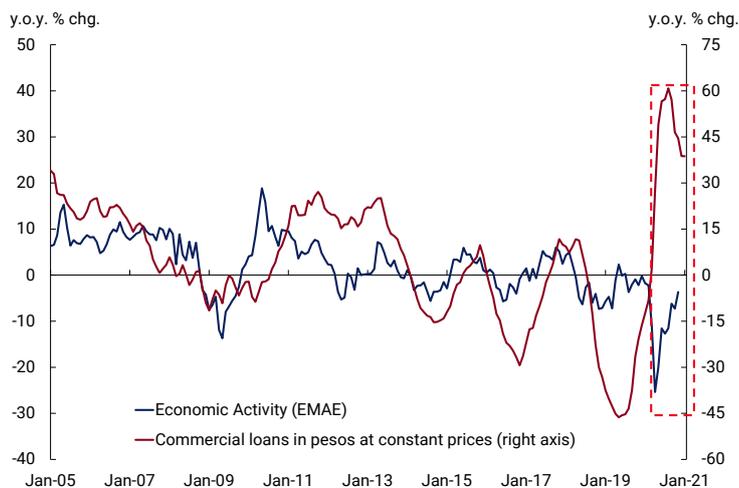
The Central Bank of Argentina used mainly its existing toolkit to provide liquidity and channel credit to SMEs. This included reducing liquidity requirements to finance new bank credit lines (government guarantees were also reinforced).

The following new credit lines were launched: loans to SMEs for working capital financing (including wages), with a 24% interest rate; extension of this facility to SMEs that did not have access to bank loans, and to companies (independently of their size) to finance the purchase of capital goods produced by local SMEs; a special credit line at a 0% interest rate for independent workers in the lowest tax brackets; and a special credit line with an interest rate between 0% and 15% for SMEs receiving the pay cheque protection program.

As a result, credit behaved countercyclically precisely when it was most needed – something unrecorded in over a decade (Graph 6). Credit to MSMEs in Argentine pesos grew by almost 71% in real terms, and loan interest rates fell 10.5 percentage points. For the financial system as a whole, loans to the private sector increased 12.4% in real terms during the same period. Total disbursements made under the central bank’s credit initiatives amount to nearly 2.7% of GDP.

Argentina: commercial loans and business cycle dynamics

Graph 6



## Monetary-fiscal policy interaction

Fiscal space was severely restricted during the response to the pandemic. Access to the international debt markets was basically closed, and a debt restructuring process until its conclusion in September 2020. In addition, the functioning of the domestic debt market was impaired pending a reconstruction process.

Limited fiscal headroom meant that the central bank had to increase financing to the Treasury to support household incomes and prevent a dramatic shutdown of firms. It did so through direct lending and profit transfers to the national government, as permitted by its charter. Unlike other central banks in the emerging world, the Central Bank of Argentina used mainly its existing toolkit in response to the pandemic,

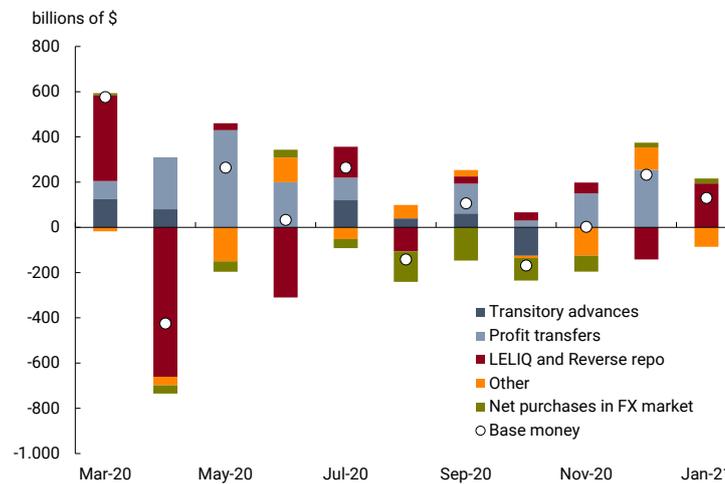
rather than broadening it to implement a wider scope of open market operations or asset purchase programmes.

Direct lending is carried out through advances to the national government repayable within a year.<sup>2</sup> They can reach up to 12% of base money and 10% of fiscal revenues on a cash basis (in the last 12 months). Central bank profits (as defined by its profit and loss statement) can be transferred to the government once reserves are approved by the central bank board.

This extraordinary financing reached 7.6% of GDP in 2020 but it has been transitory and expected to decline by more than half in 2021. The central bank toolkit has also been used to manage liquidity in order to preserve monetary equilibrium. Advances to the government and payout profits increased base money between March and July 2020 and the central bank sold its own securities to mop up excess liquidity (Graph 7).

Argentina: base money growth drivers

Graph 7

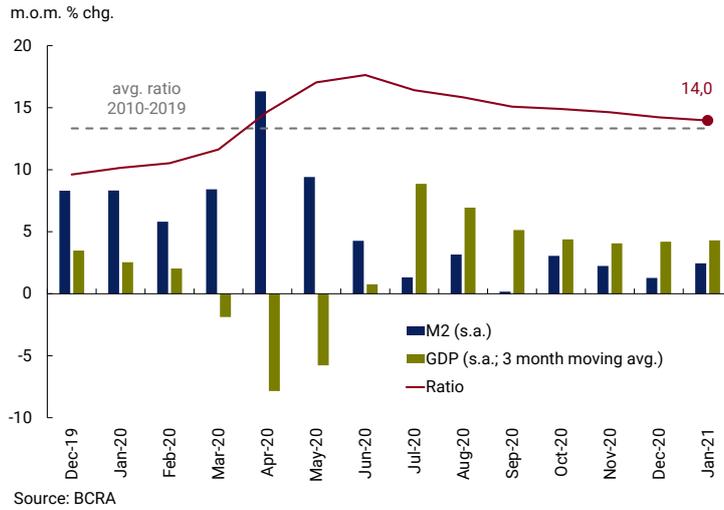


Growing money demand (at record lows before the pandemic) has helped absorb a significant portion of liquidity. Broad money as a proportion of GDP rose to a record 17.6% in June 2020. The increase in money demand was related to the greater uncertainty, the extended bank holidays at the beginning of the pandemic forced by the lockdown, and government transfers to low-income sectors. Since July 2020, M2/GDP has entered on a gradual decline, in parallel with the economic recovery (Graph 8). M2 finished last year at 13.7% of GDP, just 0.3 percentage points above its 2010–19 average, while base money stood at 7.2% of GDP by the end of 2020, 1.2 percentage points below its 2010–19 average.

<sup>2</sup> If any of these advances remains unpaid after that period, this facility may not be used again until the amounts owed have been repaid. Exceptionally, and if the situation of the national or international economy justifies, temporary advances may be granted of up to 10% of the cash resources that the national government has obtained in the last 12 months. This exceptional facility may be exercised for a maximum period of 18 months. Once this period has elapsed, the central bank will not be able to grant the national government advances in this way. These advances must be reimbursed within 18 months of being granted. If these advances remain unpaid after that period, this facility may not be used again until the amounts owed have been reimbursed (see BCRA charter, section 20)

Argentina: means of payment and GDP

Graph 8

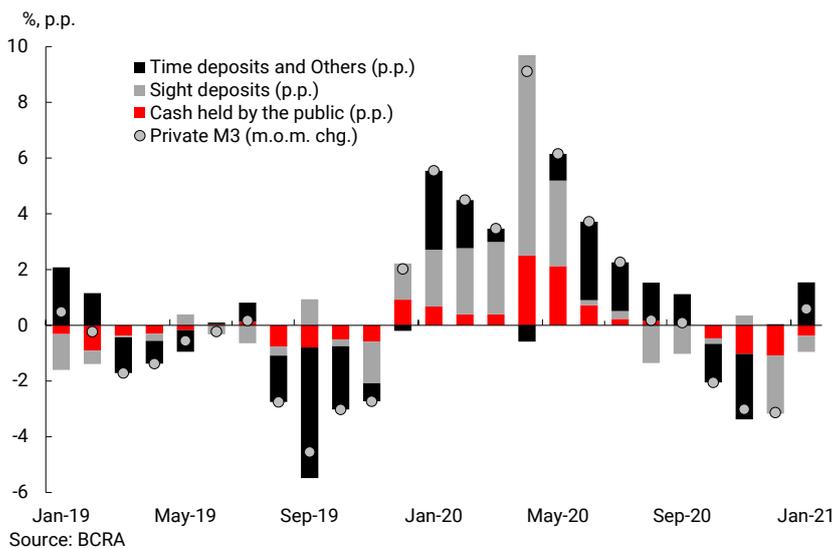


In the context of capital outflows from emerging market economies since March 2020, the Argentine economy experienced higher financial and exchange rate volatility. The central bank responded through interventions in the foreign exchange market to reduce volatility, while the foreign exchange regulations (in place since 2019) helped sustain the level of international reserves.

The monetary authority has also encouraged savings in domestic currency by ensuring that deposit interest rates remain positive in real terms. In order to prevent the expansion of liquidity as a result of the emergency policies from inducing lower interest rates on deposits, minimum interest rates were set for private sector time deposits in local currency.

Argentina: private M3 growth drivers, seasonally adjusted

Graph 9



As a result, while broad money measures have tended to decline as excess liquidity was mopped up, time deposits in local currency increased. In other words,

money growth is now associated to savings than with transactions. As the recovery proceeds and money markets stabilise, a growing fraction of M3 real growth is linked to higher time deposits (Graph 9).

The combination of foreign exchange intervention, regulation and deposit interest rate caps was instrumental in supporting liquidity supply to the private sector while providing emergency financing to the Treasury. Without liquidity management, together with capital controls, the short-term monetary policy space would have been substantially more restricted and would have prevented an effective countercyclical policy response (ie lending interest rates would have been higher and less liquidity would have been available). This was part of the short-term response to the emergency situation. Policy normalisation will call for a reversal of these measures over time.

## Capital market development, macroeconomic and fiscal sustainability

Going forward, economic policy must focus on the sustainability of economic policies, but without inducing a premature withdrawal of support that could jeopardise the recovery. In terms of monetary and fiscal policy interactions, the key is to substitute monetary financing of the government to debt market financing.

The successful resolution of the government debt restructuring process (foreign and local law, with a 99% acceptance rate) and the fiscal path signalled in this year's national budget are important steps in normalising the government's financial needs. According to the 2021 national budget, the Treasury expects to achieve positive net debt financing, significantly reducing the assistance from the central bank. A new agreement with the International Monetary Fund will also contribute to the process of policy normalisation and will increase monetary space.

Gradual economic recovery from the second half of 2020 onwards made it possible to focus fiscal policy efforts on the most critical sectors, which resulted in a lower level of transfers to the private sector. In addition, after the successful restructuring of debt denominated in foreign currency, the national government continued its efforts to reconstruct the domestic currency debt market. All this will contribute to reduce the central bank's monetary assistance.

In this context, the main challenges for the central bank in the medium term will be related to: (a) the normalisation of the foreign exchange market; (b) consolidating credit growth while strengthening savings in local currency; (c) developing a deep domestic capital market in which firms can finance long-term investment.

If the normalisation of the economy after the pandemic allows a sustained rise of exports, foreign market regulations could be gradually relaxed; but some capital controls that could help reduce volatility will be maintained in the medium term. Indeed, this crisis has again shown the need for EME central banks to draw on an enhanced toolkit.

Aiming for sustainable growth and macroeconomic stability in an emerging country such as Argentina, which is exposed to sudden stops and limited monetary sovereignty, calls for an integrated monetary policy framework that combines monetary policy, foreign exchange intervention, macroprudential and capital flow

management measures (CFMs). Studies such as that of Agénor and Pereira da Silva (2018) outline the conditions and shocks faced by EMEs that require changes to the standard policy toolkit. Moving away from the combination of interest rate rules plus purely floating exchange rates is the result of the constraints faced by our economies. This is also in keeping with recent work by the IMF on the “integrated policy framework” that sets out the conditions under which a broader menu of tools may be used, even permanently (Basu et al (2020)). Studies at the local level also point toward the optimality of FX intervention and CFMs in a small, open economy such as Argentina’s (Escudé (2015)).

Capital flow management measures can moderate the impact of foreign liquidity shocks on the local financial markets. As they smooth the volatility of portfolio flows, they help preserve the stock of international reserves and hence monetary policy degrees of freedom.

Just as room for policy manoeuvre has been gained due to the adoption of CFMs and foreign exchange intervention, macroprudential regulation is also fundamental. This has meant going beyond capital and liquidity based countercyclical bank regulation. Currency-based measures have also been put in place to deal with currency mismatches. Since 2002, US dollar-denominated deposits can be lent only to companies that generate income in that currency (any excess amount must be kept as a cash reserve). Together with currency-specific liquidity requirements and a limit on the net global position in foreign currency, this has allowed the financial system to respond to higher demand for US dollar deposits during a crisis. It has also prevented foreign exchange volatility from having a negative impact on bank borrowers’ solvency.

Finally, developing domestic capital markets will be key to opening up funding sources for the government and private investment. At the same time, domestic financial market development works hand in hand with monetary policy, as it helps the latter influence private sector decisions in a more comprehensive way. This was a key issue in the 2020 meeting of EME deputy governors at the BIS (see BIS (2020)).

Fostering local currency bond markets (LCBM) has proved useful in many EMEs by reducing the risk of currency mismatches. But LCBM development is no silver bullet: while these markets contribute to growth and resilience, they are still subject to financial stability risks. Even when issuing in local currency, conditions can lead to carry trades becoming attractive. Under full capital mobility, or without proper capital flow management measures, short-term capital inflows may be attracted to local currency markets. If flows are reversed, this can be destabilising, as there can be increased demand for foreign currency, a currency depreciation or strong pressure on international reserves. This is why deeper capital markets must be accompanied by a broader policy toolkit.

## Concluding remarks

The extraordinary impact of Covid-19 required an extraordinary response. Although it was a global shock, it hit Argentina at a very fragile time, after two years of recession, high inflation and without access to debt markets. These initial conditions reinforced the key role of the central bank, particularly in financing an adequate fiscal policy response to cushion household and business income. The challenge now is to

normalise fiscal and monetary policy in a gradual and sustainable way: moving towards fiscal balance, price stability and inclusive growth, while avoiding policy fixes that can work in the short term but lead to costly reversions over time. One crucial element here is to develop domestic capital markets to finance both public and private sector investment needs.

The crisis may also have more general lessons for EME monetary authorities. They will need to develop new tools to cope with a world more frequently subject to episodes of high volatility. However, domestic policies are not enough on their own and international cooperation will be essential to ensure that global liquidity can be adequately provided.

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# Brazil: Covid-19 and the road to recovery

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Central Bank of Brazil  
February 2021

## Abstract

Worldwide, fiscal and monetary authorities responded with unprecedented measures to the Covid-19 crisis, providing lifelines to households and firms, as well as safeguarding the functioning of credit and financial markets. The Central Bank of Brazil lowered its policy rate to a record low and implemented measures to increase liquidity and ease capital requirements. The government implemented a sizeable income transfer programme to households and several credit programmes targeting small and medium-sized businesses, among other initiatives. The Brazilian economy recovered strongly in the second half of 2020 and should continue on its path to recovery as the pandemic recedes.

JEL classification: E52, E58, E62, F42, F3.

Keywords: Covid-19 pandemic, emerging economies, conventional and unconventional policies.

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## 1. Introduction

In response to the Covid-19 pandemic, many countries adopted voluntary or mandatory lockdowns to slow the spread of the virus. In Brazil, the pandemic brought a large share of the economy to a near halt by the second quarter of 2020. In response, fiscal and monetary policy measures were quickly put in place. While the response was similar to those implemented in other countries, the policy actions taken by the monetary and fiscal authorities were tailored to fit Brazil's economic characteristics, its social needs and the mandates of responding institutions. The fiscal authority targeted its policies to low-income households, and to small and medium-sized firms by implementing transfers and subsidised credit programmes. The Central Bank of Brazil (BCB) relied on conventional monetary policy, as well as on liquidity provision and temporary adjustments to the regulatory framework. In addition, the Brazilian Congress temporarily expanded the BCB's toolbox, allowing it to buy and sell public and private bonds. Although this new tool was not employed, its availability helped ease market concerns. The economy responded well, recovering strongly during the second half of 2020.

This note focuses on the Brazilian experience and the monetary authorities' responses to the Covid-19 pandemic and their impact in the economy. It also briefly describes the fiscal authority's response to the crisis. As the crisis is still unfolding, the note concludes with a discussion about the challenges ahead.

## 2. International background

In response to the Covid-19 pandemic, several countries adopted voluntary or mandatory lockdowns to slow the spread of the virus. These efforts led to sharp and sudden declines in aggregate demand, as well as unprecedented declines in output, particularly during the first half of 2020. (Graph 1).

The near halt of some economic activities and the uncertainty regarding the evolution of the pandemic caused disruptions in global trade chains, significant contractions in the consumption of goods and services, and a worldwide decline in consumer and investor confidence. The service sector, which accounts for a large share of some countries' GDP, was particularly affected, with significant declines in the transportation, tourism, entertainment and leisure sectors.

Fiscal and monetary policy responses worldwide were large, timely and far-reaching. These policies aimed at providing lifelines to help households and firms weather the lockdowns. Fiscal and monetary authorities acted quickly to restore workers' incomes, preserve jobs, help affected sectors, and safeguard the functioning of credit markets and the financial sector. Fiscal measures included income transfers, health spending and loan guarantees, among others (Graph 2). Monetary authorities announced sizeable liquidity and credit support programmes (Graph 3) and lowered policy rates to historically low levels (Graph 4).

Central banks from both AEs and EMEs built on the experience gained during the Great Financial Crisis (GFC), which showed the importance of acting quickly and boldly. The central banks of advanced economies resorted to both conventional and unconventional accommodative policies. They quickly lowered policy rates, where possible, and announced (and implemented) sizeable asset purchase programmes to

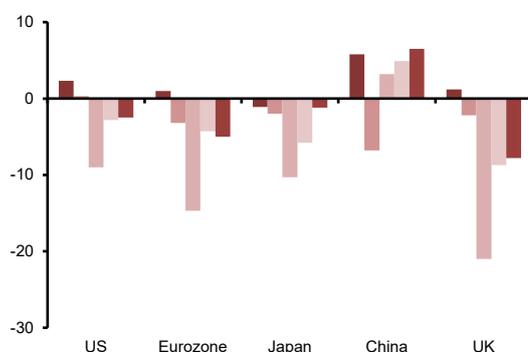
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## Year-on-year GDP growth, advanced and emerging market economies

In %

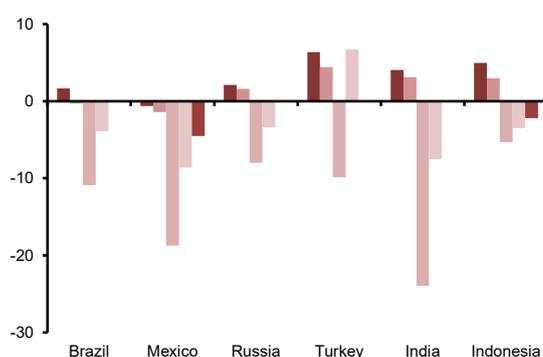
Graph 1

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yoy %

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Source: Bloomberg. 2019Q4-2020Q4

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increase monetary stimulus, expand liquidity or act as a *market maker of last resort*. The nature of this crisis meant that financial systems were better positioned to face it than was the case during the GFC, and moral hazard was less of a concern. Another remarkable difference vis-à-vis 2007–09 was the new Basel framework, which gave regulators scope to ease capital and liquidity requirements. Those conditions allowed central banks to go far beyond their 2007–09 response, allowing the banking system to respond countercyclically to the shock.

Central banks in emerging economies also responded decisively to the economic deterioration caused by the pandemic. Because of the global scope and the nature of the crisis, the response of AE and EME central banks was remarkably similar. Most EME central banks cut their policy rates to historically low levels (Graph 4). Some central banks resorted to unconventional measures to safeguard local market functioning, re-establish adequate liquidity conditions, and mitigate increases in credit costs. EME central banks also offered liquidity lines in local and foreign currencies, in addition to signing currency swap agreements with other central banks, with a view to maintaining the smooth functioning of exchange rate markets. In most cases, despite not having effectively used these swaps, these agreements were considered important in restoring confidence in financial markets. Finally, EME central

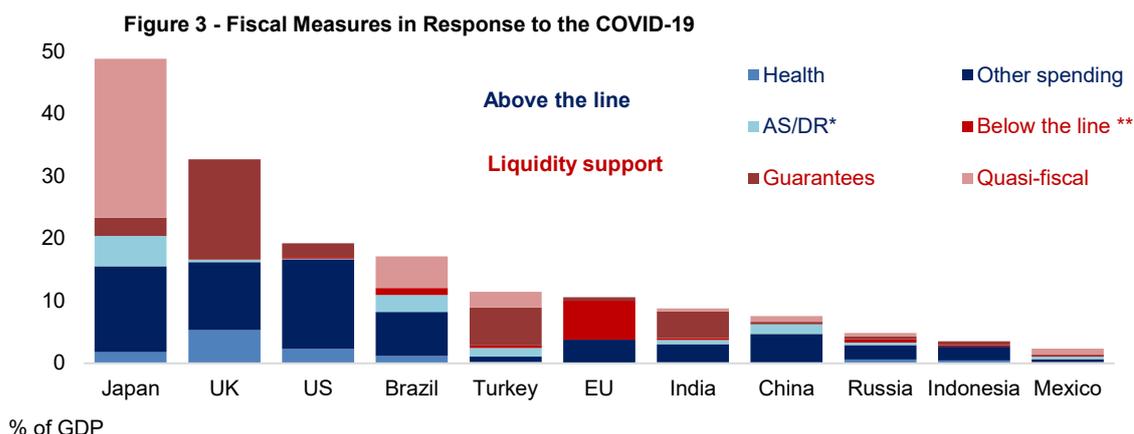
banks and national treasuries also resorted to emergency programmes guaranteeing the flow of credit to small and medium-sized businesses.

Some of the differences in the responses of EMEs and AEs reflected different legal powers and market structures. Some EME central banks had more limited powers to intervene in government bond and capital markets. In addition, financing in some economies depends more heavily on banking credit. As a result, EME central banks relied more heavily on expanding liquidity through conventional tools and funding for bank lending than on asset purchases.

Reflecting the strong response from monetary and fiscal authorities, as well as the partial reversal of some mobility restrictions, the second half of 2020 was marked by a robust, yet uneven, recovery in most economies (Graph 1). The global economy showed a strong rebound in the third quarter, although concentrated in a few sectors, such as industrial and agricultural sectors, led by the consumption of staples and durables. The recovery continued during the last quarter of 2020 but decelerated relative to the third quarter, partially due to new waves of Covid-19 and new mobility restrictions.

### Fiscal measures in response to the COVID-19

Graph 2

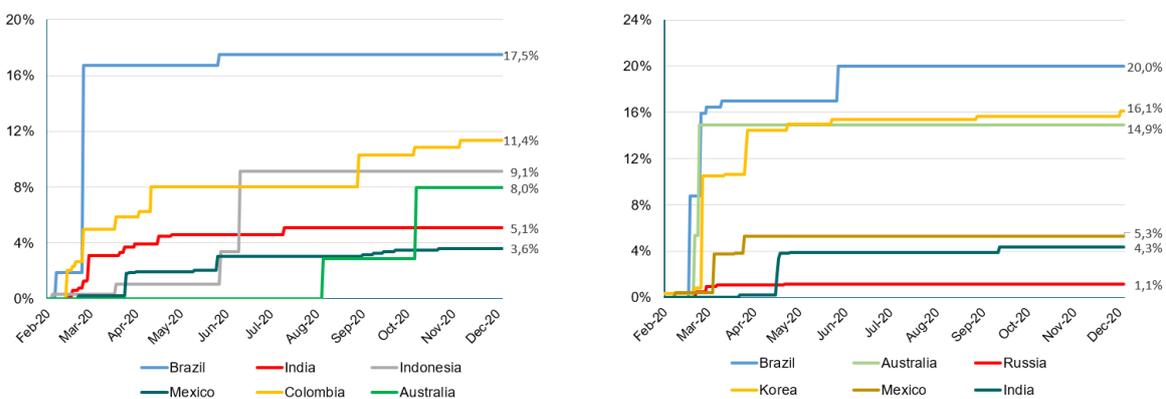


\* Accelerated spending / deferred revenue, \*\* Equity injections, loans, asset purchase or debt assumptions.

### EMEs Central Banks liquidity and credit support

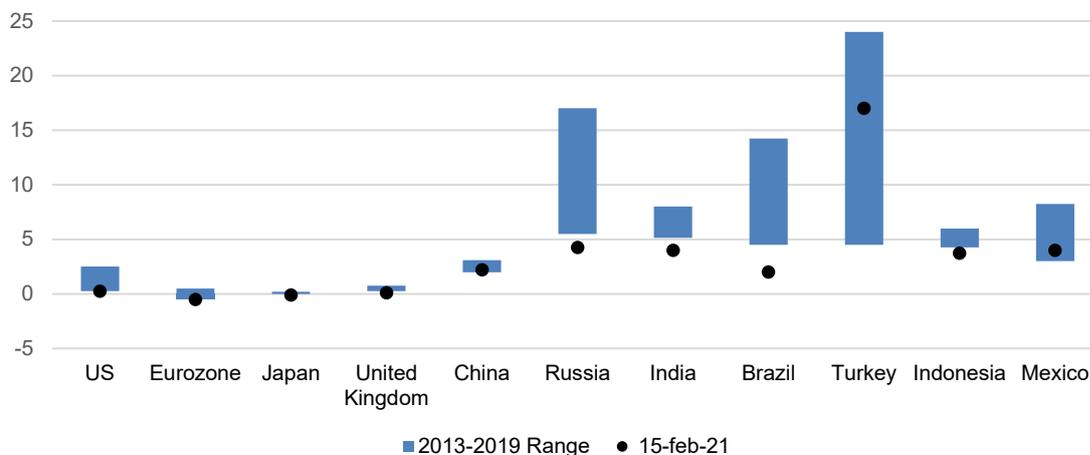
% of GDP

Graph 3



## Policy interest rate since 2013

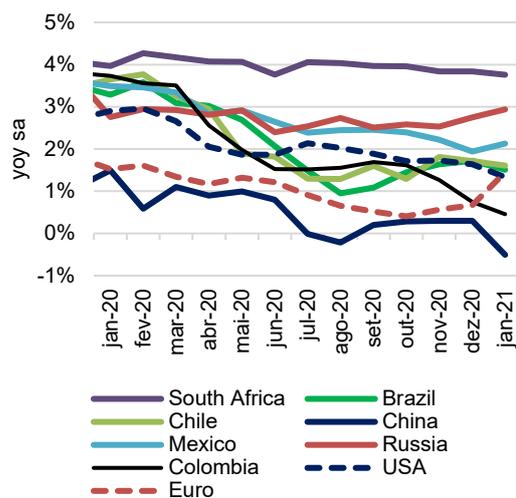
Graph 4



## CPI inflation in services and food

In %

Graph 5



Overall, economic activity ended 2020 below levels observed at the beginning of the year. In addition, the uneven economic recovery was also reflected in the diverging trends of sectoral prices. The second half of 2020 was marked by strong increases in food prices and downward trends in service prices. Some EMEs, in which food items correspond to a larger share of their main price indices, ended 2020 facing somewhat stronger inflationary pressures (Graph 5, right-hand panel).

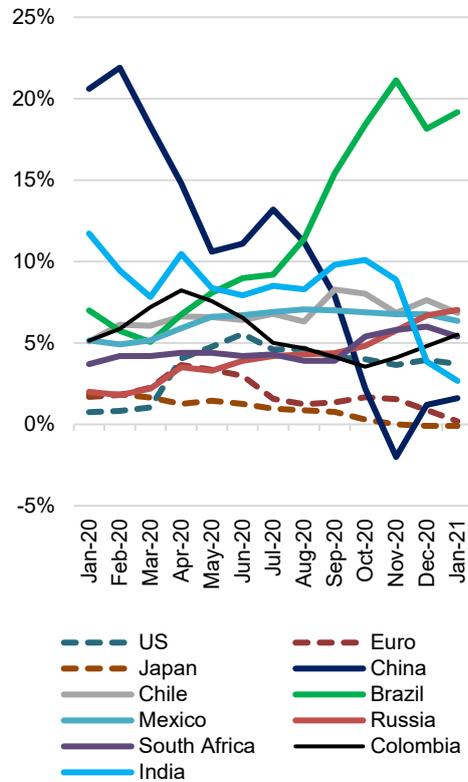
A feature of the Covid-19 crisis was that both AEs and EMEs faced a common threat and that, almost simultaneously, they implemented similar policies, albeit with some differences in their scope, size and other details. Brazil was no exception, as we will outline below.

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## CPI food

% yoy

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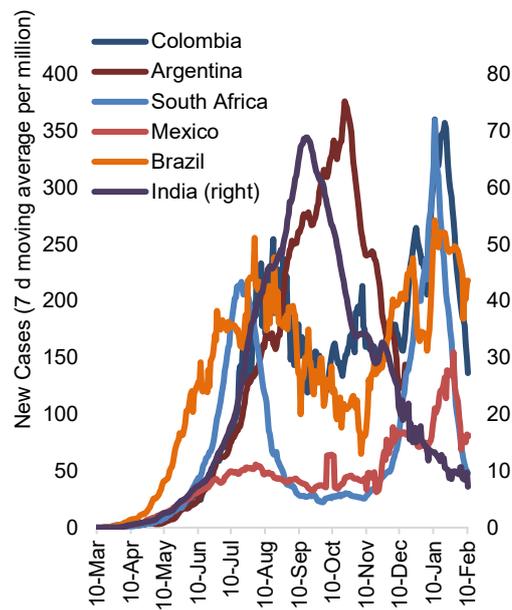
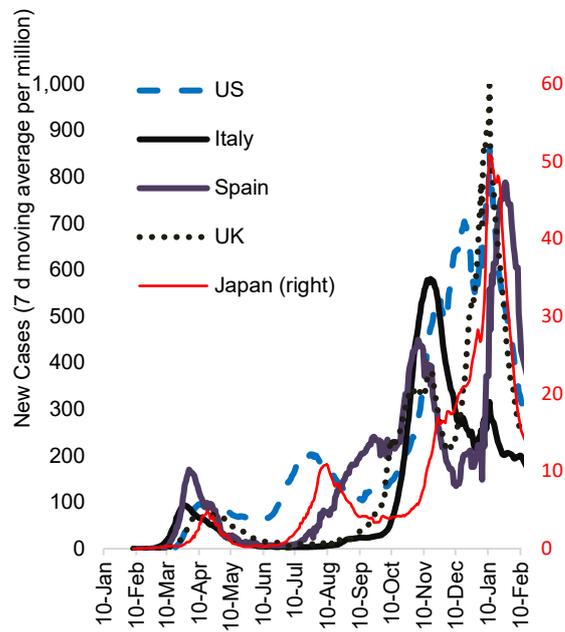
### 3. The pandemic in Brazil

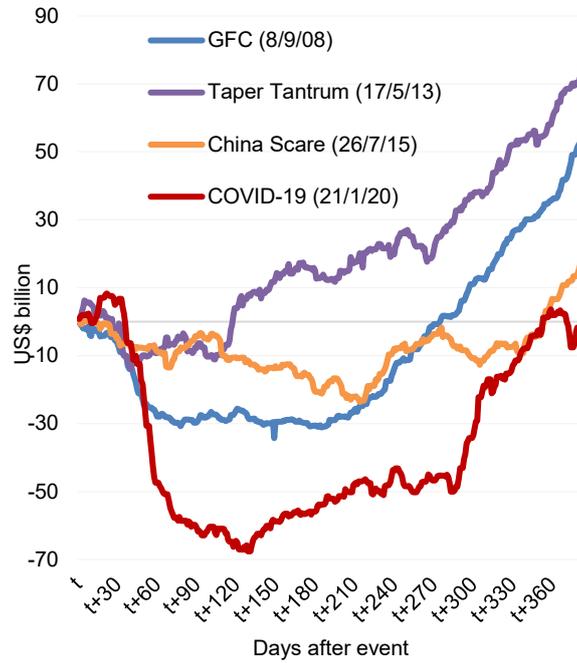
The Covid-19 pandemic arrived in Brazil and in other emerging economies later than in Europe, with the virus gaining momentum only by mid-May (Graph 6). Its effects on the financial sector and the economy, however, were felt much earlier than that. By early March, capital outflows from EMEs were larger than in any other recent crisis, asset prices fell and exchange rates have depreciated sharply (Graph 7).

#### Policy responses

As in other economies, both fiscal and monetary authorities responded quickly to the Covid-19 challenge. As the crisis unfolded and the worldwide risk aversion and uncertainty spiked, Brazil experienced a sudden and widespread increase in demand for liquidity from both households and businesses. Measures to curb mobility and lockdowns in some areas and sectors strongly affected consumer demand and goods supply. As in other countries, Brazil's economy experienced one of the largest output declines in history.

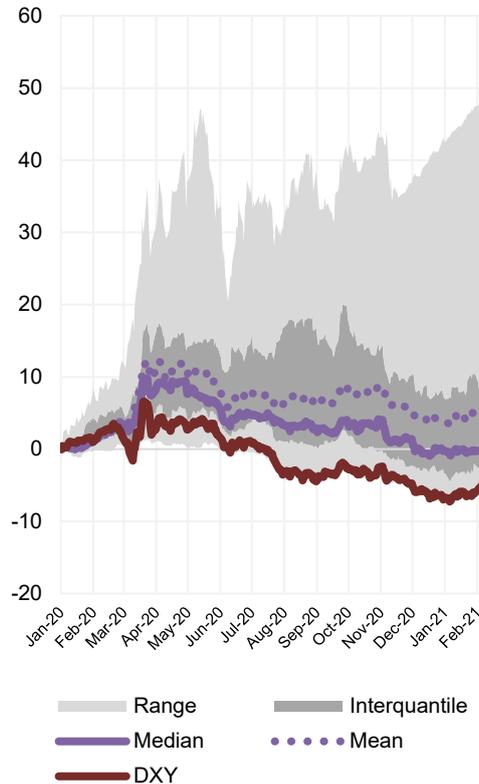
In this context, the BCB adopted a series of measures to provide stimulus for the economy, to ensure the functioning of the financial markets and to safeguard the stability of the financial system.





\* Daily net total flows for Mexico, Korea, Taiwan, India, Indonesia, South Africa, Thailand, Philippines, Sri Lanka, and Vietnam.

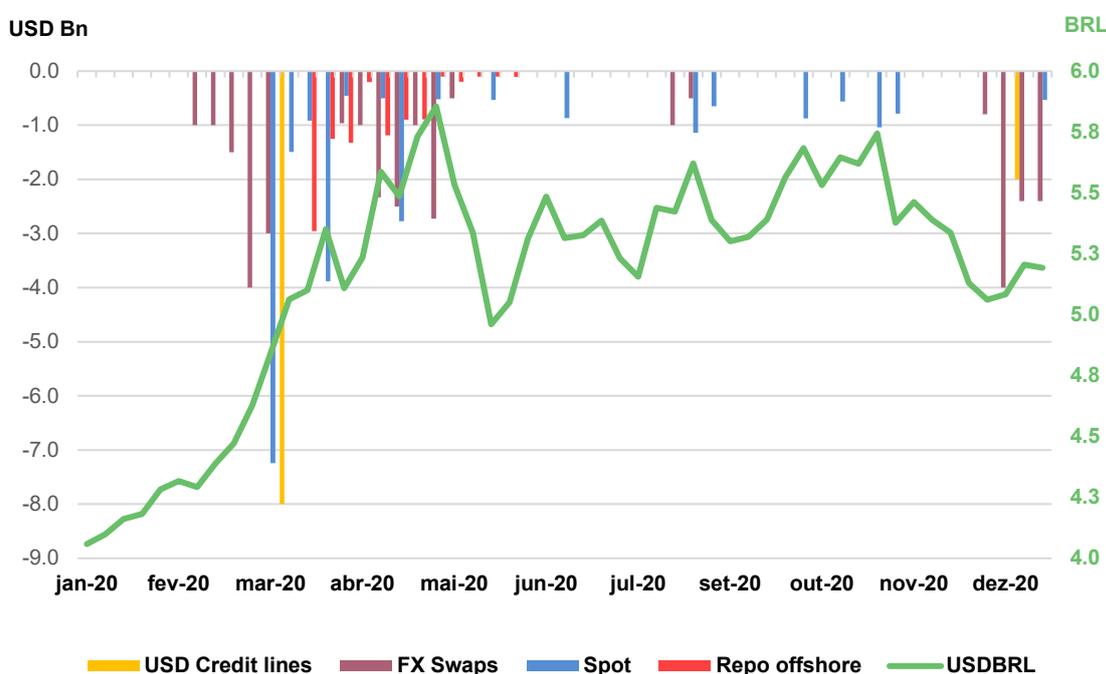
EME currencies



To provide support to the economy during the first half of 2020, the BCB lowered its policy rate from 4.25% to 2%. Furthermore, the BCB used forward guidance to anchor the yield curve from August 2020 to January 2021. In addition, to respond to liquidity and credit needs, the BCB enacted a series of measures. The first set of policies sought to increase liquidity in local currency by easing reserve requirements, opening new liquidity facilities, and creating incentives for this liquidity to be directed to capital markets. The Bank also intervened in currency spot markets to provide liquidity in dollars on onshore and offshore markets and sold dollars through derivatives (Graph 8). The second set of policies aimed at supporting the credit flow to households and firms. Within the Basel framework, the BCB eased regulatory capital requirements to release the balance sheet buffers of financial institutions.

FX interventions

Graph 8



Capital markets have only recently become a significant credit channel in Brazil (Barroso and Nechio (2020)), and this was one of the first financial market segments to be affected by the sharp increase in liquidity demand (Graph 9). After growing fast in the last two years, many investment funds had to sell considerable amounts of their asset holdings in a narrow time window to deal with a record amount of redemptions. This led to a loss of trading reference parameters in the secondary market. Financial institutions, in turn, were responding to strong demand for new loans and were unwilling to buy assets, fearing the same liquidity squeeze that affected investment fund industry.

The BCB reduced required reserves on term deposits, from 31% to 17%, unfreezing BRL 205 billion (3% of GDP), and allowed systemically important institutions to operate with liquidity coverage ratios (LCR) temporarily below the regulatory level of 100%. In addition, the BCB developed a Special Temporary Liquidity Facility to supply extraordinary liquidity, backed by a basket of loans and securities, focusing on financial institutions (FIs) that did not access liquidity through

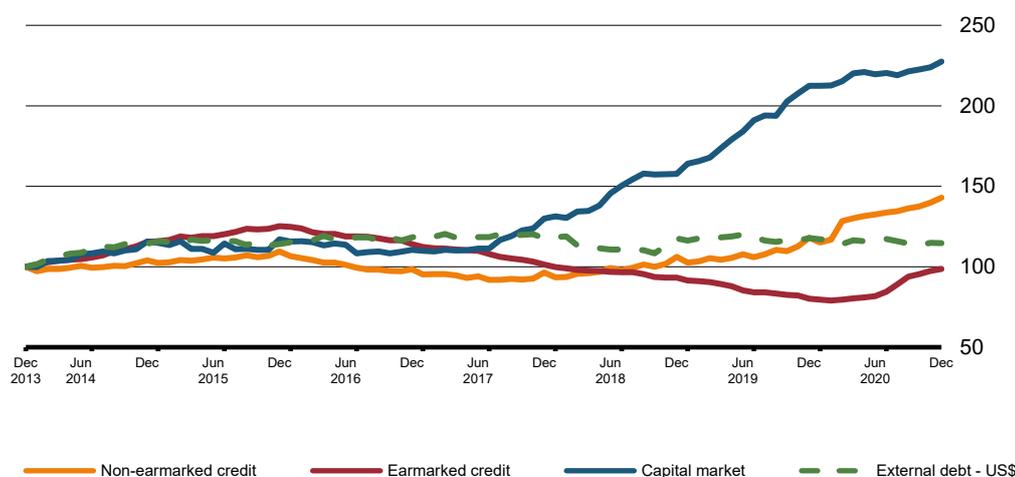
the easing of the reserve requirement.<sup>3</sup> Finally, to tackle the liquidity squeeze in the capital markets, the BCB designed incentives for FIs to purchase corporate debt or repurchase their own issuances of long-term Financial Letters. This measure sought to increase the demand for private sector debt, thereby preventing the effects of a fire sale of these assets by investment funds. After the implementation of the liquidity-enhancing measures, the trading value of private securities in the secondary market increased and the spreads stabilised.

Although common in other jurisdictions, the BCB's lending facilities, collateralised by the credit portfolios of banks, played a pivotal role during this crisis. For historical reasons, the BCB's role as a lender of last resort was dormant for nearly 25 years, as institutions feared a misperception of their financial soundness, among other reasons. During this 25-year period, lowering reserve requirements was the main instrument used to enhance financial institutions' liquidity and to direct credit. In 2020, however, partly in anticipation of a project scheduled for the end of 2021,<sup>4</sup> the BCB regained its effectiveness as a lender of last resort, supplying liquidity to 51 FIs. By comparison, a reduction in reserve requirements was most effective for the five largest banks in Brazil.

### Corporate indebtedness

Dec 2013 = 100

Graph 9



To secure temporary liquidity in foreign currency, the BCB went beyond the regular offering of dollar lines and carried out repo transactions with dollar-denominated Brazilian sovereign bonds as collateral during the most critical period of the crisis. This made it easier for Brazilian banks to hold these bonds, providing an alternative source of funding in the place of foreign FIs (counterparties), which were also facing liquidity constraints. In total, about US\$ 9.3 billion were borrowed in foreign currency through this facility. In addition, to reduce volatility and to deal with

<sup>3</sup> Reserve requirements are held mostly by systemically important institutions. The six largest banks hold 92% of the total balance of term deposits and savings reserve requirements.

<sup>4</sup> The Agenda BC# includes the establishment of a permanent liquidity support mechanism to financial institutions. The initiative is scheduled to be implemented by end-2021.

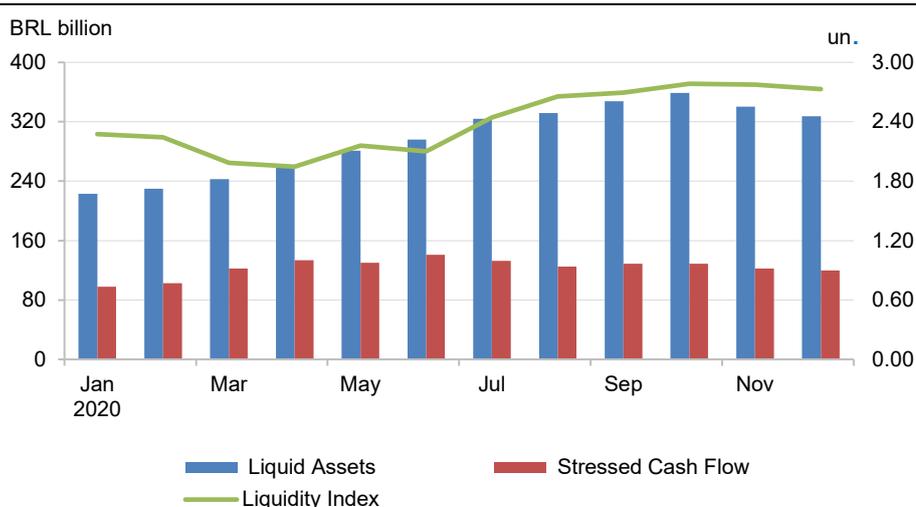
dysfunctionalities in the local foreign exchange market, the BCB intervened through spot and derivatives sales in the amount of about US\$ 57.4 billion by the end of 2020 (Graph 8).

To ease prudential regulatory capital requirements, the capital conservation buffer was temporarily reduced, and its re-establishment period was set to take place gradually during 2021. In addition, the risk-weight factor for loans granted in 2020 to certain SMEs was reduced from 100% to 85%, anticipating the Basel III framework. To ensure that the capital released with these measures was used to absorb losses and maintain the flow of credit, the BCB also imposed a temporary restriction on discretionary capital payouts, such as dividend payments, interest payments on equity capital, share repurchases, and higher management compensation. Finally, the BCB allowed FIs to postpone the due dates of loans for viable debtors whose payment capacity was temporarily affected by the pandemic. These measures allowed firms and households to postpone loan payments and to bridge the most acute phase of the crisis (Graph 10, left-hand panel).

Before the end of June, the BCB announced a new round of measures focused on redistributing liquidity in the banking system and the business sector. The BCB allowed smaller FIs to raise funds through Term Deposits with Special Guarantees (DPGE) by the Deposit Insurance fund, aiming to redistribute liquidity within the banking system.<sup>5</sup> Taking the view that credit was not flowing adequately to small businesses, the BCB allowed FIs to deduct up to 30% of their savings account reserve requirement balances to fund new credit to finance working capital for small businesses. Because the yield on this type of reserve requirement is 70% of the base rate, this measure was similar to a funding-for-lending scheme, generating almost BRL 60 billion (0.8% of GDP) in new loans. This initiative was designed to reduce frictions and direct liquidity to smaller financial institutions and businesses. With these new funding instruments, there was an increase in the balance of liquid assets of small and medium-sized financial institutions (Graph 10, right-hand panel), as well increased credit for micro, small and medium-sized companies (see below).

Loan modifications and liquidity in small and medium sized banks

Graph 10

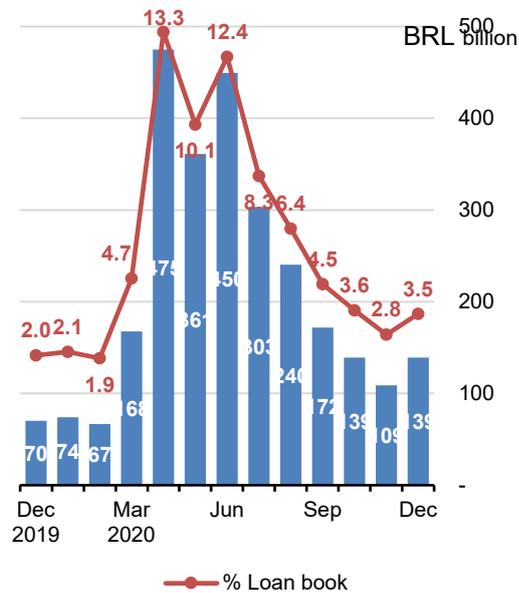


<sup>5</sup> DPGE is a term-deposit instrument for funding small and medium-sized financial institutions. It grants its holder a right of credit against the issuer with cover from the Deposit Insurance Fund (FGC, in Portuguese) up to BRL 20 million, for any given investor or conglomerate.

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## Loan modification flow

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The BCB's package of measures had the potential to increase liquidity by about BRL 1,274 billion, equivalent to about 17.5% of GDP. Similarly, the measures adopted to temporarily alleviate capital requirements of financial institutions had the potential to increase credit supply by BRL 1,348 billion, about 20% of GDP (Graph 3). Table 1 lists the measures taken by the BCB and their effective use. Additional details and updates to these numbers are available on the BCB's webpage. Detailed accounts on measures are provided by the Central Bank of Brazil, (2020a, 2020b).

While the focus of this article is on the measures taken by the BCB in response to the crisis, it is worth highlighting some of the key measures taken by the government and treasury. In addition to the measures put in place to address the pandemic's health challenges, the government implemented one of the largest direct income transfer programmes in the world with a disbursement of about 4.5% of GDP, reaching more than 60 million Brazilians in need. The sizeable fiscal package also included measures to facilitate and subsidise credit to small and medium-sized firms (0.7% of GDP), as well as programmes aimed at retaining workers (0.8% of GDP), postponing loan payments and others. For its part, the treasury adjusted its bond issuance and repurchased a record amount of government bonds in moments of distress, as outlined below.

	Potential	Implemented
<b>Liquidity Release</b>		
Required Reserves + Liquidity Coverage Ratio (LCR)	R\$ 135 bi	R\$ 135 bi
Release of Additional Required Reserves	R\$ 70 bi	R\$ 70 bi
LCA Flexibility	R\$ 2,2 bi	R\$ 2,2 bi
Loan Backed by Guaranteed LF	R\$ 670 bi	R\$ 105,1 bi
Repurchase of Brazilian Sovereign Bonds	R\$ 50 bi	R\$ 23,2 bi
New DPGE	R\$ 200 bi	R\$ 24,2 bi (ongoing)
Loan Backed by Corporate Bonds (Debentures)	R\$ 91 bi	R\$ 3 bi
Change in Required Reserves on Savings Accounts	R\$ 55,8 bi	R\$ 64,4 bi
Total	R\$ 1.274 bi	R\$ 491,5 bi
% of GDP	17.5%	
<b>Capital Release</b>		
Overhedge	R\$ 520 bi	R\$ 520 bi
Reduction in ACCP <sup>Brasil</sup>	R\$ 637 bi	R\$ 637 bi
Reduction in capital requirement for credit operations to SMEs	R\$ 35 bi	R\$ 35 bi
Reduction in capital requirement for small financial institutions	R\$ 16,5 bi	R\$ 16,5 bi
Reduction in capital requirement on DPGE exposures	R\$ 12,7 bi	R\$ 2,3 bi (ongoing)
Capital Optimization (CGPE)	R\$ 127 bi	R\$ 14,4 bi
Total	R\$ 1.348 bi	R\$ 1.225,2 bi
% of GDP	18.4%	
Provisioning exemption for loan modifications	R\$ 3.200 bi	R\$ 971,5 bi
<b>Other Measures</b>		
Dollar Swap line with the Fed	USD 60 bi	active, but not used
% of GDP	4.1%	
Creation of a special credit line for SMEs (PESE)	R\$ 40 bi	R\$ 8 bi
% of GDP	0.5%	
Property as collateral for more than one loan	R\$ 60 bi	Limited impact, around R\$ 0,2 bi
% of GDP	0.8%	
<b>Purchase of Assets in the secondary market</b>		
Purchase of assets in the secondary market by the BCB	N.D.	There were no purchases

Source: Banco Central do Brasil.

## Asset purchases

In contrast to the response to the 2007–09 GFC, many EMEs resorted to unconventional policies in response to the pandemic.

Graph 11 shows that several EME central banks implemented some type of asset purchases during 2020 (Drakopoulos et al (2020)). These central banks purchased both private and government bonds. However, differently from AEs, these interventions were carried out mainly on an ad hoc basis, and focused on addressing specific disruptions in their markets, rather than providing additional monetary stimulus (Arslan et al (2020)).

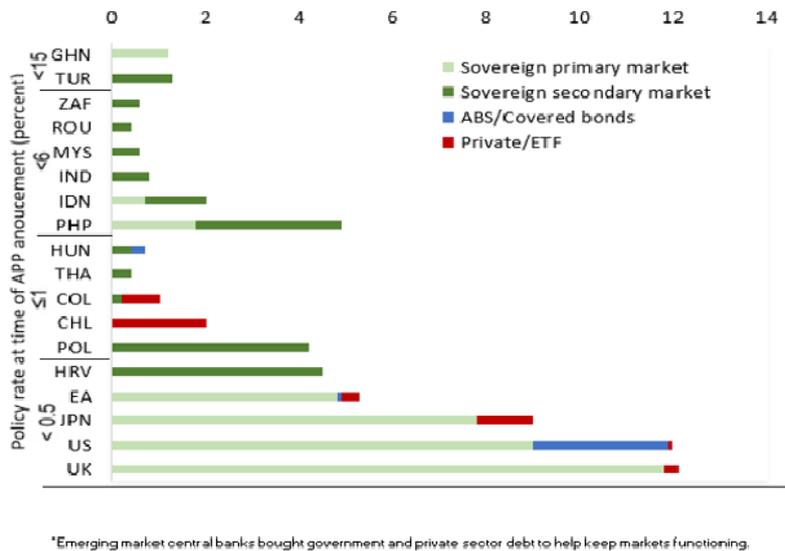
In Brazil, it is the National Treasury (NT) that acts as a market-maker of last resort for the government bond market. The BCB has a mandate to buy or sell government bonds, exclusively, to execute monetary policy. This means that, historically, the NT needs to maintain a relatively sizeable balance at the BCB (of about 5% to 10% of GDP) to be used in moments of financial stress. The NT can dispose of this balance to adjust its issuances and also to repurchase bonds as needed. This market maker of last resort role has been played by the NT in many past crises and this time was no different. The NT repurchased the largest amount of bonds ever, amounting to BRL36 billion (0.5% of GDP), and avoided auctions for seven weeks (Graph 12).

Unfortunately, during 2020 the fiscal packages demanded a sizeable increase in new bond issuance which, along with the disruptions caused by the crisis, significantly reduced the NT balance, reducing the market's confidence in the treasury's ability to sustain its role as market-maker of last resort.

## Central bank asset purchases

% of GDP

Graph 11



\*Emerging market central banks bought government and private sector debt to help keep markets functioning.

Source: IMF.

Against this backdrop, in May 2020, the Brazilian Congress approved an amendment to the constitution, valid through 2020, which, among other things, allowed the BCB to buy and sell public and private bonds in the secondary market to counter the financial stability effects of the pandemic.<sup>6</sup> While the option to intervene in the public bond markets was not used by the BCB, it increased market confidence that the bond market had a shield beyond the NT's depleted balance.

In addition, as demand for liquidity increased and volatility spiked, the NT had to shorten the maturity of its new issuances, to terms closer to those used in open market operations. Since this measure started to compete with the BCB's actions to a certain extent, the BCB also shortened the terms of its open market operations. Eventually, the National Monetary Council (CMN)<sup>7</sup> authorised, as an exception, the transfer by the BCB of part its foreign exchange rate profits to the Treasury in the middle of the year, instead of by the year-end.<sup>8</sup> All these actions required a high degree of coordination between the NT and the BCB.

In the end, the BCB did not need to resort to purchases of public or private bonds. The first set of measures announced by the BCB to increase overall liquidity and capital availability to the financial sector, the fiscal measures adopted by the government to support the economy, and the actions taken by the NT, as well as the BCB's assurance that it would act to stabilise public and private bond markets, if needed, were enough to stabilise local markets in Brazil (Graph 13).

<sup>6</sup> While Brazilian legislation already allowed the BCB to purchase public bonds for monetary policy purposes, the amendment to the constitution allowing for the purchase of private assets and public assets for financial stability purposes gave the BCB new potential instruments for use during the crisis.

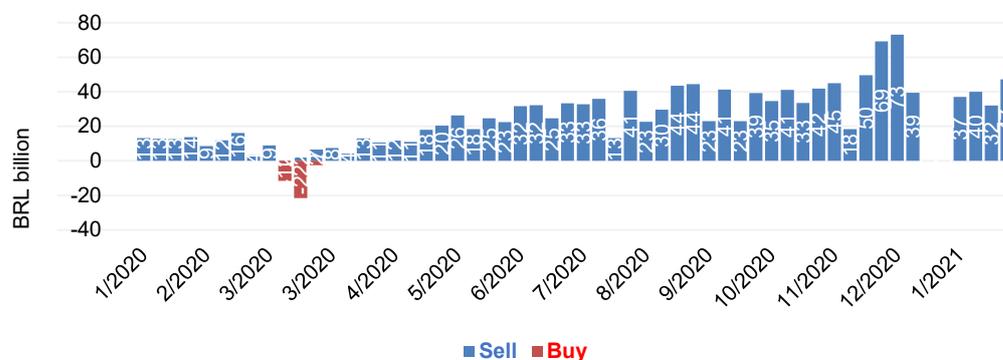
<sup>7</sup> The CMN comprises the Finance Minister (president), the BCB's Governor and the Finance Minister's Special Secretary.

<sup>8</sup> Amounting to BRL 325 billion (4.5% of GDP).

Finally, the timely and strong response of central banks in AEs were key to restoring market confidence and to reverse the risk-off sentiment towards EMEs.

Buy and sell auctions – National Treasury

Graph 12



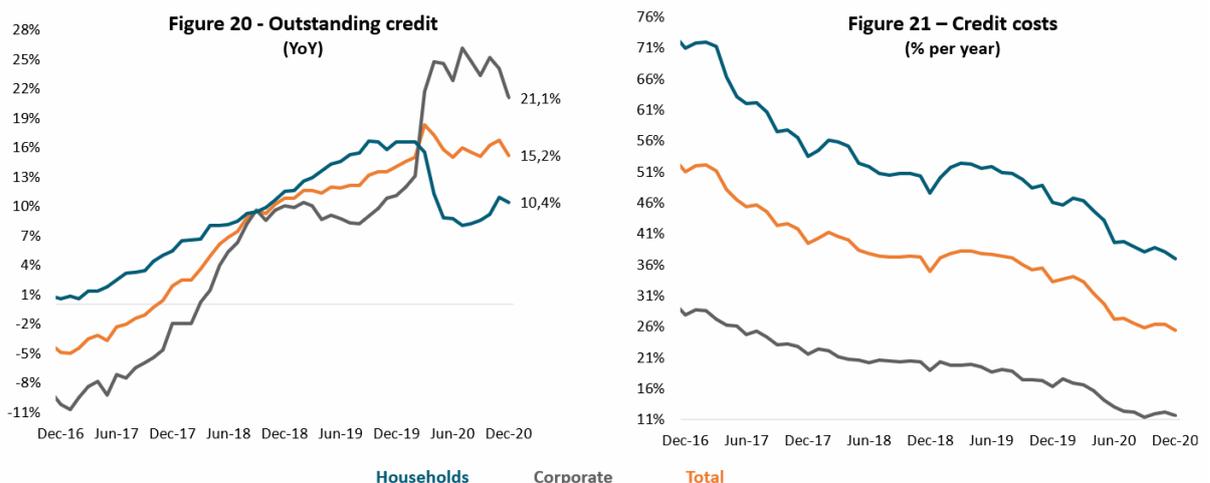
amounting to about 17% and 20% of GDP, respectively. The government also initiated a sizeable income transfer programme and several credit programmes targeting small and medium-sized businesses, among other initiatives.

Following a sharp decline in demand and output during the first half of 2020, Brazil recovered strongly in the third and fourth quarters and should continue its path to recovery as vaccination programmes make progress.

Further ahead, countries will need to face the challenges posed by the fiscal deterioration spurred by the pandemic. Before the shock, Brazil was in the initial phase of a long fiscal adjustment process, with the Spending Cap rule<sup>9</sup> as its main anchor. The measures taken during 2020, which were passed by Congress as an emergency exception to the spending cap, increased the government's gross public debt by almost 15% of GDP, limiting its scope for responding to any future crisis. With such an increase in indebtedness, investors have questioned whether the spending cap, by itself, is able to guarantee public debt sustainability. Therefore, it will be vital to reduce the uncertainty surrounding debt sustainability if the recovery is to be sustained and a painful increase in the neutral rate of interest avoided, which would make the path to recovery harder.

Outstanding credit and credit costs

Graph 14



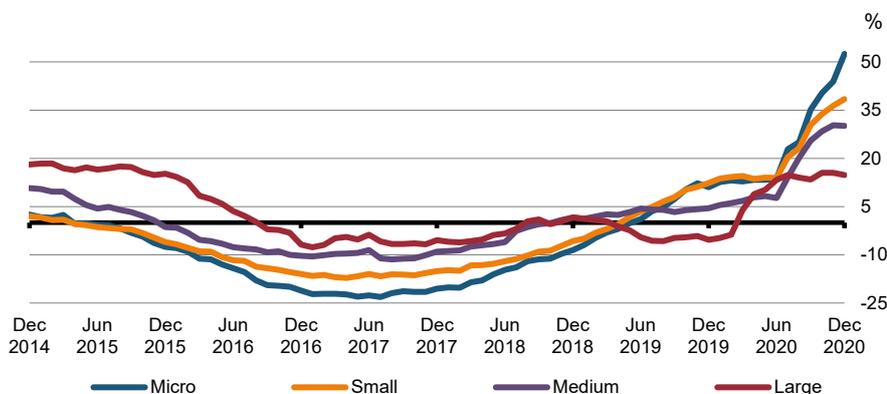
Source: BCB

<sup>9</sup> The Spending Cap's constitutional amendment, from 2016, limits expenditure growth to realised inflation.

## Credit growth (yoy)

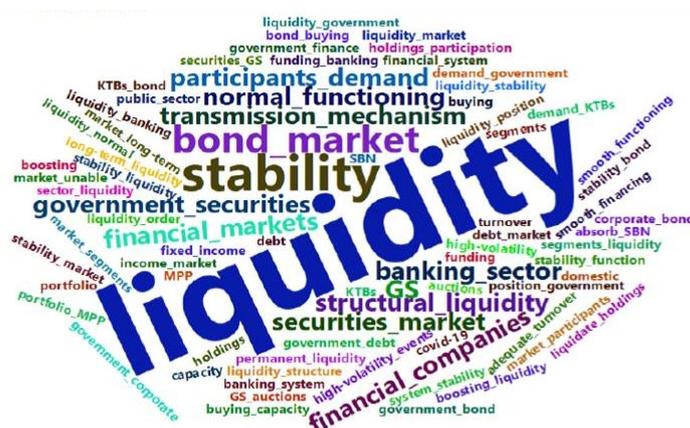
By company size

Graph 15



## Central bank bond purchases in EMEs

Graph 16



Source: BIS Bulletin 20 "Central bank bond purchase in emerging markets  
Central Banks: Chile, Colombia, Hungary, India, Indonesia, Korea, Mexico, Poland, Romania, Philippines, South Africa, Thailand, Turkey

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# The Central Bank of Chile's policy response to the Covid-19 crisis<sup>1</sup>

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Central Bank of Chile  
June 2021

## Abstract

This paper describes the Central Bank of Chile's multifaceted policy approach to the economic and financial stability challenges posed by the Covid-19 crisis. It also highlights the response's interactions with regulatory and fiscal dimensions, as well as some considerations behind the design and implementation of policy.

JEL classification: E32, E44, E58.

Keywords: monetary policy, financial stability, pandemic effects, emerging market economies.

<sup>1</sup> This paper is an updated version of García (2021). Interested readers can find more detail in the Monetary Policy and Financial Stability Reports published by the Central Bank of Chile during 2020 and 2021, available online at [www.bcentral.cl](http://www.bcentral.cl).

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## 1. Introduction

The Covid-19 pandemic created an unprecedented economic crisis. From a theoretical point of view, this crisis is very different from past recessions in both advanced or emerging market economies, which had at their root a large increase in leverage (a *boom*) that eventually became unsustainable (a *bust*). Policies aimed at managing this process tend to require a careful deleveraging of the economy, while providing support for aggregate demand. The Covid-19 crisis has differed from this process in several aspects that are worth examining.<sup>3</sup>

- The considerations for moral hazard were limited at the onset of the crisis. In contrast with earlier recessions, there was no need to tailor policies so as to avoid benefiting those sectors or agents that were deemed responsible for the boom. Thus, a broad-based design of policies was called for early on.
- In a typical financial crisis or recession, managing the deleveraging is a key issue. In the Covid-19 crisis, the policy response has instead aimed to up-lever and make it easy for firms to take on more debt. This was possible not only because the financial system was in good health when the recession hit, but also because the way to respond to a large (but transitory) income shock is by taking on more debt or using up savings.<sup>4</sup>
- The Covid-19 crisis is a strong negative supply shock to specific sectors of the economy (those that depend more on social and personal interaction, such as restaurants and hospitality). Aggregate demand support clearly cannot compensate the contraction in these sectors, but it can help stop negative spillovers to the rest of the economy. Over time, optimal policies should shift from broad liquidity support to the reallocation of resources away from those sectors that have suffered the most permanent damage.
- The speed at which this crisis has unravelled is also very unique. Response time has been measured in weeks and days instead of months or quarters. The actual outcomes have been heterogeneous. Due to legislative and political economy considerations, the response times in the health and economic areas have been diverse across jurisdictions. In contrast, independent central banks with a clear mandate and a credible framework have reacted remarkably fast. In the case of Chile and elsewhere, the recovery is proceeding fast but in a heterogeneous way. Other stimulative policies have responded forcefully and to a significant degree in a procyclical way.
- Finally, the world will emerge from this crisis poorer and more unequal. This is especially relevant for Latin America where structural factors such as labour market informality have not buffered the destruction of formal jobs.<sup>5</sup> In Latin America, SMEs represent a higher fraction of GDP than in the developed world. Since these firms have less access to financing, they will find the path to recovery more difficult. In order to weather this economic shock, the initial policy responses will need to be redesigned. Several new elements such as debt relief,

<sup>3</sup> For a detailed discussion on theoretical and policy challenges of the Covid-19 crisis, see the workshop held at the Central Bank of Chile, [www.bcentral.cl/en/content/-/details/covid-19-economic-implications-and-policy-lessons-12th-13th-january.-2021-](http://www.bcentral.cl/en/content/-/details/covid-19-economic-implications-and-policy-lessons-12th-13th-january.-2021-).

<sup>4</sup> See for example, Arellano et al (2020).

<sup>5</sup> Leyva and Urrutia (2021).

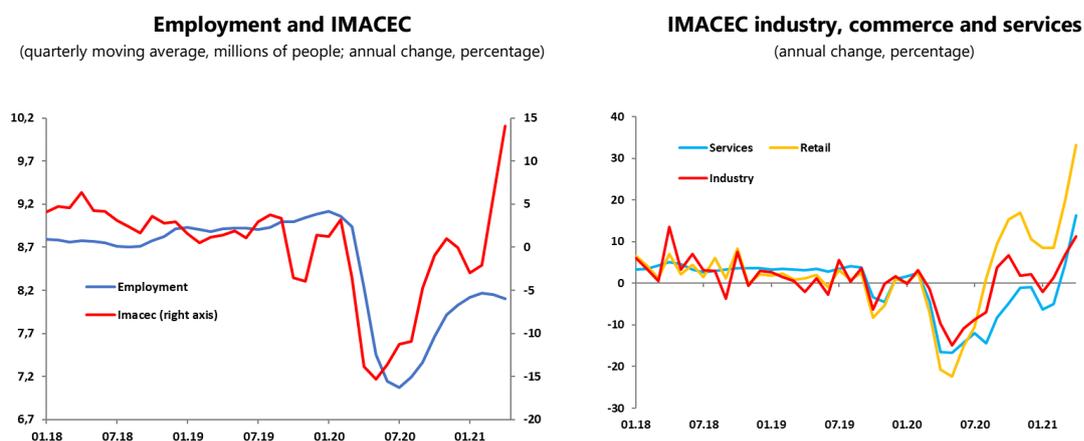
productive restructuring, more targeted support and research need to be enhanced.<sup>6</sup>

This paper will review the monetary and financial policy response to the Covid-19 crisis in Chile. It is organised as follows. The next section will highlight some metrics of the immediate impact of the crisis. Then, the main challenges for policy design will be presented. Section 4 will detail some of the specific policy measures implemented in Chile, and Section 5 will show the pandemic’s impact on the balance sheet of the central bank as well as other macro-financial metrics.

## 2. The economic and financial impact of the Covid-19 shock

The Covid-19 pandemic and the actions taken to contain it constitute a huge and unprecedented shock to the world economy. Most countries have experienced dramatic drops in economic activity, and Chile has been no exception. At a time when the economy had just started to recover from the effects of the social unrest of the end of 2019, the pandemic and the containment measures caused the largest economic contraction in 35 years, reaching its steepest fall in the second quarter of 2020 with a 14.1% year on year fall in GDP and almost 2 million jobs lost. The shock hit the service sector particularly hard, where activity and employment fell the most, and the recovery has been slower. However, in other sectors, most notably retail, the recovery has been swift and economic activity already is above pre-pandemic levels (Graph 1).

Graph 1



Sources: Central Bank of Chile; National Statistics Institute.

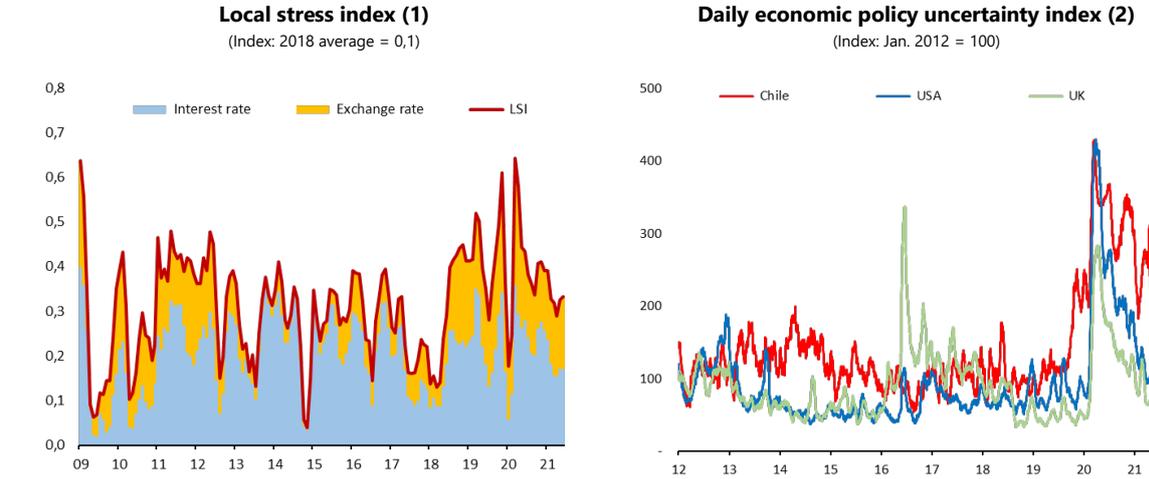
Financial volatility has been a feature of the crisis, especially during the early months, as news about the spread of the virus, the lockdowns, and the first economic indicators that accounted for the effects of the pandemic became known. Since then, the volatility of emerging countries’ sovereign rates has diminished and remains

<sup>6</sup> Arellano et al (2020), Alfaro et al (2020).

relatively low. While the Chilean economy has mirrored the reduction of its emerging peers, volatility remains near the median of the distribution, whereas in past years it was generally in the lower percentiles. This points to a reduction in the impact of some mitigators that have operated in past history, such as the behaviour of institutional investors. The increase in volatility could also reflect some structural and more permanent phenomena linked to institutional reforms that the country will undertake in the year ahead.

The effects of the Covid-19 crisis on Chile’s financial system were almost immediate, and stress indicators reflected the uncertainty associated with both Covid-19 and the social protests of October 2019. According to the local stress index (LSI)<sup>7</sup> for the local currency market, tension increased substantially in this market during the events of late 2019 and the pandemic, as a result of increased exchange rate volatility. Similarly, the conditions in the local sovereign debt market tightened considerably in response to the sharp increase in sovereign rate volatility and the reduced participation of non-residents in this market (Graph 2).

Graph 2

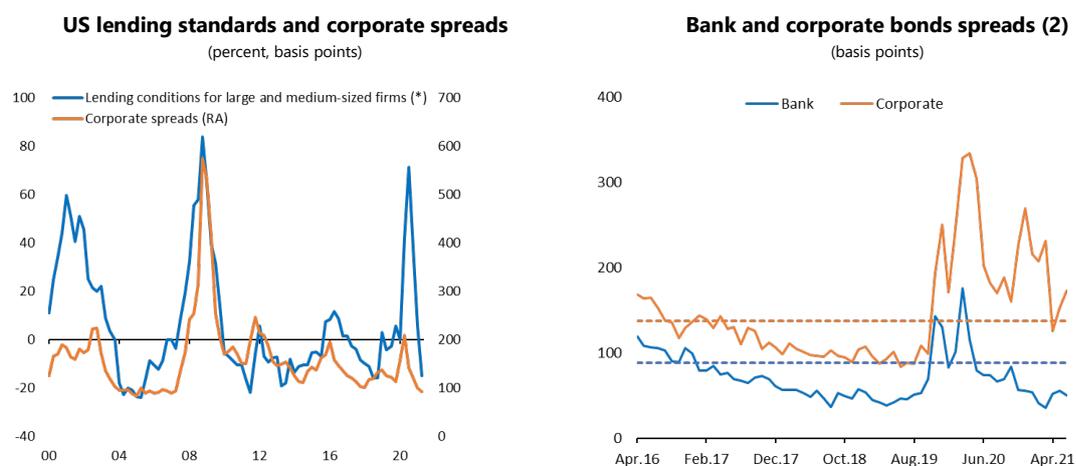


(1) Lower (higher) index values indicate looser (tighter) financial conditions in the respective markets.  
 (2) 30 – day moving average. Lower (higher) index values indicate a lower (higher) level of general uncertainty.

Source: Central Bank of Chile.

The effects of the crisis were also evident in the dislocation in the cost of funding by banks and corporations. Funding costs increased globally before aggressive measures were taken by central banks. In the United States lending conditions for small and medium-sized firms became tighter, and by the third quarter of 2020 reached the levels of the Great Financial Crisis at the end of 2008. In Chile, corporate spreads rose from below 100 bp in October 2019 to almost 350 bp in April 2020 (Graph 3).

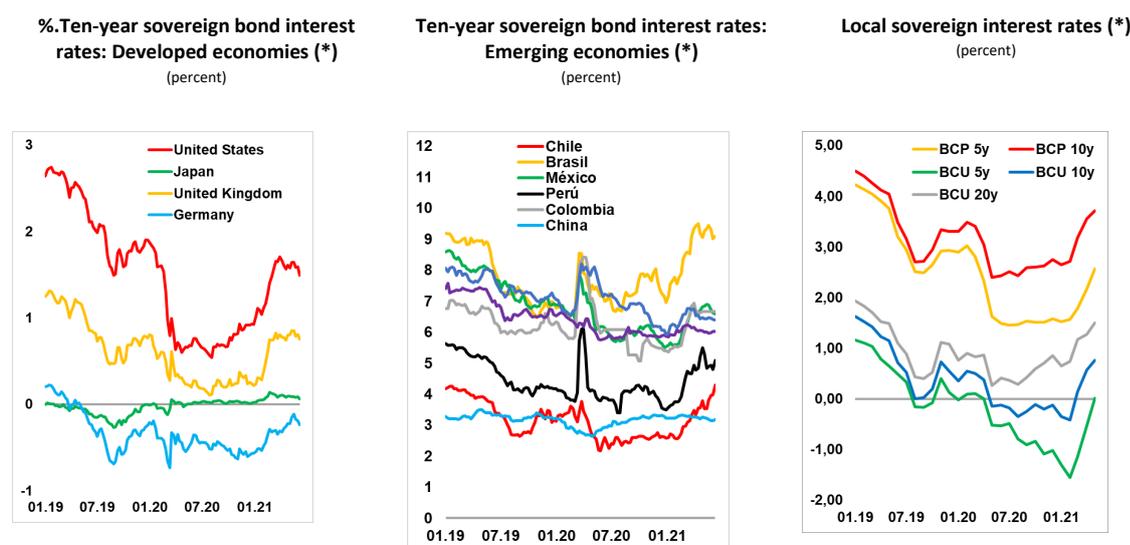
<sup>7</sup> The local stress index (LSI) combines information from a set of variables that should capture the source of tension in both the FX and local secondary sovereign fixed income markets. See D Holló, M Kremer and M Lo Duca, “CISS-a composite indicator of systemic stress in the financial system”, ECB, *Working Paper Series*, no 1426, March 2012.



(1) Positive (negative) values indicate tighter (looser) lending conditions.

(2) Dashed lines indicate the 2015–18 average of the respective series.

Sources: Central Bank of Chile; Federal Reserve Bank of St. Louis; Santiago Stock Exchange.



(\*) Weekly data. BCU and BCP are inflation linked and nominal bonds, respectively.

Sources: Central Bank of Chile and Bloomberg.

Amid uncertainty, investors fled to safety into long-term sovereign bonds, compressing their yields to levels never seen before in most of the world. Thus, during the first five months of 2020, 10-year sovereign bond interest rates fell by more than 200 bp in the United States, by 100 bp in the United Kingdom and around 50 bp in Germany, where the rate remained in negative territory for most of the year. A similar trend was observed in several emerging market economies where, after a brief initial spike at the beginning of the crisis, 10-year sovereign yields continued their downward trend in 2020. In Chile, the rate fell by more than 100 bp between March and May 2020, to its record low of 2.4. Since then, as the vaccination process and large stimulus measures were deployed, government bond yields have recovered,

reflecting both improved economic prospects but also relatively high local uncertainty (Graph 4).

### 3. Challenges in the implementation of unconventional monetary policies

The challenges faced by the Central Bank of Chile during the pandemic were not dissimilar to those faced in other jurisdictions. Both bank and non-bank intermediation is significant in Chile, and therefore to achieve the goals of both price and financial stability the policies need to be tailored so as to work effectively through both channels. This section highlights some of the key trade-offs involved.

The role of the banking system in the transmission of monetary policy through changes in lending capacity is not usually constrained in the case of idiosyncratic, or even business-cycle frequency shocks; but the fact that the Covid-19 shock has been large and spread over many sectors of the economy limited this ability. Therefore, many of the challenges for monetary policy that arose from the Covid-19 pandemic had to do with how to make sure that central bank liquidity injections would actually be transmitted to the real economy. To mention some: (i) **maturity mismatch** can be stressed as short-term central bank lending makes lending long term more difficult; (ii) **liquidity mismatch**, since the funding by the central bank needs to be rolled over frequently, whereas banks provide refinancing to their clients; (iii) **leverage**, as the increase in funding from the Central Bank of Chile if funnelled to credit would potentially squeeze the amount of equity available; (iv) **collateral**, as the liquidity provided by the Central Bank of Chile is backed by appropriate bank guarantees, but these are in essence limited in moments of high stress; and (v) **credit risk**, as banks increase their loans to firms that are affected by the pandemic and thus can potentially result in higher risk.

In order to tackle these risks, the Central Bank of Chile responded by injecting resources into the financial system, but with significant changes in the implementation methods. Specifically, the Central Bank of Chile and the Financial Markets Commission (CMV, bank regulator), (1) provided long-term financing in order to mitigate maturity mismatch; (2) regulatory liquidity requirements were relaxed, through a temporary suspension of maturity mismatch requirements, and of the Liquidity Coverage Ratio; (3) reduction of risk-weighted assets for loans guaranteed by the Treasury of Chile, CORFO,<sup>8</sup> and FOGAPE,<sup>9</sup> from 100% to 10%, moving them into line with sovereign risk; and (4) a significant broadening of collateral, including corporate bonds, commercial paper and commercial loans.

Apart from the banking system, non-bank intermediation in Chile is certainly significant. The institutional investor base is large, through mutual funds, pension funds and insurance companies, and these agents have also been susceptible to large portfolio shifts. Most notably, there has been a shortening of portfolios, a dollarisation of portfolios, and a liquidation of equity. Sudden portfolio adjustments, triggered by local or global events, could have a disruptive effect on domestic financial markets. If asset liquidation is concentrated in local market securities, in

<sup>8</sup> Economic Development Agency.

<sup>9</sup> Small Business Guarantee Fund, see below.

particular bank instruments, it could generate a significant increase in the banking system's funding costs by reducing the possibility of rolling over short-term liabilities. In this respect, the main challenges facing Chile were related to: (a) the massive legal changes allowing the withdrawal of pension funds, as well as other portfolio shifts; (b) the dollarisation of portfolios, in particular when derived from sudden and massive shifts between funds by pension fund affiliates, such as the ones that have increasingly taken place in Chile; and (c) the shortening of maturities for mutual funds and insurance companies.

In response to these challenges the Central Bank of Chile implemented a series of measures that included (a) the purchase of longer-date as well illiquid assets in stressed capital markets to accommodate private reshuffling of portfolios; (b) a special cash purchase/forward sale programme (CCVP) for bank instruments; (c) provision of dollar liquidity; and (d) the approval of a constitutional change to allow the purchase of treasuries by the central bank in secondary markets.

#### 4. Main credit-easing policies and their implementation challenges

The Financial Market Commission (CMF), the Ministry of Finance, and the Central Bank of Chile implemented an unprecedented set of measures, as described below, with the aim of mitigating the economic impact of the health emergency, based on the above-mentioned considerations.

##### **The central bank implements the Financing Facility Conditional on Increased Lending<sup>10</sup>**

This is a four-year term lending facility charged the monetary policy rate at its effective lower bound (ELB, assessed at 0.5% annual). To incentivise its uptake, even if banks expect the ELB to be revised downward, a clause for automatic refinancing at a lower rate was included. Moreover, following up some examples from other jurisdictions the amount of liquidity provided to each bank was linked to their credit growth.

This link went through a number of stages. Early on, as cashflows were significantly stressed it was deemed important to allow the total stock of credit to absorb the immediate impact of the crisis. However, as time passed and firms became more concerned about their ability to refinance their debts, the amount of bank funding was linked to the flow of credit, which also includes refinancing operations. This recognises that, for aggregate demand support, which was key early on in the pandemic, the stock of credit was an important benchmark. From now on, however, the real sector's refinancing capability becomes of critical importance.

The significant increase in bank funding under the FCIC could not be accommodated through the standard set of collateral instruments. Hence, the Central Bank of Chile significantly expanded the eligible collateral under its money market operations, including so far soundly performing bank loans as well as commercial loans guaranteed by the State.

<sup>10</sup> Facilidad de Crédito Conditional al Incremento de las Colocaciones (FCIC)

It is interesting to note that the amount of liquidity provided through the FCIC was linked to the overall growth of the bank's loan portfolio, but did not target any specific loan category. By the same token, the broadening of collateral did not aim at specifically boosting loan origination to an specific sector. Rather, the role of State credit guarantees (detailed later) played the key role for incentives to lending to different sectors. These guarantees also meant that leverage did not come under pressure, as the bank regulator allowed a reduction in risk weights on loans that benefited from such guarantees. The regulator also waived the need for higher provisions on refinancing existing loans.

The specific calibration of these measures was revisited every six months or so. The first tranche (FCIC1) was implemented in March 2020 and experienced an uptake in bank funding of close to 10% of GDP. The second tranche (FCIC2) was implemented in June 2020 but had a much more muted reception, probably due to the higher perceptions of risks outstanding. The third tranche (FCIC3) was implemented in January 2021 and aimed at funding refinancing operations of soundly performing or already-guaranteed loans. As the economy recovered, and the use of these lines had been fully taken up by the banking sector, no further extension of unconventional support measures has been contemplated.

A very important effect of this measure was that it reduced the demand for private borrowing from banks, both in time deposits and bonds. The stocks of both securities have diminished, because they have been replaced by the FCIC that has a four-year term maturity, which is equivalent to that of bond financing. The stock of bank deposits today is equivalent to that in 2012.

### **Government expands FOGAPE<sup>11</sup>**

The FOGAPE is a well-known and targeted instrument for the funding of SMEs. The government decided in 2020 to use it as part of a massive guarantees programme to counter the economic impact of the Covid-19 crisis. Its size and scope were broadened significantly during the second quarter of 2020, with guarantees of USD 3 billion that could be increased to up to USD 24 billion in new credits. This represented a tenfold increase in the programme (reaching 10% of GDP in potential new credit), made available over a much shorter period of time (three months instead of several years). The cap-on-sales eligibility criteria for business increased from USD 1 million a year to USD 40 million a year.

Credit-loss coverage was capped at 15% of any loan – as a reference, the median credit loss during the Great Financial Crisis was 9% of outstanding loans – with a deductible of 1–2% of any credit loss. As mentioned, at first these guarantees were provided only for new loans, and banks initially agreed to automatically refinance other credit operations with a grace period of six months. The incentive for refinancing was internalised by banks early on in the Covid-19 crisis, and thus incentives needed to be provided to reduce credit risk on new loans instead. Lending terms were standardised (36-month loan with a six-month grace period) and during the legislative process a cap on the lending rate was established at 3.5%.

The programme features were tailored to the view that the immediate shock of the crisis would last a few quarters. Now, as the more long-lasting effects of the crisis are starting to be experienced, the programme has been adapted to this new stage,

<sup>11</sup> Small Business' Guarantee Fund (Fondo de Garantía para Pequeños Empresarios)

through FOGAPE reactiva (2.0), legislated in early 2021. It allowed for increased flexibility in refinancing Covid and pre-Covid loans, and also about the maximum lending interest rate banks could charge.

Other regulatory and prudential measures were adopted to complement the above two policies. In particular, the CMF and the Central Bank of Chile provided 90-day renewable waivers for regulatory limits such as the LCR and other liquidity regulations. This was important due to the large amount of voluntary refinancing in the different types of loan portfolio. The potential squeeze in equity from increased leverage by banks was managed thanks to voluntary lower dividend distributions, as well as the CMF allowance that FOGAPE credits could qualify for lower (sovereign) risk weights. The CMF also allowed the temporary freezing of provisioning for voluntary refinancing of soundly performing bank and non-bank loans to households.

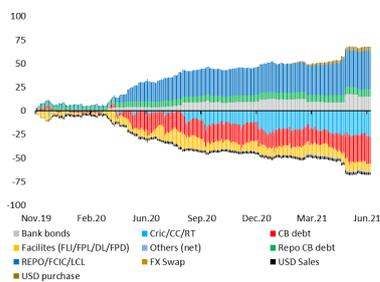
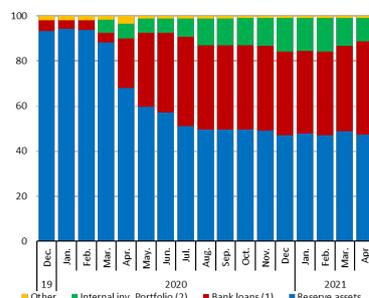
Funding from capital markets was also promoted through the “CRECE” fund, which provides guarantees usable by non-bank providers of SME financing. Reforms to ensure a speedier issuance and registration of securities and convertible bonds were implemented, as well as rule changes for repos so that banks could link risk weights to underlying assets instead of the counterparty.

A constitutional amendment passed in mid-2020 with broad support in Congress allowed the Central Bank of Chile to purchase government treasury bonds in the secondary market, to face conditions of stress and financial instability. Note that government treasury bonds have been eligible guarantees for regular money market operations for several years already, but the outright purchase of those securities, or their use in repo operations, was not legally possible. So far, this new tool has not been used.

## 5. The implementation of unconventional monetary policies adopted by the Central Bank of Chile

The Central Bank of Chile’s response to the crisis was rapid, decisive and unprecedented. Among the first measures was its lowering of the monetary policy rate (on March 20 by 75 bp, and on March 31 by 50 bp) to its technical minimum (0.5%). The effects of this monetary policy relaxation, as well as the credit easing measures described in the previous section, had a significant impact.

**The balance sheet of the Central Bank of Chile expanded significantly and the range of collateral was broadened.** The provision of liquidity via the purchase of both Central Bank of Chile and commercial bank bonds, as well as the FCIC and other facilities, entailed an extraordinary expansion of the Central Bank of Chile’s balance sheet. Assets increased from 18.1% of GDP in March 2020 to over 30% by the end of 2020, mostly due to injections of liquidity to banks through the FCIC and bond purchases. The expansion of the range of instruments accepted as collateral was very effective. On 6 May 2020, eligible collateral for the FCIC was expanded to include commercial loans that were individually rated as high-quality loans, and more recently to the entire commercial portfolio with some form of state guarantee (Graph 5).

Sources of liquidity movements (\*)  
(USD billions)CBCh's asset composition  
(percent)Assets on the CBCh's balance sheet  
(percentage of GDP)

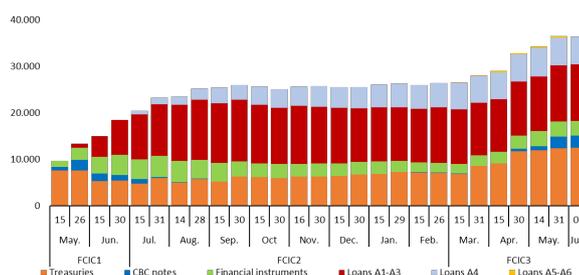
(\*) FCIC: Conditional Financing for Increased Loans; LCL: Activation of liquidity facility; FPL: Standing liquidity facility; FPD: Standing deposit facility.

(1) Includes FCIC, repos and standing liquidity facility.

(2) Includes bank bonds, time deposit and CCVP purchases.

Collateral accepted by the Central Bank of Chile in loan  
operations (FCIC/repo)

(USD Billions)

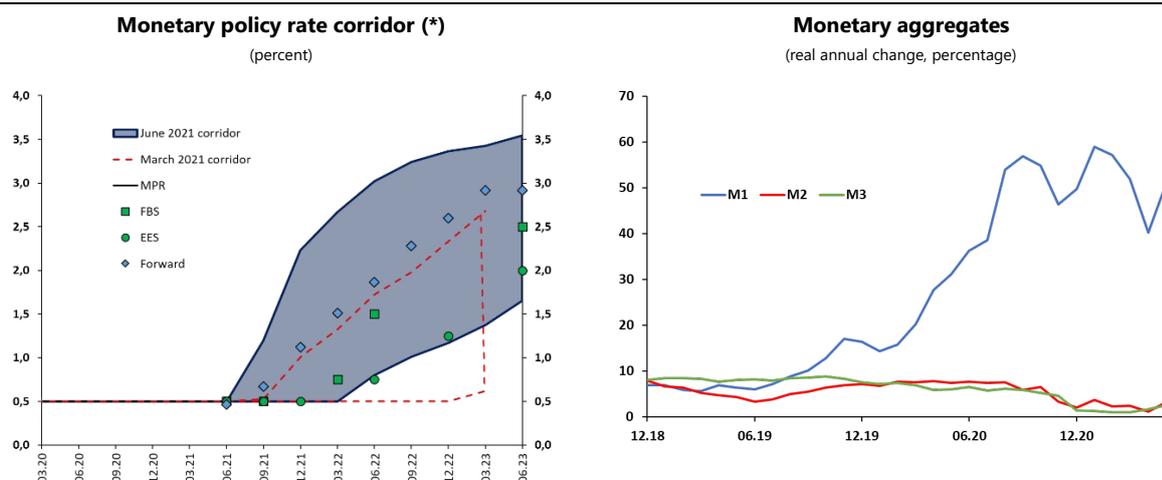


A# is the risk classification for individual loans. The higher the # the higher the risk. FCIC3 will broaden to A5 – A6 with government guarantees.

Sources: Central Bank of Chile and FMC.

**The Board communicated monetary policy would be stimulative with aggressive forward guidance.** Since March 2020, the Monetary Policy Report has reported a corridor for monetary policy, which displays the implications for the monetary policy in the baseline as well as sensitivity scenarios for growth and inflation. In the December 2020 Monetary Policy Report, the Board stated that "it will maintain the high monetary stimulus for an extended period of time, in order to ensure the consolidation of the economy's recovery and compliance with the Bank's objectives. In particular, it foresees that the MPR will remain at its minimum level over much of the two-year monetary policy horizon. Unconventional measures will continue in place."<sup>12</sup> Moreover, the high demand for cash from households and firms required an aggressive logistical effort to ensure an adequate supply of notes and coins in the economy, as the pandemic slowed their circulation. More recently, as the need for stimulus has diminished thanks to the economic recovery, forward guidance shifted to expectations of a sooner but gradual lift-off in policy rates (Graph 6).

<sup>12</sup> Central Bank of Chile, Monetary Policy Report, December 2020, p 46.

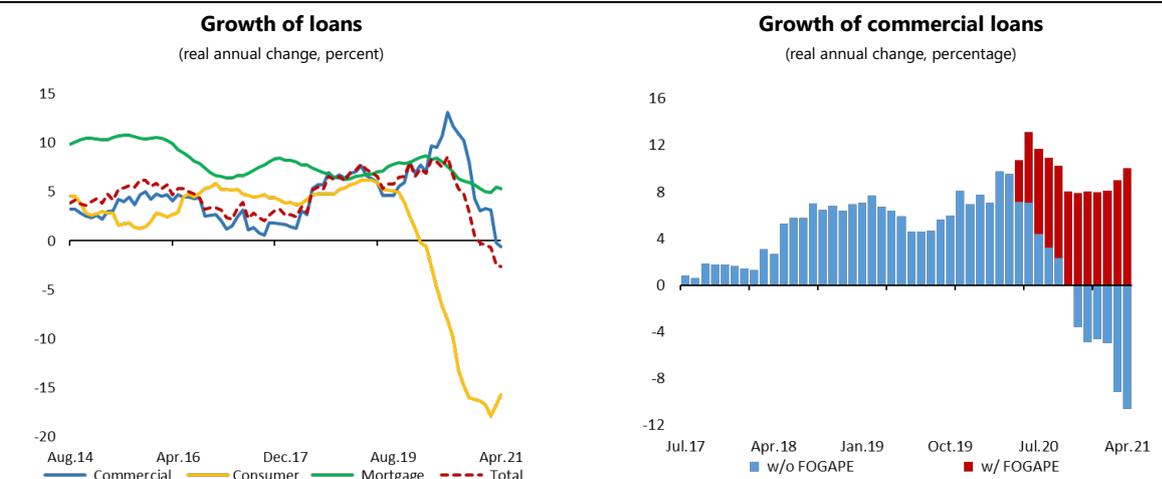


(\*) The corridor follows the methodology of Box V.1 of the March 2020 Monetary Policy Report, Central Bank of Chile. It includes the Financial Brokers Survey (FBS) of 2 December, the Economic Expectations Survey (EES) of 9 November and the forward curve derived from a 10-day average of financial assets up to 2 December.

Source: Central Bank of Chile.

Assessing the effect of policies has always been a difficult task. In the context of an unprecedented crisis and after multiple regulatory changes, fiscal measures and unconventional monetary stimuli, such an endeavour becomes even more challenging. But even under the circumstances, some important conclusions can be drawn regarding the effectiveness of the adopted policies.

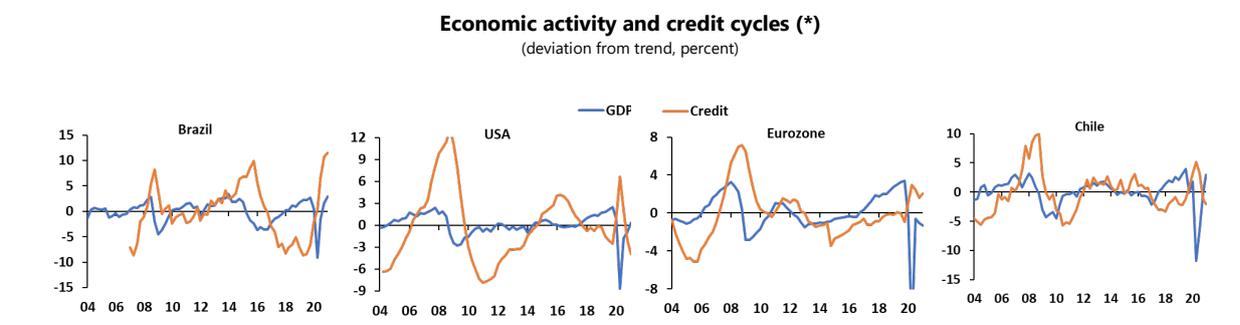
**Credit provision accelerated to the corporate sector, helped by guarantees and liquidity provision.** The first evidence comes from credit trends, which suggest a key role for the measures adopted by the Central Bank of Chile and the government. During the second quarter of 2020, the period with the strictest mobility restrictions, the commercial portfolio recorded strong growth despite the economic contraction, favoured by the support measures implemented by the authorities (Graph 7).



Sources: Central Bank of Chile and FMC.

**The countercyclicality of commercial credit was a feature in several jurisdictions.** It is noteworthy that this countercyclicality of credit during the current crisis breaks the traditional relationship observed in the past, not only in Chile but also in several other jurisdictions (Graph 8).

Graph 8

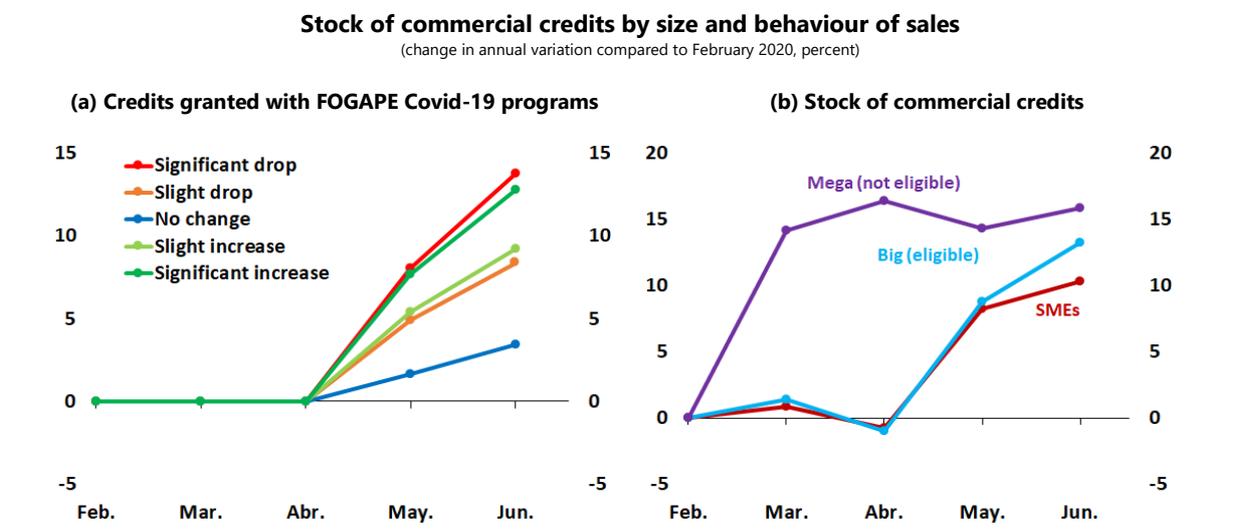


(\*) Calculated as the difference between the log of the GDP level and credit, relative to a trend calculated using a HP filter.

Source: Central Bank of Chile.

**Loans granted through the FOGAPE-Covid-19 programmes targeted, to a greater extent, companies that had significant drops in their sales.** Using matched tax and financial data at the firm level showed that the loans granted under the FOGAPE-Covid-19 programmes have gone mostly to businesses that recorded a major reduction in sales. Among companies that were ineligible for these programmes because of their sales level, there was a significant increase in credit to large firms. In terms of timing, credit to micro, small and medium-sized enterprises (MSMEs) and large firms only began to increase in May, when the FOGAPE-Covid-19 programmes were implemented. (Graph 9 and Huneus et al (2021)). Moreover, the preliminary evidence also suggests that increased access to credit has been important in softening the real impact of the crisis, by mitigating the negative impact of the shock on firms’ investment and employment decisions (Albagli et al (2020)).

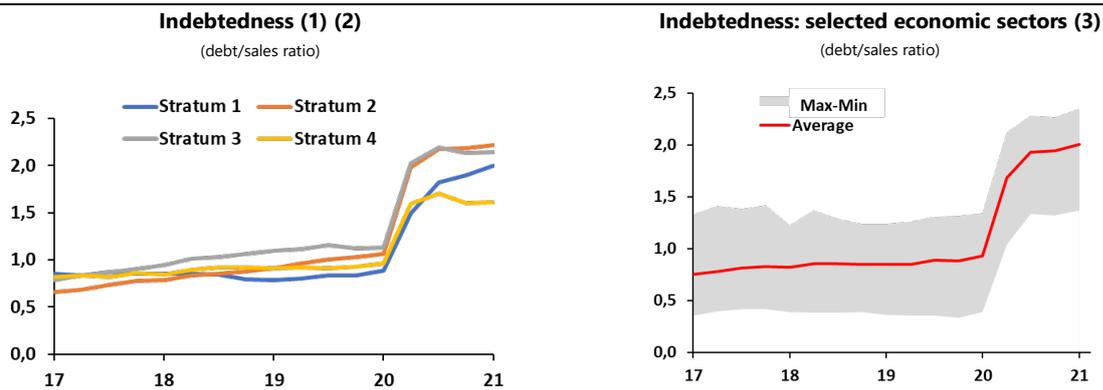
Graph 9



Sources: Centra Bank of Chile and FMC.

**Leverage increased, posing challenges going forward.** The significant increase in business leverage – which was necessary to get through the most difficult months of the pandemic and prevent a large number of businesses from stopping operations – will present challenges going forward. Indebtedness has grown across the board, although most intensely in medium-sized firms and in the retail, business and personal services sectors (which are among the hardest hit by healthcare measures and households’ precautionary behaviour). In the context of a partial recovery, the considerable fall in profits and increased indebtedness could hinder companies’ ability to embark on new projects (Graph 10).

Graph 10



(1) The debt-to-sales ratio is calculated at the level of each firm for each period. The numerator is the stock of banking and foreign debt of each firm. The denominator is calculated as the average of the real sales of each firm (deflated by the UF) between the third quarter of 2018 and 2019. The indebtedness by sales stratum is calculated as the median among the firms of each stratum.

(2) Stratum 1 and 2: annual sales less than UF 25,000. Stratum 3: annual sales greater than UF 25,000 and less than UF 100,000. Stratum 4: annual sales greater than UF 100,000.

(3) The grey area indicates the maximum and minimum debt-to-sales ratio among the selected sectors for each period. The included sectors are: business services, housing services, financial services, personal services, commerce, restaurants and hotels, industry, construction and transport.

Sources: Central Bank of Chile, FMC and National Statistics Institute.

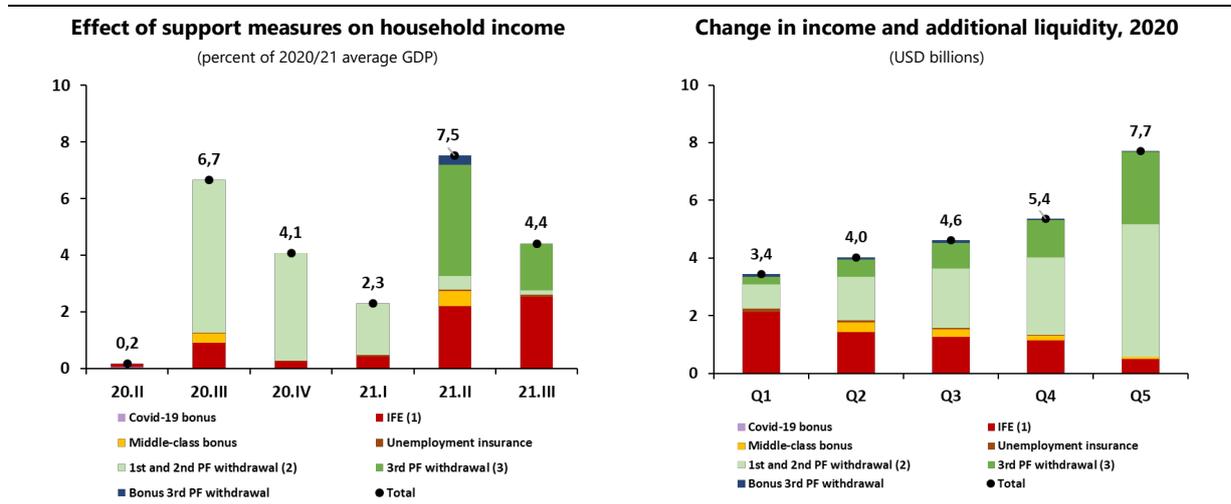
## 6. The role of other policies

The Covid-19 pandemic had very significant adverse effects on households’ income. Available data suggest that the autonomous income of households – income from work and other sources, not including transfers or other liquidity measures – fell by 5.7% in 2020, with the greatest contraction taking place during the second and third quarters, and a smaller reduction in the fourth. The fall in income was relatively larger for the lowest-income groups. Policymakers deployed various support measures to cushion these effects and improve household consumption possibilities. Among these measures were fiscal aid programmes and the early withdrawal of pension savings.

The effect of these measures was concentrated in the second half of 2020 and the first half of 2021, displaying a markedly procyclical tendency. Fiscal transfers, important from a historical perspective, only partially compensated for the drop in labour income early on, coming fully into line in the third quarter, and even increasing since then, and they have been targeted to lower-income households. Legislative

changes were approved allowing for three withdrawals of pension savings, each up to 10% of assets in individual portfolios, with a maximum cap and a minimum. By their nature, these were not targeted and, as shown, were accessed mainly by higher-income households. The impact on consumption of durables has been significant, partly explaining the increased dynamism of the retail sector (Graph 11).

Graph 11



Source: Central Bank of Chile based on Barrero et al (2020).

Finally, a brief note about the possibility of intervening in the FX market as a complement to conventional and unconventional monetary policy. Should central banks have been more active in their foreign exchange interventions during the Covid-19 crisis? There are situations in which FX intervention or liquidity provision is necessary. However, the Covid-19 crisis seems to have created the need for local currency support due to the cash flow crunch for firms (in particular, SMEs) and households. Nevertheless, it is necessary to consider the extent of transaction-dollarisation for the role of forex in liquidity provision.

In general, under inflation targeting and flexible exchange rates, foreign exchange intervention can be rationalised in three ways: (i) monetary policy at the effective lower bound, plus significantly de-anchoring of inflation expectations below the target, could provide a basis for unsterilised foreign exchange accumulation as a QE policy akin to price-level targeting; (ii) periods of financial dislocation and high volatility can require sales or purchases of foreign exchange over limited periods of time; and (iii) regular assessment of the adequacy of reserves can lead to accumulation/decumulation of foreign exchange reserves.

Inflation expectations have remained well anchored, and the demand for liquidity has been focused on domestic currency. Therefore, the foreign exchange policy implemented by the Central Bank of Chile has responded to the second and third rationales over the recent period. Some sales of foreign exchange took place early on, to confront high volatility. During 2020, the Central Bank of Chile arranged for a two-year Flexible Credit Line for a 1,000% quota (around 9% of GDP) with the IMF to backstop its external liquidity position.<sup>13</sup> More recently, as a preparation for the exit

<sup>13</sup> In addition, an existing RMB/CLP swap line was expanded.

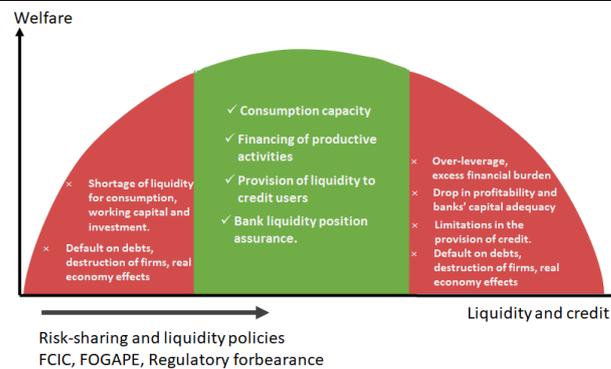
from this facility, the Central Bank of Chile implemented a 15-month programme of reserve accumulation for USD 12 billion, with small daily purchases, to avoid interfering in the operation of the foreign exchange markets.

## 7. Concluding remarks

An important challenge for the Central Bank of Chile has been to judge how extensive its support measures should be. Too little support and policies might not have been able to prevent severe liquidity crunches for firms and households, resulting in defaults and closures. Too much support and a situation with excessive leverage and risk-taking and future financial stability stresses could have resulted (Graph 12).

Central bank challenges

Graph 12



Source: Authors

The assessment of the cash flow needs from the real sector has benefited from work at the research and statistic levels. Evidence from individual firm-level data shows that the shock facing Chilean businesses was very large and heterogeneous across sectors, with plummeting sales and a significant increase in firms reporting zero sales. Electronic invoice data show that, over the first month of the Covid-19 crisis, there was a sharp reduction in sales. On average, sales fell by 13.6% in real annual terms between March and July of 2020. This compares with an increase of 10.5% between January 2014 – when electronic invoice data became available – and September 2019 – the month before the start of the social unrest.

These types of quantitative exercise require a close collaboration between institutions, statistical areas, and research teams. However, from a broader perspective of policymaking a conceptual framing of the limits of policies is needed. The Covid-19 crisis resulted in a very large increase in the need for liquid holdings and credit demand. Therefore, from a narrow monetary policy perspective, an obvious limit to policy accommodation is the credibility of the monetary and inflation targeting frameworks. Jurisdictions with credible inflation targets, anchored inflation expectations and less dollarised financial systems could afford more aggressive easing by central banks.

Beyond monetary policy, the Covid-19 crisis has posed significant political economy challenges in several economies, as it affected households and firms in many different ways. Tackling the risk-sharing and distributional implications of policy

design has represented a political and legislative challenge everywhere, determining the speed, opportunity, breadth and magnitude of support policies across countries.

Against this backdrop, these tensions are likely to continue throughout the recovery process. For independent central banks, enhancing transparency in the communication of their policy rationale will continue to be paramount.

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# A preliminary analysis of coordination between monetary and fiscal policies during Covid-19

People's Bank of China

## Abstract

Coordination between monetary and fiscal policy is warranted in fighting Covid-19, with the central bank responsible for addressing the liquidity issue and the fiscal authority focusing on the solvency issue. In China, two standing mechanisms serve as the platforms for the coordination of monetary and fiscal policy. In addition, the People's Bank of China (PBC) and the Ministry of Finance (MOF) coordinate on a regular basis through various channels. During the pandemic, the PBC worked with the MOF in facilitating pandemic containment and subsequently in supporting the resumption of work and production. The PBC remains committed to sound monetary policy that is flexible, appropriate and better targeted, and it will appropriately address potential risks such as the rising macro leverage ratio and non-performing loans.

JEL classification: E61.

Keywords: policy coordination, monetary policy, Covid-19.

## 1. Covid-19 highlighted the need for tighter coordination between monetary and fiscal policies

Covid-19 and the ensuing lockdown measures have dealt a severe blow to the real economy. Coordination between monetary and fiscal policy is therefore warranted, with central banks responsible for addressing the liquidity issue and the fiscal authority focusing on the solvency issue.

**First, the policy response depends on the nature of the crisis.** The 2007–09 Great Financial Crisis stemmed from the financial system, which bore the brunt of the impact. Thus, central banks played a key role by pumping in liquidity to maintain financial stability. In contrast, the Covid-19 pandemic is a public health crisis, mainly affecting corporates and households. So the primary task is to provide much-needed relief to the real economy. Rather than loans from banks, troubled market entities need targeted support to tide them over difficulties. In this aspect, the role of central banks is limited, and targeted fiscal policy is more important.

**Second, the economic impact of Covid-19 is uneven, calling for more targeted support through structural policies.** Covid-19 has had a larger impact on the consumer-facing service sector, low-income households and the informal sector than on the industrial sector, high-income households and the formal sector. As monetary policy focuses on stimulating economic aggregates, its role in supporting specific sectors remains limited. Fiscal policy could better target specific sectors or households through tax cuts or transfer payments, and may therefore serve as a more efficient tool to cope with the pandemic's impact.

**Third, with various pros and cons, monetary and fiscal policies should be combined.** Fiscal policy usually has a long time lag, since several rounds of discussions are needed to determine the size, recipients and other details. With a short time lag, monetary policy can be quickly deployed in the early stage of a crisis, replenishing market liquidity and boosting market confidence.

Against this backdrop, many economies have launched an unprecedented monetary and fiscal stimulus to address downward economic pressures. According to the International Monetary Fund (IMF), the aggregate fiscal and monetary stimulus amounted to 9% and 11% respectively of GDP in advanced economies, and around 3.5% and 2% of GDP respectively in emerging market economies. There are many examples of strengthened coordination between monetary and fiscal policies. For example, in the first round of the \$3 trillion rescue plan, the US Treasury allocated \$454 billion to the creation of various liquidity assistance tools by the Federal Reserve.

## 2. China's experience of monetary and fiscal policy coordination

China has attached great importance to sound coordination between monetary and fiscal policies. On the one hand, two standing mechanisms, namely the Financial Stability and Development Committee (FSDC) under the State Council and the Monetary Policy Committee (MPC), serve as the platforms for the coordination of monetary and fiscal policy. On the other hand, the People's Bank of China (PBC) and the Ministry of Finance (MOF) carry out coordination on a regular basis through

various channels, such as jointly conducting market-making for Treasury bills on the secondary market, managing the national treasury through time deposits with commercial banks and working-level communications. In addition, as the central bank of a transition economy, the PBC has multiple objectives, including maintaining price stability, supporting economic growth, promoting employment, achieving a general equilibrium of the balance of payments, promoting financial reform, and financial market development. According to the Tinbergen rule,<sup>1</sup> it may be difficult to achieve all these objectives by monetary policy tools alone, and so coordination with fiscal policy is very necessary.

Since the outbreak of Covid-19, coordination between monetary and fiscal policies has been strengthened to contain the spread of the virus.

**First**, in the early stage of the pandemic, both monetary and fiscal policies were deployed to ensure the supply of medical supplies and daily necessities. The MOF and the PBC, together with other authorities, jointly issued the *Emergency Notice on Strengthening Financial Support for Enterprises Essential to Epidemic Prevention and Control*, by which the PBC provided special central bank lending of up to RMB 300 billion to nationwide banks and local banks in severely hit regions, granting preferential loans to enterprises essential to epidemic prevention. The MOF subsidised 50% of the interest for a period up to one year, thus reducing the actual financing cost for enterprises to 1.25%. This has played a positive role in facilitating pandemic containment, as well as the resumption of work and production.

**Second**, RMB 1 trillion in special Treasury bills and RMB 3.75 trillion in local government special bonds have been issued in response to the pandemic. The PBC worked closely with the MOF to keep liquidity at a reasonably adequate level through multiple monetary policy operations, so as to create an appropriate liquidity environment.

**Third**, to improve the access of micro and small businesses to finance, in June 2020, the PBC launched two facilities directly targeting the real economy, namely the loan repayment rollover facility and the uncollateralised lending facility for micro and small businesses. Specifically, the PBC and MOF jointly funded the establishment of a special purpose vehicle, which conducts interest rate swaps with commercial banks to encourage them to extend loan and interest repayment for SMEs. With the support of these policies, the balance of inclusive small and micro loans reached RMB 15.1 trillion at the end of 2020, a year-on-year growth rate of 30%. The interest rate for new inclusive small and micro loans stood at 5.08% in December, down 0.8 percentage points from a year earlier.

At the early stage of the pandemic, some people were arguing for monetary policy 3 (MP3) and modern monetary theory (MMT) in China. However, this did not become a mainstream concept and gradually faded away. There are many challenges in the design and implementation of MP3 and MMT. First, the monetisation of fiscal deficits is the last resort when in extreme situations, such as during wars or an economic crisis. Second, some of the suggestions are not easily implemented, making the expected results rather elusive. Third, such measures may give rise to hyperinflation and economic chaos. Fourth, MP3 and MMT are faced with strict institutional constraints. Fifth, MP3 and MMT would blur the boundary between monetary and fiscal policies, and violate the principle of central bank independence.

<sup>1</sup> For each policy objective, at least one policy instrument is needed.

In general, China has ample monetary and fiscal policy space. With the support of both policies, China's economy has been recovering steadily, with annual GDP growth posting 2.3% in 2020. Therefore, there is no need for China to implement unconventional monetary policies.

### 3. China will conduct a normal monetary policy for as long as possible, keeping the fiscal deficit and public debt under control

The PBC is well positioned to maintain a normal monetary policy and has no need to deploy unconventional measures such as large-scale domestic asset purchases. The Chinese economy still has huge growth potential, and its endogenous growth momentum continues to strengthen. Monetary policy transmission remains smooth and policy space is adequate. As of December 2020, one-year and five-year LPR rates were 3.85% and 4.65% respectively, higher than the interest rates in advanced economies. In addition, the reserve requirement ratios for large banks and small- and medium-sized banks stood at 12.5% and 9.5% respectively, with some room for a further reduction. In general, conducting a normal monetary policy and maintaining positive interest rates should help provide economic entities with positive incentives, promote sustainable social and economic development and make RMB-denominated assets more attractive for foreign investors, supporting the "dual-circulation" development pattern.

**In general, China's government debt remains at a reasonable level.** Although China's fiscal deficit and public debt has risen since the beginning of 2020, the current government debt ratio is lower than the 60% threshold. Given that China's GDP growth rate has been higher than the real interest rate and has remained so for a long time, government debt is sustainable and will not threaten macroeconomic and financial stability.

The PBC remains committed to a sound monetary policy that is flexible, appropriate and well targeted, and will properly address the following risks.

**First, the risk of a rising macro leverage ratio.** Efforts to stabilise the macro leverage ratio have made considerable progress since 2017. China's leverage ratio increased at a slower rate, namely by 8.1 percentage points annually between 2017 and 2020, whereas the average annual growth in the period of 2008–16 was 11.4 percentage points. However, the macro leverage ratio temporarily rose in 2020, as stimulus policies were rolled out to support the real economy. In addition, many new local government officials will take office in 2021, and the impulse to expand credit may further push up the macro leverage ratio. Therefore, while maintaining continuity and avoiding "cliff effects", monetary policy should also be designed to prevent the macro leverage ratio from rising too fast.

**Second, the risk of rising NPL.** Since the outbreak of Covid-19, many enterprises have suffered from a lack of funding, and some of them have even filed for bankruptcy, putting downward pressure on the quality of bank credit. Given the time lag before NPL risks materialise, as well as the repayment extension policy adopted during the pandemic, the NPL ratio is expected to increase in the future. In 2020, the PBC conducted a three-year stress test (2020–22) on commercial banks. The results show that the NPL ratio will rise in 2020, and peak in 2021 before declining in

2022. In response, the PBC has instructed commercial banks to make contingency plans to cope with the increase of NPLs and increase pre-emptive provisioning and write-offs.

**Third, external risks.** The impact of the second wave of the pandemic should not be neglected. Vaccine nationalism could affect the distribution of vaccines. The pandemic may also accelerate the process of deglobalisation, as many multinational companies expedite the diversification of supply chains, shorten the overseas industrial chain, change their procurement arrangements and even move some factories back home, exerting possible downward pressure on exports. If the pandemic persists, the risk of renewed volatility in the global financial market cannot be ruled out, which would have a bearing on the Chinese market and create uncertainties in the balance of payments and cross-border capital flows. Financial risks have been on the rise, as the performance of financial markets disconnect from the real economy, and the vulnerabilities of non-bank financial institutions are exposed and the quality of banks' assets deteriorate. Additionally, given the increasing global leverage ratio and high levels of both private and public debt, the risks of excessive debt should not be underestimated .

Although there is still huge uncertainty about the evolution of Covid-19, China's sound economic growth fundamentals will remain unchanged, backed as they are by a resilient economy and a vast domestic market. Going forward, China's macroeconomic policy will maintain its continuity, stability and sustainability. Proactive fiscal policy and prudent monetary policy will be more targeted, seeking to improve economic efficiency in supporting the recovery and avoiding any sharp policy reversals.

# The Covid-19 shock and the monetary policy response in Colombia

Hernando Vargas-Herrera, Juan Jose Ospina and Jose Vicente Romero<sup>1</sup>

## Abstract

This paper analyses some of the challenges posed by the Covid-19 shock in Colombia, describes the monetary policy response and discusses the effects on the fiscal position. Evidence is presented for non-linear responses of EME risk premia (CDS) to their determinants, depending on the public debt-to-GDP ratio and the distribution of the risk premium. These findings are introduced in a DSGE model that includes the fiscal sector for Colombia (COFFEE model) to illustrate how increasing public debt levels may constrain monetary policy through a higher sovereign risk premium and a higher responsiveness of the latter to shocks affecting its fundamentals.

JEL classification numbers: E63, E65, E44.

Keywords: analysis of fiscal and monetary policy, Covid-19 shock, sovereign risk prices.

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## 1. Introduction

The unprecedented effects of Covid-19 on financial markets and the macroeconomy has led to strong policy responses on the part of Bank of the Republic and the Colombian government. This note describes the effects of the shock on Colombian financial markets, as well as the response of the central bank and the outcomes, with special attention to the asset purchase programmes implemented. It also discusses the effects on public finances and the ensuing fiscal challenges facing the country, along with the possible constraints imposed on monetary policy. The relationship between government debt and the sovereign risk premia (CDS) is a key consideration that we explore empirically for a sample of emerging market economies (EMEs).

## 2. The central bank response to the Covid-19 shock

Public and private bond purchases by Bank of the Republic were part of a wider response to the Covid-19 shock. This in turn depended on the effects of the shock on financial markets and the macroeconomy, and the perceived benefits and costs of different policy tools through time. In what follows, the main short-term effects of the shock are described, as well as the ensuing policy objectives. Finally, the main policy measures and their effectiveness are evaluated.

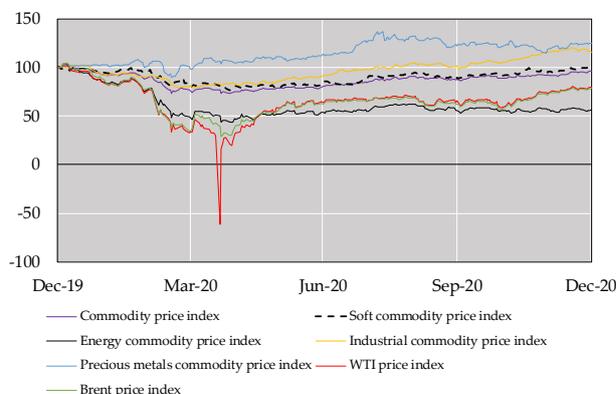
### 2.1 The shock

Colombia's external conditions and financial markets were particularly hard hit by the Covid-19 shock. The oil price drop that followed the shock was greater and more persistent than for other commodities, implying a stronger effect on the country's terms of trade (Graph 1). As oil-related revenues are important for public finances, this also meant a significant impact on the fiscal position and its outlook. These factors, coupled with a moderately high initial level of the government debt-to-GDP ratio (Graph A.1) and a comparatively large current account deficit (Graph A.1), may explain the relatively large jump in Colombian risk premia (Graph 1).

Graph 1

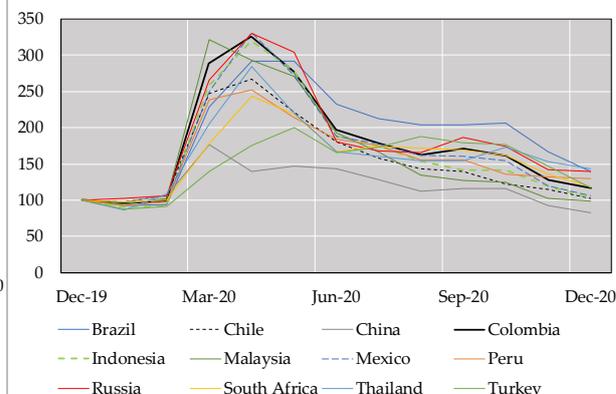
Commodity prices indices during the Covid-19 shock

December 2019=100



CDS indices in selected EME economies

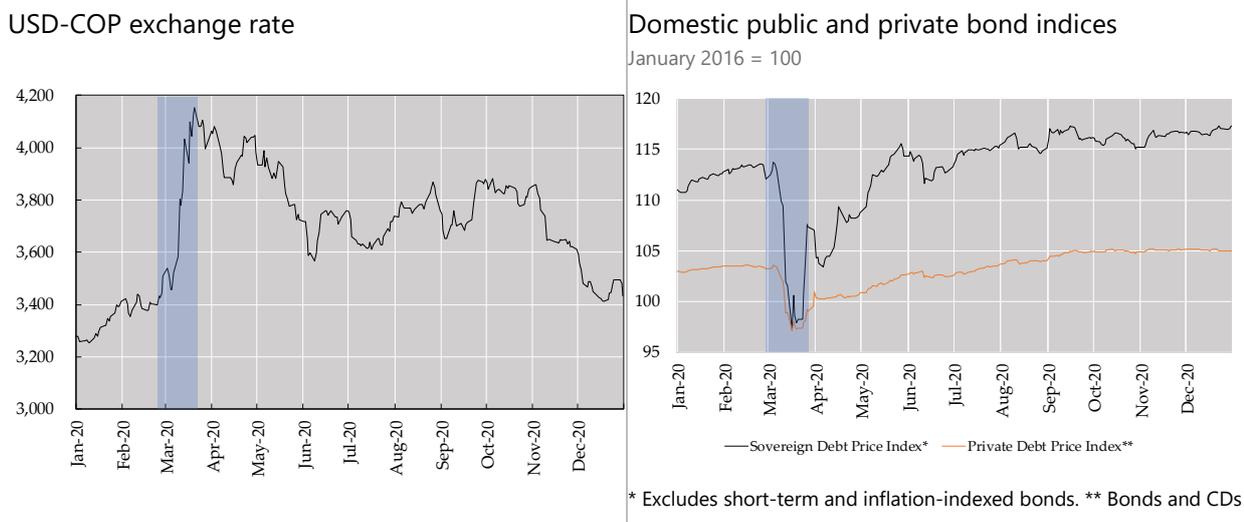
December 2019 = 100



Source: Bloomberg and authors' calculations.

Local financial markets were severely disturbed by these shocks. The FX spot market liquidity was hindered (Graph A.1), offshore forward FX net demand increased sharply (Graph A.1) and the COP/USD exchange rate skyrocketed (Graph 2). Also, amid heightened risk aversion and a large depreciation of the COP, some Colombian participants in the FX forward market received margin calls, while the access of Colombian banks to foreign funding became uncertain. The public bond market seized up and lost liquidity (Graph A.1), while prices collapsed (Graph 2). This was obviously problematic because it made it more difficult for the government to fund itself during the crisis, but also because it affected the market of an asset widely used as collateral and as a benchmark for local asset pricing. In these respects, the shock threatened to hamper the transmission mechanism of monetary policy.

Graph 2



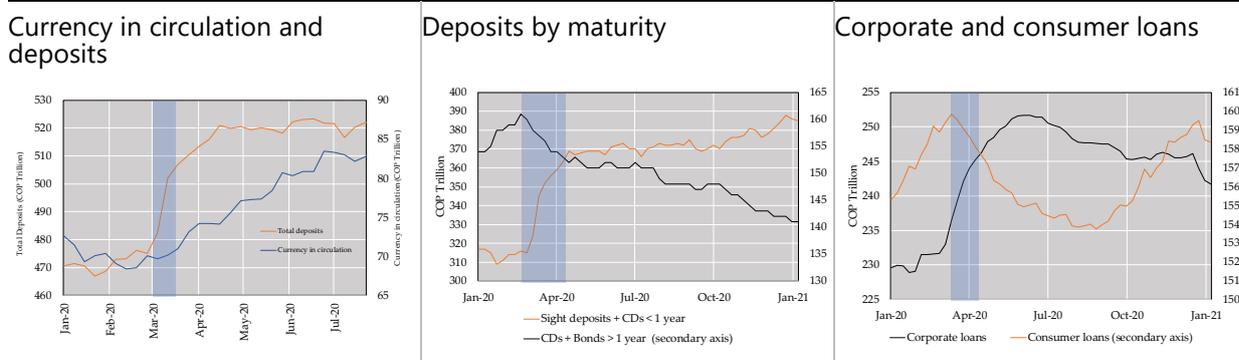
Source: Bank of the Republic.

The losses in the public bond market and the uncertainty surrounding financial asset prices prompted a run on money market funds (MMF) (Graph A.1), which ended up in a large drop in private bond prices, especially commercial bank CDs (Graph 2), as the MMFs sold or reduced their demand for these securities. Strained MMF liquidity and fear of payment suspensions may have reinforced the pressure to withdraw funds from them. In the end, MMFs had to substantially reduce the maturity of their portfolios, increasing the weight of short-term commercial bank CDs, sight deposits and liquid public bonds (Graph A.1). This constituted a significant effect of the shock, for MMFs held 18% of bank and other financial intermediaries' liabilities in February 2020.

More generally, the Covid shock produced a pronounced increase in the preference for liquidity. Demand for cash and bank liabilities rose significantly, but with a marked bias towards sight deposits and short-term CDs (Graph 3). At the same time, demand for commercial loans spiked, as corporations increased borrowing in the face of falling cash flows. By contrast, consumer credit froze, as a result of exacerbated bank risk aversion (Graph 3). Overall, total bank loans sharply rose immediately after the shock. The simultaneous occurrence of a shift towards short-term bank liabilities, fast-growing bank loans and the reduction of interest and amortisation cash flows (due to debtor relief measures) increased bank liquidity risk, especially for smaller intermediaries that had no access to diversified funding sources.

From a macroeconomic point of view, the ensuing lockdowns affected both aggregate supply and demand, but the latter was hit harder, as can be inferred from the collapse of output and employment along with a decline in core inflation measures.

Graph 3



Source: Financial Superintendency and Bank of the Republic.

## 2.2 The central bank response

The immediate challenges facing the central bank were (i) ensuring the smooth functioning of the payment system, (ii) stabilising key financial markets under stress, and (iii) supporting an adequate provision of credit by local intermediaries when it was badly needed by firms and households. At a longer horizon, the central bank had to confront the impact of the shock on output and employment. For these purposes, the central bank undertook several actions, as summarised in Table 1.

Objectives and actions of the central bank response

Table 1

Objectives	Protecting the payments system	Preserve the supply of credit	Stabilising key financial markets	Provide an economic stimulus
<b>Actions</b>				
Temporary liquidity (repo operations)				
Increase in the allotment counterparties, collaterals, and maturities	X	X	X	
Outright purchases of public and private securities	X	X	X	
Reduction of banks' reserve requirements	X	X		X
Auction of FX Non-delivery forwards			X	
Auctions of FX swaps	X	X	X	

Sources: Bank of the Republic.

To stabilise the FX market, the CB offered dollars in the NDF market as a way to strengthen a net supply hampered by risk aversion. Auctions of FX swaps also helped to restore normality in the FX market, while providing a backstop in case of a

reduction of foreign funding to local banks. To buttress the payment system, mitigate financial intermediaries' liquidity risk, support loan supply and help stabilise markets in distress, temporary liquidity sources were expanded. The amounts available, tenor, counterparts and collateral of central bank repo operations were expanded. Repos backed by private bonds and bank loans were made available in addition to the existing public bond-backed ones. The acceptance of private bonds (mostly commercial bank CDs) as collateral and the admission of MMFs as counterparts for central bank repo operations were in part aimed at relieving the private bond market and coping with increased banks' liquidity risk and term mismatches. Bank loan-backed repos were introduced to enhance liquidity in general, but especially for those intermediaries with more limited funding sources.

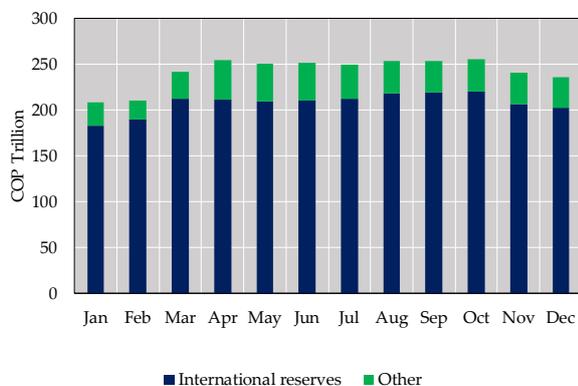
These facilities, however, increased only the supply of temporary central bank liquidity amid unprecedented uncertainty in the economy and in financial markets. To ensure the provision of long-lasting liquidity, support credit supply and deal with increased bank liquidity risk, reserve requirements were reduced (on average from 7% to 5%), releasing funds for about 10% of the monetary base of February 2020 (prior to Covid-19 crisis). This was also an important tool for addressing possible liquidity shortages for intermediaries without a diversified funding base. Moreover, the reduction of reserve requirements may have also influenced lending interest rates through its impact on the cost of financial intermediation and bank spreads.

Outright purchases of public and private bonds were an important component of the central bank policy response, as they were intended to expand long-term liquidity along the reduction in reserve requirements. Even more importantly, they were central in restoring normality in stressed security markets. The purchases were made between March and April 2020 (Graph 4). Public bonds were bought in the secondary market by means of the electronic platform that supports it. Private bonds were purchased through auctions held by the central bank. Only highly rated bank CDs or bonds with remaining maturities of three years or less and with at least 30 days after issuance were accepted. Public and private bond purchases were about 2.8% and 8.5% of the monetary base of February 2020 (before the Covid shock), respectively.

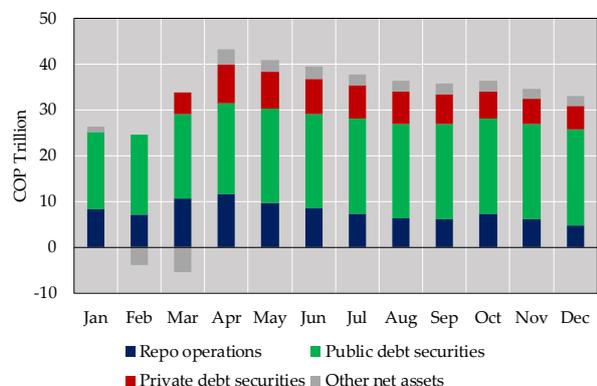
## Central bank's assets

Graph 4

Central bank's assets (2020)



Central bank's assets other than international reserves (2020)



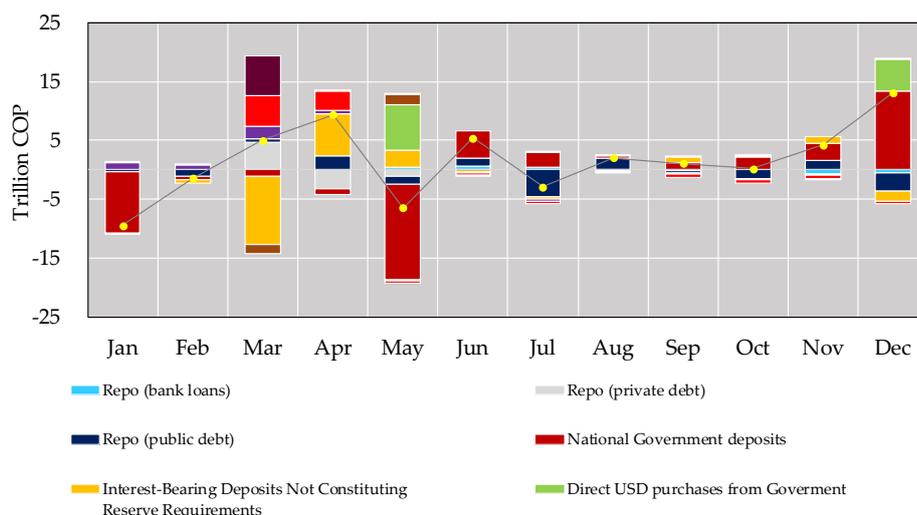
Source: Bank of the Republic.

In addition to the above-mentioned policy measures, the central bank purchased FX from the government in May and December 2020, and augmented access to the IMF's Flexible Credit Line in order to bolster international liquidity. The resulting increase in international reserves enhanced long-term domestic liquidity, as the government spent the proceeds from the FX sales, complementing the effects of local asset purchases and the cut in reserve requirements. It is noteworthy that the resulting monetary expansion was sterilised to the extent necessary to stabilise short-term money market interest rates around the policy rate, which has remained well above zero or an effective lower bound in Colombia since the beginning of the Covid-19 crisis. The sterilisation was carried out mostly through short-term (seven- to 14-day) deposits of banks at the central bank, deposits of the Treasury at the central bank and the gradual reduction of the stock of repos (Graph 5).

To support economic activity and employment, the central bank gradually reduced the policy interest rate from 4.25% to 1.75% between March and September 2020. This contrasts with the faster reaction by the central banks in other EMEs. The response by the Colombian central bank took into account, among other things, the relatively high initial values of the public debt-to-GDP ratio and the current account deficit, as well as the sharp increase in the country's risk premium, the strong depreciation of the COP and the stress in local asset markets. The possibility of exacerbating some of these dynamics was perceived as a risk of monetary expansion and a constraint on the monetary policy response. Furthermore, given the nature of the shock that involved lockdowns and the interruption of normal spending behaviour, the short-term effects of an interest rate reduction on economic activity were deemed small. Overall, then, the risks and benefits of monetary policy relaxation suggested that a slower monetary policy reaction was appropriate. As external and domestic financial conditions improved, and the economy was gradually opened, transmission mechanisms were restored and monetary stimulus was increased.

Monetary base change drivers

Graph 5



Source: Bank of the Republic.

Finally, the policy response must be understood as part of a wider effort by Colombian authorities to deal with the shock. These measures included income support for households, subsidies to formal employment and suspension of some

taxes and contributions, among others. On the financial policy side, the government implemented loan guarantee programmes and special lending facilities through second-tier state financial institutions. The Financial Superintendency adopted temporary regulatory forbearance to accommodate loan relief programmes undertaken by financial intermediaries and set the rules for the subsequent provisioning and adequate revelation of credit risk, as well as the restructuring of some segments of the loan portfolio.

### 2.3 The effectiveness of the central bank policy response

In general, the central bank policy response was effective. Local financial markets were stabilised, as illustrated by the normalisation of market liquidity indicators (Annex Graph A.2) and the appreciation of the COP and local financial assets (Graph 2). Doubtless, the rapid reaction of monetary and fiscal authorities in advanced economies greatly contributed to the restoration of more normal conditions in EME financial markets. However, event studies suggest some significance of the role played by EME central bank asset purchases in stabilising local markets (eg Hartley and Rebutti (2020) and Fratto et al (2021)).

These studies find a response of local bond yields to central bank asset purchase programme announcements that is stronger in EMEs than in advanced ones and, according to the estimates, the response in Colombia seemed to be among the largest of all the countries considered. It is worth mentioning that in the events examined for Colombia, there were no simultaneous announcements of policy rate cuts (asset purchases were explicitly aimed at stabilising markets), so that the event study results are “cleaner” than in other episodes. By contrast, the coincidence of the Bank of the Republic’s announcement with one of the Fed’s announcements (March 23) may obscure the significance of the effects of the local announcement.

Withdrawals from MMFs stopped and then reversed (Annex Graph A.2), while the payment system kept functioning smoothly. However, the liability composition of banks and other financial intermediaries have remained more tilted toward shorter-term instruments (Graph 3, middle panel). This might reflect the public’s lasting preference for liquidity in an environment still affected by Covid-19 infection and the uncertainty regarding future lockdowns and restrictions on mobility. Furthermore, this episode may also signal potential liquidity risks for MMFs that are not adequately covered by current regulation, so an evaluation of the latter may be in order.<sup>2</sup>

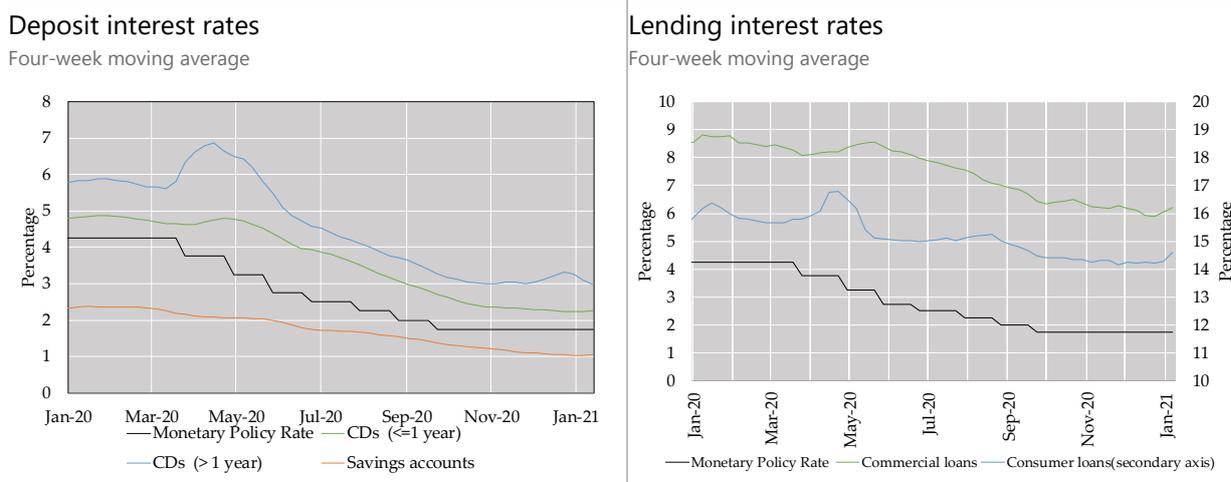
With stable local financial asset markets and buttressed bank liquidity, the successive cuts in the policy interest rate were transmitted to deposit and lending rates (Graph 6), while credit to households started to recover in the third quarter of 2020 (Graph 3, right-hand panel). This is compatible with the relatively fast improvement in durable consumption observed in the second half of 2020. Commercial loans, however, have shown a decline from their peak early after the shock. This is in part due to the repayment of loans initially taken out by corporations to maintain their liquidity. Evidently, the sharp contraction of the economy (–6.8% in 2020) has played an important role in total commercial credit slowdown.

A key feature in this episode in Colombia has been the absence of a significant substitution of local assets for foreign ones. As previously shown, demand for

<sup>2</sup> For example, whereas bank liquidity regulation includes higher requirements for larger counterparts (institutional investors), MMF regulation lacks this feature.

domestic liquid assets jumped after the shock (Graph 3 left-hand panel) and the country's net portfolio outflows have been smaller than in other EMEs (Annex Graph A.2). An initially credible macro-financial policy framework and a relatively cautious fiscal and monetary policy response may explain this behaviour. Another reason was the large adjustment that authorities allowed in the prices of local assets before any action was announced or taken. Only after a substantial depreciation of the COP and local bonds had occurred did the central bank announce interventions in those markets. This may have prevented the formation of expectations of a future sharp depreciation, thus permitting a fast adjustment in the markets and limiting outflows.

Graph 6



Source: Bank of the Republic.

Finally, it is worth noticing that the central bank's asset purchases can hardly be characterised as QE measures. To begin, they were undertaken at point in which the policy interest rate was well above zero or a level that could be interpreted as an effective lower bound. Hence, they were not meant to replace or complement the interest rate as a way of altering the monetary policy stance. Their primary objective was to stabilise financial markets in the short term. Consequently, they were not systematically calibrated to respond to inflation or output gaps. Moreover, once bond markets were stabilised, no further purchases were announced or made, and there has been no rollover of principal and interest payments from the purchased bonds. Also, the stock of bonds purchased was a relatively small fraction of central bank assets (3.2% at its peak in April 2020).

## 2.4 Challenges posed by the Covid shock to the process of monetary policymaking

The magnitude and the widespread nature of the unprecedented Covid-19 shock also imposed several technical challenges on the analyses and the forecasts that guide monetary policymaking. Among these challenges, the central bank staff had to develop new tools and strategies to better understand the impact of lockdowns, to estimate the magnitude and persistence of supply and demand effects, to account for the influence of some central bank policy actions (eg changes in banks' reserve requirements), and to assess the consequences of record low interest rates for capital inflows and bank profitability. One crucial challenge was the analysis of the shock's effects on the fiscal position and the implications for monetary policy. In the next

section, we discuss one such implication, namely the effect of the fiscal position and international financial conditions on the sovereign risk premium, the macroeconomy and monetary policy.

### 3. Monetary policy implications of the Covid-19 shock's fiscal effects

We start by providing some background on the evolution of Colombia's public finances in the years prior to the Covid-19 pandemic and how they shaped increasingly fragile initial conditions. Next we briefly describe the fiscal response to the pandemic and set out some elements that could affect the channels through which fiscal policy can affect monetary policy. We put special emphasis on how the level of debt can affect the economy's financial conditions and how these, in turn, constrain monetary policy. Then we explore the empirical relation between public debt and risk premia. Finally, we use a DSGE model to illustrate some effects of fiscal policy on the macroeconomy and monetary policy.

#### 3.1 Context, initial conditions and the Covid-19 shock

In the last two decades Colombia has employed two tools as part of the institutional framework to guide fiscal policy. The first one is the Medium Term Fiscal Framework (MTFF), a document presented to Congress by law since 2004 which outlines the projections of central government's main fiscal variables (revenues, primary and total deficit and debt) for a 10-year horizon and a strategy for following the forecasted path. The MTFF provides an intertemporal fiscal sustainability context in which the budget decisions are made. The second tool is a fiscal rule, which has been in place since 2011. Each year the fiscal rule consultative committee sets the targets for the central government's structural and overall deficits and the MTFF aligns those targets with the medium-term strategy. Countercyclical considerations regarding GDP and oil revenues are included in the rule. The fiscal rule determines budget policy and links public spending to government revenue for a given year.

From 2015 the Colombian economy experienced shocks that eroded its public finances, leaving both the economy and public finances in a weak state to face the Covid-19 shock. In particular, the fall of oil prices in the second half of 2014, from more than USD 100 per barrel to USD 50 per barrel in 2015, turned out to be a highly persistent shock. This resulted in a permanent reduction of oil-related revenue. Table 2 shows that the loss of revenue ranged from 2.5% of GDP through 1.5% of GDP between 2015 and 2018. This was accompanied by an increase in public debt, which went up from about 40% to 50% of GDP in the same period. In addition, other shocks such as the migration of about 1.8 million people from Venezuela between 2016 and 2019, required temporary deviations from the parameters of the fiscal rule to ensure that the government could meet the associated expenditure needs. These shocks, resulted in an increasing level of debt, despite tax reforms in 2014, 2016, 2018 and 2019 and although the fiscal rule targets were met every year.<sup>3</sup>

<sup>3</sup> Part of the policy discussion in Colombia is that, given the structure and rigidity of public spending, tax revenue must be enhanced systematically to support a prudent path of public debt.

### 3.2 Fiscal response to the Covid-19 shock and implications for monetary policy

The Covid-19 shock has been met with a significant fiscal policy response, resulting in a substantial impact on public finances. The Ministry of Finance (MoF) invoked the escape clause to suspend the fiscal rule in 2020 and 2021, allowing for a larger deficit. Table 2 shows estimates of the impact on revenue, expenditure, the fiscal balance, and the debt-to-GDP ratio in 2020. The government made emergency monetary transfers to help low-income households, and took measures to strengthen liquidity and facilitate access by companies to both loans and subsidies. Regarding the latter, the central government postponed the deadline for income tax payments, and local governments did the same for industry and commerce tax payments, among others. It also authorised automatic tax refunds for low-risk taxpayers, granted benefits on 2019 tax obligations, and suspended the consumption tax for restaurants. According to the National Tax and Customs Department (DIAN), these measures generated a liquidity and disposable income boost close to COP 10 trillion (1% of GDP).

Evolution of Colombia's central government balance and debt 2013–20

Percent of GDP	2013	2014	2015	2016	2017	2018	2019	2020p
<b>Total revenue</b>	16.9	<b>16.7</b>	<b>16.1</b>	<b>14.9</b>	<b>15.6</b>	<b>15.3</b>	<b>16.2</b>	<b>15.2</b>
Tax revenue	14.3	14.3	14.5	13.6	13.8	13.9	14.0	12.9
<i>From oil sector</i>	1.5	1.2	0.6	0.0	0.2	0.6	0.4	0.3
Other revenue	2.7	2.3	1.6	1.3	1.9	1.4	2.2	2.3
<i>Ecopetrol</i>	1.9	1.4	0.5	0.1	0.1	0.3	1.1	0.6
<b>Total expenditure</b>	<b>19.3</b>	<b>19.1</b>	<b>19.2</b>	<b>18.9</b>	<b>19.3</b>	<b>18.4</b>	<b>18.7</b>	<b>23.7</b>
<i>Covid-19 emergency</i>								2.0
<b>Overall deficit</b>	<b>2.4</b>	<b>2.4</b>	<b>3.0</b>	<b>4.0</b>	<b>3.6</b>	<b>3.1</b>	<b>2.5</b>	<b>8.6</b>
<b>Gross debt</b>	<b>36.6</b>	<b>39.9</b>	<b>44.6</b>	<b>45.6</b>	<b>46.4</b>	<b>49.4</b>	<b>50.3</b>	<b>67.5</b>

Sources: Ministry of Finance and authors' estimates.

Additionally, the government capitalised the National Guarantee Fund with 0.3% of GDP which, according Ministry of Finance estimates, allowed the Fund to extend guarantees up to 4.8% of GDP, which in turn may represent new loans for working capital up to 8% of GDP. Through the Formal Employment Support Program, the government provides companies that meet the requirements (mainly a 20% reduction in revenue) with a payroll subsidy equivalent to 40% of the minimum wage per employee. According to the government, by the end of 2020, the programme, which started in April 2020 and will continue until March 2021, transferred 0.5% of GDP to companies, seeking to preserve about 3.6 million jobs. Table 3 presents the size of some of the expenditure programmes put in place as a response to the pandemic.

The debt-to-GDP ratio rose in 2020 to 67.5% and according to our projections using COFFEE, a DSGE model used at the central bank, it is projected to increase and stay near 70% for the next few years (Graph 7).<sup>4</sup> Is this level of government indebtedness a factor that could pose a risk to macroeconomic and financial stability

<sup>4</sup> These projections may differ from the official projections of the Ministry of Finance and are presented here for analytical purposes only.

## Some expenditure measures in response to Covid-19

Table 3

Measure	% of GDP
Monetary transfers to low-income households	0.6
Electricity and water subsidies for low-income households	0.3
Support for health sector	0.3
Support for formal employment	0.7
<b>Total for included measures</b>	<b>1.8</b>

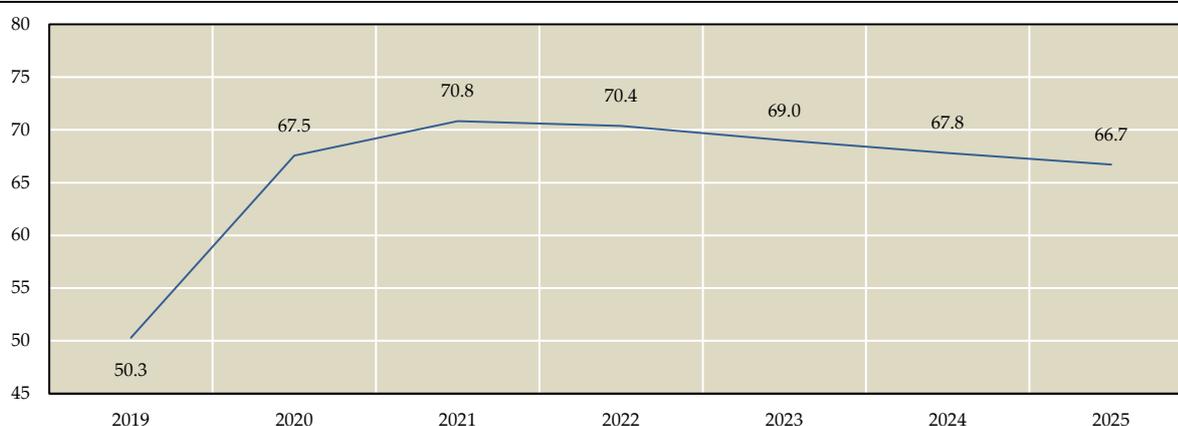
Source: Ministry of Finance.

and constrain monetary policy? If so how? As a first step to tackling these questions, we make some computations on debt limits beyond which further negative shocks could put debt sustainability at risk. We employ two methodologies. First, we follow Mendoza and Oviedo (2009) and compute the “natural debt limit”, the maximum level of debt that can be sustained in adverse scenarios were revenues to fall permanently and expenditures to fall to the minimum feasible. Under the assumptions in Appendix A we obtain a debt limit of 60.6% of GDP. Second, we follow Gosh et al (2013) and apply their methodology to calculate the “fiscal fatigue” debt level. This is a level of debt above which the increase in debt results in a higher probability of default, which in turn increases the risk premium and the interest costs to a point where the primary surplus cannot increase further and stabilise debt. Using this approach, we obtain a debt limit of 68.4% of GDP.

## Central government gross debt

% of GDP

Graph 7



Source: Ministry of Finance, authors' estimates using the COFFEE model.

To summarise, before the Covid-19 shock, public finances had been deteriorating because of shocks and a shortfall of tax revenues given expenditure needs. As a result, the initial conditions when the pandemic hit were increasingly fragile from the fiscal policy perspective. The fiscal policy response required by the pandemic put the current and forecasted debt-to-GDP ratio at levels where further negative shocks could become a threat to sustainability. This was recognised in the 2020 MTF, which projects a fiscal reform of 2% of GDP in order to put debt in a downward path. The current policy discussion is about the timing and the feasible size of the reform, as well as the mix of fiscal instruments that will be modified.

Turning to the implications for monetary policy, as long as the country retains access to international markets (likely under the current global financial conditions of low interest rates and ample liquidity), the effects of increased deficits and public debt ratios would impact monetary policy through (i) the sovereign risk premium; (ii) the sensitivity of the risk premium to external financial shocks; (iii) the timing and size of a fiscal reform; and (iv) the currency composition of public debt, among others.

We now study these elements and how they might affect monetary policy.

### 3.3 Assessing sovereign risk fundamentals in a small open economy

#### 3.3.1 *Literature review*

The empirical literature has explored a large set of macroeconomic variables to explain sovereign debt spreads and CDS. In this literature, there is ample evidence that sovereign risk is influenced by the level of debt relative to GDP, by variables related to debt sustainability, and by covariates that could affect the likelihood of repayment (Delatte et al (2014)). Furthermore, these elements can be classified into local and global risk factors (Daehler et al (2020)).

Regarding local risk factors, Ahmed et al (2017) noticed that EMEs with stronger fundamentals fared better during stress episodes such as the taper tantrum in 2013. Ertugrul and Ozturk (2014) found cointegrating relations between CDS spreads and local financial market indicators for selected EME countries. Particularly, they found that the CDS market is cointegrated with the foreign exchange market, the equity market and the bond market after controlling for external factors. They argue this result indicates evidence that there is a transmission from the financial markets to the CDS market for the whole-country sample. Kocsis and Monostori (2016) showed that in the specific cases of Poland, Russia and Turkey, domestic fundamentals explain more of CDS spread variance than global factors.

Concerning global risk factors, Longstaff et al (2011) found that the bulk of sovereign credit risk can be linked to global factors. In their analysis, a single principal component accounts for 64% of the variation in sovereign credit spreads. Furthermore, sovereign credit spreads are more closely related to the US stock and high-yield markets than they are to local economic measures. Likewise, Fender et al (2012) observed a relation between daily CDS spreads for EME sovereigns and global and regional risk premia that is stronger than that between CDS spreads and country-specific risk factors. Finally, Daehler et al (2020) showed that COVID mortalities and infections were not as important in explaining CDS spreads in the first half of 2020 as were variables capturing fiscal space, economic activity, actions by the Fed and the ECB, and the change in oil prices.

In addition to the debate regarding the impact of local and global risk factors, the literature has analysed the possibility of non-linearity in the determination of sovereign risk spreads (Aizenman et al (2011), de Grauwe and Ji (2013), Gerlach et al (2010), Montfort and Renne (2011), Borgy et al (2011), Favero and Missale (2012), Delatte et al, (2014), Brzoza-Brzezina and Kotłowski (2020)). In general, this literature has explored whether the pricing of sovereign risk is linear during bearish episodes, whether shocks to economic fundamentals are exacerbated by endogenous factors that create non-linearities, and whether there are particular levels of gross debt or net foreign assets that can trigger non-linear behaviour in sovereign risk pricing.

### 3.3.2 Some stylised facts of EME CDS

To illustrate some stylised facts regarding CDS dynamics, we explored several empirical specifications for a panel of 12 EMEs.<sup>5</sup> We focus on five-year CDS since this is the variable most commonly used by both practitioners and policymakers. Our baseline linear specification is a fixed effects model (FE) in which EME CDS depends on the level of gross government debt to GDP,<sup>6</sup> the cyclical component of a commodity terms of trade indicator,<sup>7</sup> a broad measure of US financial conditions,<sup>8</sup> and a country-specific EME CDS index.<sup>9</sup> There is evidence that the series are stationary in the sample period (January 2010–October 2020). This setting allows us to capture local risk factors, broad global financial conditions, and the country-specific external financial environment for each country while keeping a relatively parsimonious specification. Table 4 shows the results of the linear FE model used as a baseline.

#### Panel regression (FE) for selected EME CDS

Dependent variable: CDS for selected EMEs

Table 4

Variable	Coefficient
Debt to GDP	1.73 *** [0.18]
Commodities terms of trade cycle	−0.01 ** [0.63]
US Financial conditions	13.43 * [7.02]
EM CDS Index	0.88 *** [0.04]
Constant	101.01 [65.44]

Effects specification: cross section fixed (dummy variables)

R-squared: 0.64

Observations: 1560

Notes: Standard errors are corrected for heteroskedasticity. Sample: January 2010 to October 2020. (\*): significant at the 10% level; (\*\*): significant at the 5% level and (\*\*\*): significant at the 1% level.

Source: Authors' calculations.

<sup>5</sup> Our estimations use information for Brazil, Chile, China, Colombia, Indonesia, Malaysia, Mexico, Peru, Russia, South Africa, Thailand and Turkey from January 2010 to October 2020. The series are shown in Appendix B.

<sup>6</sup> We use the general government gross debt reported in the IMF's WEO report. We kept the debt levels relative to GDP constant for all the months of a given year.

<sup>7</sup> We use the IMF's country-specific commodities terms of trade. The commodity terms-of-trade index proxies the windfall gains and losses of income associated with changes in world commodity prices (Gruss and Kebhaj (2019)). The cyclical component is computed using the Hodrick-Prescott filter on the log of the index.

<sup>8</sup> We use the National Financial Conditions Index computed by the Chicago Fed. The series are normalised with mean of 0 and variance of 1. An increase of this indicator represents a tightening of financial conditions.

<sup>9</sup> The EME CDS indices used in the estimations were constructed for each country  $i$  using the weights obtained from the first principal component of the selected CDS series. To reflect exogenous financial conditions external, the CDS of country  $i$  is excluded. The EME CDS index for each country is shown in Appendix B. Individual series and panel unit root test are shown in Appendix B and C.

In this linear specification, we found that there is a positive relationship between the gross government debt and CDS spread, that a positive commodity terms of trade gap decreases CDS spreads, that a tightening of US financial conditions increases EME sovereign risk, and that CDS increase along with a rise in the country specific EME CDS index.<sup>10</sup>

Nonetheless, the linear specification may hide some important features regarding the dynamics of sovereign risk pricing. Thus, we use two alternative estimation strategies. The first one consists in estimating a panel smooth transition regression (PSTR) model. This approach allows us to explore the non-linear relation between CDS spread and its covariates. The second one relies on the estimation of a panel quantile regression (PQR) to model the conditional distribution of EME CDS.

**Panel smooth transition regression.** The PSTR model developed by Gonzalez et al (2005) allows the estimation of a non-linear specification for CDS as a function of an observable variable as follows<sup>11</sup>:

$$CDS_{it} = \mu_i + \beta'_1 X_{it} + \beta'_2 X_{it} g(q_{it}; \gamma, c) + u_{it} \quad (1)$$

For  $i = 1, \dots, N$  and  $t = 1, \dots, T$  where  $\mu_i$  represents individual fixed effects,  $X_{it}$  is a set of covariates and  $u_{it}$  are i.i.d errors.

In this setting,  $g(\cdot)$  is a logistic function of order 1 that has an S shape:

$$g(q_{it}; \gamma, c) = \frac{1}{1 + \exp[-\gamma(q_{it} - c)]}, \gamma > 0 \quad (2)$$

$q_{it}$  is the observable threshold variable (gross government debt to GDP). The  $\gamma$  parameter determines the smoothness (the speed of the transition from one regime to the other), and  $c$  is the location parameter, which shows the inflection point of the transition<sup>12</sup>. Results in Table 5 report the estimated coefficients in regime 1 and regime 2 ( $\hat{\beta}_1$  and  $\hat{\beta}_1 + \hat{\beta}_2$ ). In the estimation, we use the CDS spread of our 12 EME sample and the same covariates that we use in the linear baseline model. We set gross government debt to GDP as the threshold variable. Our estimates suggest amplification effects that operate in regime 2 ( $|\hat{\beta}_1 + \hat{\beta}_2| > |\hat{\beta}_1|$ ) through a stronger influence on CDS of all the included covariates, with the exception of US financial conditions. In other words, when the gross debt to GDP is higher than the threshold value ( $\hat{c} = 70.85$ ), the weight of these fundamentals increases in the EME CDS model, so the shocks to fundamentals have larger effects on sovereign risk pricing.

<sup>10</sup> The FE model displays similar results if the estimation sample is reduced to December 2019. Dummy variables for the commodity price shock in 2014/2015 and for the Covid-19 health crisis were not significant in country-specific regressions.

<sup>11</sup> A similar approach applied to Italy, Spain and Portugal during the debt crisis can be found in Delatte et al (2014).

<sup>12</sup> The estimation of the PSTR includes several stages. First, a null hypothesis of linearity is tested against the alternative hypothesis of a threshold specification against a baseline linear model. If the linear specification is rejected, the estimation of the parameters of the PSTR model requires eliminating the individual effects,  $\mu_i$ , by removing individual-specific means and then applying non-linear least squares (see Gonzalez et al (2005) and Delatte et al (2014)).

Panel smooth threshold regression (PSTR) for selected EME CDS

Dependent variable: CDS for selected EMEs Threshold variable: Debt to GDP (–1)

Table 5

Variable	$\beta_1$ (linear)	$\beta_2$ (non-linear)
Gross Government Debt to GDP	0.80 *** [0.22]	0.99 *** [0.34]
Commodities terms of trade cycle	–0.02 *** [0.00]	–0.02 *** [0.00]
US Financial conditions	14.48 ** [7.20]	–47.28 [31.82]
EM CDS Index	0.78 *** [0.03]	1.59 *** [0.12]
Constant		158.65 ** [65.63]
$\gamma$		1.88 [5.95]
c (threshold)		70.85 *** [5.57]
R-squared: 0.69		
Observations: 1560		

Notes: Effects specification: Cross-section fixed (dummy variables). Standard errors are corrected for heteroskedasticity. Sample: January 2010 to October 2020. (\*): significant at the 10% level; (\*\*): significant at the 5% level and (\*\*\*): significant at the 1% level.

Source: Authors' calculations.

**Panel quantile regression.** To characterise the distribution of CDS we rely on the quantile regression proposed by Koenker and Bassett (1978). Particularly, we followed the approach proposed by Eguren-Martin et al (2020) in a panel data context. We specify our PQR model for the conditional quantiles of EME CDS as follows:

$$Q_{CDS_{i,t}}(\tau|X_{i,t}) = \alpha(\tau) + \sum_{j=1}^k \beta_j(\tau) X_{it} + \epsilon_i \quad (3)$$

$CDS_{i,t}$  are the five-year CDS spread for country  $i$ ,  $X_{it}$  is the set of covariates, and  $\epsilon_i$  is a country-specific fixed effect. Function  $Q$  computes quantiles  $\tau$  of the distribution of  $CDS_{i,t}$  given  $X_{i,t}$ . We estimate equation (3) in our panel of 12 EMEs from January 2010 to October 2020. Graph 8 shows the quantile process estimates in our EM CDS model.<sup>13</sup> Our results show that for the upper quantiles of the CDS distribution the effect of gross government debt is higher. The parameter for the commodities' terms of trade is not significantly different from zero for the lower deciles of the distribution, but the estimate turns negative in the middle of the distribution before it stabilises. Regarding external financial conditions (the broad US financial conditions and the country specific CDS index), we find greater responsiveness in higher deciles of the CDS distribution (see Graph 8).

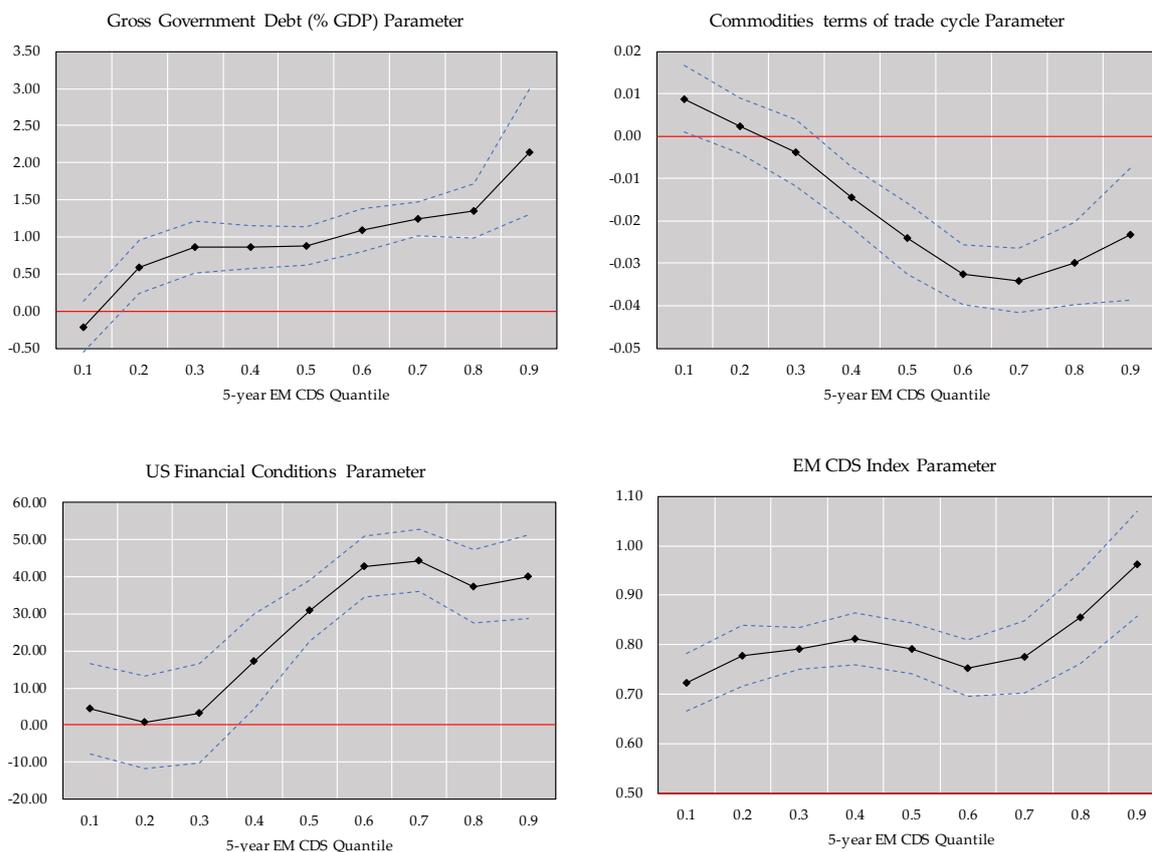
In sum, our results show that there is a positive relation between sovereign risk pricing and the level of government debt to GDP. Furthermore, there is evidence that higher levels of government debt could trigger non-linear behaviour and that

<sup>13</sup> Detailed results for the PQR estimation are presented in Appendix E.

countries in the higher deciles of the CDS distribution could experience a higher responsiveness of CDS to government debt. Moreover, we find that financial conditions play an important role in the determination of CDS and that high levels of government debt and tighter external financial conditions significantly increase EM sovereign risk prices.

Quantile estimates for EME CDS panel

Graph 8



Source: Authors' calculations. Note: Bootstrap Standard Errors (90% confidence intervals).

### 3.3.3 Some stylised facts of Colombian CDS

To show some stylised facts regarding Colombian CDS we estimate a simple linear model using the same set of covariates as in the previous exercises. We use the following form:

$$CDS_t^{col} = \alpha_0 + \alpha_1 \left(\frac{D}{Y}\right)_t + \alpha_2 (\widetilde{CT}_t) + \alpha_3 US_{FCO}N_t + \alpha_4 ECDS_t + \varepsilon_t \quad (4)$$

Where  $(D/Y)$  represents the gross debt-to-GDP ratio produced by the IMF,  $\widetilde{CT}_t$  is the cyclical component of the commodity terms of trade index,  $US_{FCO}N_t$  is the US financial condition index produced by the Chicago Fed, and  $ECDS$  is the EME five-year CDS index constructed using the weights of the first principal component taken from the selected countries (excluding Colombia). Table 6 shows the OLS estimates for this specification.<sup>14</sup>

<sup>14</sup> Individual unit root tests are shown in Appendix C.

## OLS regression for Colombia

Dependent variable: five-year Colombian CDS

Table 6

Variable	Coefficient
Gross government debt to GDP	1.42 *** [0.14]
Commodities terms of trade cycle	-9.78 *** [1.53]
US Financial conditions	30.01 ** [7.57]
EM CDS Index	0.85 *** [0.04]
Constant	20.19 [10.28]

R-squared: 0.90

Jarque-Bera (JB) test: 0.44 P-value: 0.79

Notes: HAC Standard errors and covariance. Sample: January 2010 to October 2020. (\*): significant at the 10% level; (\*\*): significant at the 5% level and (\*\*\*): significant at the 1% level.

Source: Authors' calculations.

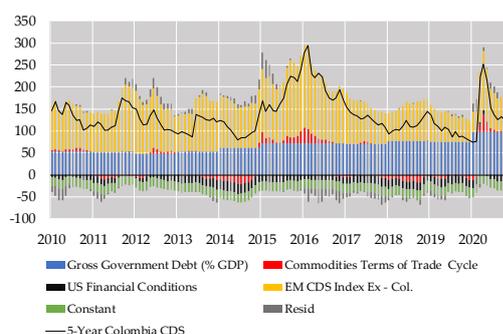
In line with our EM CDS panel estimation, we find a positive relation between gross government debt and Colombian five-year CDS spread. The commodities terms-of-trade cycle shows a negative and significantly higher parameter (in absolute terms) than the one estimated in the EM Panel. US financial conditions and the dynamics of the EM CDS index also affect positively the level of CDS spread. Graph 9 shows the historical contribution of each factor to the dynamics of Colombian five-year CDS. Gross government debt and the EM CDS are the main contributors to the level of CDS. Nonetheless, the variation of CDS seems to be highly related to the dynamics of the rest of the EM CDS included in our index. During the recent stress episode of the Covid-19 shock, the increase in the five-year CDS was driven by the deterioration of EM CDS, a worsening of commodities terms of trade and a temporarily tightening in US financial conditions. These results further support the importance of gross government debt levels and external financial conditions in the determination of CDS.

## Five-year Colombia CDS drivers using equation 3

Graph 9

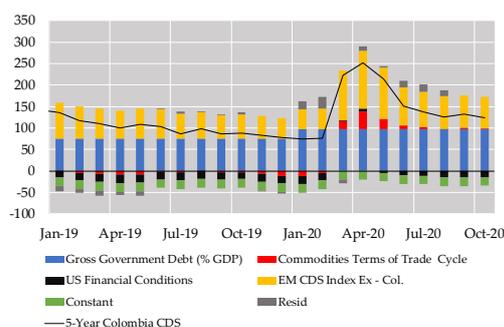
### Five-year Colombia CDS drivers

2010–20



### Five-year Colombia CDS drivers

2019–20



Source: Authors' calculations.

### 3.4 Public debt dynamics and monetary policy

Up to this point we have provided evidence that:

1. The fiscal response to the Covid-19 shock, coupled with the deteriorating trend of public finances, has taken the level of public debt in Colombia above prudent debt limits.
2. Public sector debt levels measured as a debt-to-GDP ratio are positively correlated with risk premia in EME economies.
3. Debt-to-GDP ratios may be related to risk premia in a non-linear way, with risk premia becoming increasingly sensitive to debt and other determinants as debt levels rise.
4. Financial conditions in advanced economies are related to risk premia, and when they tighten, risk premia rise (also in a possibly non-linear fashion).
5. Public debt levels, international financial conditions, and commodity cycles explain almost all the variation of Colombian risk premia as measured by five-year CDS on public debt.

We now use the COFFEE model (see Appendix F for a brief description) and illustrate how increasing debt levels may constrain monetary policy. To this end we filter the data through the model, recover shocks in 2020 and construct a baseline scenario that resembles a macroeconomic adjustment like the one that the central bank's staff forecasts in its Monetary Policy Report. In this scenario we allow for a fiscal adjustment similar in magnitude to the one in the MTFE through non-distortionary taxes in 2022. We also set fiscal variables to follow a path over time like the one projected in the MTFE. This baseline scenario exhibits a relatively smooth recovery after the Covid-19 shock in which debt levels fall slowly towards 60% and risk premia also fall over time, GDP growth rates rise above their long-term growth rate of 3.3%, and interest rates normalise from below, while the currency appreciates in 2022. Absorption grows faster than GDP and consequently the trade balance widens over time.

Based on this benchmark and the findings of the previous section, we study the implications of two aspects of fiscal policy for the macroeconomy and monetary policy, namely (i) the effects of an insufficient fiscal adjustment on risk premia and (ii) the impact of delaying a fiscal adjustment. We then discuss the consequences that changes in the currency composition of public debt may have on monetary policy.

In Section 3.3 we stated that both the sovereign risk premium and its sensitivity to external financing shocks would be important factors to determine how increased fiscal deficit and public debt ratios would affect monetary policy. To illustrate their effect, we construct an alternative scenario in which we do not allow for a fiscal reform to happen before 2030. In this scenario debt grows over time. Given the results of Section 3.3, a shock that produces a jump in the debt level would be associated with larger risk premia, with values reached in the simulation akin to a non-linear response. To reflect this in the model, we introduce shocks and changes to the curve that capture the availability of external financing and its cost (a curve that relates risk premia to debt levels, see (Schmidt-Grohe and Uribe (2003))). More specifically, the shocks temporarily shift up this curve (to reflect the availability of external financing) and make it permanently steeper. In this way we make risk premia more sensitive to debt levels while making them vary in a non-linear form. The size of the shocks in this scenario is chosen to resemble the behaviour of risk premia in some downgrade

events (Hungary 2011, Russia 2015 and Brazil 2015) in which countries lost their investment grade credit rating. In these events, risk premia tends to rise fast prior to the downgrade and about a year later it exhibits a correction. When debt levels remain high after the events and the investment grade rating is not regained, risk premia also remains higher than in comparable countries.

Graph 10 compares the baseline scenario, which has a fiscal reform in 2022, with the alternative scenario where there is no reform before 2030. In the absence of a reform, public debt levels would go from 71% of GDP in 2021 to about 85% of GDP in 2030. Consequently, risk premia would jump in 2022 and while they decline subsequently, they would remain higher than in the past because of greater debt levels and the absence of the expected fiscal reform. Higher risk premia is accompanied by capital net outflows and currency depreciation. The COP depreciates by about 12% in real terms in 2022, nominal depreciation passes through local prices and inflation rises by more than 100 bp above target in 2023. An inflation rate persistently above target requires a monetary policy interest rate path that is about 110 bp higher on average than in the baseline scenario. Higher real interest rates and a greater debt burden<sup>15</sup> result in lower consumption and investment growth rates and lead to a persistently lower output level of about 100 bp. The reduced growth rates of private consumption and investment and the real depreciation of the currency are consistent with the fall in the trade balance deficit. Generally speaking, through their impact on risk premia, deteriorating public finances can significantly worsen the trade-offs of monetary policy. The persistence of the changes in risk premia determines the impact on the exchange rate and its expectation, and, thereby, the degree of constraint on monetary policy.<sup>16</sup>

Thus far we have illustrated how higher levels of debt can result in persistently higher, and more sensitive risk premia, and how they could affect the macroeconomy and the response of monetary policy. However, we have not considered other dimensions of higher debt that could further affect the economy. For instance, higher debt could be accompanied by the potential loss of credibility in fiscal policy and in the compatibility of both fiscal and monetary policies. In our analysis, there is full credibility and agents perceive the government to have both the willingness and ability to pay. Relaxing these assumptions requires other tools, but one can conjecture that, if they did not hold, monetary policy could face even stronger constraints. Moreover, the use of different fiscal instruments to achieve an adjustment may have diverse consequences for the economy and, thereby, for monetary policy. It may also imply different challenges to central bank communication (eg VAT increases could have short-term effects on inflation that should be explained to minimise their impact on inflation expectations).

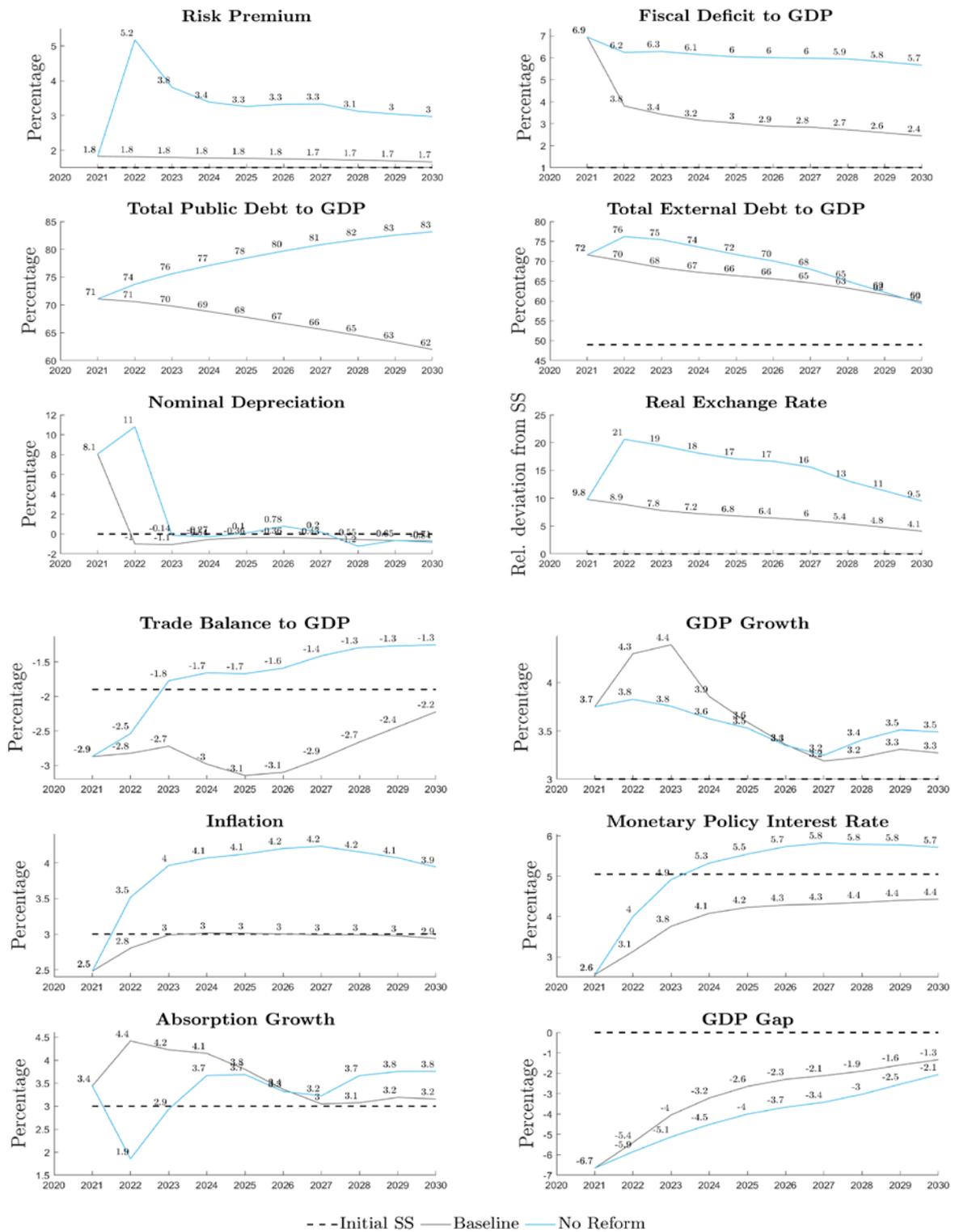
We now illustrate how delaying a fiscal adjustment may imply changes in its size that matter for the performance of the macroeconomy and for monetary policy. For these simulations we compare the magnitude of the adjustment of two tax reforms

<sup>15</sup> Debt burden in 2023 is about 2% of GDP in the baseline scenario while it is almost 4% in the no-reform scenario. On average, between 2023 and 2030, the difference between the debt burden of both scenarios is 1% of GDP per year.

<sup>16</sup> Graph TA.6 in the appendix also presents a scenario in which the required fiscal adjustment occurs in 2023. Even though the reform arrives late with respect to the baseline scenario and therefore risk premia do jump and become more sensitive to debt and external financing shocks, the effect on risk premia is less persistent and therefore the impact on the exchange rate and exchange rate expectations is milder and the constraint on monetary policy is not as strong.

Effect of higher public debt and higher risk premia on monetary policy:  
no fiscal reform

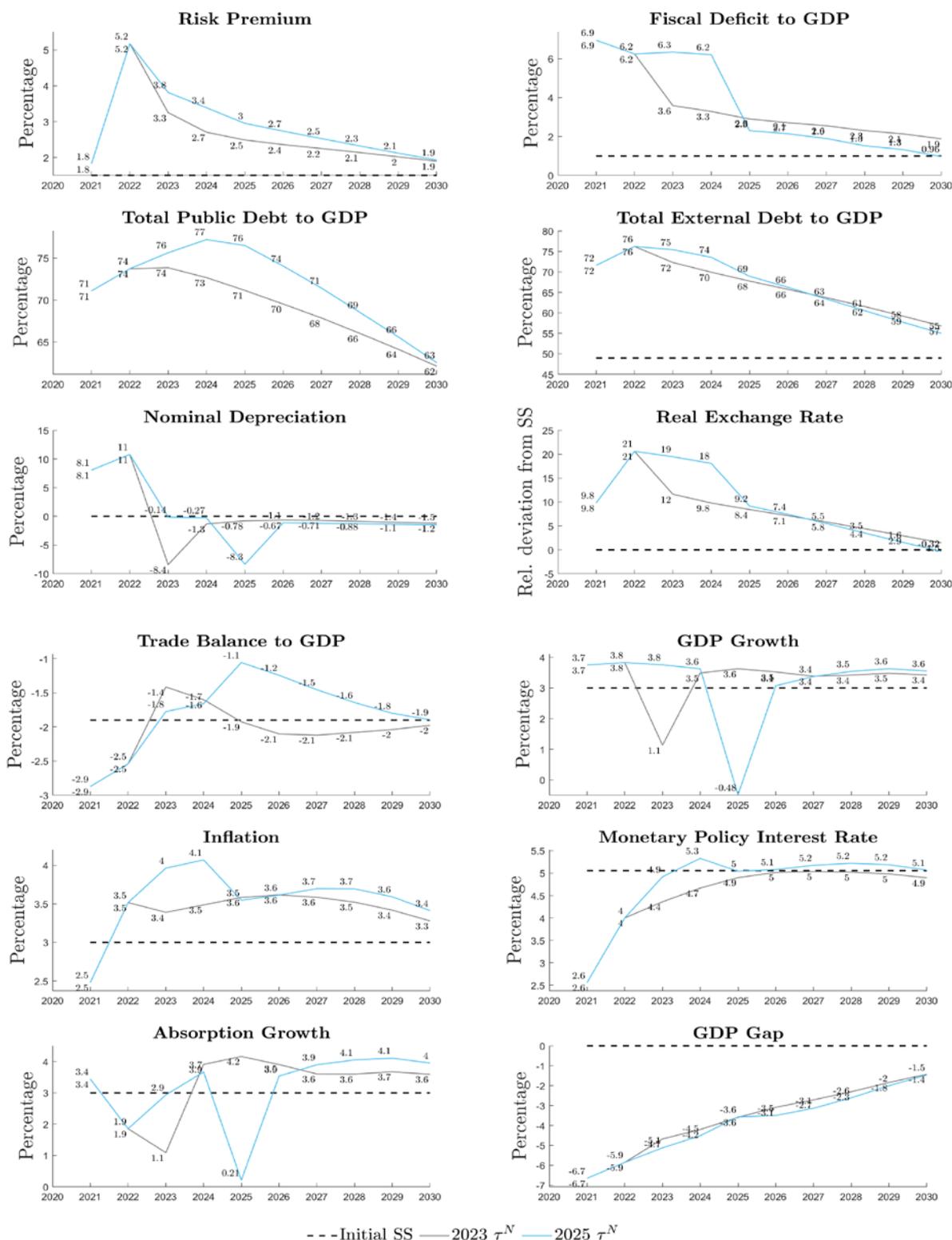
Graph 10



Source: Authors' calculations.

Effects of higher public debt and higher risk premia on monetary policy:  
effects of a delayed income tax reform

Graph 11



Source: Authors' calculations.

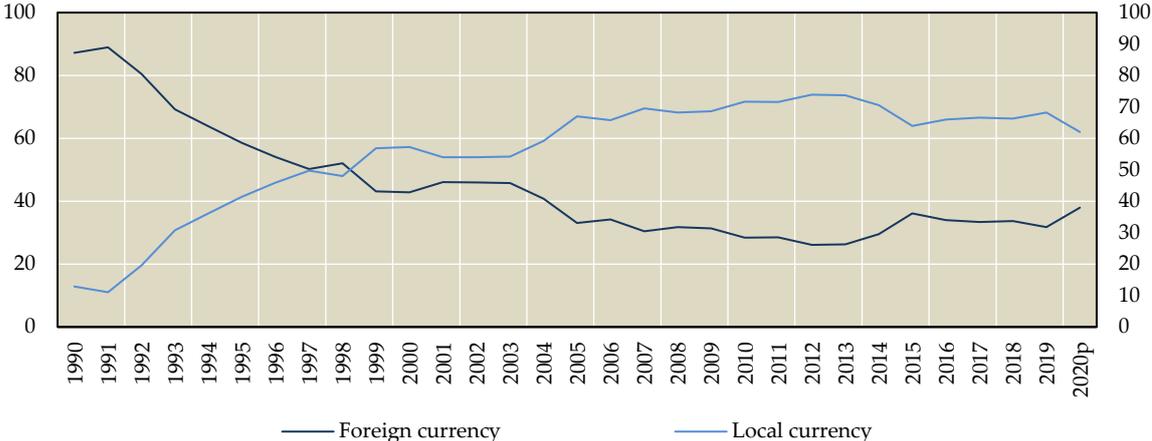
involving changes in distortionary taxes in order to allow for a direct impact on output and expenditures. More specifically, fiscal adjustment is carried out through successive raises in personal income taxes at two different points in time, in 2023 and 2025. As in the previous simulations, both exercises exhibit large increases in risk premia and currency depreciations in 2022, triggering the channels that constrain monetary policy that we have already mentioned. We force the economy to achieve debt levels of around 62% of GDP by 2030 as in the MTFF regardless of the timing of the reform.<sup>17</sup> Putting off the reform in 2023 increases risk premia as the level of public debt rises, but also requires of a larger fiscal adjustment in 2025 to be able to get to the same debt level by 2030. Graph 11 shows that delaying the reform further constrains monetary policy and worsens macroeconomic outcomes. The negative output gap widens, while the reform in 2025 is so large that it is enough to generate a recession on impact. However, because of the increase in risk premia and inflation, the policy interest rate is higher in this scenario until 2030, illustrating the limits that a delayed fiscal reform may impose on a countercyclical response of monetary policy.

Finally, we turn to the currency composition of public debt, another factor that may eventually contribute to constrain monetary policy in the face of increased fiscal deficits and debt. Before the Covid-19 shock, such composition was related to the structure of government revenue sources (oil, tradable and non-tradable sectors). With the need to produce an immediate response to the crisis, the government relied more on external financing and the new debt was tilted toward foreign currency-denominated debt. Graph 12 and Graph TA.7 in the appendix show the evolution over time of the currency composition of public debt. Before the pandemic, around 70% of debt was denominated in local currency. With the pandemic this percentage is projected to fall to around 60%. Even though the fraction of foreign currency remains

Colombian central government gross debt composition

% of total gross debt

Graph 12



Source: Ministry of Finance, Central Bank’s estimates.

<sup>17</sup> Since in the class of models we are using there is full credibility, debt is always sustainable, and agents are rational and forward-looking, delaying the reform tends to produce better short-run outcomes. This is unlikely in a stress scenario at debt levels that are higher than prudent limits. To get around this issue, in all simulations we force debt to get to the same level by 2030.

relatively low, and much lower than in the 1990s, a future policy challenge may be to restore the weight of COP-denominated debt to avoid currency mismatches and the associated fragility in the public sector. One way in which debt composition might matter for the conduct of monetary policy and its interaction with fiscal policy has been pointed out by Blanchard (2004). When the initial debt level is high and the proportion of foreign currency-denominated debt is high as well, an inflation targeting central bank that raises the real interest rate in response to an increase in inflation can produce a depreciation that further increases inflation due to the weakening of the government's financial position.

#### 4. Conclusions

The central bank policy response to the Covid-19 shock in Colombia was effective enough to keep the payment system operating, stabilise key financial markets under stress, maintain financial system liquidity and support credit supply, and provide a timely stimulus to economic activity. As part of this wider response, asset purchase programmes were particularly aimed at stabilising financial markets under stress and enhancing overall liquidity in the economy. However, they can hardly be characterised as "quantitative easing" measures, given their relatively small amount (with respect to central bank assets) and their one-time, non-systematic use.

Public debt greatly increased because of the Covid-19 shock, reaching values near estimates of "natural" limits. Further, an empirical exploration of the behaviour of sovereign risk premia (CDS) in EME points to non-linear, augmented responses to changes in fundamentals for high debt-to-GDP ratios and for values of the risk premia in the upper deciles of their distribution. The inclusion of such non-linear behaviour of risk premia in a fiscal DSGE macro model for Colombia suggests an increasing importance of constraints on monetary policy derived from shocks that significantly raise debt ratios. Interest rates are generally higher in these circumstances and it becomes more difficult for the central bank to support the economy in the face of a delayed fiscal adjustment. These constraints mostly arise from the impact that the shocks have on the exchange rate.

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## Technical Appendix

### Natural debt limit calculations

Following Mendoza and Oviedo (2009), we can calculate the natural debt limit  $b^*$  as follows:

$$b^* = \frac{y^{min} - g^{min}}{r - \gamma}$$

where

- $y^{min}$  : minimum level of revenues that the government can obtain in crisis times
- $g^{min}$  : minimum feasible level of public spending should a financing constraint bind
- $\gamma$  : long-run per-capita growth rate of the economy
- $r$  : real interest rate on public debt
- The interest rate on government debt depends on its debt level  $r(b_t) = r^{fr} e^{\omega b_t}$ ,  $r^{fr}$  is the international risk free rate and  $\omega$  is the sensitivity of the interest rate to changes in the level of public debt

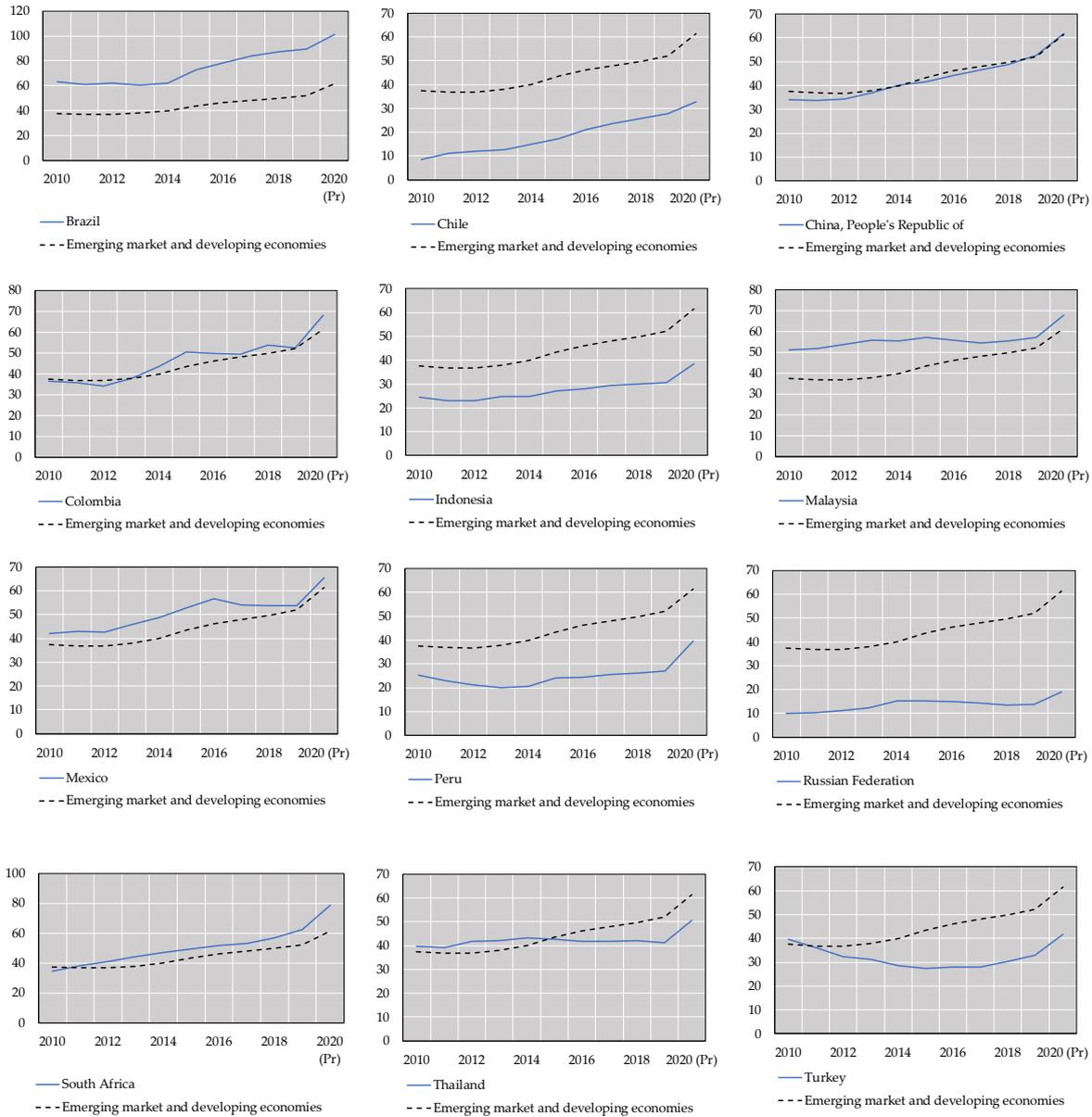
Assumptions for the natural debt limit calculation

- ( $y^{min}$ ): 14,4% of GDP PIB, which is 2 standard deviations below average revenues between 2010 and 2019 (15,6%).
- ( $g^{min}$ ): 13,6% of GDP, 85% of primary spending between 2010 and 2019, which amounts to having a degree of flexibility 2,4% of GDP.
- ( $\gamma$ ): 3,3%, which is consistent with recent estimates of the rate of population growth rate and a per-capita growth rate of 2,7%.
- ( $r^{fr}$ ): 0,66%, mean real interest rate on 3-month US Treasury Bills between 1947 and 2019.
- ( $\omega$ ): 0,05, consistent with an external interest rate for Colombia close to 400bp, which is the level reached by five-year CDS during the 2008 Global Financial Crisis.

## Selected variables included in the estimations

Gross Government Debt (% GDP) in Selected EME Countries

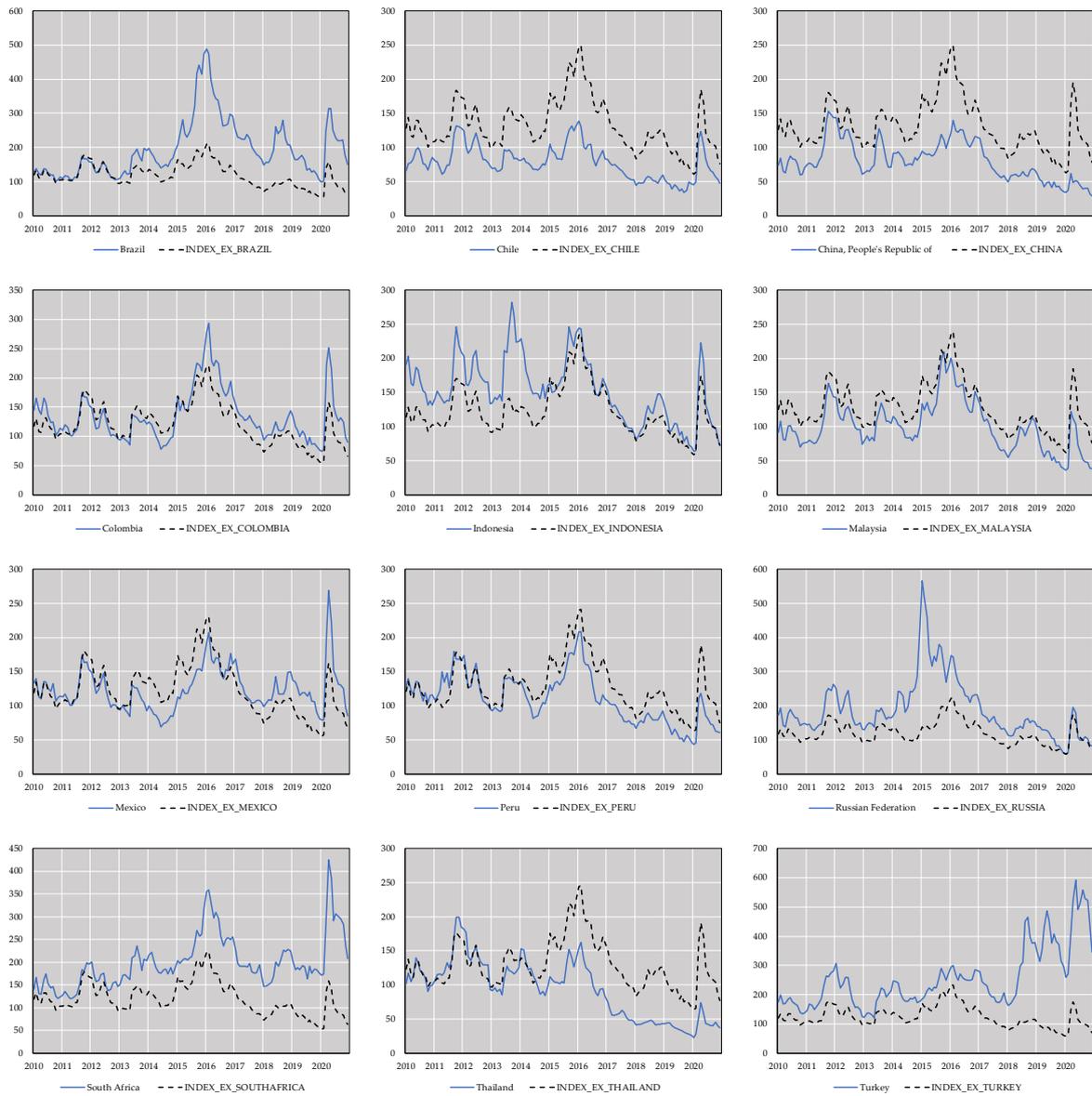
Graph TA.1



Source: IMF – WEO.

Five-year CDS and EME CDS Index (principal component)

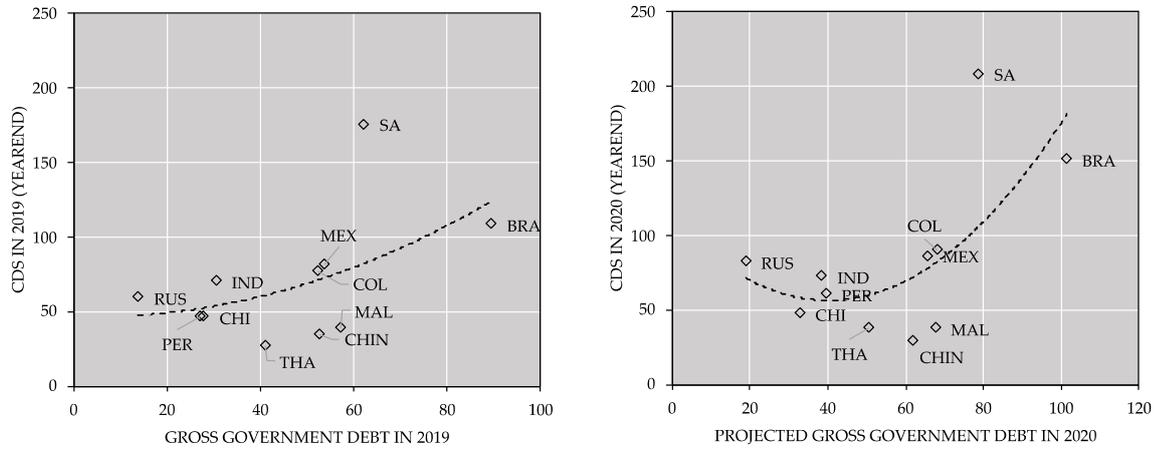
Graph TA.2



Source: Bloomberg and authors' calculations. Notes: The EM CDS index used in the estimations was constructed using the weights of the first principal component using n-i CDS series.

### Gross public debt vs five-year CDS

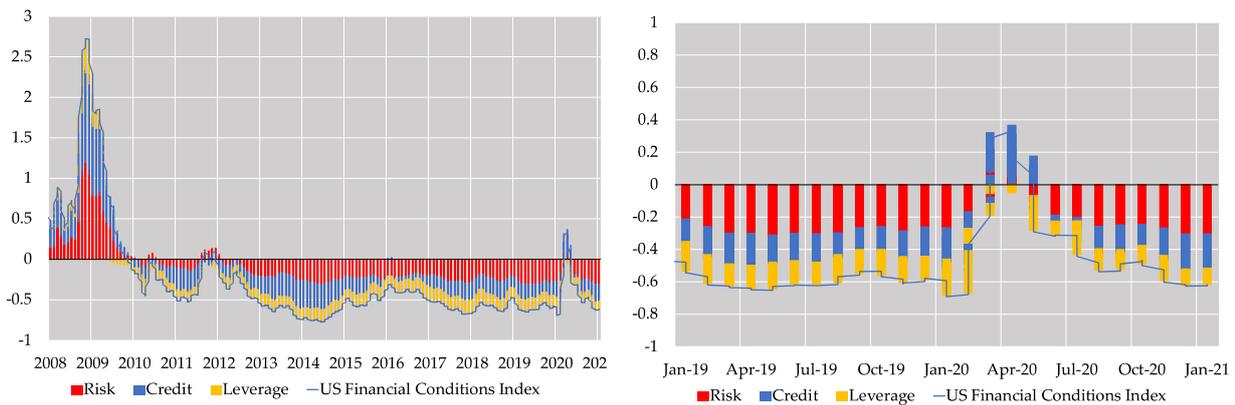
Graph TA.3



Source: IMF-WEO and authors' calculations.

### US Financial Conditions Index and its components

Graph TA.4



Source: Chicago Fed. Notes: Weekly data.

## Unit root tests for the series used in the selected models

### Unit Root Test Results

Table TA.1

		5-YEAR CDS (At Level)												
		BRA	CHI	CHIN	COL	IND	MAL	MEX	PER	RUS	SA	THA	TUR	PANEL
With Constant	t-Statistic	-2.63	-3.36	-2.36	-3.56	-3.28	-2.48	-4.81	-1.89	-2.11	-2.59	-1.17	-2.75	Breitung t-stat
	Prob.	0.09	0.01	0.15	0.01	0.02	0.12	0.00	0.34	0.24	0.10	0.68	0.07	(common unit root process)
		*	**		***	**		***			*		*	-6.28
With Constant & Trend	t-Statistic	-2.65	-4.00	-3.09	-3.55	-3.96	-2.70	-4.84	-3.00	-2.35	-2.85	-2.96	-4.08	Prob.
	Prob.	0.26	0.01	0.11	0.04	0.01	0.24	0.00	0.14	0.40	0.18	0.15	0.01	0.00
		**	**		**	**		***				***	***	***
Without Constant & Trend	t-Statistic	-1.04	-0.96	-1.14	-0.96	-1.32	-1.17	-0.84	-1.00	-0.91	-0.26	-0.92	-0.85	
	Prob.	0.27	0.30	0.23	0.30	0.17	0.22	0.35	0.28	0.32	0.59	0.32	0.35	
<b>Evidence</b>		I(0)	I(0)	I(0)	KPSS	I(0)	I(0)	I(0)	KPSS	I(0)	KPSS	I(0)	I(0)	KPSS
		Commodities Terms of Trade Cycle (At Level)												
		BRA	CHI	CHIN	COL	IND	MAL	MEX	PER	RUS	SA	THA	TUR	PANEL
With Constant	t-Statistic	-3.33	-3.42	-4.27	-4.41	-4.81	-2.36	-4.21	-4.06	-4.39	-5.84	-4.21	-4.20	Breitung t-stat
	Prob.	0.02	0.01	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00	(common unit root process)
		**	**	***	***	***		***	***	***	***	***	***	-1.38
With Constant & Trend	t-Statistic	-3.32	-3.41	-4.26	-4.39	-4.79	-2.36	-4.19	-4.05	-4.38	-5.81	-4.20	-4.18	Prob.
	Prob.	0.07	0.05	0.01	0.00	0.00	0.40	0.01	0.01	0.00	0.00	0.01	0.01	0.08
		*	*	***	***	***	n0	***	***	***	***	***	***	*
Without Constant & Trend	t-Statistic	-3.35	-3.44	-4.29	-4.43	-4.84	-2.36	-4.23	-4.08	-4.41	-5.86	-4.23	-4.21	
	Prob.	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		***	***	***	***	***	**	***	***	***	***	***	***	***
<b>Evidence</b>		I(0)	I(0)	I(0)	I(0)	I(0)	I(0)	I(0)	I(0)	I(0)	I(0)	I(0)	I(0)	
		EM CDS Index EX (At Level)												
		BRA	CHI	CHIN	COL	IND	MAL	MEX	PER	RUS	SA	THA	TUR	PANEL
With Constant	t-Statistic	-3.02	-3.10	-3.24	-2.93	-3.08	-2.46	-2.92	-3.26	-3.22	-2.96	-3.22	-3.11	Breitung t-stat
	Prob.	0.04	0.03	0.02	0.04	0.03	0.13	0.05	0.02	0.02	0.04	0.02	0.03	(common unit root process)
		**	**	**	**	**		**	**	**	**	**	**	-8.65
With Constant & Trend	t-Statistic	-3.41	-3.24	-3.35	-3.25	-3.19	-3.40	-3.18	-3.35	-3.39	-3.25	-3.30	-3.30	Prob.
	Prob.	0.05	0.08	0.06	0.08	0.09	0.06	0.09	0.06	0.06	0.08	0.07	0.07	0.00
		*	*	*	*	*	*	*	*	*	*	*	*	***
Without Constant & Trend	t-Statistic	-0.82	-0.78	-0.79	-0.78	-0.76	-0.78	-0.80	-0.77	-0.81	-0.83	-0.78	-0.79	
	Prob.	0.36	0.38	0.37	0.37	0.38	0.38	0.37	0.38	0.36	0.36	0.38	0.37	
<b>Evidence</b>		I(0)	I(0)	I(0)	I(0)	I(0)	I(0)	I(0)	I(0)	I(0)	I(0)	I(0)	I(0)	
		US Financial Conditions (At Level)												
With Constant	t-Statistic	-2.87												
	Prob.	0.05												
		*												
With Constant & Trend	t-Statistic	-3.05												
	Prob.	0.12												
Without Constant & Trend	t-Statistic	-0.32												
	Prob.	0.57												
<b>Evidence</b>		I(0)												

Notes: Individual ADF test results and common unit root tests. We also compute the KPSS test, and the result is shown for some CDS series (when the ADF signalled a unit root process in the series). Sample: January 2010 to October 2020..

Source: Authors' calculations.

## Linearity tests for the PSTR Model

### Smooth Threshold Linearity Tests

Table TA.2

Linearity Tests			
Null Hypothesis	F-statistic	d.f.	p-value
H04: $b_1=b_2=b_3=b_4=0$	14.75355	(5, 1538)	0
H03: $b_1=b_2=b_3=0$	14.75355	(5, 1538)	0
H02: $b_1=b_2=0$	14.75355	(5, 1538)	0
H01: $b_1=0$	18.42526	(4, 1539)	0

The H0i test uses the i-th order Taylor expansion ( $b_j=0$  for all  $j>i$ ).

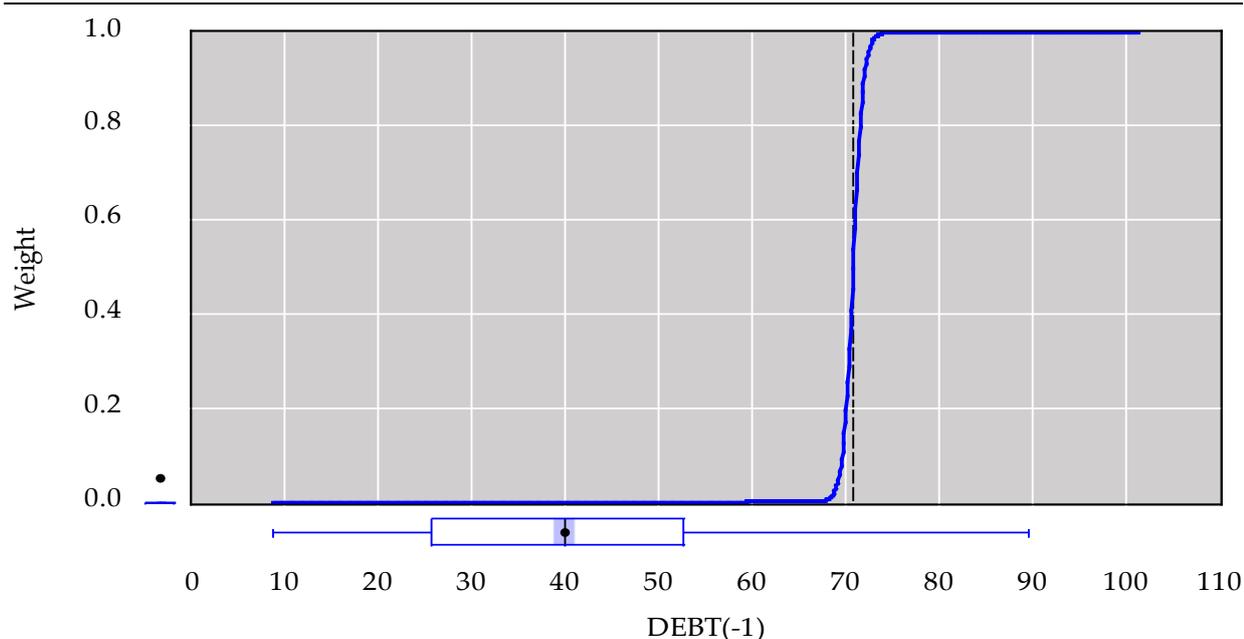
### Terasvirta Sequential Tests

Null Hypothesis	F-statistic	d.f.	p-value
H3: $b_3=0$	NA	(0, 1538)	NA
H2: $b_2=0 \mid b_3=0$	0.109382	(1, 1538)	0.7409
H1: $b_1=0 \mid b_2=b_3=0$	18.42526	(4, 1539)	0

Source: Authors' calculations. Notes: Test for non-linearity using the first lag of gross government debt as the threshold variable. Taylor series alternatives:  $b_0+b_1s+b_2s^2+b_3s^3+b_4s^4$ . All tests are based on the third-order Taylor expansion ( $b_4=0$ ). The Linear model is rejected at the 5% level using H03. Recommended model: first-order logistic.

### Function Graph – Threshold Weighting Function Logistic ( $c=70.8499$ )

Graph TA.5



Source: Authors' calculations.

## Panel Quantile Regression

Quantile Panel Regression (PSTR) for selected EM CDS – Median

Table TA.2

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Gross Government Debt to GDP	0.880	0.15	5.51	0.00
Commodities terms of trade cycle	-0.02	0.50	-4.75	0.00
US Financial conditions	30.82	5.01	6.15	0.00
EM CDS Index	0.79	0.031	25.05	0.00
Constant	279.72	51.94	5.38	0.00
Effects Specification - Cross-section fixed (dummy variables)				
Pseudo R-squared	0.49	Mean dependent var		143.38
Adjusted R-squared	0.48	S.D. dependent var		77.98
S.E. of regression	49.20	Objective		21531.84
Quantile dependent var	127.39	Restr. objective		42314.76
Sparsity	58.42	Quasi-LR statistic		2845.775
Prob(Quasi-LR stat)	0.00			
Variable	Coefficient	Std. Error	t-Statistic	Prob.
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Sparsity	58.42	Quasi-LR statistic		2845.775
Prob(Quasi-LR stat)	0.00			

Source: Authors' calculations. Notes: Bootstrap Standard Errors and Covariance.

## COFFEE DSGE Model: main features

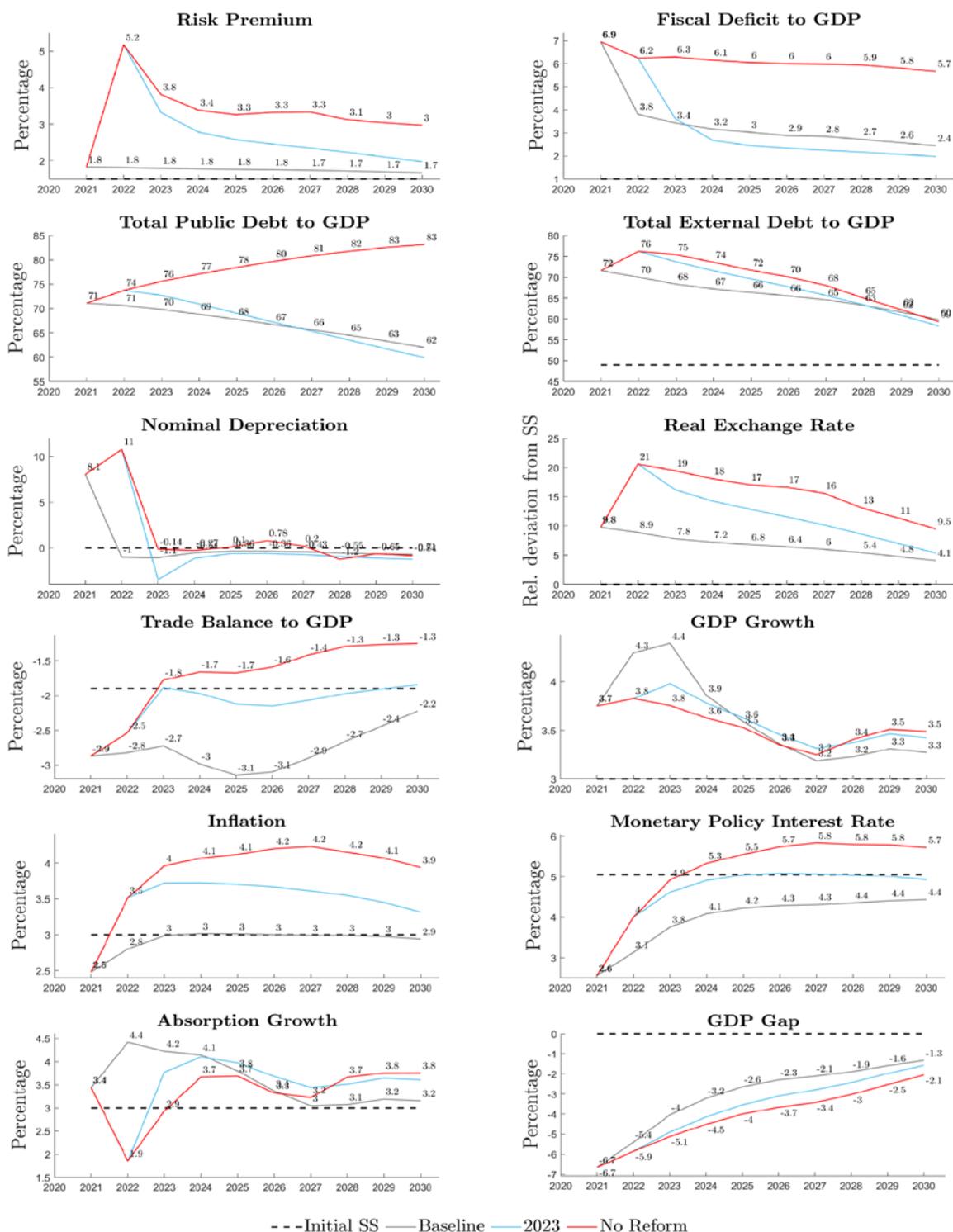
The Colombian Framework for Fiscal Economics and Evaluation –COFFEE– is a model for a small oil-exporting economy that comprises different types of household and firm and incorporates nominal price and wage rigidities (Gonzalez et al (2021)). The model is an overlapping generation DSGE that includes households with and without access to credit and saving instruments. Domestic firms produce a composite good that can be consumed internally, exported, or used by other domestic firms to produce investment goods. Final household consumption and investment goods baskets include both domestic and imported goods. Imports are also intermediate goods in domestic production.

Given the emphasis on analysis of fiscal policy, COFFEE has a comprehensive module that characterises Colombia's fiscal policy. The government receives revenues and dividends from oil production, lump-sum taxes and taxes on consumption goods (domestic and imported), labour income, household wealth, and the profits of firms and capital producers. Government revenue is used for spending on consumption, interest payments, transfers to households, and public capital formation. Fiscal deficits are financed with both domestic and foreign debt. A fiscal rule set for the deficit considers the output and oil price gaps. The central bank sets the nominal interest rate based on a Taylor rule.

## Effects of higher public debt and higher risk premia on monetary policy

Effect of higher public debt and risk premia in selected variables

Graph TA6

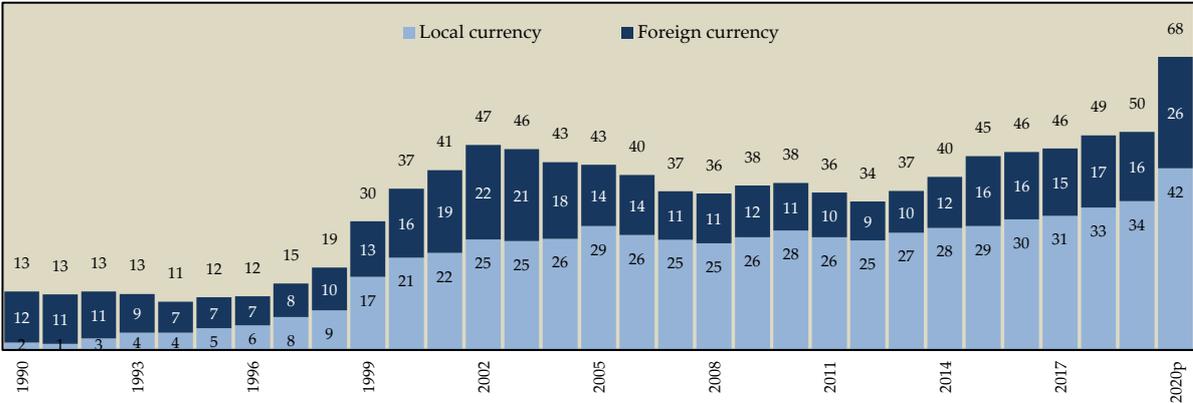


Source: Authors' calculations.

# Colombian central government debt by currency

Colombian central government gross debt by currency (% of GDP)

Graph TA.7

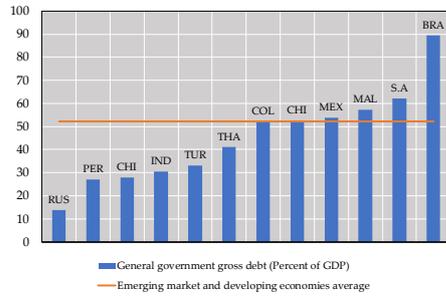


Source: Ministry of Finance, Central Bank's estimates.

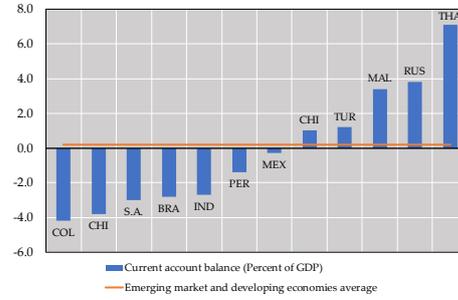
## Annex Graphs

A.1

General government debt in selected EME economies



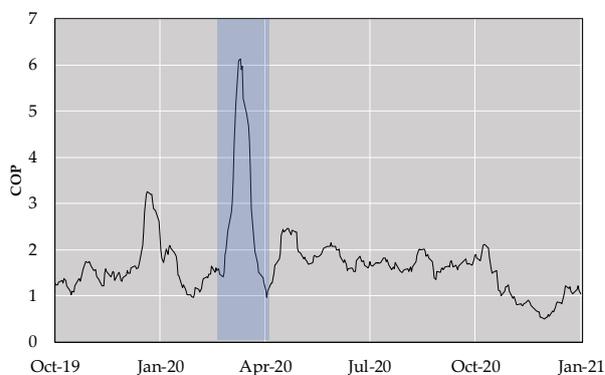
Current account balance in selected EME economies



Source: IMF and authors' calculations. Includes information for Brazil, Chile, China, Colombia, Indonesia, Malaysia, Mexico, Peru, Russia, South Africa, Thailand and Turkey,

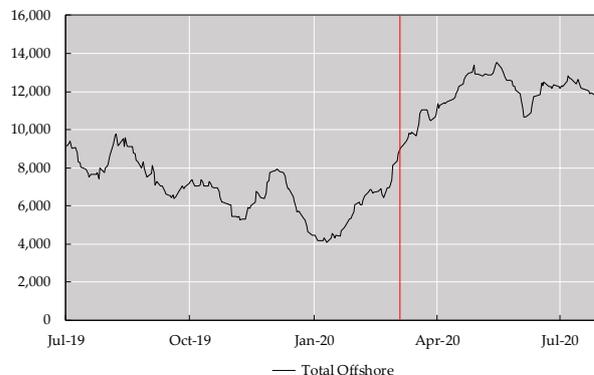
### Bid-ask spread USD-COP spot market

10-day moving average December 2019 = 100



### Offshore net forward long positions

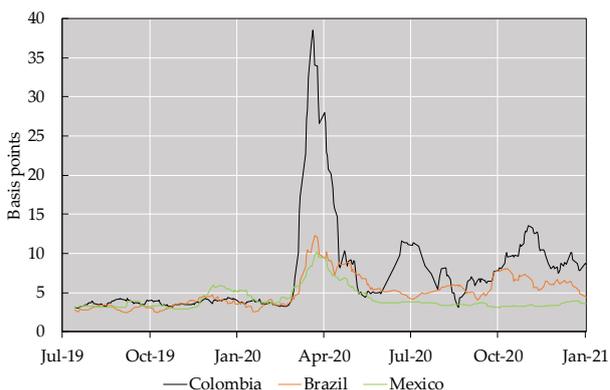
USD millions



Note: net claims of offshore agents on domestic FX intermediaries (FXI) and pension funds.

### Bid-ask spread 10-year local currency bonds\*

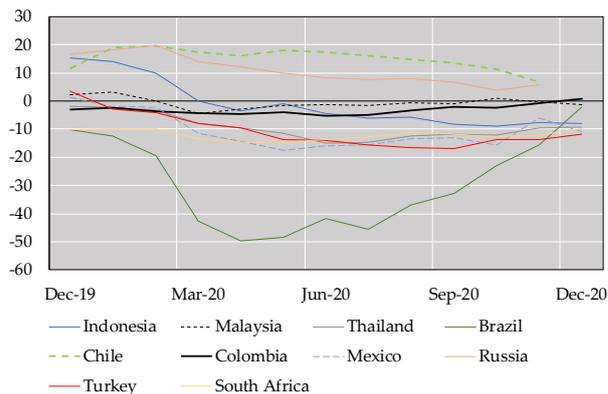
10-day moving average



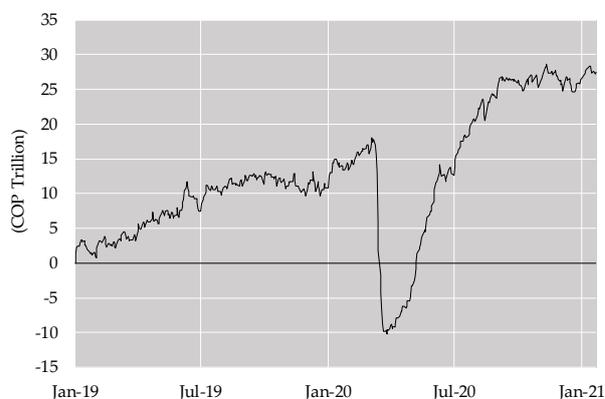
\* Bond References: Colombia 2028, Brazil 2029 and Mexico 2029.

### Capital inflows to EME economies

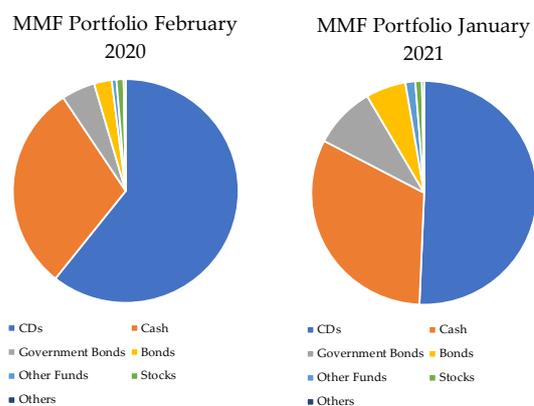
12-month cumulative net portfolio inflows (USD billions)



### Money market funds (MMF) cumulative net inflows



### Money market funds (MMF) portfolio distribution



Source: Bloomberg, SET-FX, Bank of the Republic, Financial Superintendency, IIF and authors' calculations

# Monetary and fiscal policy interactions in the wake of the pandemic: the case of the Czech Republic

Marek Mora, Kamil Galuščák<sup>1</sup>

## Abstract

In this note we describe the impact of the Covid-19 pandemic on the Czech economy and the measures adopted by the Czech National Bank (CNB) and the Czech government in the areas of monetary, macroprudential, microprudential and fiscal policies. We review the formal rules of interaction between government and central bank policies which are important for successful macroeconomic stabilisation and the country's experience before and during the Covid-19 crisis. We then summarise the existing evidence on de jure and de facto CNB independence which are important elements of the interactions between monetary and fiscal policies. We provide a qualitative update of the indicators of central bank independence up to 2020 by assessing the recent changes to the Act on the CNB in the case of de jure independence, and by using the Binder methodology on political pressure on central banks in the case of de facto independence. Finally, we discuss the potential constraints on monetary policy emanating from the sustainability of public finance.

Keywords: Monetary policy, fiscal policy, central bank independence, Covid-19 pandemic.

JEL classification codes: E52, E58, E61, E62.

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We thank Róbert Ambriško for the calculations used in Figure 5.

## 1. Introduction

Like the majority of countries, the Czech Republic was affected by the Covid-19 pandemic. The first positive cases were recorded in March 2020. In response to the outbreak of the disease, the government declared a state of emergency on 12 March and introduced containment measures. During the first lockdown in spring 2020, the number of daily cases per capita was very low by international comparisons, yet the measures introduced had significant negative impacts on economic activity. Since the escalation of the second wave of the pandemic in September 2020, the Czech Republic has ranked globally among the countries which have been most negatively hit by the pandemic.

The Czech government and the Czech National Bank (CNB) have responded to the pandemic by providing unparalleled stimulus and support to the corporate, household and financial sectors. In Section 2, we describe the impact of the pandemic on the Czech economy, contrasting its effects with the macroeconomic indicators and the public finance stance in the period preceding the pandemic. We summarise the measures introduced by the CNB and the government in the areas of monetary, macroprudential, microprudential and fiscal policies. In Section 3, we outline the Czech experience of interactions between government and central bank policies which are crucial to successful macroeconomic stabilisation. In Section 4, we describe the evidence on de jure and de facto independence of the CNB and assess the recent changes which could potentially affect the CNB's independence and hence the institutional arrangement of interactions between the CNB and the Czech government. In the final part we discuss the potential constraints on monetary policy stemming from the sustainability of public finance and the likely outlook for interactions between CNB and government policies.

## 2. Before and during the pandemic: the initial situation and the policy measures adopted

Until 2019, the Czech Republic had experienced robust economic growth, while the unemployment rate was at levels which were among the lowest in the EU. The inflation rate was close to the CNB's 2% inflation target and accelerated to 2.8% on average in 2019. Market interest rates had been on the rise since 2017, reaching 2.1% in 2019. The exchange rate appreciated from 2017, reaching CZK 25.7 to the euro in 2019 (Table 1).

Since the onset of the pandemic in March 2020, the negative impact on the economy has been unprecedented. GDP growth saw a double-digit decline in the second quarter, followed by a slight rebound since Q3 2020 as containment measures were gradually lifted. The unemployment rate remained at astonishingly low levels throughout 2020, mainly due to government measures aimed at maintaining employment. The inflation rate remained above the upper bound of the 2% target for most of the year, reflecting a combination of demand and supply factors.

Key macroeconomic indicators								Table 1
	2017	2018	2019	2020	Q1 2020	Q2 2020	Q3 2020	Q4 2020
GDP growth (y-o-y, %)	5.4	3.2	2.2	-5.6	-1.8	-10.8	-5.1	-4.8
Unemployment rate (%)	2.9	2.3	2.0	2.6	2.0	2.5	2.8	3.0
Inflation rate (%)	2.5	2.1	2.8	3.2	3.6	3.1	3.3	2.6
3M PRIBOR (%)	0.4	1.3	2.1	0.9	2.1	0.6	0.3	0.4
Exchange rate (CZK/EUR)	26.3	25.6	25.7	26.5	25.6	27.1	26.5	26.7

PRIBOR = Prague Inter Bank Offered Rate

Average values except for GDP growth.

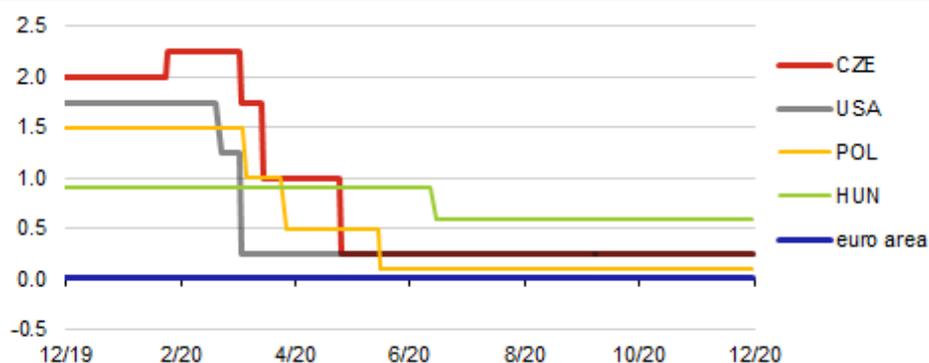
Source: Czech National Bank Monetary Policy Report, Spring 2021.

Before the outbreak of the pandemic, the Czech authorities had ample room for manoeuvre in the event of unfavourable economic conditions.<sup>2</sup> The two-week repo interest rate, the CNB's main monetary policy instrument, stood at 2.25% in February 2020, well above the levels observed in other countries (Graph 1). The fiscal position in terms of government debt to GDP and the budget balance was at a favourable level in 2019 in comparison to many EU countries (Graph 2, left-hand panel). In 2019, the general government balance was slightly positive at 0.3% of GDP, while the debt to GDP ratio was 30.3%.

## Monetary policy interest rates

In %

Graph 1



CZE = Czech Republic; HUN = Hungary; POL = Republic of Poland; USA = the United States.

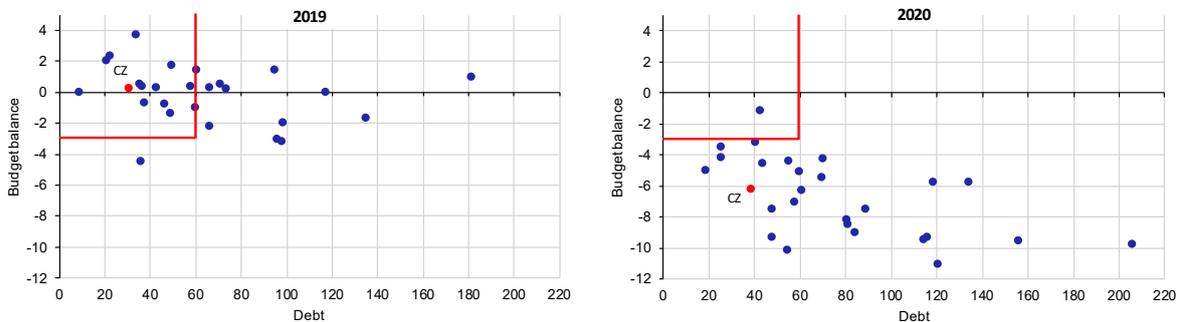
Source: Czech National Bank (2020)

<sup>2</sup> Rusnok (2018) points to the importance of the room for public finance manoeuvring in the context of the post-GFC experience in advanced economies.

## Fiscal positions in the EU-27

In % of GDP

Graph 2



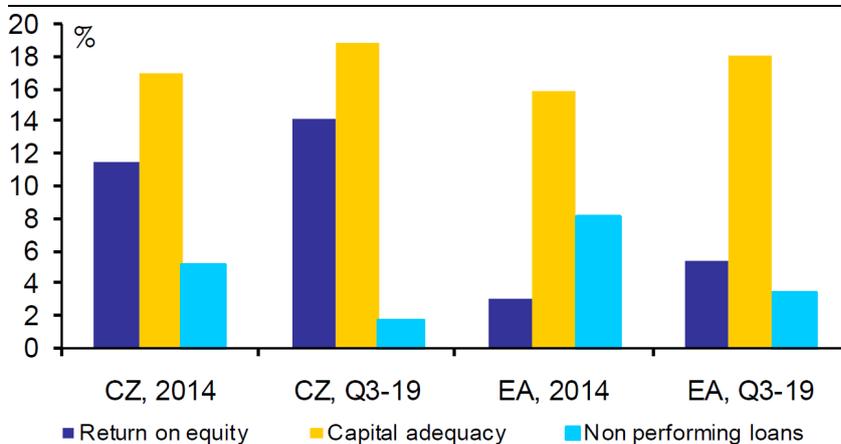
CZ = Czech Republic.

Source: Eurostat.

The capitalisation of Czech banks was robust before the Covid-19 pandemic and has remained so during the pandemic owing to capital requirements and voluntary capital surpluses, which have enabled the banking sector to cope with adverse economic developments. In terms of return on equity, capital adequacy and non-performing loans, the Czech banking sector was performing better before the pandemic than the banking sector in the euro area (Graph 3).

## Selected banking sector soundness indicators

Graph 3



CZ = Czech Republic; EA = euro area. Q3 2019 return on equity is calculated over the previous four quarters.

Source: European Commission (2020).

Both the CNB and the Czech government responded to the pandemic by applying measures to mitigate its negative effects on the economy. The purpose of the measures was to help Czech financial institutions and the corporate and household sectors to withstand the unfavourable economic conditions better.

The CNB applied a combination of monetary, macroprudential and microprudential tools. The CNB lowered the key interest rates twice in March and once in May, by 200 basis points in total, with the two-week repo rate standing at 0.25% since May 2020 (Graph 1). These interest rate cuts were immediately reflected

in market interest rates and, with some delay, also in interest rates on loans and deposits. The exchange rate depreciated markedly to 27.1 CZK/EUR in the second quarter of 2020 (Table 1), easing the monetary conditions further, so that the exchange rate worked as a natural stabiliser.

Other CNB measures were implemented to support the liquidity of the Czech financial market and the capital position of Czech banks. Although the Czech interbank market has exhibited a sizeable aggregate surplus, and no liquidity shortage is observed, the rules for monetary operations have been modified for preventive reasons. Since 18 March 2020, the frequency of the liquidity-providing repo operations has been increased from once per week to three times per week at a fixed rate equal to the two-week repo rate. In addition to these amendments, liquidity-providing operations with three-month maturities were added to the CNB's liquidity management tools in May 2020. In March 2020, the CNB initiated an amendment to the Act on the CNB. After it came into effect in April 2020, it allowed the CNB to introduce further preventive measures by extending the scope of open market operations. Since 18 May, non-bank financial institutions (insurance, pension management and management companies) have been allowed to obtain short-term liquidity from the CNB. The collateral requirements for obtaining such credit are the same as the standard collateral of banks which take part in monetary operations, ie mainly Czech government bonds. The CNB also broadened the range of eligible collateral accepted from credit institutions (banks, foreign bank branches and credit unions) to include mortgage bonds. As a further measure to preserve liquidity on the market and strengthen the capital position of individual institutions, the CNB called on banks, insurance companies and pension management companies to refrain from making dividend payouts or taking steps that might jeopardise the resilience of their institutions.

The Czech National Bank also introduced a number of macroprudential measures. The CNB lowered the countercyclical capital buffer (CCyB) as economic activity started to decline significantly which might have an adverse impact on the quality of loan portfolios. In March 2020, the CNB cancelled its decision from the previous year to raise the CCyB rate to 2% and left it at 1.75%. Later, the CNB lowered the rate to 1% with effect from 1 April and to 0.5% from 1 July 2020. The CNB also modified the lending rules on the mortgage market. As the CNB expected that the banks themselves would be rather cautious regarding the provision of new mortgage loans, the CNB relaxed the limits on the credit ratios used by banks to assess applications for new mortgage loans in several steps (Table 2). As of 1 April 2020, the loan-to-value (LTV) ratio was increased from 80% to 90%, the debt-service-to-income (DSTI) ratio was raised from 45% to 50% and the debt-to-income (DTI) ratio was abolished. As of 8 July 2020, the LTV ratio remained at 90%, while the DSTI limit was abolished. The LTV ratio reflects the persisting overvaluation of housing prices.

## Recommended mortgage lending ratios

Table 2

	Before 1 April 2020	From 1 April to 7 July 2020	From 8 July 2020
LTV (loan-to-value)	80%	90%	90%
DTI (debt-to-income)	Eightfold	No limit	No limit
DSTI (debt-service-to-income)	45%	50%	No limit

In order to protect firms, the self-employed and households against early insolvencies, the CNB in cooperation with the Ministry of Finance, initiated a loan moratorium. The law, which was passed in April 2020, allowed borrowers who had suffered a negative economic impact from the pandemic to withhold repaying their debt obligations for three to six months. The moratorium allowed repayments to be postponed quickly and simply, while also making it unnecessary for banks to increase their provisions due to such postponement.

Crucial measures were introduced by the Czech government to mitigate the economic and social impact of the recession caused by the Covid-19 pandemic, mainly through fiscal policy. On the revenue side of public budgets, the measures included, inter alia, waiving the advance payments of health insurance and social security contributions, a compensation bonus for the self-employed and a reduction in the VAT rate from 15% to 10% for selected services. Policies on the expenditure side encompassed, for example, compensation of wage costs, an increase and extension in care benefits, bonuses in the healthcare sector and a one-off contribution to pensions. The government introduced several programmes for firms in selected sectors which were eligible for subsidies and loan guarantees. In terms of labour market supports, a programme was launched to partially reimburse employers for payroll costs (antivirus programme). This was made available to employers who were in economic difficulty, had to stop operating or to those who had to quarantine their employees. The programme helped to keep the unemployment rate low throughout 2020 (Table 1). Table 3 shows the CNB's calculation of fiscal discretion expressed as a percentage of GDP.

## Discretionary fiscal measures

As % of GDP

Table 3

	2020	2021	2022
Cancelling of social and health contributions for self-employed	0.25	-	-
Increase in a care benefit	0.22	0.05	-
Wage subsidies for companies (antivirus programme)	0.47	0.40	-
One-off benefit for persons that are self-employed, partners of small ltd., or employed in short-term contracts	0.43	0.53	-
Increase in healthcare and security corps expenditure	0.54	0.54	-
Postponement of electronic records of sales	0.06	0.08	-
Loss carry back	0.00	0.22	0.21
Covid-19 - rent	0.04	-	-
Abolition of real estate transfer tax	0.24	-	-
Cancelling of social and health contributions for employers	0.24	-	-
VAT reduction on accommodation, cultural and sports services	0.02	0.04	-
Covid-19 - spa/accommodation/culture/sport	0.06	0.03	-
Other measures, 1st wave	0.06	-	-
Targeted support for areas in decline, 2nd wave (culture, sports, rent etc)	0.12	0.50	-
One-off increase of pension	0.27	-	-
Tax package II*	-	2.12	0.37
Increase in a child benefit and in a sickness benefit during quarantine	-	0.06	0.03
VAT exemption for vaccines, tests and respirators	-	0.04	0.01
<b>Total measures</b>	<b>3.03</b>	<b>4.62</b>	<b>0.62</b>

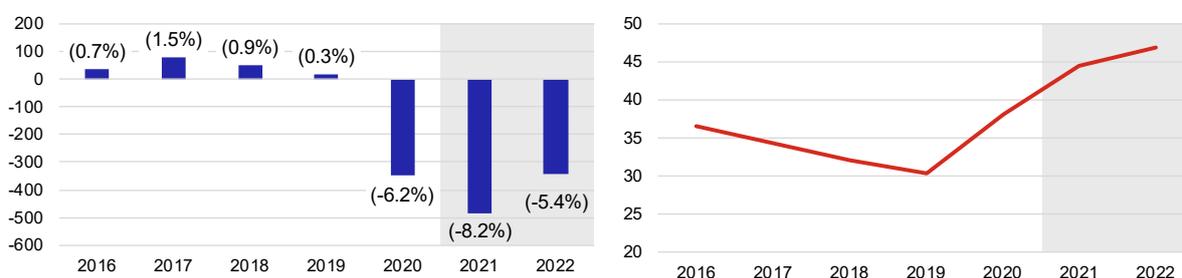
\*2021 tax reform: abolition of the super-gross wage, increase in tax deductible items for taxpayers, abolition of the threshold on tax deductible items for children, changes in amortisation of assets, introduction of a flat tax rate on meal tickets, changes in excise duties rates etc.

Source: CNB.

Discretionary crisis policies adopted by the government together with automatic stabilisers resulted in a significant deterioration of public finances (Graph 4). In 2020, the general government balance reached a deficit of 6.2% of GDP and the debt to GDP ratio climbed to 38.1%. Nevertheless, the fiscal position of the Czech Republic remained at a relatively favourable level in 2020 compared to most other EU countries (Graph 2, right-hand panel). According to the CNB forecast, the general government deficit will also remain relatively high in 2021 and 2022, which will result in a substantial increase in general government debt (Graph 4, right-hand panel).

General government budget balance (on the left in CZK billion; percentage of GDP in parentheses) and government debt (on the right as % of GDP)

Graph 4



Source: CNB Monetary Policy Report, Spring 2021.

The government and the CNB reacted swiftly to ease the negative impacts of the Covid-19 pandemic on the Czech economy. Fiscal measures are more suitable for dealing with such a crisis, as they are targeted at vulnerable groups and, unlike monetary policy, their impact is immediate. The CNB's measures were complementary, providing the necessary easing of monetary policy and the appropriate financial stability measures. Thanks to the available monetary policy space, the CNB was able to use monetary policy interest rates without the need for the deployment of unconventional monetary policy tools. The government had ample room for expansionary policies owing to the relatively low level of public debt before the pandemic.

### 3. Monetary and fiscal policy interactions

#### Formal rules and past experience

The framework of interactions between the CNB and the government is set by law. The CNB is defined by the Czech Constitution and the Act on the Czech National Bank as a strictly independent body. In line with the provisions of the EU Treaty and the Statute on the European System of Central Banks (ESCB) and the European Central Bank (ECB), the CNB is not allowed, or even expected to be involved in, any formal coordination of policies with the Czech fiscal authority, and it is forbidden for the CNB to take instructions from the government. This does not preclude interactions. The CNB, as one of the most transparent central banks (see Dincer and Eichengreen (2014)), uses a wide range of communication channels to present its monetary policy decisions to various stakeholders, including fiscal authorities. In this way, the CNB contributes to a stable economic environment, which in turn helps to shape expectations and prices, including interest rates.

The formal procedures for setting the interactions between the CNB and the government are defined in the Act on the CNB. The CNB and the government inform each other about the principles and measures concerning monetary, macroprudential and economic policy. The CNB has observer status in several government expert groups and committees. These platforms enable the sharing and exchange of views on economic issues at different working levels. The Minister of Finance, or an authorised member of the government, may attend CNB Board meetings. He or she

is allowed to submit proposals for discussion and has an advisory vote. However, participation in the CNB's Board meetings is not an established practice and the right to attend meetings has been used very rarely in the past (the last such case was in 2017). On the other hand, the CNB is involved in drafting relevant economic legislation submitted by the government, and the governor or deputy governor can attend government meetings. This happens only rarely. The purpose of their participation is to be involved in discussions about topics related to the CNB's activities. The CNB also submits quarterly reports on monetary developments to the Chamber of Deputies of Parliament. On these occasions, the Governor of the CNB attends the plenary sessions.

Another rule specified in the Act on the CNB sets the conditions under which the CNB's profit is transferred to the state budget. The CNB is required to use its profit to finance past losses or to deposit it in its reserve fund, which is expected to cover possible future losses. Only after the reserve fund is full, can the remaining profit be transferred to the state budget. This has happened only once – in 1993. Due to sizeable foreign exchange reserves and the appreciating currency, the central bank has recorded persistent losses in most of the period since the early 1990s, so that profit transfers to the state budget are not common practice in the Czech Republic and the state budget does not rely on the CNB's profits. However, the economic developments in the last decade and CNB's policies have had a bearing on the probability of CNB profit transfers to the state budget. In particular, the amount of foreign currency reserves accumulated significantly in the period 2013–2017 (it is currently at around €135 billion or two thirds of GDP) as a consequence of the CNB's monetary policy at that time. As long as economic convergence and the related real appreciation of the domestic currency are expected, any transfers of the CNB's profit to the state budget will be postponed further into the future.

The CNB's independence does not preclude the bank from analysing the steps taken by the government. The CNB analyses fiscal policy and uses its own projections of fiscal policy in its macroeconomic forecasts (see, for example, Tomšík (2012) for a brief overview). Fiscal policy is incorporated into the forecast as an exogenous factor. In the forecasting process, CNB staff assess discretionary fiscal policy measures and their impact on GDP and its expenditure components. Proposed fiscal measures, which have not yet been approved by the parliament, are not part of the baseline forecast scenario. They are instead taken into consideration when discussing risks to the forecast. The CNB calculates general government revenue, expenditure and balance, as well as general government debt and debt service costs. The CNB's fiscal forecasts are thus fully consistent with the CNB's macroeconomic projections.

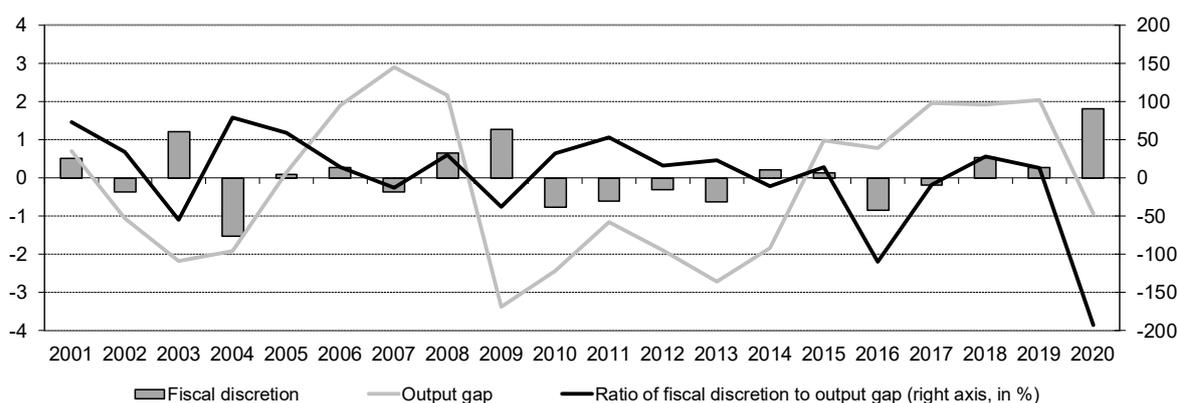
The Czech fiscal authority is constrained by fiscal rules which are defined in the Act on Budgetary Responsibility Rules. The law defines a debt brake which is activated when government debt exceeds 55% of GDP. In such a case, the government is obliged to submit the state budget and the budgets of state funds which ensure the long-term sustainability of public finances. In addition, the proposed budgets of health insurance funds must be balanced. Another rule stipulates a structural government deficit ceiling of 1% of GDP. In view of the ongoing coronavirus pandemic, the general escape clause of the Stability and Growth Pact was activated at the EU level for both 2020 and 2021. This has allowed the Czech government to adopt a further loosening of the budgetary rules. The last approved amendment to the rules of budgetary responsibility from December 2020 essentially creates de facto unlimited space for the fiscal stimulation of the Czech economy in 2021. From 2022, the annual consolidation of the structural government budget balance in the amount

of 0.5 percentage points of GDP will be required, with the year 2021 being the starting point for determining the level from which the consolidation of public finances will take place in the following years.

Although the CNB and the government responded in tandem in 2020 so that their policies counteracted the unfavourable economic conditions caused by the pandemic, operating in the same countercyclical direction cannot be taken for granted. Automatic fiscal stabilisers mitigate the impact of the business cycle through public finance revenues and expenditure, but the available evidence suggests that the discretionary fiscal measures adopted by the government were only rarely countercyclical in the years before the Covid-19 pandemic. Updating the estimates in Ambriško et al (2012), Graph 5 shows that fiscal discretion was used frequently by the government and was large in several years between 2001 and 2020. However, the ratio of fiscal discretion to the output gap was positive in most of the period, indicating the discretionary fiscal policy measures were more procyclical than countercyclical. This fiscal policy sometimes made it complicated for the CNB to fulfil its price stability mandate.<sup>3</sup>

Impact of fiscal discretion on the GDP and the output gap (as % of GDP)

Graph 5



Fiscal discretion is the average value of several measures based on Ambriško et al (2012). Positive values indicate fiscal expansion; negative values signal fiscal restriction. Output gap is the yearly average output gap estimated using the production function and the Kalman filter. The ratio of fiscal discretion to output gap indicates procyclical (countercyclical) fiscal discretion when it is above (below) the zero line.

Source: Czech National Bank's calculations based on Ambriško et al (2012).

## Experience in the Covid crisis

The formal cooperation processes and procedures between the CNB and the government have not changed since the onset of the Covid-19 pandemic, but the interaction between the two has intensified. On 11 March 2020, the CNB Bank Board discussed the possible economic scenarios facing the country, due to the Covid-19 crisis, with the prime minister and government representatives. After the meeting, the Bank Board declared its willingness and readiness, together with the government, to take all the necessary steps and measures in its area of competence and to use all the measures in its toolkit to fulfil its price stability and financial stability mandate. The CNB Governor took part in several government meetings, mainly related to new

<sup>3</sup> Rusnok (2018) points to the procyclical effects of Czech fiscal policy from 2010 to 2013 which transferred the burden of adjustment to monetary policy.

legislation which affected the CNB (the amendment to the Act on the CNB, the Act on the Deferment of Loan Repayment). However, no formal interactions between the CNB and the government contradict the Act on the CNB.

After the CNB lowered its key two-week repo interest rate to 0.25% in May 2020 and interest rates approached zero, the CNB started internally discussing its preparedness to use unconventional monetary policy should there be a need for a further easing of monetary conditions. The CNB has already used the exchange rate as an additional monetary policy tool to ease monetary policy conditions in order to avoid the risk of deflation and a protracted economic recession. In November 2013, the CNB committed to preventing the exchange rate from appreciating below 27 CZK/EUR. The exchange rate commitment had been in place until 2017 when the conditions for sustainable fulfilment of the 2% inflation target on the monetary policy horizon had been met. Hence, the CNB is ready, in principle, to use the exchange rate as an unconventional monetary tool for monetary policy easing.

The CNB has not ruled out other unconventional monetary policy options, including negative interest rates, yield curve control and quantitative easing. On the other hand, Board members spoke in their public statements against the use of “helicopter money”, as it was mostly a theoretical concept and was in fact in the remit of government policy. Some doubts were also raised about funding for lending which would not have been efficient given the structural surplus on the interbank liquidity market.

The amendment to the Act on the CNB, which came into effect in April 2020, extends temporarily (until the end of 2021) the range of CNB instruments and counterparties for open market operations, as well as their maturity to beyond 12 months. The amendment was approved to allow the CNB to tackle the Covid-19 crisis more effectively. However, the CNB has been striving since 2016 for a permanent extension of its open market operations toolkit, which would enhance the CNB’s operational independence to the level necessary for fulfilling its legal mandate of price and financial stability. During the parliamentary discussions on extending the range of CNB instruments, some doubts were raised about their potential misuse by the CNB, and the violation of market neutrality, when buying corporate bonds. The proposed comprehensive amendment also allows the CNB to apply legally binding lending rules to the mortgage market which have so far been used by the CNB in the form of recommendations (see Table 2). This amendment to the Act on the CNB has already been approved and took effect in August 2021.

#### 4. Measurement of the CNB’s independence: de jure and de facto views

So far we have discussed monetary and fiscal policy interactions from the perspective of recent lessons learned. The relationship between the monetary and fiscal authority is driven by the institutional arrangement which may be expressed in terms of de jure (legal) and de facto (actual) central bank independence.

Mas et al (2020) show that traditional indices of central bank independence do not indicate a deterioration in de jure independence of central banks after the global financial crisis. To assess whether actual central bank independence has changed more recently, they collected information from news reports and other official sources

related to pressure exerted by governments and changes in central bank practices in 13 central banks in 2018 and 2019. Their results suggest that actual independence may have deteriorated in almost half of the sample. In a similar vein, Binder (2021) constructed a dataset for political pressure put on 118 central banks in the period between 2010 and 2018. She finds that about 10% of central banks allegedly came under political pressure in an average year, usually in the direction of looser monetary policy.

Table 4 shows central bank independence indices for the Czech Republic reported in the literature. The results indicate no change in de jure central bank independence from the global financial crisis until 2014. To assess the potential changes in these indices since 2015, we investigate updates of the Act on the CNB which would have a bearing on the CNB's independence. As there have been no amendments which would affect the factors used in the calculation of the indices in Table 4, we conclude that the CNB's de jure independence did not change until 2020.

Central bank independence indices for the Czech Republic

Table 4

Source	Index	2002	2010	2012	2014
Dincer and Eichengreen (2014)	LVAW		0.66		
Dincer and Eichengreen (2014)	CBIW	0.64	0.64		
Bodea and Hicks (2015)	LVAW	0.73	0.73	0.73	0.73
Garriga (2016)	LVAW	0.83	0.83	0.83	

LVAW is the Legal Variables Aggregated Weighted index calculated using the methodology proposed in Cukierman et al (1992). The CBIW index augments the LVAW index by adding other aspects of central bank independence.

As for the evidence on de facto central bank independence, Binder (2021) reports that between 2010 and 2018, the CNB came under political pressure to tighten monetary policy three times (in Q3 2015, Q4 2015 and Q1 2016), with calls for the replacement of the Governor, but the CNB did not succumb to the pressure. In the earlier literature, Geršl (2006) analysed political pressure on the CNB using the same methodology as Binder (2021) and found that the CNB came under considerable pressure from the government to ease monetary policy between 1997 and 2005, which was comparable to the pressure on the Board of Governors of the Federal Reserve System and slightly higher than the pressure on the Bundesbank, but resisted the pressure. More importantly, Geršl (2006) did not find any systematic impact of political pressure on either the direction of monetary policy or the uncertainty under which CNB Board members made their decisions, as measured by the degree of disagreement when voting on monetary policy.

We updated the evidence on the CNB's de facto independence between 2019 and 2020. We used the same approach as Geršl (2006) and reviewed the articles in the Czech daily newspaper *Hospodářské noviny* and in social media between 2019 and 2020 for any calls by government officials for weaker or stricter monetary policy. We found two mentions (23 February 2020 and 15 April 2020) demanding lower interest rates. The number of signs of political pressure per year is one, which is much lower than the 5.2 reported by Geršl (2006) for the period 1997–2005. This suggests that political pressure from the government was substantially lower between 2019

and 2020 than between 1997 and 2005.<sup>4</sup> However, we do not believe that these rare public statements affect the conduct of the CNB's monetary policy or the CNB's independence.

## 5. Looking ahead

At the time of writing this note (February 2021, updated in June 2021), the CNB does not see any significant constraints on monetary policy in the short- to medium-term stemming from the sustainability of public finances, although the Covid-19 crisis constitutes a major risk to the fiscal position in 2021 and the years to come. The risk of fiscal dominance is low, as the debt level is relatively low compared to other EU countries, and the CNB considers it to be sustainable if interest rates were to rise in the medium term. The currently favourable maturity structure of Czech government debt and the Ministry of Finance's strategy to exploit the currently favourable bond market conditions, including low yields and ample demand for Czech government bonds, have so far mitigated the vulnerability of public finances to a possible rise in interest rates. Furthermore, due to the relatively low number of government bonds denominated in foreign currency, exchange rate developments do not pose a significant risk to the sustainability of government debt.

Nevertheless, we prefer to avoid strong conclusions on future constraints on monetary policy. Confidence in the sustainability of Czech public finances has been robust so far, reflected by favourable ratings and a stable outlook by rating agencies. However, a sharp rise in government debt, followed by a moderate public finance consolidation, could lead to rating downgrades,<sup>5</sup> adverse sentiment on the bond market and portfolio reallocation mainly by non-residents, resulting in higher interest costs for new issues of Czech government bonds. As an institution with a forward-looking perspective, the CNB is aware that fiscal consolidation will be crucial for keeping Czech public finances on a sustainable track.

Looking ahead, we do not foresee significant changes in the interactions between CNB and government policies. Despite some turbulence linked to the depreciation of the Czech koruna and the introduction of the exchange rate commitment in November 2013, the CNB is considered to be one of the most trusted public institutions. Moreover, there have not been any amendments to the Act on the CNB, or any significant political pressures put on the CNB in recent years, which would weaken the CNB's independence and negatively affect the ability of the CNB to fulfil its mandate.

<sup>4</sup> Binder (2021) found three signs of political pressure between 2010 and 2018 which would indicate an even lower number of incidents of pressure on the CNB per year. She reviewed articles about the CNB in country reports published by the Economist Intelligence Unit and Business Monitor International. Political pressure could thus be underestimated in comparison with the approach based on national sources.

<sup>5</sup> When confirming the Czech Republic's rating as Aa3 in February 2021, Moody's cited a slowdown in government debt through sensitive fiscal consolidation as a condition for this rating to be maintained in subsequent years.

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# Riding out the Covid-19 challenge under a currency board arrangement: Hong Kong SAR's experience

Hong Kong Monetary Authority

## Abstract

This note examines Hong Kong SAR's multi-pronged strategy to alleviate local economic pressures amid the Covid-19 pandemic, through the lenses of the policy lessons from recent international experience on fiscal-monetary policy interactions, and the principle of fiscal prudence that underpins the Linked Exchange Rate System. It elucidates the guiding principles behind Hong Kong's extensions of relief measures, and concludes by reflecting upon how Hong Kong, being a small open economy, may be influenced by the fiscal-monetary interactions in major overseas economies, especially the United States.

JEL classification: E42, E65, H12.

Keywords: Fiscal-monetary interactions; Linked Exchange Rate System; relief measures.

## 1. Introduction

The Covid-19 pandemic and the ensuing restriction measures on social distancing have put unprecedented strains on the global economy. The resulting global recession, the most severe since 1945, prompted a rethink on how monetary and fiscal policies may be better coordinated to foster a more robust and inclusive recovery, while steering clear of potential pitfalls such as the threat to central bank independence amid fiscal dominance.

Hong Kong's currency board system means that local monetary conditions are largely determined by the US Federal Reserve's monetary policy stance, and thus outside the control of the Hong Kong Monetary Authority (HKMA). However, the lack of active monetary policy tools *per se* is not necessarily a hindrance to navigating the Hong Kong economy through economic downturns. Indeed, since its adoption in 1983, Hong Kong's Linked Exchange Rate System (LERS) has withstood the tests of several external shocks, including the Asian Financial Crisis (AFC) and the Great Financial Crisis (GFC), thanks to strong public finances, large foreign reserves, robust banking system, and the HKMA's unwavering support for the currency board system. At the same time, discussions on monetary-fiscal policy interactions are just as relevant for Hong Kong despite its lack of an independent monetary policy, because the Special Administrative Region (SAR) government and the HKMA must ensure that their policy responses to the pandemic always respect the confines of the LERS.

Against this background, this note reviews Hong Kong's experience in riding out the Covid-19 shock, explaining how the policy responses are consistent with the policy lessons from recent international experience on fiscal-monetary policy interactions, as well as the principle of fiscal prudence that underpins the LERS. It is followed by discussions on the guiding principles of the recent extensions of relief measures, and concludes by anticipating the possible impact of the synchronised global fiscal and monetary easing on the Hong Kong economy.

## 2. Policy responses to Covid-19: Global and Hong Kong's experience

### 2.1 Policy lessons from international responses to the Covid recession

While every recession is different, the latest global recession wrought by the Covid-19 pandemic differs from other recent recessions in a number of important ways:

Being an exogenous shock, the pandemic was largely unanticipated and was unrelated to any pre-existing macro-financial vulnerabilities, unlike the AFC or the GFC. It was the real economy, rather than the financial sector as in the case of the GFC, that was the first casualty of the recession, as the pandemic disproportionately affected the contact-intensive services sectors (such as tourism, retail and catering) and workers whose jobs could not be done remotely.<sup>1</sup> Such sector-specific shocks suggest that blanket monetary easing on its own is unlikely to be an effective solution in supporting a global recovery. Moreover, as many of the hard-hit sectors were

<sup>1</sup> See Angelucci et al (2020) for details.

typically employers of lower-skilled, lower-income and occupationally less-mobile workers, the outbreak has also aggravated income inequality, which again is a problem not very amenable to remedy by monetary accommodation alone.

The pandemic also drove a surge in private sector savings, although not because of the need for households and firms to deleverage (as in the case after the GFC), but rather out of precautionary motives as well as “forced” or “involuntary” savings, in the sense that consumers could not spend as they might wish amid lockdowns and social distancing measures that shut down the entire in-person, non-essential economy.<sup>2</sup>

Taking into account the special circumstances surrounding this Covid recession, and summarising the international policy responses so far, two important policy lessons emerged:

**Fiscal policy can play a more proactive and timely role than commonly envisaged:** Recent experience in the European Union (eg the NextGenerationEU Fund) and the United States (eg the CARES Act) suggests that fiscal policy is capable of offering timely countercyclical responses to support the economy, in contrast with traditional assumptions that fiscal policy is usually subject to an implementation lag while monetary policy is the “only game in town”. Indeed, given that global monetary easing is arguably fast approaching its limits, fiscal policy will inevitably have to play a more prominent role in future economic downturns. Moreover, as discussed before, fiscal policy offers an advantage of being a more suitable policy instrument than monetary policy to alleviate sector-specific shocks and to address the widening inequality caused by the Covid-19 pandemic, by means of targeted fiscal transfers.

**Greater scope for fiscal and monetary policies to work in concert, given lessened concerns over moral hazards:** Because the current recession has been caused by an exogenous shock (Covid-19) rather than excessive risk-taking that leads to the accumulation of financial imbalances, there is greater scope for monetary and fiscal policies to work in concert in times of extreme headwinds and uncertainty, with an understanding that moral hazards (such as perceptions of “too big to fail” or “central bank put”) are less of a concern. Indeed, recent experience suggests that financial markets tended to react positively to developments towards greater monetary-fiscal policy coordination, reflecting its bolstering effect on market confidence.

## 2.2 How do these policy lessons apply in Hong Kong’s context?

From the perspective of Hong Kong, the adoption of the LERS means forsaking an independent monetary policy, and hence its policymakers cannot use monetary policy tools to “lean against the wind”. That said, Hong Kong still has many policy options at its disposal to cushion the economy from negative shocks, thanks to its strong public finances and the well capitalised banking sector. Indeed, given the unprecedented challenges brought by the Covid-19 pandemic, during which many local economic activities ground to a standstill, swift and comprehensive policy responses by the SAR government and the HKMA have helped to avert a collapse in economic activities and confidence. Specifically, since early 2020, the SAR government has already rolled out series of supporting measures totalling about HK\$ 400 billion under the Budget and the Anti-Epidemic Fund (AEF), while the HKMA,

<sup>2</sup> See Dossche and Zlatanov (2020) for details.

acting in concert with the banking sector, implemented a principal-only loan moratorium for small and medium-sized enterprises (SMEs).

Under the second round of the AEF (AEF 2.0), the SAR Government launched the "Employment Support Scheme" (ESS) as a means of enabling local employers to retain their employees, by providing time-limited wage subsidies to private firms of all sizes in all sectors.<sup>3</sup>

To be eligible for the ESS, private employers had to be participating in either one of the Mandatory Provident Fund schemes or the Occupational Retirement Schemes Ordinance (ORSO) schemes, and would be required to provide an undertaking not to implement any redundancies during the subsidy period, and to spend all the wage subsidies on paying wages to their employees.

The amount of subsidy for an employer would be calculated on the basis of 50% of the actual wages paid to each employee in an employer-specified month,<sup>4</sup> with a wage cap at HK\$ 18,000 per month (in other words, a maximum subsidy of HK\$ 9,000 per month per employee) for six months. Besides, eligible self-employed persons were also entitled to receive a one-off lump-sum subsidy of HK\$ 7,500 under the ESS.

The HKMA, together with the Banking Sector SME Lending Coordination Mechanism, rolled out the Pre-approved Principal Payment Holiday Scheme (PPPHS) to alleviate SMEs' cash flow pressures in a timely and broad-based manner.<sup>5</sup> Under this scheme, banks could offer principal payment holidays to covered corporate borrowers on a pre-approved basis.

Specifically, under the latest deferral arrangement, all loan principal payments of eligible corporate borrowers falling due between May and October 2021 will generally be deferred by six months, without any need for them to apply.

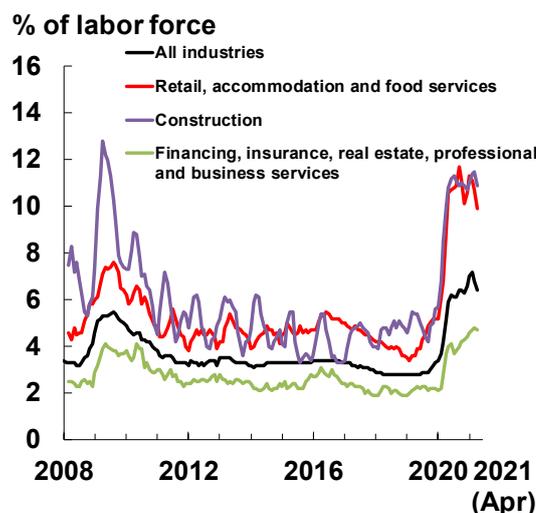
The pre-approved nature of the Scheme not only expedites the process, but also alleviates the stigma associated with requesting relief from banks. Moreover, as the Scheme is principal-only, banks will still be able to monitor the creditworthiness of their customers by observing their ability to service the interest portion of their debt.

It is imperative to highlight how the AEF and the PPPHS embodied key considerations from the two policy lessons described in the previous subsection. The swift rollout of the four rounds of AEF testifies to the intention of allowing fiscal policy to play a larger role at times of extreme headwinds and uncertainties, and to facilitate more targeted support to prevent an even sharper deterioration in local labour market conditions (Graph 1). At the same time, some of the elements in the PPPHS, such as requiring borrowers to continue serving the interest portion of their debt, are designed with a view to preventing moral hazards in the private sector.

<sup>3</sup> See [www.ess.gov.hk/en/](http://www.ess.gov.hk/en/) for details.

<sup>4</sup> A "specified month" between December 2019 to March 2020 (both inclusive) was to be chosen by the employer. The number of employees and their relevant income during that "specified month" would serve as a basis for calculating the subsidy.

<sup>5</sup> To be eligible for the PPPHS, a corporate borrower has to have an annual sales turnover of at most HK\$ 800 million, have no outstanding loan payments payable to the bank which have been overdue for more than 30 days since 1 May 2020, and are not in the process of ceasing operations or declaring bankruptcy or liquidation. See [www.hkma.gov.hk/eng/key-functions/banking/banking-regulatory-and-supervisory-regime/preapproved-principal-payment-holiday-scheme/](http://www.hkma.gov.hk/eng/key-functions/banking/banking-regulatory-and-supervisory-regime/preapproved-principal-payment-holiday-scheme/).



Source: Census and Statistics Department.

### 3. Beyond the pandemic: Extension of relief measures

#### 3.1 Guiding principles

Since late 2020, breakthroughs in vaccine development raised hopes that the Covid-19 pandemic would eventually be eradicated or otherwise brought under control, thereby allowing a return to normal. However, even when the recovery eventually begins, the recuperation process will likely remain fragile and uneven, not only because of the severity of the recession, but also because the pandemic has very likely resulted in long-term damage, or economic scarring. For instance, workers suffering from prolonged unemployment spells may become permanently detached from the labour market, while structural changes in consumer behaviour may render some business models non-viable even after the pandemic subsides (eg greater preference for online shopping may pose headwinds to traditional brick-and-mortar retail outlets).

Given such considerations, policymakers should err on the side of caution and avoid withdrawing policy support abruptly or prematurely, especially during the early phase of the recovery, in order to avoid disruptive “policy cliffs” that may dampen the recovery momentum. However, as the recovery continues to take hold, policymakers will need to begin to weigh the benefit of relief measures against their associated costs, both in terms of their impact on fiscal sustainability, and possible delays to necessary reallocation of resources away from economic sectors that are no longer viable. Indeed, prolonged implementation of relief measures may risk creating more “zombie firms”, especially in hard-hit sectors, whose businesses are no longer viable in the post-Covid world, but nonetheless continue to survive with the help of government support.

## 3.2 The situation in Hong Kong

In Hong Kong, the extension of policy support has been guided by a framework assessing whether it is beneficial to begin to “exit from”, or to “extend”, relief measures, and which parties should receive relief extensions. Even as Hong Kong’s strong public finances have allowed the adoption of the most expansionary fiscal policies ever in response to the pandemic, the SAR government remains mindful of the need for fiscal prudence over the medium term, given that fiscal reserves are expected to drop below the levels seen in 2003, when the outbreak of the Severe Acute Respiratory Syndrome (SARS) dealt a heavy blow to the local economy.

Moreover, as the global rollout of vaccines is expected to bring the global economy back to normal eventually, by that time financial markets would likely begin to differentiate economies by their fiscal fundamentals. In contrast to major advanced economies that enjoy reserve currency status, Hong Kong is subject to much more stringent fiscal standards, because it does not have the option of monetising government debts under the currency board system. As such, there is a limit on how far fiscal deficit and government debt can rise in Hong Kong without eroding investor confidence in the exchange rate peg. Accordingly, the latest two rounds of the AEF (3.0 and 4.0) adopted an even more targeted approach to assist only the hard-hit sectors, and the size of the funds was also significantly reduced relative to the first two rounds of AEF.

As for the PPPHS, an extension of this programme would likely increase banks’ exposures to failing borrowers over time, which could result in deterioration of the solvency and liquidity positions of Hong Kong banks. Ultimately, the policy question can be distilled into a trade-off between the near-term benefit of providing additional stimulus via PPPHS, and longer-term banking sector costs and a delay in necessary economic restructuring. In extending the PPPHS, the HKMA’s decision was guided by a cost-benefit approach, where benefits are quantified using a model that estimates how much of the corporate borrowers’ funding gaps can be closed by extension of relief measures, which ultimately translate into estimates of the degree of reduction in default likelihood and the number of jobs to be preserved. Calculations are done on a sector-by-sector basis; for most sectors, it was found that banks faced higher loss rates the longer the PPPHS continues, while for other sectors, loss rates decline because the drop in estimated probability of default more than compensates for the increase in banks’ loss-given-default exposures. Given the strong capital and liquidity positions of Hong Kong banks, the costs were deemed manageable compared with the societal benefits, thereby leading to the HKMA’s decision to extend the Scheme. That said, the HKMA will continue to closely monitor the situation and adjust the parameters of the PPPHS as necessary.

How may Hong Kong be affected by monetary-fiscal policy interactions elsewhere?

In addition to relief measures, another important longer-term policy issue relates to the extent of external spillovers from other major economies’ policy responses to the Covid recession. Because of the LERS, Hong Kong passively imports the US monetary policy stance. In particular, the US Federal Reserve’s large-scale asset purchases, in addition to its commitment to a “low for long” monetary policy through the adoption of average inflation targeting, have contributed to the highly accommodative financial conditions in Hong Kong. While this easing of financial conditions may have helped cushion the domestic economy from the Covid shock, it has also arguably

resulted in greater inequalities between the "haves" and "have nots", as well as a disconnect between the financial markets (particularly the property market) and the real economy. To mitigate these issues, macroprudential policies would be the first line of defence to constrain the build-up of risks and strengthen the resilience of the financial system against potential shocks, while targeted fiscal policy may be deployed as necessary to alleviate the impact on inequality.

## 4. Conclusion

While Hong Kong has no independent monetary policy due to its LERS, the SAR government and the HKMA have been able to pursue a multi-pronged strategy to provide timely and targeted relief measures to the local economy, via fiscal support, employment retention schemes and principal-only loan moratoriums for SMEs, thanks to Hong Kong's strong public finances and the well capitalised banking sector. These relief measures have embodied important policy lessons from recent international experience regarding fiscal-monetary policy interactions, namely, that a more proactive use of fiscal policy as a countercyclical tool can be helpful, and that fiscal and monetary policy can better augment each other as the special nature of this recession has helped to lessen concerns over moral hazards. At the same time, the design and implementation of the policy support also strictly respect the principle of fiscal prudence that underpins the LERS.

Future decisions to extend relief measures will be guided by a framework that explicitly weighs the benefits of minimising policy cliffs against the potential costs in terms of fiscal sustainability and delayed economic restructuring. Because of the LERS and its status as a small open economy, Hong Kong is highly exposed to the impact of fiscal-monetary policy interactions in major economies, especially the United States. The resulting highly accommodative financial conditions in Hong Kong have arguably resulted in disconnect between the financial markets and the real economy, as well as between "haves" and "have nots". To address these concerns, macroprudential policies could help constrain the build-up of risks and strengthen the resilience of the financial system against potential shocks, while targeted fiscal policy may be rolled out as necessary to alleviate the impact on inequality.

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# The Magyar Nemzeti Bank's government debt securities purchase programme

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Magyar Nemzeti Bank  
February 2021

## Abstract

The global financial turbulence caused by the coronavirus in March 2020 also had an impact on the Hungarian government securities market. In order to stabilise financial market developments and facilitate efficient monetary policy transmission, the MNB intervened with targeted instruments: it provided adequate liquidity with collateralised credit facility for maturities of three to five years and with government securities purchases in the long-term segment (10 years and over). With these measures, the central bank successfully stabilised government securities market developments within a short period of time. As a result of the programmes, long-term government bond yields declined substantially, the yield curve flattened and government securities market liquidity also improved.

JEL classification: E43, E44, E50, E52.

Keywords: monetary policy, asset purchase programme, government securities market.

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## 1. Motivation, introduction

The Magyar Nemzeti Bank (MNB) responded to the economic downturn caused by the coronavirus pandemic with a series of coordinated and targeted measures. The first phase of the economic protection had two key tasks: on the one hand, to stabilise the financial market developments, and on the other hand, to provide the required amount of liquidity to all economic participants, on favourable conditions and with adequate maturity. A significant adaptation of the monetary policy toolkit was one element of the process. As part of this, the government bond purchase programme to affect long-term yields became part of the toolkit, which was announced by the central bank's Monetary Council after its meeting on 28 April 2020.

The programme's aim in the first months of purchases was to create a stable liquidity situation in the government securities market and to facilitate efficient monetary policy transmission. With targeted purchases carried out in May, the MNB successfully stabilised government securities market developments and reduced long-term yields. From July 2020, after a temporary pause, the central bank continued government securities purchases in the over-15-year segment in order to allow the two-step base rate cut in the summer of 2020 to affect the longer part of the yield curve too. Subsequently, in order to facilitate efficient monetary transmission and support liquidity in the government securities market, the Monetary Council increased its weekly purchases several times from August 2020, amended the strategic parameters of the government securities purchase programme on 6 October and carried out a technical review of the programme in November.

The MNB will use its government securities purchase programme to the extent necessary and as long as required by maintaining a lasting presence in the market. The central bank continues to consider it a priority to increase the share of longer maturities within the maturity profile of government debt.

This study presents the development of the Hungarian government securities market before the launch of the programme, and then it describes the monetary policy considerations and the main features of the programme. Then it reviews the effects of purchases on the government securities market and its macroeconomic effects.

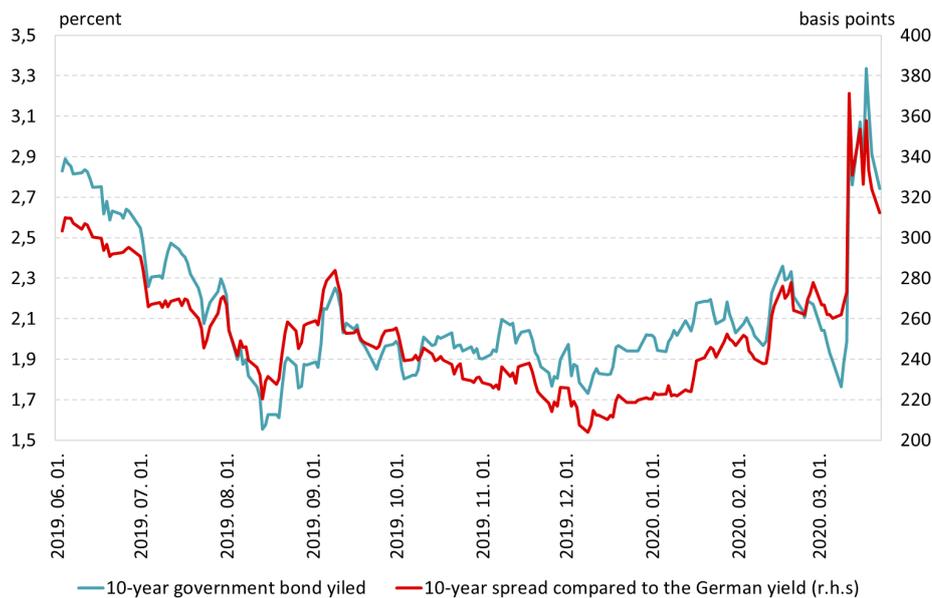
## 2. The impact of the March 2020 market turbulence on the Hungarian government securities market

In March 2020, global financial markets experienced turbulence not seen since the 2007–09 Great Financial Crisis. At the beginning of March 2020, risk aversion intensified in global financial markets, and volatility increased substantially. Developed stock indices fell by 30–40% in a few weeks, with the VIX index measuring stock market volatility rising to a historical high. The EMBI Global index, which measures emerging market bond spreads, rose by 300 basis points to 660 basis points in less than a month, its highest level since 2009. In foreign exchange markets, emerging market economy (EME) currencies weakened with significant dispersion. Currencies considered the riskiest depreciated by nearly 20% against the dollar, while currencies in the central and eastern European (CEE) region weakened by 8–10% against the dollar.

The global financial turbulence also had an impact on the Hungarian government securities market. Long-term yields rose significantly, while the liquidity situation and demand in the long-term auctions fell. During the financial market turbulence in March 2020, 10-year government bond yields rose from around 2% at the beginning of the year by more than 130 basis points to 3.33%. In parallel with rising yields, government bond yield spreads also increased. The spread compared with the German 10-year yield rose by 100 basis points to 370 basis points in a single day on 12 March. Although demand was still adequate at the five-year maturity of the bond auction held by Government Debt Management Agency (ÁKK) on the same day, demand was exceptionally low for the 10- and 20-year maturities, and thus the ÁKK did not issue bonds at these maturities that day. The main indicators of market liquidity also deteriorated: bid-ask spreads rose, average transaction volume declined, and the return-to-volume index, which shows how much price change is caused by executing a given transaction volume, also deteriorated.

Development of the Hungarian 10-year government securities market yield and the spread compared with the German yield

Graph 1



Source: Bloomberg.

Note: The graph includes data up to 24 March 2020, when the long-term collateralised credit facility was announced.

### 3. Monetary policy considerations

The global market turbulence also affected the Hungarian government securities market, which made it uncertain whether the MNB could achieve its main objective of maintaining price stability. In response, the Bank launched its government securities purchase programme as part of its coordinated and targeted measures.

The main objective of the government securities purchase programme is to maintain the efficiency of monetary transmission and the stability of the government securities market. Despite rapidly changing global market sentiment and the increased demand for government funding, the programme supports the extension

of the maturity profile of government debt, the maintenance of stability in the government securities market, and the flattening of the yield curve.

The MNB responded to the challenges posed by changes in the economic environment with a large volume of liquidity and targeted instruments in the long-term assets market. The Bank launched its government securities purchase programme on 4 May to facilitate efficient monetary transmission and mitigate the economic and financial impacts of the pandemic. With targeted purchases carried out in May, the MNB successfully stabilised government securities market developments and reduced long-term yields. In parallel, in order to provide long-lasting support for bank liquidity management and to ensure the stable operation of the relevant financial markets, the MNB also launched a fixed-income collateralised credit facility with a maturity of up to five years.

After a temporary pause, the central bank continued government securities purchases in the over-15-year segment. Subsequently, the MNB decided to increase the amount of weekly government securities purchases on several occasions. This decision reflected the increase of external risks, to support health and economic safeguards, and to maintain the efficiency of monetary transmission and the liquidity of the government securities market.

The government securities purchase programme has become part of the revised monetary policy toolkit. As such, it is an instrument affecting long-term yields. With long-term government bond purchases, monetary policy aims to ensure that interest rate conditions set by the MNB are reflected throughout the yield curve. The monetary policy approach effectively flattens the yield curve.

The role and importance of long-term yields in monetary transmission and financial stability has increased in recent years: the maturity of household loans has shifted to the long side, the prevalence of longer-term assets in savings has strengthened and also within corporate lending, long-term fixed income fund-raising plays an increasingly important role.

The Monetary Council uses the government securities purchase programme to the extent necessary and as long as required by maintaining a lasting presence in the market. The central bank adjusts the amount of its weekly purchases flexibly. The MNB's government securities purchases take place in the secondary market, within the framework of purchase auctions organised by the central bank and at individual secondary market transactions. Purchases are made by the central bank at market prices, focusing on longer maturities. Flexibility is further enhanced by the wide range of counterparties, including both banking and non-banking players, which is of key importance for the government securities market.

Prior to the launch of the government securities purchase programme, the MNB's balance sheet had not expanded in comparison with those of other central banks. Since 2013, instead of a general increase, the MNB has focused on the efficient restructuring of the balance sheet, thus having more room for manoeuvre as regards increasing the size of the balance sheet. Therefore the central bank had a substantial set of instruments available in responding to the adverse economic effects arising from the pandemic. Despite a significant balance sheet increase in 2020, the MNB's balance sheet can be considered to be of average size by regional comparison. All this will allow the central bank to support the management of the risks posed by the coronavirus pandemic and the rapid and sustainable recovery of growth by further expanding its balance sheet.

## 4. Key features of the programme

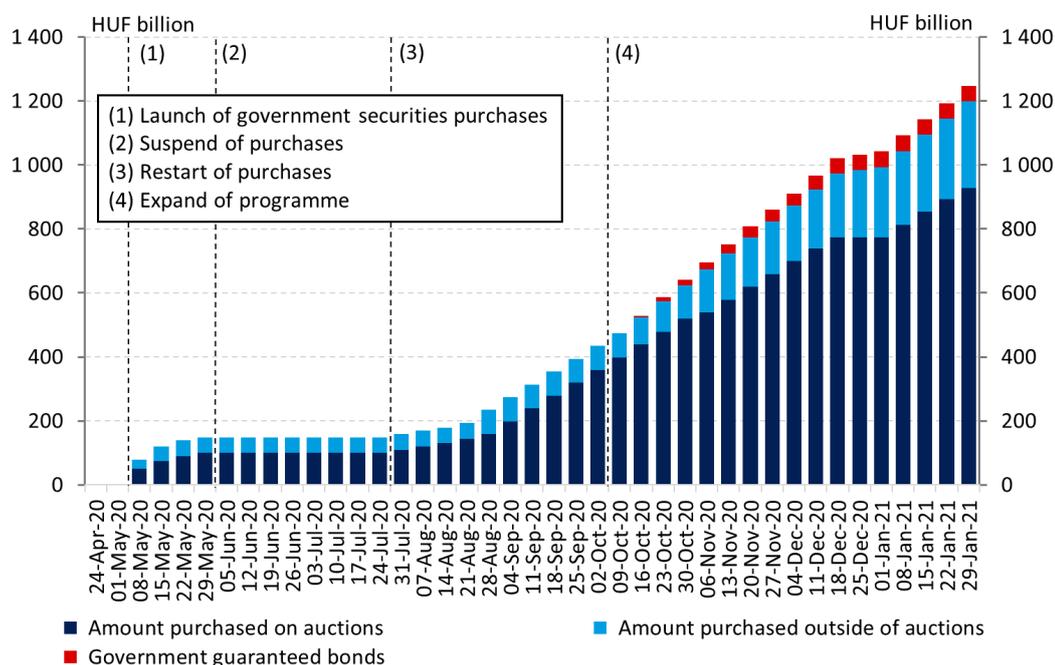
### 4.1 Purchased volume

In April 2020, the Monetary Council decided to launch its government securities purchase programme in order to strengthen monetary policy transmission, taking into account country-specific issues and the practice of the ECB. At the start of the programme, the MNB did not set any targeted amount, but it stated that it would carry out a technical review at a portfolio increase of HUF 1,000 billion, as compared with the start of the programme. This amount then represented about 50% of the gross government bond issue planned by the ÁKK for 2020. According to the decision, the purchases covered HUF-denominated, fixed income Hungarian government securities. In the case of each security series, the MNB set the upper limit of the amount that can be purchased at 33% of the market stock. In the first phase of the programme, in May 2020, the weekly purchased volume gradually fell from HUF 80 billion to HUF 10 billion. Following the improvement of market developments and liquidity, the MNB suspended purchases after 26 May. At that time, the stock of government securities owned by the MNB amounted to about HUF 150 billion at face value.

So that the MNB's interest rate measures taken in the summer of 2020 (two base rate cuts of 15 basis points each) would also affect the longer part of the yield curve, the Monetary Council decided in July 2020 to restart government securities purchases, focusing on primarily on the over-15-year segment. In addition, to strengthen monetary transmission over long maturities, the MNB's goal was to dampen potential market volatility due to higher-than-expected government funding needs. The weekly volume of restarted purchases increased from an initial HUF 10 billion to HUF 40 billion in August and then to HUF 50 billion in October.

Following the first revision of the programme, the Monetary Council decided on 6 October 2020 to continue purchases and to fine-tune the parameters of the programme due to the increasing risks as a consequence of the global deterioration of the pandemic situation and in order to support the efficiency of monetary transmission. According to the decision, the next revision will take place when HUF 2,000 billion is reached; the scope of securities that can be purchased was expanded to include debt securities issued with a state guarantee, and the amount that can be purchased for each security series has increased – in line with the ECB's practice – from 33% to 50%. By the end of 2020, the stock of government securities owned by the central bank reached HUF 993 billion, which amounted to about 2%<sup>2</sup> of Hungarian GDP and about 16% of the total net government securities issue of HUF 5,950 billion. By the end of January 2021, the stock rose to almost HUF 1,200 billion.

<sup>2</sup> Based on four quarterly GDP data at the end of September 2020.



Source: MNB.

## 4.2 Maturity profile

The MNB shapes its weekly purchases in a flexible way, taking into account market developments, but also focusing on longer maturities. With regard to the maturity of government securities available for purchase, the MNB does not impose any restrictions other than the 50% limit per series. The purpose of the purchases is to maintain the efficiency of monetary transmission in a way that supports the extension of the maturity profile of government debt, the maintenance of the stability of government securities market, and the flattening of the yield curve despite the rapidly changing global market sentiment and the increased demand for government funding. Within the total purchased government securities portfolio, the remaining maturity of securities of HUF 1,085 billion is over 10 years, while HUF 114 billion falls between five and 10 years. The average duration of the total government securities stocks thus exceeded 12.5 years at the end of January 2021.

## 4.3 Technical details (on-auction and off-auction purchases)

The MNB conducts purchases both via regular weekly auctions and through other channels. In addition to government securities auctions and government-guaranteed bond purchase auctions, the MNB purchases government securities and securities issued with government guarantees or sureties on both the stock exchange and over-the-counter secondary markets. The MNB carries out its purchases by enforcing the principles of market neutrality and equal treatment, and in addition to variable-price auctions, bilateral purchases are made at market price. The MNB typically announced three to four series at the weekly auctions. Under the programme, a total of HUF 929 billion was purchased on auctions by the end of January 2021, and the non-auction

purchases amounted to an additional HUF 270 billion. The MNB engages with the most important players in terms of market activity. Thus, in addition to the banks that play a key role in the government securities market, investment funds can also participate in the programme, both at auctions and in bilateral transactions, through major investment fund managers.

#### 4.4 Extension of the scheme to securities issued with government guarantees

On 6 October 2020, the Monetary Council also decided to expand the range of bonds purchased as part of the fine-tuning of several parameters of the programme. In order to improve monetary transmission, the range of assets available for purchase was expanded to include securities issued with government guarantees or sureties, by using the same strategic parameters as for the government securities purchases. The central bank purchases bonds with a credit rating corresponding to government securities on the secondary market – in accordance with the practice used in government securities purchases.<sup>3</sup> Since the decision of the Monetary Council in October 2020, the MNB acquired debt securities issued with government guarantees or sureties in total face value of HUF 48.3 billion up to the end of January 2021, with an average duration of 5.9 years.

### 5. Impact of central bank measures on the government securities market

#### 5.1 Yields, liquidity, primary market

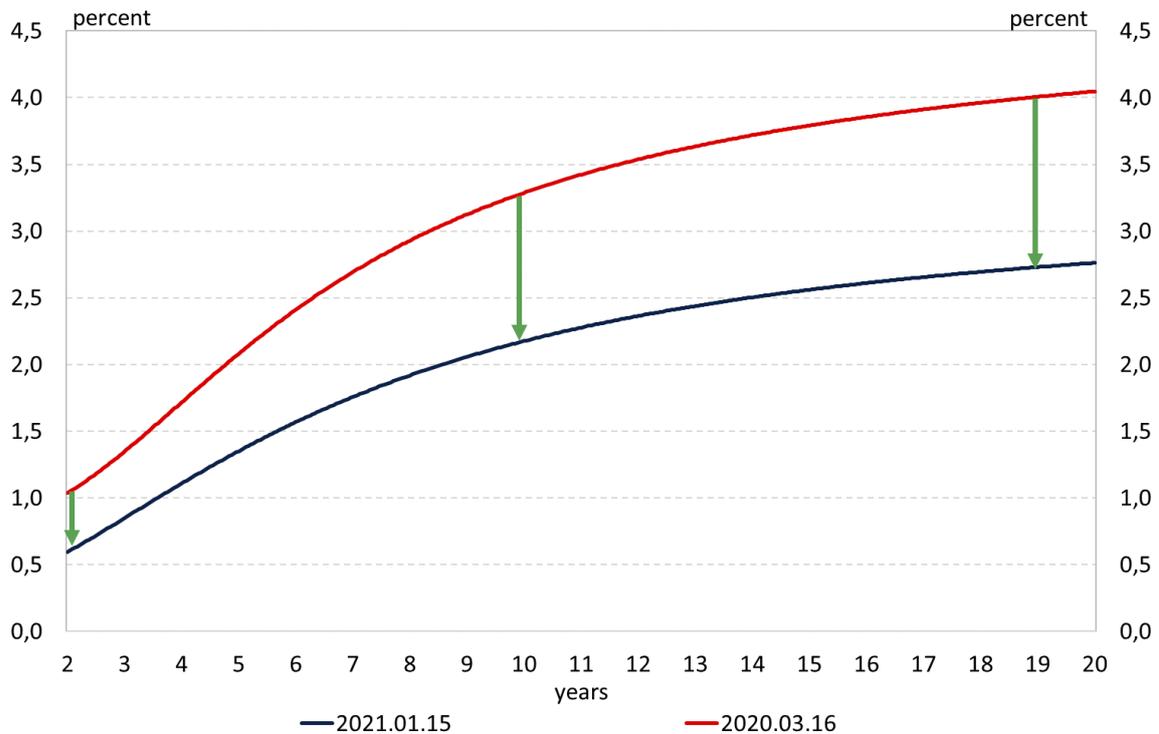
As a result of central bank measures, the HUF government securities market stabilised and long-term government bond yields declined (Graph 3). Compared with the local maximum of 3.33% in March, due to the MNB's measures and the improving global risk sentiment, the 10-year yield ranged mostly from 2.0 to 2.4% after mid-April. There was also a significant decline in yields in the over-10 years segment of the yield curve. Both the 15- and 20-year yields fell 160–170 basis points from their March highs, with the former hovering currently around 2.55% and the latter around 2.85%.

Due to the fall in long-term yields, the slope of the Hungarian government bond yield curve has also flattened. The MNB's instruments affecting long-term yields have substantially supported the central bank's aim of easing monetary conditions over the long end of the yield curve. Government securities purchases are largely concentrated on maturities of over 10 years, as a result of which yields fell more in this segment compared with shorter maturities in the recent period. The two- to 10-year HUF yield spread rose above 220 basis points in March, and currently the slope of this section of the yield curve is around 150 basis points.

<sup>3</sup> Currently, the Hungarian Development Bank and Hungarian Export-Import Bank have bonds outstanding with a state guarantee ("guaranteed" bonds).

Shift of the government securities market yield curve compared with mid-March

Graph 3



Source: ÁKK, MNB.

In addition to the decline in nominal yields, government bond spreads also narrowed. The 10-year spread relative to the German yield, considered to be risk-free, reached 370 basis points during the financial market turbulence in the spring. However, as a result of these measures, the spread has narrowed significantly and has fluctuated between 250 and 300 basis points in recent months. All this means that, in addition to global factors, country-specific effects have also contributed to the decline in HUF yields.

HUF bond auctions have been characterised by stable demand since the beginning of April. The bid-to-cover ratio decreased slightly with the increase in maturity, but the average ratio was more than two during the period under review.

Compared with the end of March, the liquidity situation in the government securities market also improved substantially. Following the launch of the collateralised credit facility and then the government securities purchase programme, all the liquidity indices for the government securities market showed an improvement. In fact, the liquidity situation of the market returned to a level that can be considered as the historical average.<sup>4</sup>

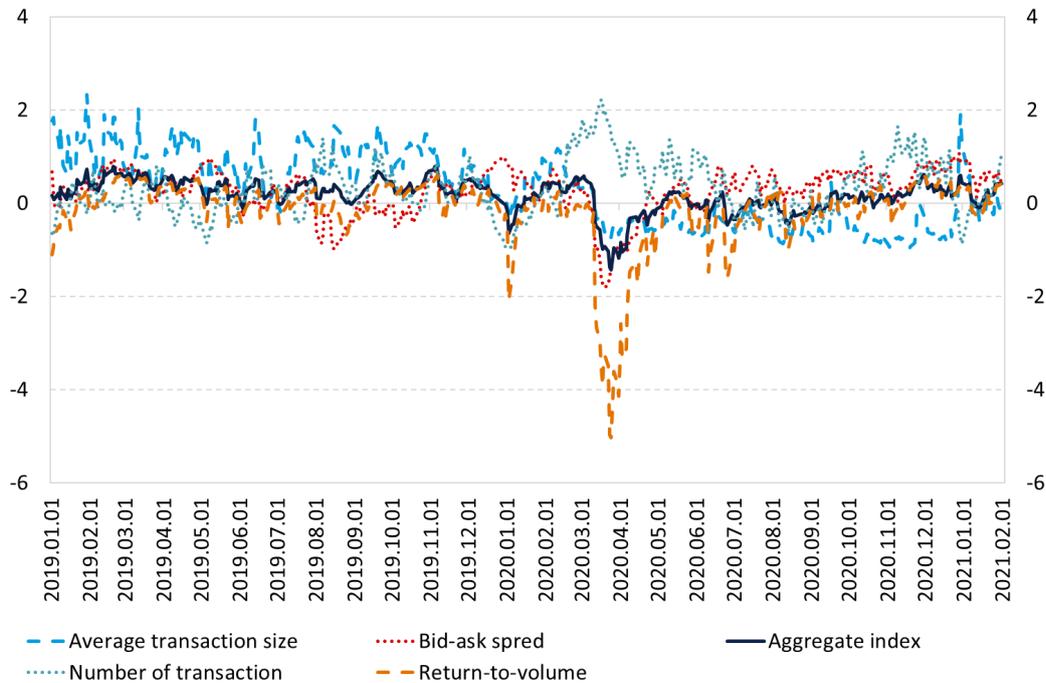
By expanding its asset purchase programme, the MNB also contributed to the decline in the yield on securities issued with government guarantees. In early October, the central bank extended its asset purchase programme to securities issued with

<sup>4</sup> For the methodology, see J Páles and L Varga, "Trends in the liquidity of Hungarian financial markets – What does the MNB's new liquidity index show?", *MNB Bulletin* (discontinued), vol 3, no 1, 2008.

government guarantees. Following the decision, both the Hungarian Export-Import Bank and the Hungarian Development Bank were able to issue bonds on favourable terms. These institutions have raised about HUF 130 billion since October, with a narrow spread of 10–20 basis points over government bond yields.

Government securities market aggregate liquidity index and its sub-indices

Graph 4



Note: For the aggregate liquidity index and its sub-indices a shift towards negative values indicates the decrease in liquidity. Thus, bid-ask spread and price effect index appear on an inverse scale.

Source: MNB, KELER.

## 5.2 Ownership structure

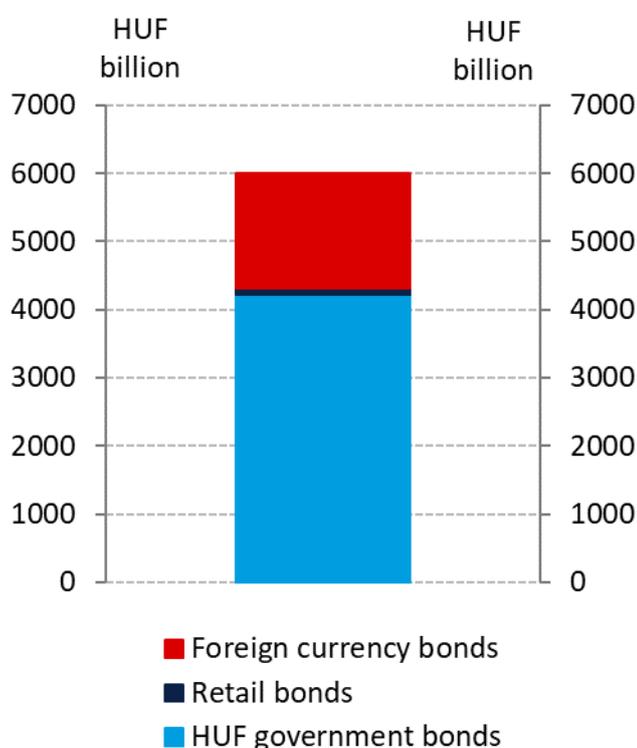
The significantly increased financing need was channelled to the wholesale market's diversified investor base and mostly to domestic institutions. In March 2020, the central bank introduced its long-term collateralised credit facility, through which it provides liquidity to the banking system. On the one hand, it stimulates lending activity, and on the other hand, part of it emerges on the government securities market, thus increasing the demand for HUF bonds. MNB also supports the Hungarian government securities market through its government securities purchase programme and its collateralised credit facility. The two programmes work as a hybrid solution, where the combined effect of the two measures is significant. The commercial banks' stock of the government securities with a maturity of over three years increased by more than HUF 2,200 billion compared with the first quarter of 2020, which was also supported by the central bank's collateralised credit facility. Thus their share in this market segment is around 50%. The stock of foreign-owned government securities also increased by about HUF 1,000 billion. As part of these purchases, the holdings of the government securities by the central bank increased by about HUF 1,200 billion until January 2021. At present, the central bank holds 7% of the market stock of HUF government bonds.

## 6. Impact of the programme on public sector funding

The MNB's government securities purchase programme indirectly supports the restoration of Hungarian economic growth through a number of channels. In addition to facilitating the proper functioning of monetary transmission, the government securities purchase programme also helps to ensure that government securities market funding is achieved under favourable conditions. Stable and predictable financing has created room for a strong fiscal intervention. In 2020, measures mitigating the negative health and economic effects of the pandemic accounted for a direct budgetary impact of more than 12% of GDP. A significant part of the measures were financed through transfers, use of reserves, tax increases and reallocations of EU funds. Thus, the net effect of these measures may have been around 8% of GDP.

Profile of Hungarian net government securities issue in 2020

Graph 5



Source: ÁKK

In 2020, financing of the current year's deficit and the maturing debt relied mainly on domestic sources. As a result of the fall in revenue caused by the coronavirus and the additional expenditures due to the crisis, the cash flow-based deficit of the central budget amounted to over HUF 5,500 billion. Continuing the strategy of recent years, the Debt Management Agency sought to raise the necessary funds mainly via the domestic market. The issue of HUF bonds thus amounted in net terms to over HUF 4,000 billion. In addition, despite the crisis, the stock of retail securities also increased last year, by about HUF 100 billion. Within this total, the stock held by households increased by more than HUF 1,000 billion, while the stock held by other sectors (credit institutions, investment funds etc) fell by HUF 900 billion. Financing the increased deficit entirely from the HUF market could have led to

oversupply tensions. Taking this and other economic policy objectives (green bonds) into account, the Debt Management Agency issued nine foreign currency bonds on four occasions in 2020, for a total value of € 6.5 billion. Thus, net foreign currency issuance amounted to HUF 1,700 billion.

Despite the increased supply, yields remained stable in the HUF market. Gross HUF bond issuance accounted for about 13% of GDP, which represented a significant increase over 2019, representing some 7% of GDP. Nevertheless, yields returned to or below the pre-crisis levels after the jump in March, and have fluctuated around these levels in recent months. Despite the increased supply, the Debt Management Agency was able to issue, almost without exception, the planned quantity at the auctions.

Increased issuance was concentrated in the longer segment, increasing the average duration of government debt. The average duration of Hungarian government debt can be considered low by international comparison, which also means that the annual gross financing need of the budget is high. With its purchases in the longer segment, the central bank supported the Debt Management Agency in its aim of increasing issuance of longer-term securities to higher levels than in previous years. As a result, the average duration of government debt increased by almost one year to five years in November 2020, as compared with the end of 2019, exceeding the average maturity of Polish and Swedish government debt.

At present, it is too early to assess in depth the macroeconomic impact of the programme. Looking ahead, maintaining favourable financing conditions will be key to restoring the economy. Once the pandemic situation is resolved, the economic policy goal will be to return to a sustainable growth path supported by low yields on the financing side. In addition, low interest rates should also promote the demand side of credit markets, thus facilitating, inter alia, the recovery of the real estate market in parallel with the home building programme. The government securities purchase programme will thus help to avoid a credit-free recovery. The macroeconomic impact of the programme will become apparent after the recovery.

## 7. Conclusion

In order to stabilise market processes, the MNB intervened in the government securities market with targeted instruments: it provided adequate liquidity with its collateralised credit facility in medium-term maturities (three to five years) and through government securities purchases in the long-term segment (10 years and over). As a response to the outbreak of the coronavirus pandemic, the MNB successfully and quickly stabilised the government securities market through government securities purchases. As a result of the programme, long-term government bond yields declined substantially, the yield curve flattened and liquidity improved. In addition to declining yields, spreads relative to German yields also declined substantially owing to the targeted programmes of the central bank.

Purchases in the long segment contributed to the proper functioning of monetary transmission. The MNB reduced the base rate by 15 basis points in both June and July. The base rate cuts also had an effect on the long end of the yield curve, with yields declining by around 160–170 basis points in the longest segment following the turbulent period in 2020. The MNB's purchases are concentrated in

maturities of over 10 years, and thus its purchases also support the issuance of longer-term government debt and hence the lengthening of its maturity profile.

In addition to improving the efficiency of monetary transmission, the MNB's measures concerning the government securities purchase programme have helped to maintain the stability of the government securities market and to keep yields low. The MNB increased the pace of weekly purchases in August 2020, then changed the parameters of the programme in October 2020, increasing the central bank's room for manoeuvre. In November 2020, the MNB set a new HUF 2,000 billion technical revision limit for the programme. In this way, the MNB has established a lasting presence in the government securities market, thus safeguarding the results achieved so far by the purchase programme.



# Monetary and fiscal policy interactions in the wake of the pandemic

Reserve Bank of India

## Abstract

The Covid-19 pandemic triggered active interventions and policy support from both monetary and fiscal authorities across the world. In India, the authorities undertook multidimensional efforts to mitigate the impact of the crisis and preserve financial stability. The Reserve Bank of India deployed a range of instruments – conventional and unconventional – to provide liquidity, promote growth and ensure financial stability. The measures were aimed at sizeably expanding liquidity in the system to ensure that financial markets and institutions can function normally in the face of Covid-related dislocations. India's fiscal policy response to the pandemic was strategised with a step-by-step approach due to the unprecedented nature of the crisis and massive uncertainty. Fiscal spending in India initially focused on providing support in cash and in kind to vulnerable households. Now the focus has shifted to encouraging investment. Overall, the policy response aimed at making the economy more resilient and flexible to deal with the opportunities and problems of the post-Covid world.

JEL classification: E62, E52, E58, H12.

Keywords: monetary policy, fiscal policy, crisis management.

## Introduction

The devastating impact of the Covid-19 pandemic prompted immediate and decisive action from governments and central banks globally. Alongside large-scale fiscal expenditure to protect the economically vulnerable, monetary policy attempted to ease credit conditions and boost liquidity. The crisis featured an uneven impact across sectors and concurrent shocks to both supply and demand – as a result, coordinated policy response became the norm in most jurisdictions. In India too, monetary and fiscal policy moved in tandem to provide a Concerns regarding price and financial instability have been renewed based on steady increases of private and public sector debt and central bank balance sheets. Additionally, the conduct of monetary policy may be challenged by rising fiscal deficits during the recovery period. Thus, it is particularly important to review the nature and scope of monetary and fiscal coordination. This note highlights the policy response to the pandemic in India and the nature of India's monetary and fiscal interface.

## 1. Policy response to the pandemic in India

All levers of economic stabilisation – fiscal, monetary and prudential measures – were needed to revive the economy after the severe contraction in economic activity after the nation-wide Covid-19 lockdown. Greater allocation of government resources was required to finance the mounting health expenditures and support the livelihood of the work force. The paramount challenge for national authorities in the immediate aftermath of the crisis was to revive economic activity. Financial markets experienced pressure from extreme volatility in equity markets and currency pressure from capital outflows from EMEs. Thus, two predominant concerns were to maintain adequate liquidity and ensure financial stability. So, monetary and fiscal policy moved in tandem to provide support to growth. In the following sections, we outline broadly some of the policies announced since the start of the pandemic by the government and the Reserve Bank of India (RBI).

### 1.1 Monetary policy

The RBI has been on the frontlines of providing policy support, deploying the full range of instruments to ensure orderly functioning of financial markets and maintaining financial stability. Volatility in global financial markets and large-scale capital outflows due to extreme risk aversion prompted the RBI to ease currency market pressures through measures such as foreign exchange swaps.<sup>1</sup> The Indian rupee (INR) depreciated to its lowest level of INR 76.81 per USD in early 2020. But, this decline was modest in comparison with many emerging market peers.

With the tightening of financial conditions, the initial priority was to ensure liquidity and stability in all market segments. In February 2020, the RBI adopted a

<sup>1</sup> In the wake of sell-offs triggered by risk aversion and flight to safety in early 2020, the RBI conducted two six-month USD/INR sell/buy swap auctions on 16 March and 23 March 2020, injecting dollar liquidity of USD 2.7 billion to meet the increased demand for US dollars in the foreign exchange market (Indian Ministry of Finance (2021)).

multipronged approach announcing liquidity augmenting measures totalling INR 12.8 trillion (6.3% of nominal GDP). The measures included, but were not limited to, long-term repo operations, open market operations to buy Government of India securities, a one-time reduction in the cash reserve ratio of banks and widening of the monetary policy corridor.<sup>2</sup> These measures along with forex purchases resulted in expansion of surplus liquidity, as reflected in average daily net liquidity absorptions under the liquidity adjustment facility (LAF), from INR 3.43 lakh crore at the end of January 2020 to INR 5.47 lakh crore on 15 January 2021 (Economic Survey (2021)).

The Monetary Policy Committee (MPC) of the RBI attempted to provide countercyclical support to growth by reducing the policy rate by a cumulative 115 basis points since the outbreak of the pandemic. The cumulative rate reduction – taking into account the previous policy rate cuts since February 2019 – has been 250 basis points.

Despite persisting economic slack and low demand side risks, pandemic induced supply chain disruptions meant that the inflation rate remained elevated and crossed the upper tolerance level of the target for six months (June–November 2020).<sup>3</sup> The MPC, in its February 2021 meeting, deliberated on current and evolving domestic and global macroeconomic and financial developments and decided to “continue with the accommodative stance as long as necessary – at least during the current financial year and into the next financial year – to revive growth on a durable basis and mitigate the impact of Covid-19 on the economy, while ensuring that inflation remains within the target going forward”. The RBI is regularly monitoring the current and evolving developments and remains steadfast to take any further measures while at the same time remaining fully committed to maintaining financial stability.<sup>4</sup>

During the crisis, the RBI has undertaken several measures to ease pressures for both central and state governments in India. The revenue generation slowed because of reduced economic activity while the need for fiscal resources for Covid relief increased. Against this background, the RBI conducted outright open market operations (OMOs) and “Operation Twist” operations (special OMOs) to manage the government borrowing programme in an orderly manner. The RBI conducted OMOs as a special case in 2020/21 in state development loans (SDLs) – market borrowings by sub-national (state) governments – and facilitated efficient pricing as a special case during 2020/21 in order to impart liquidity and facilitate efficient pricing.

Additionally, the RBI increased the limits for temporary Ways and Means Advances (WMAs) – a short-term credit facility – available for up to three months. The WMA limit for the central government for the first half of the financial year 2020/21 (April 2020 to September 2020) was increased from INR 1.2 trillion to INR 2.0 trillion. Similarly, the WMA limit of states was increased by 60% beyond the level existing on 31 March 2020. The “overdraft (OD) scheme for state governments” was reviewed to provide greater flexibility to state governments to tide over their cash-flow mismatches. The number of days for which a state / union territory can be in OD continuously was increased from 14 working days to 21 working days. Further, the number of days for which a state / union territory can be in OD in a quarter was

<sup>2</sup> Details on all measures undertaken by the RBI during the Covid-19 pandemic may be found at [www.rbi.org.in/scripts/bs\\_viewcontent.aspx?Id=3894#PR](http://www.rbi.org.in/scripts/bs_viewcontent.aspx?Id=3894#PR).

<sup>3</sup> CPI inflation fell to 4.6% in December on the back of easing food prices and favourable base effects.

<sup>4</sup> [www.rbi.org.in/Scripts/BS\\_SpeechesView.aspx?Id=1104](http://www.rbi.org.in/Scripts/BS_SpeechesView.aspx?Id=1104).

increased from 36 working days to 50 working days. This facilitated the seamless mobilisation of resources under the combined government borrowing programme (both centre and states) at record low costs.

The 10-year benchmark G-Sec yield has largely remained stable and traded in a narrow band despite coming under sporadic pressure due to exogenous factors such as firming up of the US Treasury yields as well as global crude oil prices. These developments bear testimony to the effectiveness of the forward guidance provided by the MPC during the year, credibly demonstrated through the RBI's market operations. Since the RBI's asset purchase programme has solely been restricted to government securities only, there has not been any dilution in the quality of the RBI's balance sheet. As such, the space for fiscal policy has not been limited in any manner while independence for monetary policy has been preserved.

The RBI also supported fiscal efforts at reviving the economy through several developmental and regulatory policies announced during this period. Several targeted sector-specific policies have been initiated to maintain flow of funds and provide support to key sectors. For instance, additional liquidity facilities were set up for the National Bank for Agriculture and Rural Development (NABARD), the Small Industries Development Bank of India (SIDBI), the National Housing Bank (NHB) and the Export Import Bank (EXIM) to meet funding requirements in specific sectors.<sup>5</sup> Trade contraction deepened since the outbreak of Covid-19, so RBI measures to boost export credit and extension of time for payment for importers from six to 12 months are expected to provide much-needed support to the foreign trade sector.<sup>6</sup> The RBI has also provided relief to the vulnerable small enterprises by allowing lending institutions to restructure their debt, subject to the borrower's account being classified as standard pre-pandemic.<sup>7</sup>

Thus, since the start of the pandemic, the RBI has taken on multiple roles. Not only has it worked towards ensuring price and financial stability while supporting economic recovery, it also has taken on the mantle of undertaking developmental policies targeted towards easing financial stresses of vulnerable sections and ensuring a stable flow of funds to critical sectors in light of the uneven impact of the pandemic.

## 1.2 Fiscal policy

The government of India was proactive in tackling the spread of the Covid-19 pandemic by announcing a nationwide lockdown on 25 March 2020, when the confirmed positive coronavirus cases were approximately 500. The lockdown, initially announced for a period of 21 days, was extended with progressive relaxations until 31 May 2020. Since then, activities have opened in a phased manner. The brutal toll

<sup>5</sup> In April 2020, special refinance facilities were announced to NABARD, SIDBI and NHB for a total amount of INR 50,000 crore to enable them to meet sectoral credit needs. In order to enable EXIM bank to meet its foreign currency resource requirements, a line of credit of INR 15,000 crore was extended to the EXIM Bank for a period of 90 days (with rollover up to one year) enabling it to access a US dollar swap facility. An additional standing liquidity facility (ASLF) of INR 5,000 crore to NHB was announced in August 2020 – over and above the INR 10,000 crore already provided for supporting housing finance companies (RBI 2020a). See also Governor's Statement, MPC, (RBI 2020b).

<sup>6</sup> RBI (2020).

<sup>7</sup> In order to provide appropriate forward guidance and with a view to maintaining long-term financial stability in light of pandemic related stresses, the RBI set out a detailed Resolution for Covid-19 related stress, [www.rbi.org.in/Scripts/NotificationUser.aspx?Id=11941&Mode=0](http://www.rbi.org.in/Scripts/NotificationUser.aspx?Id=11941&Mode=0).

of the pandemic and the associated lockdown measures have adversely impacted economic activity in India, with the April–June 2020 quarter registering a contraction of 23.9% in real GDP. Taking a calibrated approach to fiscal interventions, the government provided fiscal assistance to poor and vulnerable households in cash and in kind during the initial stages and later broadened this coverage to various sectors of the economy.

The initial measures in April 2020 included cash transfers to poor households, distribution of free food grains and medical insurance to health workers. More comprehensive measures were announced under the various tranches of the Atmanirbhar Bharat package in May and November 2020. Policies were announced to aid the micro, small and medium enterprise (MSME) sector by increasing the coverage, providing collateral-free loans, a corpus to fund equity etc. Several schemes were announced to provide support to farmers and promote production of high-value primary products. Reforms in the energy sector and labour regulations were also announced with a view to promoting investment and productivity across the manufacturing sector. The size and composition of the stimulus, coupled with its calibrated shift in focus from consumption to liquidity to investment, suggest that it is aimed at promoting recovery primarily through the investment revival channel.

While some of the measures led to additional expenditures, many have been financed by reallocation of funds from other heads of expenditure. The government has also undertaken rationalisation measures during 2020/21 to target spending in priority areas over avoidable outgoes.<sup>8</sup> Ministries and departments of the government of India issued directions to strictly adhere to expenditure ceilings and avoid releases that may lead to idle parking of funds, and revisions to quarterly expenditure plans were made to accommodate stresses to the government's cash position.

The quality of government expenditure is crucial for promoting and sustaining the growth. While the initial focus of the government in the aftermath of the crisis was to provide socioeconomic assistance to vulnerable segments of society, later rounds of fiscal stimulus focused on measures to increase capital expenditure. Accordingly, capital expenditure recorded double-digit growth during April–November 2020/21, whereas revenue expenditure grew moderately. The re-prioritising of expenditure from consumption to investment is expected to increase growth over the medium term.

Going forward, managing the fiscal-monetary trade-off may be crucial once the economy revives and growth picks up. The exit from the accommodative stance of monetary policy has to be well calibrated and conducted in a phased manner without disrupting financial market sentiments and the economic recovery process. The independence of monetary policy is institutionalised in the flexible inflation targeting framework and the objective of the monetary policy is "to maintain price stability while keeping in mind the objective of growth".

<sup>8</sup> Office Memorandum: Cash management guidelines for the remaining period of the FY 2020/21, 29 October 2020, [dea.gov.in/sites/default/files/OMCash%20Management%20Guidelines%20for%20remaining%20period-2020-21.pdf](https://dea.gov.in/sites/default/files/OMCash%20Management%20Guidelines%20for%20remaining%20period-2020-21.pdf).

## 2. Monetary-fiscal interactions: past lessons and current scenario

India has a complex history of fiscal-monetary policy coordination – something that may in fact prove to be an asset during these trying times. The current legislative framework, which delineates the roles of monetary and fiscal authorities along several dimensions, is a culmination of a long and multifaceted legacy of coordination. From the 1950s until the early 1990s, deficit financing in India was defined as change in government indebtedness to RBI, which became the source of financing for the five-year plans set out by the government of India. The premise was that the plans which fund capital expenditure would be non-inflationary in the medium term and, accordingly, the RBI was required to automatically monetise deficits. The interface changed further with the nationalisation of banks in 1969, which meant that interest rates became part of the planning process. This led to the RBI simultaneously addressing supply and demand aspects of the economy while also performing regulatory and developmental functions simultaneously (Reddy (2018)). Thus, high fiscal dominance and financial repression characterized the 1980s.

The reforms initiated in the early 1990s were a paradigm shift in the fiscal-monetary interface in India. They included the end to automatic monetisation of government deficits, the erection of fiscal rules through fiscal responsibility legislation, efforts to eliminate administered interest rates and phasing-out of the RBI's refinancing of various entities. The RBI actively helped develop the government securities market and the money market in the process of truly ending automatic monetisation. This yielded rich dividends by facilitating efficient market borrowing and effective transmission of policy. This also helped the economy step out of a regime of financial repression based on administered interest rates to vibrant money and debt markets that allowed interest rates to be largely determined by the market. The financial sector reforms during this period, especially the development of an active secondary market for government securities, laid the foundation for moving from direct to indirect instruments of monetary control in the medium term.<sup>9</sup> The reforms pursued by the fiscal and monetary authorities in tandem helped improve the efficacy of macroeconomic management (RBI (2013)).

The global financial crisis marked another phase in fiscal-monetary interactions in India. The orders of the day were global policy coordination and coordination between monetary and fiscal authorities. Both fiscal and monetary stimuli were undertaken in India and were also supplemented by regulatory forbearance (Reddy (2018)). The institutional architecture for the conduct of monetary policy underwent a fundamental shift, with the formal transition to a flexible inflation targeting framework and the constitution of a six-member MPC for setting the policy rate in 2016. These reforms marked the culmination of efforts made since early 2014 to strengthen the transparency, credibility and independence of monetary policy formulation. The amended RBI Act, incorporating the provisions and responsibilities of the MPC, came into effect in June 2016. The RBI is also entrusted with managing the domestic debt of the government of India and the various aspects of debt management such as quantum of issuance. The pattern of issuance across various tenors is decided by the government in consultation with the RBI. The Debt

<sup>9</sup> The statutory pre-emptions for banks were reduced from around 63% in early 1992 to 35% in a span of six years. The interest rate structure was rationalised and term deposit rates were deregulated.

Management Strategy of the government<sup>10</sup> is decided after deliberations in its half-yearly meetings in which the RBI participates. In the meeting, recent developments in financial markets, the possible impact of steps taken by the RBI and other issues of mutual interest are discussed with the fiscal authority before finalising the borrowing plan. The Medium-Term Debt Strategy spells out the medium-term (three- to five-year) strategy of debt management to be followed and captures the government's preferences with regard to the cost-risk trade-off while taking due account of constraints and potential risks. These institutional features support monetary-fiscal policy coordination without infringing upon monetary policy instrument independence with the central bank.

During the pandemic, the RBI has stepped forward to support the economy even as it continues to work towards maintaining price and financial stability. As domestic asset purchases have been confined solely to government securities, the RBI's balance sheet has not been compromised in any manner and it has adequate instruments at its disposal to sterilise the impact of liquidity on the domestic economy. In the February 2021 MPC meeting, the RBI announced plans to initiate the exit from some of the extraordinary measures announced during the Covid-19 pandemic. An increase in government borrowing can lead to a steepening of the yield curve, with important implications for monetary policy transmission. In the light of this, the RBI conducted simultaneous sale and purchase of securities, often referred to as Operation Twist, to manage the government borrowing programme in an orderly manner. The RBI also provided explicit guidance that systemic liquidity would continue to remain comfortable over the ensuing year and that it will ensure completion of the market-borrowing programme of the government in a non-disruptive manner. The RBI purchases government securities from the secondary market as part of its liquidity management operations and in line with the monetary policy stance. The RBI does not participate in the primary G-Sec market to provide financing to the government.

RBI's policies during the pandemic have facilitated resource mobilisation for the central and state governments at low costs.<sup>11</sup> While the fiscal deficit in India is going to be higher in 2020/21 than was intended, it is important to note that this has primarily been driven by falling revenues. The later rounds of fiscal policies announced in the wake of the pandemic emphasised that government spending would be shifting towards boosting investment rather than consumption. Of course, this will depend on the speed of the recovery. Some studies suggest that debt sustainability depends on the interest rate and growth rate differential – if the interest rate paid by the government is less than the growth rate, then the intertemporal budget constraint facing the government is no longer binding (Blanchard (2019)). If inflation remains in the lower range of the target (eg 4%) even with a real growth rate of 3.4%, the differential would remain negative (Indian Ministry of Finance (2021)). If fiscal deficits remain sustainable, there are unlikely to be any serious challenges for the conduct of monetary policy. Additionally, it is noteworthy that government debt is characterised by low currency and interest rate risks in India. This is due to the low share of external debt and the fact that most of the public debt has been contracted at fixed interest rates, making India's debt stock virtually insulated from interest rate

<sup>10</sup> Contained in the Medium-Term Debt Strategy (MTDS), [www.rbi.org.in/Scripts/PublicationReportDetails.aspx?UrlPage=&ID=837](http://www.rbi.org.in/Scripts/PublicationReportDetails.aspx?UrlPage=&ID=837).

<sup>11</sup> In the G-Sec market in which risk-free benchmarks evolve, a record low weighted average cost of 5.78% and an elongated weighted average maturity of 14.9 years testify to the credibility of monetary and liquidity management operations of the RBI (Indian Ministry of Finance (2021)).

volatility. This lends certainty and stability to the budget in terms of interest payments. However, the possibility of capital flow volatility as a result of excessive deficits can impact exchange rates which, in turn, may affect inflation. Monetary policy actions may then be constrained as a result of elevated inflation and inflation expectations. It should be noted, though, that both foreign and domestic currency denominated debt is predominantly in longer maturity, thus ameliorating any imminent concerns to debt management.<sup>12</sup> Nevertheless, a clear strategy of exit from the fiscal stimulus assumes importance. An orderly unwinding of RBIs countercyclical measures is also warranted along with the financial sector returning to normal functioning without relying on continuing regulatory relaxations as the new norm.<sup>13</sup>

## Concluding remarks

The RBI has played a crucial role during the pandemic, attempting to reinforce the policies of the government to cushion the fallout from the pandemic and place the economy on the path to recovery. It has worked towards ensuring price and financial stability while supporting economic recovery, while simultaneously undertaking developmental policies targeted at easing financial stresses of vulnerable segments and ensuring a stable flow of funds to critical sectors. On the issue of deviation from fiscal rules, it may be noted that the ideal prescription in times of recession caused by a once-in-a-century global crisis, would be a sustained, productive programme of permanent stimulus directed towards public investment in both physical and human capital (Krugman (2020)).

Even though the pandemic has led to a rise in the fiscal deficit, there are reasons to believe that as fiscal spending shifts towards capital expenditure and the economy recovers, with positive implications for revenue garnering, the fiscal deficit will decline and remain sustainable – thus reducing any potential challenges to central bank independence. It is important to bear in mind that, given the depth of the crisis, the uncertain recovery path and the uneven impact across sectors, fiscal and monetary authorities need to remain vigilant, maintain coordination and continue to intervene as and when needed. Coordinated fiscal-monetary policy exit from the accommodative policy mode in a carefully sequenced and timely manner, without disrupting economic revival, would go a long way towards improving macroeconomic management and strengthening financial stability.

<sup>12</sup> The weighted average maturity of outstanding stock of dated securities of the GOI has increased from 9.7 years at 31 March 2010 to 10.7 years at 31 March 2020. The ratio of external debt to internal debt of the Central Government of India in 2019/20, stood at 7.3% (RBI 2020d).

<sup>13</sup> [www.rbi.org.in/Scripts/BS\\_SpeechesView.aspx?id=1099](http://www.rbi.org.in/Scripts/BS_SpeechesView.aspx?id=1099).

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# Monetary and fiscal policy interactions in the wake of the pandemic

Bank Indonesia  
February 2021

## Abstract

The Covid-19 crisis was what the BIS's *Annual Economic Report 2020* called a policy-induced recession generated by repressing economic activity. Extraordinary policy responses were required in terms of health, fiscal and monetary stimulus, and also in terms of the financial sector's response. The speed and effectiveness of policymakers in meeting the challenges of the Covid-19 pandemic will determine the process of economic recovery.

Throughout 2020 and to date in February 2021, Bank Indonesia has maintained a diverse policy mix to mitigate the economic risks associated with Covid-19 and support the national economic recovery programme. To this end, Bank Indonesia has strengthened its policy mix to maintain exchange stability, keep inflation in check, and safeguard financial system stability. It is also taking the necessary follow-up policy measures in coordination with the government and the Financial System Stability Committee in order to maintain macroeconomic and financial system stability, and to expedite the economic recovery.

JEL classification: E52, E58, E61.

Keywords: monetary and fiscal policy interactions, integrated policy framework, policy coordination.

## 1. Recent economic development

After the contraction in the second quarter of 2020, world economic activity has started to increase, although it is still overshadowed by the risk of a second or third pandemic wave in some regions. In the third quarter of 2020, economic activity gradually improved, although the degree of improvement varied from country to country. Meanwhile, vaccinations are likely to be carried out more widely in 2021, including in Indonesia.

**On global financial markets, uncertainty has eased, although caution is warranted.** The rapid spread of the Covid-19 pandemic worldwide caused a global financial market panic in March 2020, leading to turbulence in the financial markets of emerging market economies (EMEs). Portfolio investment withdrawals from EMEs occurred on a large scale, resulting in a scarcity of US dollars that subjected EME currency exchange rates to major depreciation pressures. However, as global financial market uncertainty subsided, the flow of portfolio investment started to return to EMEs. From early November 2020, this was expected to stimulate foreign capital inflows and further appreciation of the exchange rates in EMEs, including Indonesia. Meanwhile, weak domestic demand implies muted inflationary pressures. At the same time, the financial system, which was in good shape when the pandemic started, has provided a cushion for financial system resilience, although credit growth has contracted due to weak domestic demand.

**Many countries provided a sizeable fiscal stimulus for economic recovery from the impact of the Covid-19 pandemic.** Fiscal stimulus was generally allocated for health budgets, social assistance programmes, incentives for the business world, especially for micro, small and medium-sized enterprises (MSMEs), and tax relief for corporations. The amount of additional spending amid falling tax revenues has led to a widening of the fiscal deficit in many countries, with a large increase in deficits exceeding 8% of GDP in some developed countries, as compared with generally smaller deficits in EMEs. The fiscal stimulus has had a positive impact on the economic recovery since the third quarter of 2020.

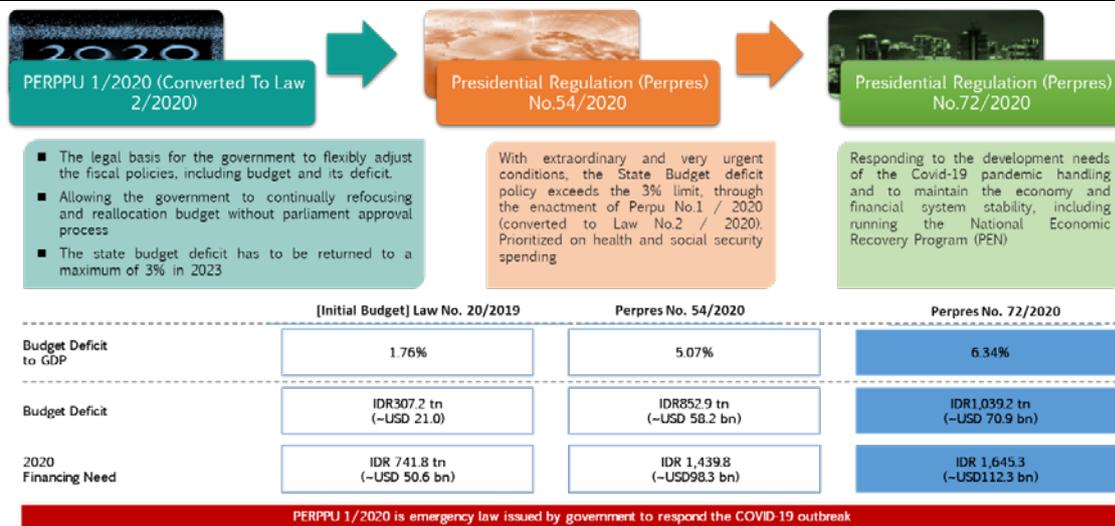
**The process of economic recovery from the Covid-19 pandemic was also supported by monetary stimulus from central banks in many countries.** With monetary policy interest rates approaching zero in developed countries, central banks have created monetary stimulus by injecting liquidity (via quantitative easing or QE) into the financial sector, particularly banking. In EMEs, monetary stimulus is implemented through a combination of lower policy interest rates and injecting liquidity into banking and financial markets. Liquidity injection (QE) is generally carried out through monetary operations, given the limited depth of secondary market financial assets in EMEs. In this vein, Indonesia has carried out the largest amount of QE, amounting to 4.4% of GDP, followed by Mexico (3.3%), Chile (2.8%), and the Philippines (1.6%).

## 2. National economic performance and process: recovery under way

**The Covid-19 pandemic also had a tremendous impact on Indonesia's health, economy, and finances, especially in the second quarter of 2020.** Indonesia is still

experiencing a spike of Covid-19 cases, although the recovery rate continues to improve. The social restriction policies needed to prevent the spread of Covid-19 placed constraints on labour mobility in almost all major cities from April to June, and also undercut economic activity in the second quarter of 2020. Labour mobility has gradually improved since July 2020, in line with the easing of social restrictions in various regions. This has also stimulated economic activity from the third quarter of 2020. Meanwhile, the global financial market turbulence at the end of March and April 2020 resulted in a large outflow of foreign portfolio investment, putting heavy depreciation pressure on the rupiah. With a strong commitment to stability policies from Bank Indonesia, the rupiah exchange rate has strengthened significantly since the end of March 2020, thus supporting the economic recovery. Stability has been maintained, and the process of economic recovery is ongoing.

### Amendment of state budget posture in 2020 in response to the pandemic



**The Indonesian authorities responded immediately to the multidimensional effects of Covid-19.** The coordinated policy measures of the government, Bank Indonesia and other authorities were given legal backing by the enactment of Law No 2 of 2020. This ensured that the authorities could quickly and accountably take extraordinary steps in overcoming the pandemic and encouraging economic recovery.

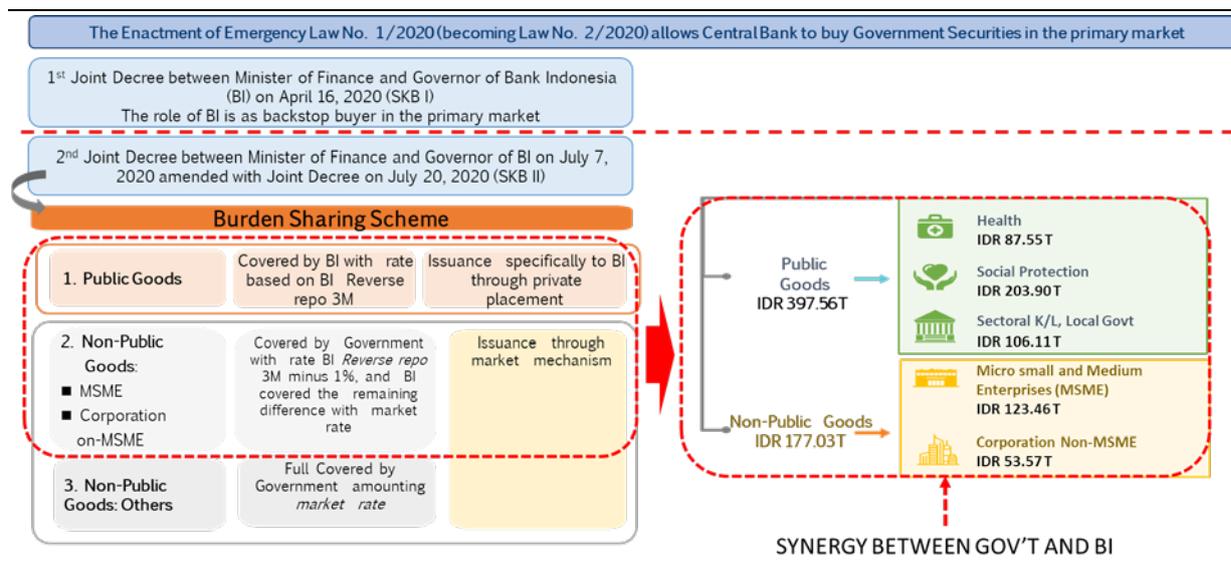
The government pursued an expansive fiscal policy, expanding the deficit and increasing budget financing in 2020. Bank Indonesia conducted an accommodative policy mix amid low inflationary pressures, including monetary stimulus through interest rates and monetary easing on a large scale. These policies were supported by the stabilisation of the rupiah exchange rate, the easing of macroprudential policies, and the digitisation of payment systems.

### 3. Bank Indonesia's policy response: coordinate to build optimism for economic recovery

During the pandemic, the fiscal and monetary authorities coordinated their policies in order to maintain stability. Under Law No 2 of 2020, Bank Indonesia was authorised to assist the financing of APBN 2020 (the state budget) through the purchase of long-term government bonds (SBNs) in the primary market and to share the burden of fiscal financing through market mechanisms and private placements.

Coordination between the central bank and the government in accelerating the economic recovery

Graph 1



**Policy coordination was also strengthened by the Financial System Stability Committee (KSKS), with the aim of mitigating any effects of Covid-19 on financial stability.** In addition to the fiscal and monetary measures, the Financial Services Authority (OJK) focused on maintaining the stability of the financial system through restructuring programmes for SMEs and corporations, as well as other initiatives to maintain the function of financing intermediaries. Likewise, the Indonesia Deposit Insurance Corporation (LPS) also continued to ensure that public savings in the banking sector were guaranteed to support financial system stability.

#### On the policy mix to maintain stability and support the recovery

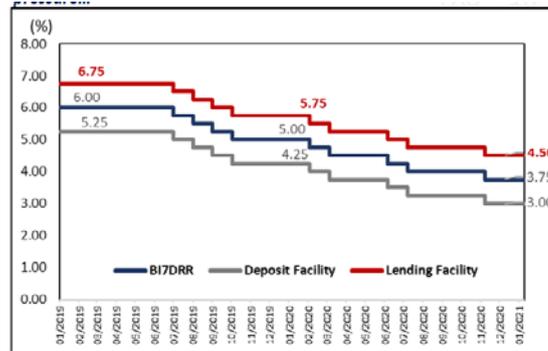
Low inflation and external stability were the key factors that led Bank Indonesia to conduct easing monetary policy through quantitative easing, as well as funding the 2020 state budget, by purchasing SBN in the primary market and sharing the burden of fiscal financing. An expansion of liquidity was carried out to maintain financial system stability and promote the functioning of financial intermediaries with a view to supporting the economic recovery.

**Bank Indonesia carried out this accommodative monetary policy by lowering the BI 7-Day Reverse Repo Rate (BI7DRR) policy rate by 125 bp in 2020.** Bank Indonesia also implemented a monetary stimulus in the form of a QE policy. As

of 30 December 2020, Bank Indonesia had injected rupiah liquidity of around IDR 726.57 trillion or about 4.7% of GDP, mainly from reducing the reserve requirement of around IDR 155 trillion and monetary expansion around IDR 555.77 trillion. Bank Indonesia also lowered its reserve requirement ratio by 300 bp in relation to reserve requirements, including the easing of reserve requirement incentives of 50 bp.

## Reduced policy rate and injection of liquidity

Graph 2



**QE 2020 & 2021 : IDR738,7 Trillion (4.77% GDP)**

**2020 QE: IDR726,6 Trillion (4,69% GDP)**

- SBN Purchase from secondary market Rp166.2 Trillion
- Term-repo and FX Swap Rp389.6 trillion
- Reduction in RR Rupiah 300 bps around Rp155 trillion
- Not imposing additional reserves requirement penalty for RIM Rp15.8 trillion

**2021 QE : IDR12,08 Trillion (as of 27 January 2021)**

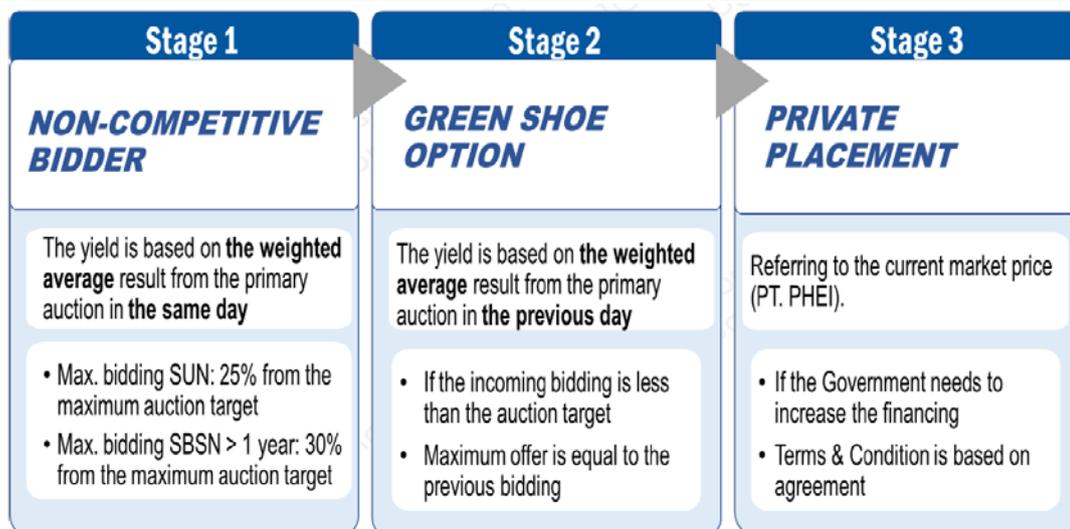
**Under Act No 2 of 2020, Bank Indonesia is committed to funding the 2020 state budget by purchasing SBNs in the primary market.** The commitment was carried out by adhering to prudent principles to maintain economic stability, also taking into account the effect on inflation. Overall, in 2020, Bank Indonesia has purchased SBNs in the amount of IDR 473.42 trillion for funding and burden-sharing in the 2020 state budget for the national economic recovery programme. The first purchase consisted of IDR 75.86 trillion worth of SBNs in the primary market. The second purchase consisted of IDR 397.56 trillion through a private placement under the Joint Decree of the Minister of Finance and Governor of Bank Indonesia issued on 7 July 2020. Furthermore, Bank Indonesia has also undertaken burden-sharing with the government to fund non-public sector SMEs in the amount of IDR 114.81 trillion and non-public sector corporates in the amount of IDR 62.22 trillion according to the Joint Decree of the Minister of Finance and the Governor of Bank Indonesia issued on 7 July 2020. Coordination between fiscal and monetary policy through the purchase of SBNs by Bank Indonesia to fund the State Budget 2020 has provided sufficient room for fiscal manoeuvre. This cooperation has allowed the government to focus on driving the momentum of national economic recovery.

**Indonesia's economic growth started to improve in the second half of 2020, along with the loosening of social restrictions,** the realisation of increasing fiscal stimulus, and the global economic recovery. Economic growth in the third and fourth quarters of 2020 fell by 3.49% year on year and 2.19%, respectively, resulting in an overall contraction of 2.07% in 2020. Macroeconomic stability remained under

control. Indonesia's balance of payments was solid, thereby reinforcing external sector resilience. Supported by Bank Indonesia's stabilisation measures and steady foreign capital inflows to domestic financial markets, the rupiah appreciated. Inflation remained low due to compressed domestic demand and adequate supply. In line with Bank Indonesia's accommodative monetary and macroprudential policy stance, liquidity conditions stayed loose, prompting lower interest rates and stimulating economic financing.

Mechanism of government bond purchases from the primary market

Graph 3



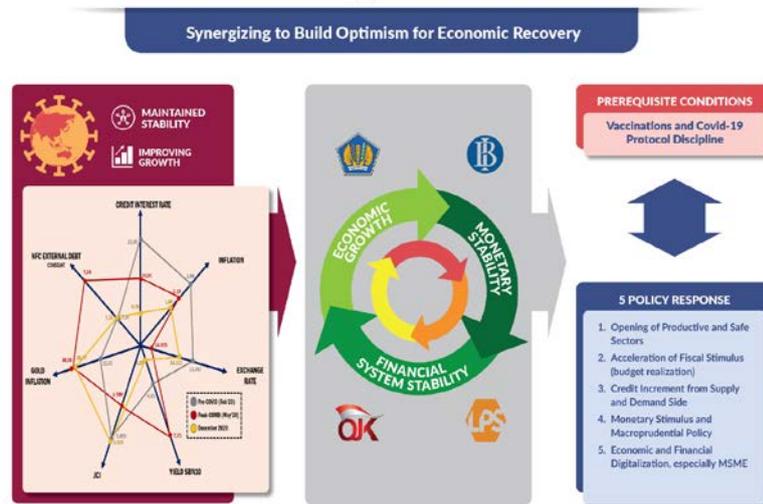
#### 4. Bank Indonesia's policy response: synergise to build optimism for economic recovery

##### On macroeconomic and financial stability risk management

**Act No 2 of 2020 allows the government to raise the fiscal deficit above 3% until 2022 as a part of its extraordinary measures to mitigate the impact of the pandemic on the economy.** In 2020, the fiscal deficit increased from the initial target of 1.76% of GDP to 6.34% of GDP. Meanwhile, the public debt as of November 2020 rose to US\$ 203.7 billion, up from US\$ 198.6 billion in November 2019 (2.57% year on year). Nevertheless, the fiscal deficit and public debt remained manageable and also relatively low compared with peer countries. The expansionary fiscal policy is ongoing, as reflected in the 2021 State Budget deficit of IDR 1,006.4 (5.7% of GDP), after a deficit of IDR 1.039.2 trillion (6.3% of GDP) in 2020, but despite this increase in debt the government has remained within the provisions of the law. Hence, we do not view the increase in fiscal deficits and public debt as raising macroeconomic and financial stability risks.

**Going forward, the coordination of fiscal and monetary policy continues to be strengthened under the Financial System Stability Committee (KKSK),** with the aim of maintaining macroeconomic and financial system stability, as well as accelerating the economic recovery. The focus of policy coordination is oriented

towards overcoming supply and demand-side constraints, in terms of bank lending to priority sectors, to support economic growth and the economic recovery.



### On exchange rate vulnerabilities and inflation

**BI's policy mix has been carried out in a prudent and measured manner by taking into account its impact on stability, including the exchange rate and inflation.** Pursuing accommodative monetary policy through a combination of lower policy interest rates and purchasing bonds is appropriate under the current exceptional circumstances. This combination is more likely to achieve accommodative financial conditions along the rupiah yield curve than if policymakers were to depend only on interest rate measures. Bank Indonesia is fully aware that bond purchases, notably those in primary markets, pose risks to monetary policy credibility and, when large, might be difficult to absorb by the Bank while meeting its inflation mandate.

**Current developments indicate that the rupiah exchange rate remains stable, with the potential to strengthen.** This is in line with its fundamentally undervalued level, supported by the low current account deficit, the high attractiveness of domestic financial assets and a declining risk premium for Indonesia. Low and controlled inflation has also supported the exchange rate movement as evidence that the impact on inflation is manageable in line with weak demand and adequate supply.

Bank Indonesia will continue to strengthen its exchange rate stabilisation policy in line with the currency's fundamental value and market mechanisms through monetary operations and by providing market liquidity. Inflation in 2021 is projected to remain within the 3.0% ±1% target corridor. Bank Indonesia remains firmly committed to maintaining price stability and strengthening policy coordination with the government through national and regional inflation control teams (TPI and TPID), with the aim of keeping inflation within the predetermined target range.

# Domestic asset purchases by the Bank of Israel during the pandemic

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Bank of Israel  
February 2021

## Abstract

The Bank of Israel rolled out two large-scale domestic asset purchase programmes during 2020: a government bond programme and a corporate bond programme. The Bank of Israel committed to purchasing domestic assets worth ILS 100 billion – about 7% of GDP. This paper reviews the background, considerations and impact of these two asset purchase programmes, both of which are on a macroeconomic scale and are ongoing. A preliminary assessment suggests that these programmes significantly reduced government bond yields and corporate bond spreads. In our view, the commitment made in advance by the Bank of Israel to purchase well-defined, sizable quantities of bonds, as well as timely rollouts of the programmes, were key to their success.

JEL codes: E58, G01, H12.

Keywords: domestic asset purchases, quantitative easing, unconventional monetary policy.

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## 1. Introduction

What are the chances that within the space of an hour the Bank of Israel (BOI) and the Board of Governors of the Federal Reserve System (the Fed) would launch uncoordinated government bond asset purchase programmes? This is exactly what happened in March 2020, when a global meltdown of financial markets was triggered by news of the spread of the Covid-19 pandemic and led the Fed and the BOI to move in unison.

As a general principle, it is more efficient and elegant to conduct monetary policy by adjusting the key interest rate rather than through indirect quantitative operations. The simple rationale is that it is better to control prices rather than quantities. However, cracks in this paradigm appeared in the previous decade, when central banks acted as market makers of last resort and the proximity to the zero lower bound interest rate limited the ability of central banks to deliver the extent of monetary accommodation that was deemed necessary. This opened the door for asset purchases (APs) as legitimate monetary instruments. In addition, unconventional tools, including APs, were always part of the toolkit which central banks could use in times of crises when financial markets were disorderly.

The BOI, like other central banks, has two modes of operation. In normal times, inflation and output are the focal points of its policies. In abnormal times, financial market stability, credit flow and liquidity become more important. The Covid-19 crisis clearly falls under the definition of the latter, causing dysfunction in the forex (FX) swap market, disruption in the government bond market and considerable stress in the corporate bond market. After it succeeded in stabilising the markets, the BOI looked for additional tools for “doing more” ie delivering additional monetary accommodation.

This is the context under which the BOI has activated two AP programmes: the government bond purchase programme was rolled out in March 2020 and the corporate bond purchase programme was announced in July 2020. The government bond programme was reactive in nature, motivated by market liquidity and stability concerns that were the background to the decision to intervene. The corporate bond programme was more proactive and preemptive, designed to deliver additional monetary easing and aimed at supporting credit conditions.<sup>3</sup>

This paper reviews the background, considerations and impact of these two AP programmes, both of which are of a macroeconomic scale and ongoing. It is probably too early to give a full account of their pros and cons. The ultimate test – how to smoothly exit from these programmes – is yet to come. Though the lessons from the BOI’s 2009 government AP programme suggest that a buy and hold strategy should facilitate a smooth exit. However, our assessment is preliminary at this stage.

<sup>3</sup> In parallel there were targeted programmes aimed at supporting credit provision by banks to private micro and small firms.

## 2. A chronicle of financial markets distress: turbulence and stabilisation

Government domestic currency bonds are the backbone of the financial market. In addition to funding the government, government bonds are a centrepiece of private wealth and a fundamental benchmark for financial assets. As such, it is imperative to have a well-functioning, liquid and stable market in which those bonds can be traded. Normally, the sovereign bond market is the deepest and most stable part of the financial market. In developed economies, sovereign bonds are a safe haven and the demand for those bonds during crises increases. The correlation between yields and the macroeconomic cycle usually allows governments to issue debt at lower costs exactly when it is needed most, during economic downturns. Because government yields are an important benchmark for the credit market, the decrease in yields during downturns reduces, on the margins, the cost of borrowing for corporates and households alike.

Government bonds in Israel evolved as expected during the first stage of the Covid-19 crisis. Flight to safety compressed the 10-year sovereign yields by half (Graph 1, bottom left-hand panel). However, this phase ended abruptly in early March, when the market became one-sided: with only sellers active, government bond yields spiked and liquidity dried up.

Other markets also showed similar signs of distress. In the corporate bond market, spreads widened sharply (Graph 1, top right-hand panel), issuance dried up and overall liquidity plummeted. In the foreign exchange market, a shortage of dollar liquidity caused the implied shekel interest rate to plummet and participants claimed they were unable to hedge currency exposures. This was a global phenomenon, but it was more pronounced in the shekel-dollar market than in the euro-dollar market (Graph 1, bottom right-hand panel). A non-financial crisis turned into one characterised by severe financial stress through four distinctive factors:

- worldwide equity corrections (Graph 1, top left-hand panel);
- massive outflows from domestic mutual funds, most of which are multi-asset funds;
- margin calls on the foreign equity derivatives holdings of institutional investors; and
- large short-dollar positions by institutional investors.<sup>4</sup>

Financial asset repricing was inevitable in early March, when suddenly it had become clear that the Covid-19 virus was not limited to China and it was spreading uncontrollably. The factors above exacerbated the extent of the problem in Israel and the result was a disorderly adjustment process.

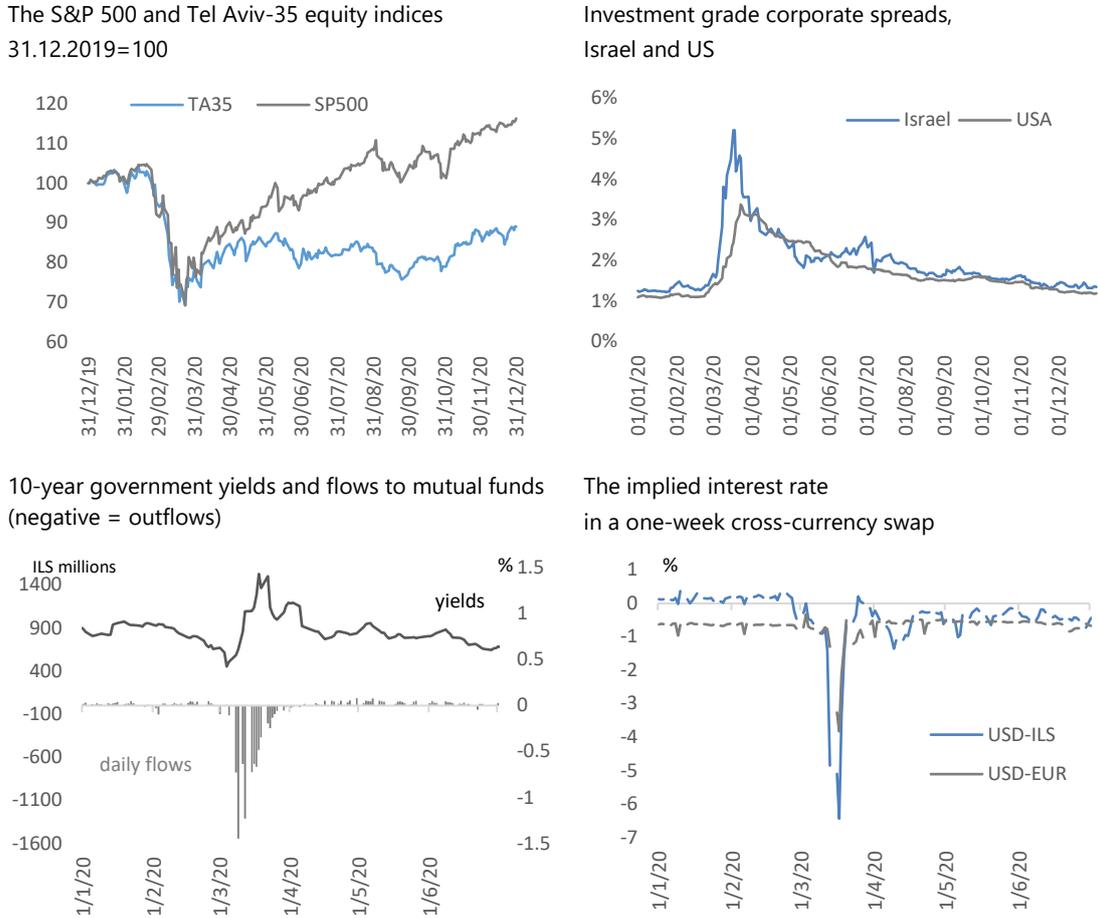
Equities dropped globally and at home (Graph 1, top left-hand panel) while in the corporate bond market spreads widened (Graph 1, top right-hand panel). These events triggered outflows from multi-asset mutual funds, a popular and liquid investment vehicle in Israel. This put additional pressure on the prices of these assets and on government bond yields as well, as these funds hold a large proportion of

<sup>4</sup> These factors are not unique to Israel – a similar combination of the last two factors was also at play in Norway. See Alstadheim et al (2021).

government bonds (Graph 1, bottom left-hand panel). In order to meet the redemptions on the funds, the managers were forced to liquidate government bonds, their most liquid asset. Meanwhile, the global risk-off triggered margin calls on foreign equity derivatives held by institutional investors. The institutional investors did not have access to a large enough pool of dollar liquidity to meet these margin calls and were forced to raise dollars, initially in the FX swap market. As a result, the cross-currency basis in the swap market widened (also due to a global dollar shortage). This pushed institutional investors to liquidate their government bonds at any rate and use the shekel proceeds to buy dollars in the spot market. The result of the two processes above was a “fire sale” of Israeli government bonds, which was driven by their interconnectedness with other assets and not by their intrinsic value.

Equity, bond and FX swap markets in 2020

Graph 1



Source: Bank of Israel

These events led the BOI to move swiftly in order to stabilise the markets on several fronts. First, on 15 March, the BOI announced that it would purchase government bonds in order to stabilise the markets. In addition, the repo facility was made more flexible and access to it was widened to institutional investors.<sup>5</sup> These measures were taken to stop the “fire sale” in the government bond market and to

<sup>5</sup> The repo facility was introduced in March and the collateral spectrum was widened in April.

facilitate an alternative source of shekel liquidity without having to actually sell the bonds.<sup>6</sup> The FX swap market dysfunction was dealt with on 18 March by offering banks and institutional investors swap lines with the BOI, at up to USD 15 billion, at rates set lower than those in the market.<sup>7</sup>

While all these actions were necessary and managed to stabilise the markets, government and corporate bond yields remained elevated. Given the sharp downturn in economic activity and inflation, the Monetary Policy Committee (MPC) was interested in delivering additional monetary accommodation. As the interest rate was already very low at 0.25% and medium- and long-term bond yields were relatively high, the MPC decided to apply “quantitative easing” and announced a large-scale government bond purchase programme.

### 3. The government bond asset purchase programme

On 23 March, the BOI announced that it would purchase government bonds worth ILS 50 billion. The strong, unequivocal commitment (ie not “up to 50 billion” etc) delivered a signal of the BOI’s actions in the future – a “forward guidance” component that the 15 March announcement had lacked. The size of the programme – at about 4% of GDP and 10% of domestic tradable debt – was set to balance between the need to have an impact on yields and considerations regarding liquidity and risks of fiscal dominance (real or perceived).

The impact on yields of the announcement and the subsequent purchases that followed were substantial. The curve flattened almost immediately – about 30 minutes after the announcement – and 10-year yields dropped by 30 basis points. External help came in the form of a contemporaneous and comparable move by the Fed. In a few days, after the dust had settled, it became clear that the programme delivered exactly what it was supposed to – a relatively flat and stable yield curve, similar to the one in early 2020. A recent cross-country study (Rebucci et al (2020)) shows that the short-term effect of the BOI’s announcement on yields stands out when compared to advanced economies and it resembles the average effect in emerging markets (Graph 2, left-hand panel). In addition to its direct impact, the programme immediately triggered a compression of corporate spreads that decreased to comparable levels to those in the US (Graph 1, top right-hand panel).

Still, it was unclear how long this achievement would hold and how the market would react to the sharp increase in the fiscal deficit and the issuance of unprecedented quantities of government bonds.<sup>8</sup> Although fiscal conditions have become much more challenging and the coverage ratio in the primary market auctions fell, the market was able to absorb the higher quantities in the rest of 2020

<sup>6</sup> Non-banks have been included in the group of potential counterparties and corporate bonds have become eligible collateral.

<sup>7</sup> Dollar illiquidity was a global problem and led several other central banks to offer swap lines as well. Unlike other central banks that had back-to-back swap lines with the Fed, the BOI used its own FX reserves to finance the operation.

<sup>8</sup> The BOI purchases government bonds in the secondary market only. The BOI law prohibits purchases of government bonds directly from the government either in or out of the market.

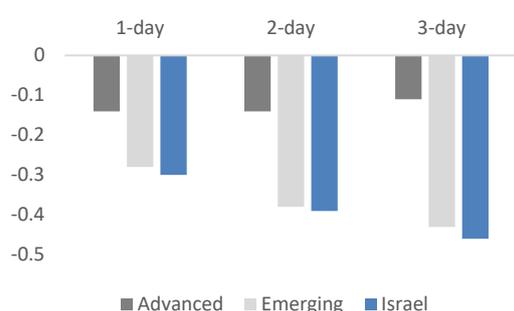
(Graph 2, right-hand panel) without an adverse price reaction (Graph 1, bottom left-hand panel).

The BOI purchased government bonds worth ILS 46 billion in 2020 under the programme.<sup>9</sup> In November 2020, the BOI replenished the programme’s budget by an additional ILS 35 billion, bringing the total budget to ILS 85 billion. The additional allocation enables a continuous execution at the current pace of purchases throughout most of 2021.

## The impact of the government asset purchase programme on yields and issuance

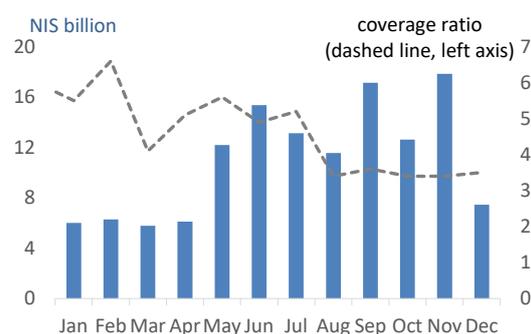
Graph 2

The impact of asset purchase programmes on 10-year yields, in a 1-2-3 day window after announcement, %



Source: Based on estimates by Hartley and Rebucci (2020)

Monthly issuance of tradable government debt and the average coverage ratio in 2020



Source: Israeli Ministry of Finance

## 4. The corporate bond AP programme

The spike in the corporate spreads in March was drastic and some of the mechanisms that were discussed in the previous section, such as the outflows from mutual funds, were also at play here. After the announcement on the government AP programme, corporate yields dropped by more than the drop in government bond yields due to an additional drop in corporate spreads – and the spread continued to narrow in April. At that point, it seemed the corporate bond market did not require additional direct support. However, concerns about a potential credit squeeze and a slow but steady increase in corporate spreads in May and June, led the BOI to roll out a corporate AP programme in early July.

The corporate bond programme was designed early on as a contingency. The plan was to purchase corporate bonds based on their market cap of outstanding eligible debt.<sup>10</sup> The credit quality threshold for purchases was set to bonds rated “A-” or higher (local ratings in Israel are two notches higher than elsewhere, so the top tier of high-yield debt was also included).

The corporate AP programme invoked several controversial issues at the outset. Firstly, intervention by the BOI in the corporate bond market might exacerbate moral

<sup>9</sup> Although the BOI’s AP programme is sizable, it is still lower than the increase in debt issuance. In addition to issuing debt in local currency presented here, the MOF stepped up issuance of foreign currency denominated debt since March 2020.

<sup>10</sup> Foreign companies that issued debt in Israel and unconventional bonds were excluded.

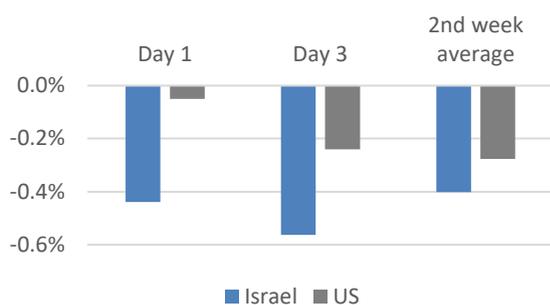
hazard risks. In the event of future credit events, the BOI would have to write-off the losses and transfer resources between the public and private sector – a quasi-fiscal operation. Unlike other central banks, the BOI does not have a reimbursement mechanism in place with the government to compensate for these losses. The programme also puts the BOI in an awkward position and creates a potential conflict of interest because the BOI is both a debtor and the supervisor of banks at the same time. Nonetheless, the BOI Law is flexible enough to accommodate the programme. The investment grade (IG) credit rating is expected to keep credit losses at a low level, and the total return on the corporate portfolio is expected to be positive even under adverse conditions – credit losses are expected to be financed by capital gains on the rest of the portfolio.

The increase in spreads between May and June was neither dramatic nor erratic. Therefore, launching the corporate AP programme was not an easy, straightforward decision. Perhaps an additional factor helped the BOI to reach the tipping point – the BOI routinely invests in corporate bonds in the US and Europe as part of its FX reserves portfolio, via an in-house corporate desk. Hence, the asset class and its associated risks are well known. The availability of well-trained staff and the organisational know-how paved the way – psychologically and practically – to doing so at home. In addition, corporate bonds in Israel are traded on the stock exchange electronically, which enables a streamlined process.

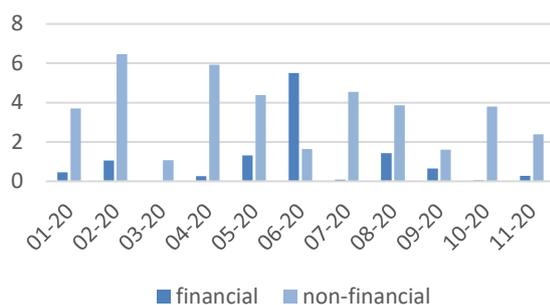
As the real economy deteriorated as a result of a severe lockdown, considerations tilted, on balance, towards activating the programme. On 6 July, the BOI announced it would purchase bonds worth ILS 15 billion, representing slightly above 1% of GDP and 6% of the eligible corporate debt at the time. The BOI started to implement the programme minutes after the announcement, which attests to the capacity mentioned above.

The impact of the corporate asset purchase programme on spreads and issuance Graph 3

Investment-grade spreads after the announcements on corporate asset purchase programmes\*



Monthly issuance of debt by financial and non-financial companies in 2020, ILS billions\*\*



\*The figure shows the drop in investment grade spreads in Israel following the 6 July announcement, compared with the drop in IG spreads in the US following the Fed’s announcement on the Secondary Market Corporate Credit Facility (SMCCF) on 23 March 2020. The third column is the weekly average one week after the announcements.

\*\*Financial companies include banks, insurance companies and non-bank credit providers.

Source: Bank of Israel

The programme came as a surprise, and the spreads reacted accordingly by a drop of about 40 basis points.<sup>11</sup>

A comparison of the impact of the BOI's corporate bond programme on spreads vs the Fed's announcement on the Secondary Market Corporate Credit Facility (SMCCF), in a methodology in line with Rebucci et al (2020) – ie at variable time spans – points to the relatively high impact of the BOI's programme (Graph 3, left-hand panel). The difference may be explained by the fact that while the BOI moved to immediate implementation, the Fed began to purchase corporate bond ETFs a month after the announcement, so the Fed's impact on the Investment Grade (IG) spread is a clean announcement effect (see Sharpe and Zhou (2020)). In addition, the comparison does not control for the possibly higher uncertainty around Covid-19 in March vs July.<sup>12</sup> It is also possible that the BOI's announcement had a stronger impact than the Fed's because this is the first time a corporate bond programme had been announced in Israel. The IG spread in Israel continued to decrease slowly in the rest of 2020 and since the programme launched, it has usually only been slightly higher than the US IG spread.

The programme was also motivated by the goal of supporting the primary market and enabling firms to rollover their debt at a relatively low cost. After the primary market froze in March, debt issuance by non-financial corporates bounced back in full in April following normalisation in the market and the decrease in yields, but started to decline again in May and June.<sup>13</sup> The corporate AP programme reversed this trend and issuance by non-financials bounced back in July and August. As for financial corporates, the BOI offered very attractive substitutes, such as medium-term lending to banks.<sup>14</sup> This reduced the banks' reliance on wholesale funding and released supply for issuances among non-financials.

## 5. Conclusions

The BOI rolled out two large-scale AP programmes during 2020. Put together, the BOI committed to purchase domestic assets worth ILS 100 billion. While government bonds were purchased in 2009, the corporate bond AP programme is a novel addition to the BOI's toolkit. Both programmes are a form of quantitative easing – additional monetary accommodation near the zero lower bound, but they were also designed to stabilise financial markets and to reduce the probability of market turbulence.

Yields have been low and stable since the inception of the government AP programme in March 2020. It is difficult to isolate the programme's contribution to this outcome, as clearly other factors were at play: inflation in Israel is exceptionally low, the economy has outperformed relative to most OECD economies in terms of output and Israel has maintained its credit rating in a global environment of credit

<sup>11</sup> Although on the same day, the BOI lowered its macroeconomic forecast.

<sup>12</sup> The SMCCF also had other benefits as was introduced when liquidity dried up and it reduced the transactions cost. See O'Hara and Zhou (2021).

<sup>13</sup> The bounce in April may have been the result of a completion of issuances that were already in the pipeline.

<sup>14</sup> The cheap loans, some of which carry a negative interest rate, were designed to encourage banks to lend to micro and small firms.

downgrades. Even so, the AP programme is probably a major contributor to the favourable conditions in the government bond market.

The corporate bond programme reversed a slow but steady increase in corporate bond yields between May and July 2020 and contributed to a boost in the issuance of corporate debt. Although the programme had clear benefits, it is unclear whether it was essential. Only ILS 3.4 billion has so far been purchased (as of 31 January 2021). It is possible that the spreads are still affected by the programme's framework even when actual purchases do not take place. Thus, the programme might have eliminated a "bad equilibrium" with a negative feedback loop between the spreads and defaults, and added a safety net at a bearable cost. In a major crisis, it is probably better to err on the side of doing too much monetary easing rather than too little.

The strong signal that was associated with the government and corporate bond purchase programmes was imperative for normalising conditions in the bond markets. In our view, the commitment made by the BOI in advance to purchase well-defined, sizable quantities was key. This explicitly Odyssean form of forward guidance comes at a cost, but may nevertheless be indispensable.

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# Monetary and fiscal policy interactions in the wake of the pandemic in Korea

Bank of Korea

## Abstract

In response to the Covid-19 crisis, Korea's monetary and fiscal policies were conducted in a coordinated manner. The Bank of Korea increased the degree of monetary policy accommodation through conventional and unconventional policies, while the government increased its fiscal expansion. The policies adopted by the Bank of Korea improved financial conditions, thereby alleviating possible adverse effects on the real economy.

To prevent any blurring of the boundary between monetary and fiscal policies, the Bank of Korea implemented policies that were deemed not to bear any risk of financial losses, so as to reduce any possible impact on market resource allocation. The expansionary fiscal policy increased the fiscal deficit and government debt, but the government debt-to-GDP ratio in Korea is still at a favourable level compared with those of other major economies.

The influence of monetary policy on the exchange rate was insignificant. Depreciation of the Korean won and inflationary pressures from it are not expected for the time being, although exchange rate volatility could conceivably increase if unexpected shocks were to hit the global economy.

JEL classification: E31, E58, E63, F31.

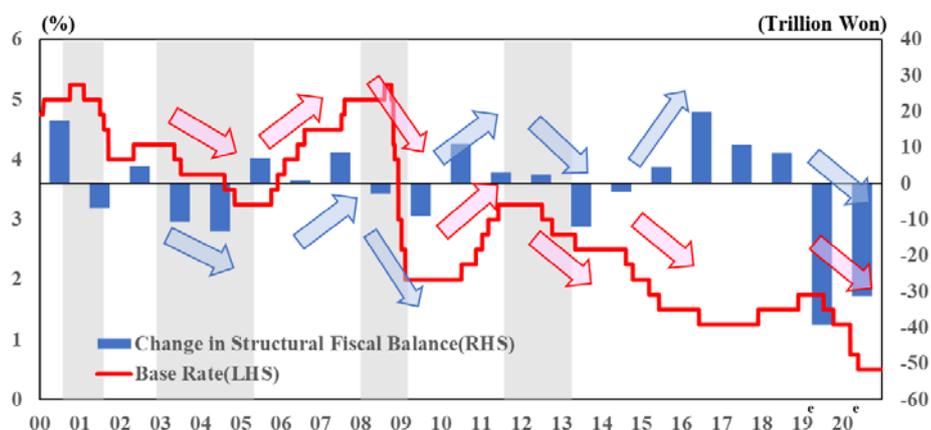
Keywords: monetary policy, policy mix, public debt, exchange rates.

## 1. Monetary and fiscal policy operations in Korea

Korea's monetary and fiscal policy have been implemented in a coordinated manner<sup>1</sup> since the start of this century. Both monetary and fiscal policies are usually implemented countercyclically. They are accommodative (expansionary) during economic downturns and tighten during economic upturns, although with one exception. Between 2015 and 2017, fiscal policy took a tightening stance to achieve a balanced budget, while monetary policy maintained an accommodative stance. In this case, the two policies worked in different directions.

Korean structural fiscal balance<sup>1</sup> and base rate

Graph 1



<sup>1</sup> Fiscal balance less changes in fiscal balance due to the business cycle. Structural fiscal balance indicates the government's discretionary fiscal policy stance. <sup>2</sup> Shaded areas indicate recessions.

Sources: Bank of Korea; Statistics Korea; IMF.

In normal situations, monetary and fiscal policies at times take different approaches. However, in some situations, such as an economic crisis, it is necessary that the two policies are coordinated. In Korea too, coordination between the two policies strengthened during the response to the Covid-19 pandemic. The Bank of Korea significantly increased its degree of monetary policy accommodation through, for instance, Base Rate cuts, expansions of the Bank Intermediated Lending Support Facility,<sup>2</sup> and a regular full-allotment RP purchase facility.<sup>3</sup> The government also substantially increased its degree of fiscal expansion through measures such as four rounds of supplementary budget compilations amounting to 67.7 trillion won (3.5% of GDP). In addition, the government, a state-owned bank, and the Bank of Korea together established an SPV to purchase corporate bonds, including low-credit ones, and commercial paper to support the corporate bond and commercial paper markets.

<sup>1</sup> The objective of monetary policy is to ensure macro-financial and economic stability, while fiscal policy is implemented in consideration of other objectives, such as the expansion of growth potential, support for vulnerable sectors, or fiscal soundness, as well as financial and economic stability. Therefore, the question of whether the two policies are either "cooperative" or "uncooperative" tends to depend mainly on the role of fiscal policy.

<sup>2</sup> The Bank of Korea finances banks at low interest rates in accordance with their SME lending performance.

<sup>3</sup> The facility allows for the purchasing of bonds in repo (91-day) auctions once a week. Liquidity is supplied by purchasing bonds (at a fixed interest rate) in full without any auction limit.

## Policy responses to Covid-19 in Korea

Table 1

	Monetary policy	Fiscal policy
March	<ul style="list-style-type: none"> <li>• Base Rate cut (1.25% → 0.75%)</li> <li>• Expansion in size and interest rate cut of the Bank Intermediated Lending Support Facility</li> <li>• Non-regular repo purchase</li> <li>• Outright purchase of Treasury bonds (March ~ November)</li> </ul>	<ul style="list-style-type: none"> <li>• First supplementary budget compilation (11.7 trillion won)</li> <li>• Stock Market Stabilization Fund</li> </ul>
April	<ul style="list-style-type: none"> <li>• Full-allotment RP purchase (April ~ July)</li> </ul>	<ul style="list-style-type: none"> <li>• Second supplementary budget compilation (12.2 trillion won)</li> <li>• Special Low-rate Loans for Small Merchants</li> <li>• Bond Market Stabilization Fund, P-CBO<sup>4</sup></li> </ul>
May ~ July	<ul style="list-style-type: none"> <li>• Base Rate cut (0.75% → 0.50%)</li> <li>• Expansion of the Bank Intermediated Lending Support Facility</li> <li>• Co-established an SPV to purchase corporate bonds and commercial paper with the government</li> </ul>	<ul style="list-style-type: none"> <li>• Third supplementary budget compilation (35.1 trillion won)</li> <li>• Emergency Disaster Relief Fund (14.2 trillion won)</li> <li>• Emergency Employment Stabilization Subsidy</li> <li>• Key Industry Stabilization Fund</li> </ul>
August ~ September	<ul style="list-style-type: none"> <li>• Expansion of the Bank Intermediated Lending Support Facility</li> </ul>	<ul style="list-style-type: none"> <li>• Fourth supplementary budget compilation (7.8 trillion won)</li> <li>• New Hope Fund for Small Businesses</li> </ul>

Sources: Bank of Korea; Ministry of Economy and Finance.

In the course of policy cooperation, however, the boundary between monetary and fiscal policies has become blurred, and there are growing concerns about monetary financing. Under these circumstances, it is important that central banks stick to their principles of not bearing the risk of financial losses, and of a neutral liquidity supply that does not affect market resource allocation excessively, while making policy cooperation efforts to overcome the current crisis. With this taken into consideration, in setting up the SPV to manage purchases of corporate bonds and commercial paper, the Korean government and the state-run bank bore the risk of losses through investment and subordinated loans. In addition, purchases of the credit securities were conducted not only for the subprime bonds and paper, but also for the prime ones to reduce their influence on resource allocation.

<sup>4</sup> A measure to support the issuance of corporate bonds through primary collateralised bond obligations.

SPV to purchase corporate bonds and commercial paper

Table 2

Monetary policy	
Financing structure	<ul style="list-style-type: none"> <li>• Korea Development Bank (KDB) invested 1 trillion won. (Government invested 1 trillion won into the KDB.)</li> <li>• KDB made 1 trillion won of subordinated loans.</li> <li>• Bank of Korea made 8 trillion won of primary loans.</li> </ul>
Eligible securities	<ul style="list-style-type: none"> <li>• (Credit Rating) Corporate bonds: AA~BB, Commercial paper: A1~A3</li> <li>• (Eligible Issuer) Firms whose interest coverage ratio is less than 100% for two consecutive years are not eligible.</li> <li>• (Maturity) Less than three years</li> </ul>
Proportion to purchase by credit rating	<ul style="list-style-type: none"> <li>• AA (including A1): more than 25%</li> <li>• A (including A2): about 55%</li> <li>• BBB or lower (including A3): less than 20%</li> </ul>

Source: Bank of Korea.

## 2. Asset purchase policy

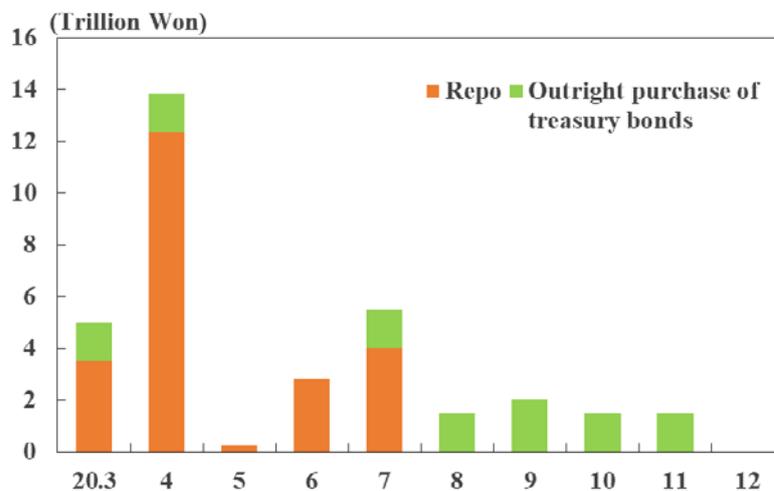
### 2.1 Necessity of asset purchase policy

When financial markets became unstable and the real economy contracted significantly after the outbreak of Covid-19, major central banks responded via their policy rates, and also by employing other monetary policy tools.

The Bank of Korea also made outright purchases of Treasury bonds, financing an SPV to purchase corporate bonds and commercial paper, and conducting bond purchases in a full-allotment RP purchase programme. Outright Treasury bond

BOK's treasury bond purchases and repos

Graph 2



Source: Bank of Korea.

purchases and bond purchases in repos amounted to 34 trillion won (11 trillion won and 23 trillion won, respectively) from March to December 2020, which accounted for 1.8% of Korea’s GDP. Purchases of corporate bonds and commercial paper worth 2.5 trillion won (0.4% of the outstanding amount of corporate bonds and commercial paper issuance) were made through the SPV as of end-December 2020.

The BOK’s asset purchases, however, were different from the LSAPs in major advanced countries in some respects, such as their relatively small size. Since the spread of Covid-19 and the consequent financial market unrest and real economic slump were not as serious in Korea as they were in some major economies, large-scale asset purchases were not necessary.

## 2.2 Effects of asset purchase programme

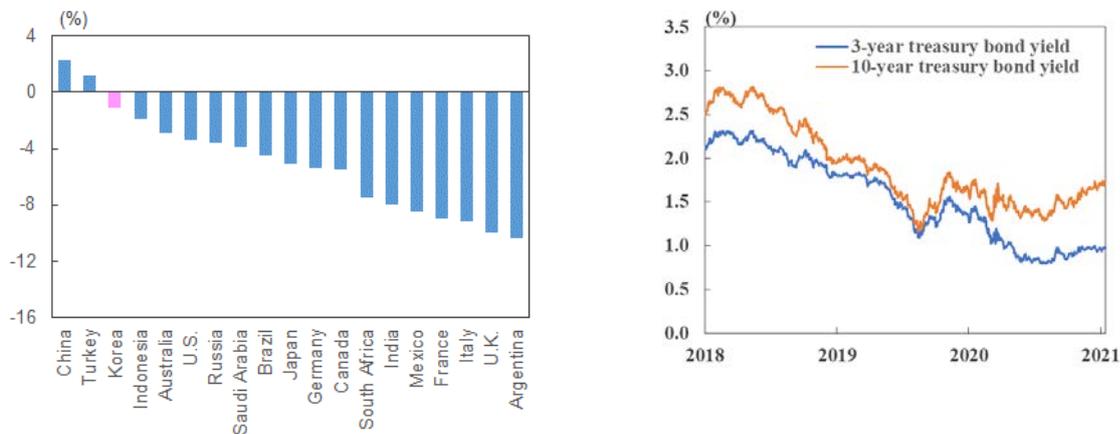
The Bank of Korea’s purchase of Treasury bonds and repos, and its introduction of a corporate bonds and commercial paper purchase programme, are assessed to have improved financial conditions, supporting the real economy. Due to the Base Rate cuts and the outright purchase of Treasury bonds, the Treasury bond yield during 2020 came down to a level below that seen in 2019. Credit spreads, which had widened sharply over a short period of time, narrowed rapidly since the Bank’s adoption of the full-allotment RP purchase programme and the corporate bonds and commercial paper purchase programme, although the spread on subprime bonds (A–corporate bonds) narrowed relatively slowly.

Growth estimates and KRW yield curve

Graph 3

G20 countries’ real GDP growth estimates

Three- and 10-year treasury bond yields<sup>1</sup>



<sup>1</sup> Final quotation yields.

Sources: IMF and Korea Financial Investment Association.

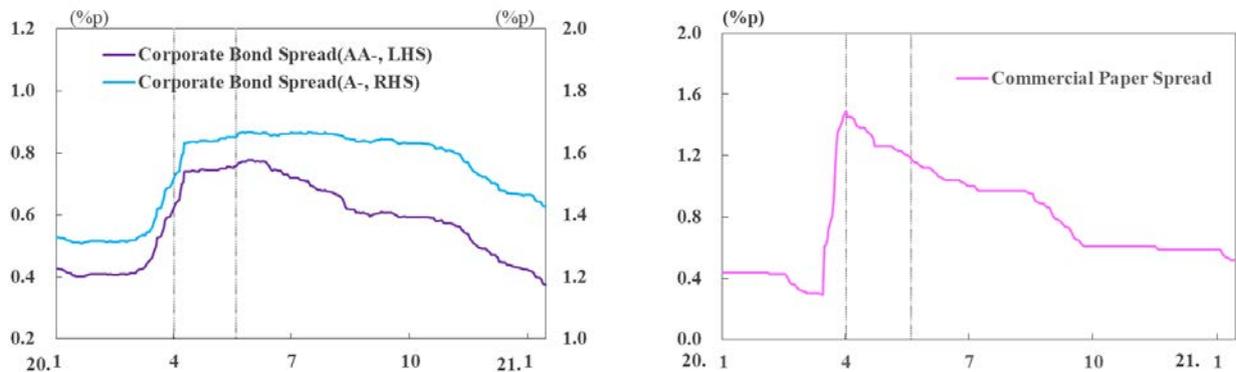
As a result, the Financial Conditions Index (FCI), indicating overall financial conditions, began to rise rapidly after hitting its lowest figure in April 2020, and has exceeded pre-Covid-19 levels since August 2020. According to a VAR analysis, the improvement in the FCI is estimated to have had a significant positive effect on the real economy, ie it reduced the negative GDP gap, which implies that if improvements in financial conditions had been delayed, Korea’s growth path would have been considerably lower than the actual outcome.

## Credit spreads

Graph 4

Corporate bond spread<sup>1,2</sup>

Commercial paper spread<sup>3,4</sup>



<sup>1</sup> Corporate bond yield – treasury bond yield (three-year) <sup>2</sup> Dotted lines indicate the start of Unlimited Liquidity Support Facility purchases (2 April) and announcement of SPV introduction (20 May). <sup>3</sup> Commercial paper yield (91-days) – base rate. <sup>4</sup> Dotted lines indicate the start of Unlimited Liquidity Support Facility purchases (2 April) and announcement of SPV introduction (20 May).

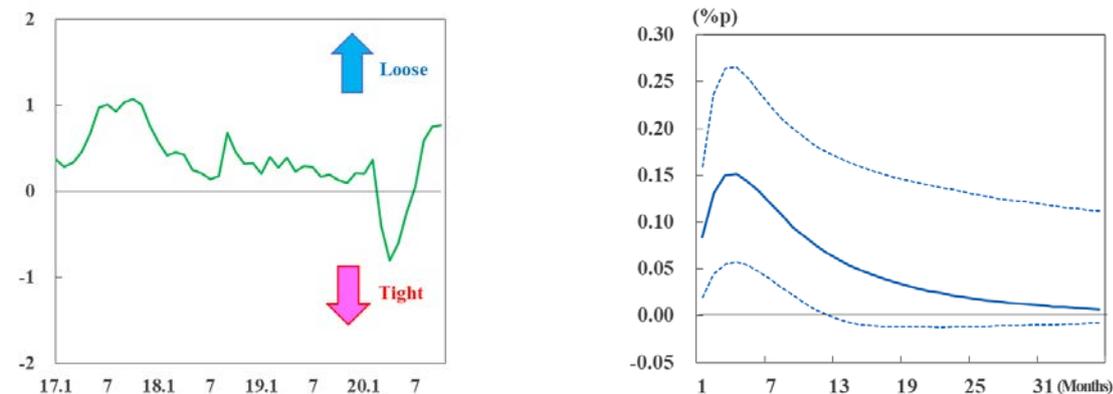
Sources: Bank of Korea; Korea Financial Investment Association.

## Financial conditions and real activity

Graph 5

Financial Conditions Index<sup>1</sup>

Response of GDP gap to Financial Conditions Index shock<sup>2</sup>



<sup>1</sup> Value above/below zero (long term average) indicates loose/tight financial condition. <sup>2</sup> Response of GDP gap to one standard deviation increase of Financial Condition Index. Dotted lines indicate 68% posterior probability confidence interval.

Source: Bank of Korea and IMF.

## 2.3 Central bank's asset purchase programme and fiscal policy space

The stabilisation of long-term market rates due to the Bank of Korea's purchase of Treasury bonds indirectly helped to win some manoeuvring space for fiscal policy, for example, by reducing the cost of Treasury bond issuance. However, the Bank's purpose in purchasing Treasury bonds was to respond to financial market unrest, including a supply and demand mismatch in the Treasury bond market. Fiscal policy financing conditions were not a consideration. Likewise, the government's fiscal and Treasury bond issuance plan was set up in consideration of financial market and economic conditions, as well as market funding conditions, but it did not take into account the Bank of Korea's Treasury bond purchases.

### 3. Public debt and monetary policy

#### 3.1 Fiscal deficit and government debt in Korea

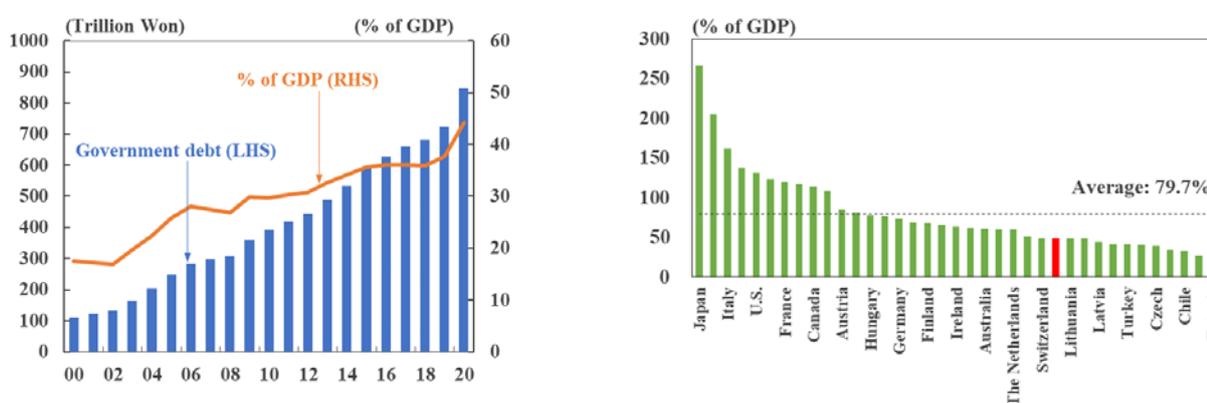
Korea's expansionary fiscal policy in response to the Covid-19 crisis greatly increased the fiscal deficit and government debt. The ratio of consolidated fiscal balance to GDP is estimated at minus 4.4% in 2020, the largest deficit ratio since 1972.<sup>5</sup> Accordingly, the ratio of government debt to GDP stood at 44.2% as of the end of 2020, up by 6.5%p from the end of 2019, owing to increased issuance of government bonds. However, the expansion of the fiscal deficit and government debt last year was somewhat inevitable due to Covid-19, and the government debt ratio in Korea is still low compared with that of some major economies.<sup>6</sup>

Government debt

Graph 6

Korean government debt<sup>1</sup>

OECD countries' general government debt-to-GDP ratio



Sources: Ministry of Economy and Finance and IMF (October 2020).

Meanwhile, it is necessary to manage government debt in a sustainable and stable manner from the medium- to long-term perspective, considering the need for continued fiscal support in response to the Covid-19 crisis, structural factors undermining public finance, such as the low birth rate and an ageing population, and the negative impacts of a rise in government debt. In particular, as the above-mentioned demographic factors are proceeding rapidly in Korea, concerns are growing about the increase in government debt.<sup>7</sup> When government debt increases rapidly in a country heavily dependent on external trade, it could cause a downgrade in sovereign credit ratings<sup>8</sup> and negative investment sentiment, thereby leading to capital outflows and to financial and FX market unrest.

<sup>5</sup> The ratio of managed fiscal balance in 2020 recorded the largest deficit since the beginning of statistics publication in 1990, at minus 6.1%. (The previous lowest figure was minus 4.6% in 1998.)

<sup>6</sup> The ratio of government debt to GDP in Korea is 48.4%, far below the OECD average of 79.7%.

<sup>7</sup> Fiscal revenue is limited by the low birth rate, while fiscal spending, such as pensions and medical expenses, is increasing rapidly due to the ageing population.

<sup>8</sup> Factors determining sovereign credit rating (Moody's): economic power, quality of institutions and governance, fiscal soundness, vulnerability to risks etc.

## 3.2 Impacts of fiscal policy operation on monetary policy

Korea's government debt is expected to expand this year too,<sup>9</sup> due to a large amount of deficit financing. The expansionary fiscal budget is expected to work together with the accommodative monetary policy to support the economic recovery. As the volume of government bonds to be issued this year stands at 176.4 trillion won, similar to that of last year (174.5 trillion), and as the ratio of public debt to GDP in reflection of this volume still remains low compared with that in major economies, the adverse effects resulting from the issuance are relatively low. If unexpected shocks are encountered, however, causing a surge in the outstanding volume of government bonds and a rise in public debt, this could destabilise supply and demand in the government bond market and increase long-term market rates, thus limiting the effects of an accommodative monetary policy.

Meanwhile, concerning any threat of fiscal dominance,<sup>10</sup> as Korea is fiscally sound, the Bank of Korea is not in a position to take the issue into account when conducting monetary policy. However, as mentioned earlier, there are medium- to long-term risk factors that could erode Korea's fiscal soundness, including low fertility and an ageing population. Therefore, it is necessary to keep managing government debt in a stable manner so as to prevent fiscal dominance from occurring.

## 4. Asset purchasing programme and the exchange rate

### 4.1 Effect on the exchange rate

Given the small size of the BOK's asset purchases such as the outright purchase of Treasury bonds, it is difficult to assess the precise impact of the programme on the exchange rate.<sup>11</sup> Looking at the relationship between policy rate operations and the exchange rate, however, the impact of the Bank of Korea's monetary policy on the won/dollar exchange rate has been found to be not so significant. The movements of the Base Rate and the won/dollar exchange rate over the past decade show that the relationship between the two variables is unclear, and that the correlation coefficient is low. The impact of monetary policy on the exchange rate as analysed in previous research was also found to be unclear.<sup>12</sup> This reflects the characteristics of small, open economies that are greatly affected by external factors, and shows that the exchange rate was affected substantially by factors other than the BOK's monetary policy, such as monetary policy in other major countries, domestic and global economic developments, and foreign exchange market soundness.

<sup>9</sup> Ratio of consolidated fiscal balance relative to GDP: -4.4%e) in 2020 → -3.7% e) in 2021. Ratio of national debt to GDP: 44.2% e) at end-2020 → 47.8% e) at end-2021.

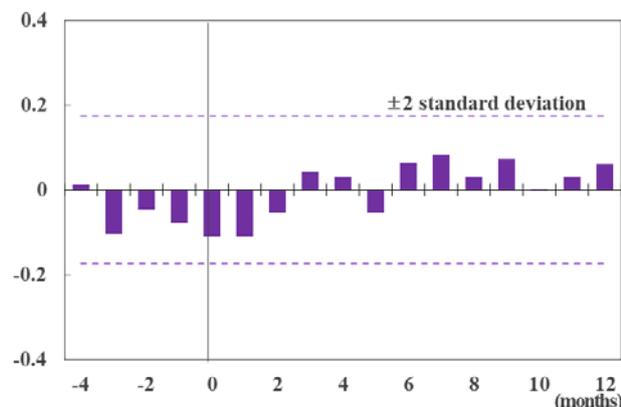
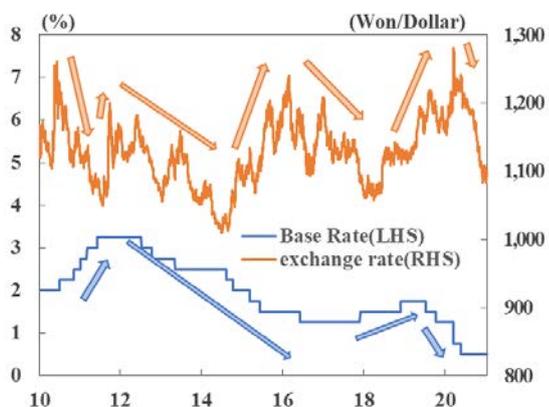
<sup>10</sup> This is a situation where monetary policy must be kept accommodative (asset purchases and persistently low interest rates) due to the excessively elevated level of public debt (Turner (2011)).

<sup>11</sup> According to BIS (2019) and Arslan et al (2020), large-scale asset purchase programmes generally push the exchange rate down, and have a greater exchange rate impact in countries with a higher proportion of foreign investors in their bond markets.

<sup>12</sup> According to Aum (2013), and Shin (2019), the impact of short-term interest rate differentials on the exchange rate was estimated to be either insignificant or contrary to the theory.

Base rate and won/dollar exchange rate

Cross correlation between base rate and won/dollar exchange rate<sup>1</sup>



<sup>1</sup> Cross correlation between  $\Delta$ base rate and  $\Delta$ won/dollar exchange rate.

Source: Bank of Korea.

## 4.2 Exchange rate and inflation risk

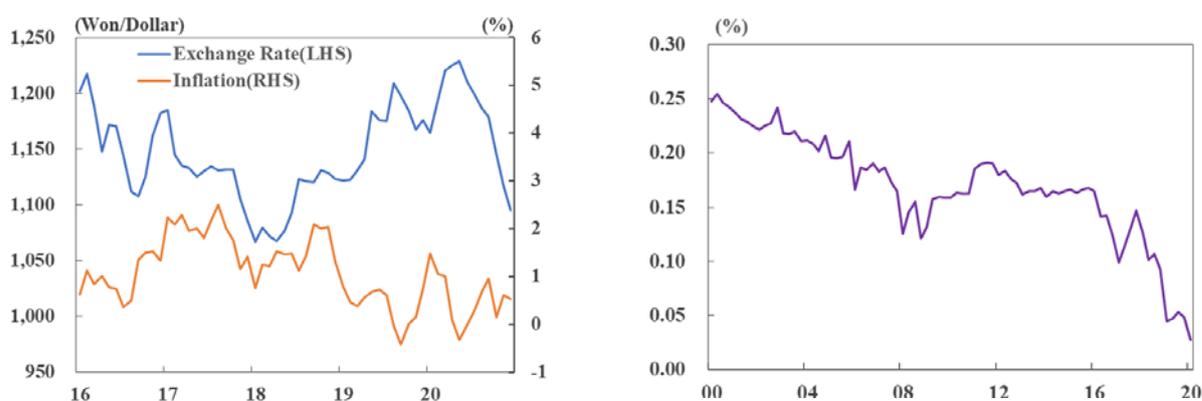
In the BOK’s view, a won depreciation is not likely to lead to domestic inflationary pressures for the time being. First, the won/dollar exchange rate soared in the early days of the Covid-19 pandemic (in March 2020), but then fell back rapidly afterward, to remain below the pre-Covid level recently. In the current year, the exchange rate is still unlikely to rise sharply, as major central banks will maintain their accommodative monetary policies, and as the current account surplus and foreigners’ domestic investments are expected to continue in line with an economic recovery. The exchange rate pass-through to inflation is also assessed to be far lower than in the past, due to stronger global competition and continued low inflation.

Table 3

	21.1Q	21.2Q	21.3Q	21.4Q
Investment banks’ won/dollar exchange rate projections (median of 35 IBs’)	1,080	1,078	1,064	1,050

However, it needs to be noted that exchange rate volatility could increase, should the global economy fall back into recession if vaccines turn out to be less effective than expected, or if the Federal Reserve changes its monetary policy stance earlier due to a faster-than-expected recovery in the US economy.

Won/dollar exchange rate and inflation rate

Exchange rate pass-through to inflation<sup>1</sup>

<sup>1</sup> Long-term pass-through.

Sources: Bank of Korea; Statistics Korea.

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# Monetary and fiscal policy interactions in the wake of the pandemic

Central Bank of Malaysia  
February 2021

## Abstract

The impact of the pandemic and subsequent lockdown measures on incomes and growth was unlike economic shocks before. Heightened coordination between monetary and fiscal authorities was a critical element of a comprehensive policy response. However, several potential risks arose from the heightened level of interaction. For central banks in particular, questions on central bank independence and fiscal dominance gained attention. This article explores the preconditions and processes that allowed the risks associated with heightened monetary and fiscal coordination in Malaysia to be managed. Specifically, this paper offers insights on the processes and safeguards to ensure that monetary and fiscal policy complementarities can be maximised, while limiting the risk of impediments to respective authorities in achieving their mandates.

JEL classification: E58, E62, E63, H12.

Keywords: monetary and fiscal policies, coordination, institutional coordination, robust policies.

## Introduction

The Great Financial Crisis (GFC) almost saw the collapse of the modern financial system and required significant policy responses and the exploration of unorthodox policy tools. Many advanced economies implemented various types of unconventional monetary policy (UMP), some of which inadvertently require closer interactions with the fiscal authorities. In 2020, the world faced another unprecedented challenge: a global pandemic. Lockdown measures that were essential in dealing with the pandemic had a direct negative impact on incomes and growth. Countries implemented months-long lockdowns to contain the spread of the virus, as experts advised.

As public debt continues to accumulate and monetary policy approaches its effective lower bound globally, more countries (including emerging market economies (EMEs)) have resorted to unconventional policy measures, eg central bank purchases of government bonds) to support the economic recovery. Once again, the interactions between monetary and fiscal policy are at the forefront, raising concerns about monetary policy independence, and suggesting that steps should be taken with caution. Upending the delicate balance of how monetary and fiscal policies operate, which itself is an outcome of “a long history of trials and errors”,<sup>1</sup> could lead to several unintended outcomes (eg fiscal dominance).<sup>2</sup> This paper will look at Malaysia’s experience regarding the interaction between monetary and fiscal authorities. The overall goal is to emphasise that this balance can be retained while still providing a multifaceted approach in addressing the economic impact of the pandemic.

## Part A: Monetary and fiscal policies as complementary tools

Traditionally, a monetary authority’s primary goal is to ensure short-run price and macroeconomic stability, mostly expressed in quantitative targets for inflation, unemployment or growth. Meanwhile, the fiscal authority plays its role in the economy via taxation and expenditure by affecting aggregate demand, the distribution of wealth and the economy’s capacity to produce goods and services.<sup>3</sup> Given the reduction in conventional policy space available to central banks recently, many countries have either resorted to unconventional monetary policies or heightened monetary and fiscal coordination.<sup>4</sup>

<sup>1</sup> Bonatti et al (2020).

<sup>2</sup> Schnabel (2020) defines fiscal dominance as a condition when high government debt leads to a central bank deviating from its monetary policy objectives, such that monetary policy targets are geared towards ensuring government debt sustainability rather than other economic targets such as inflation, growth or employment.

<sup>3</sup> Kopcke et al (2006).

<sup>4</sup> Benmelech and Tzur-Ilan (2020) argue that AEs with lower policy space in the lead-up to the pandemic were more likely to pursue unconventional MP, while Bonatti et al (2020) highlight examples from the ECB such as the asset purchase programme and the Pandemic Emergency Purchase Programme.

In either case, it is imperative that central banks be wary of two issues. The first issue is the challenges in unwinding these types of policies.<sup>5</sup> These could be avoided by embedding exit mechanisms and strategies at the onset of policy implementation. The second issue is the impact these changes could have on the central bank achieving its mandate. Here, self-interest is the key challenge to be wary of,<sup>6</sup> especially with regards to the risk of asymmetric fiscal responses to shocks. Due to political considerations, fiscal authorities are by nature less (more) inclined to reduce (increase) deficits during upturns (downturns). These asymmetric preferences could result in an imbalance where monetary policy builds policy space during good times<sup>7</sup> while fiscal policy does not.<sup>8</sup> This imbalance can result in an overburdening of monetary policy to provide support to growth if the economy experiences another major economic shock. Resorting to various unconventional monetary policies, especially those with links to fiscal policy,<sup>9</sup> could be a source of concern. If clear exit mechanisms are not established under these programmes at inception, unwinding them could prove challenging, which complicates the strategy and implementation of monetary policy. The next section of this article assesses the preconditions for a more effective monetary-fiscal nexus to avoid unravelling complementarities.

## Part B: Preconditions for an effective monetary policy-fiscal policy nexus

It is important to have preconditions to pre-emptively avert fiscal dominance. The first precondition for an effective monetary-fiscal nexus is clearly defined legislation and mandates.<sup>10</sup> Central banks rely on legislation for the legitimacy and independence of their operations. Central bank acts (CBAs) around the world set “the rules of the game”, ensuring that though monetary authorities are able to act independently, they carry out actions within specified rules expressed in their mandates. The Fed, for example, looks to achieve its dual mandate of “maximum employment and stable prices”. These mandates limit external political influence in monetary policy decision-making. In addition, many central banks in advanced

<sup>5</sup> Jones (2017), for example, argues that unwinding policies is more complicated than implementing them, given the need to avoid disruptions to sovereign debt markets and excessive volatility.

<sup>6</sup> Hallet (2008) argues in favour of coordination without explicit cooperation between fiscal and monetary authorities to achieve optimal outcomes to output and inflation. Since there is no separation of the effects of policies to the targets of both entities, self-interest on either end could prove disruptive.

<sup>7</sup> While there are criticisms that interest rates tend to be too low for too long, which may suggest asymmetry, it is primarily following unequal effects of monetary policy. Barnichon (2017), for example, finds that contractionary monetary policy shocks raise unemployment more strongly than expansionary shocks to lower it. Panetta (2020) notes asymmetric policy reaction can also be due to the asymmetry in risks.

<sup>8</sup> While this generally tends to be the preference, fiscal authorities have also shown commitment to fiscal consolidation. For example, in Malaysia the fiscal deficit narrowed by half between 2009 and 2019 from –6.7% of GDP to –3.4% of GDP.

<sup>9</sup> This includes, among others, large-scale asset purchase programmes.

<sup>10</sup> This refers to all laws related to the central bank and its operations that are passed by the legislative body of a country (eg parliament). Most countries have a Central Bank Act which specifies the mandate of the central bank.

economies (AEs) also specify certain definitions of their mandate via quantitative targets, which further solidifies the independence of the decision-making process.<sup>11</sup> With well defined objectives and limitations, the incentives can allow for long-term independent conduct of monetary policy. These legislative mandates are a formal expression of the role that the central bank plays in the economy and in responding to shocks.

In addition to the legislative infrastructure, explicit terms of reference for the interaction of monetary and fiscal authorities are needed. Similar to the benefits of having clear legislative limitations, the explicit rules specified under the terms of reference provide guidance to entities represented in these committees. Guided by these terms of reference, there are two goals for communication. The first allows the creation of concerted responses, especially when a specific remedy for a unique shock is needed (eg the Fed initiated emergency lending programmes to ensure continued credit flow in 2020 in response to the credit tightening).<sup>12</sup> The backstop provided by the US Treasury to absorb potential losses from defaults was a key feature of some of these programmes. The cooperation seen in establishing these facilities is an example of how concerted efforts from various facets of government can ensure optimal implementation. The second, having established and lasting platforms beyond those for emergency circumstances, would also help in ensuring smoother interactions. This can only be fostered if clearly defined rules are set. In many countries, this channel of interaction is often via committees at both the high and technical levels. It is through these committees, whether set up under normal circumstances or to respond to specific shocks, that information-sharing and discussions of policy responses can happen. These committees should be specific in their objectives (and therefore cross-agency representation), decision-making processes and frequency of meetings, often clarified via the terms of reference.

## Part C: Policy coordination in practice

Similar to most countries, the nature of monetary-fiscal interactions in Malaysia is primarily in the areas of macroeconomic stabilisation policies, debt management activities and developmental and growth-promoting policies. The Central Bank of Malaysia (Bank Negara Malaysia, BNM) functions as the economic and financial adviser to the government and is mandated to promote monetary and financial stability. These interactions allowed BNM to cultivate a relatively healthy relationship with the Ministry of Finance (MOF). The key to fostering the relationship has been open communication in addressing economic issues through the various interagency policy platforms of which BNM and MOF are members. BNM leverages platforms such as the Economic Action Council (EAC) and the Fiscal Policy Committee (FPC) to provide policy advice to the government. The advisory role includes various matters ranging from policy best practices to risk mitigation. Further, working-level platforms

<sup>11</sup> This is more complicated for EMEs. Building long-term credibility could be emphasised prior to adopting inflation targeting. For example, Fraga et al (2004), highlight that central banks in EMEs have this focus due to generally higher external vulnerabilities and weaker institutions than AEs. Frequently missing the target (due to factors which AEs may generally not face) could impede on this credibility-building process.

<sup>12</sup> These include the Municipal Liquidity Facility, Main Street Lending Programme and Commercial Paper Funding Facility.

ensure information-sharing occurs at all levels. BNM representatives attend the Cashflow Management Committee (CMC), chaired by the Secretary General of the Treasury, so that BNM can assess risks emanating from fiscal policy like debt management issues and adequacy of fiscal space.

The impact of the pandemic-induced recession has further underlined the importance of seamless communication between BNM and the MOF. BNM provided policy suggestions to ensure that key issues are addressed while retaining sustainability of public finances. BNM must have assurance that the fiscal authority will not impede decisions regarding the appropriate monetary policy stance in order for the relationship to continue working.

The independence of decisions made by the Monetary Policy Committee (MPC), as accorded by Article 22 of the Central Bank Act 2009, must be upheld as the highest priority, given evidence of the effectiveness of the MPC when it is free from political influence.<sup>13</sup>

Three key strategies are deployed by BNM to ensure the MPC's independence will remain in the long term. First, BNM utilises proactive advisory on fiscal matters to ensure that public finances are sustainable in the long term. This proactive advisory role allows BNM to provide the government with complementing insights on how best to utilise its resources to efficiently provide fiscal impetus to the economy and also help to mitigate short-to-medium term fiscal risks. BNM's second strategy to ensure MPC independence is by ensuring the continued ability of the fiscal authority to seek financing from the financial market. The outcome sought from this policy is to avoid BNM being in a position where it is relied on for deficit financing. Over the years, BNM's role as the agent for the government's front office provides the ability to minimise risks to government issuances as well as develop facilities to manage issuances. BNM advises the government on the details of government securities issuance (eg assessment on operational risks and sequencing of issuances) and is responsible for the development of facilities to manage these issuances (eg appointments of principal dealers). Risk mitigation and the availability of private sources of financing to the government eliminate the need for the government to seek financing directly from BNM. BNM also seeks to ensure that market functioning remains orderly, particularly to prevent disruption in the primary government bond market and ensure that price discovery remains efficient. Third, legislation draws clear boundaries and limits to maintain monetary operational independence should fiscal authorities find themselves seeking longer-term financing directly from BNM. These boundaries are drawn on the amount of financing allowed, the terms of the lending and its exit mechanism (provided under Section 71 of the CBA). During times of revenue shortfall, the government can leverage this clause of the CBA to obtain financing of up to 12.5% of projected annual revenue. The lending is also to be "on terms prevailing in the market" to ensure that there are no perverse incentives to pursue this lending facility during normal periods. Finally, repayment of the financing is to be completed in not more than three months after the end of the financial year. Should there be outstanding financing yet to be repaid by this time, this clause cannot be utilised further, which provides a clear exit mechanism for BNM. These also reflect the policy preferences of BNM to avoid taking on unwarranted credit risk of the government.

<sup>13</sup> Arnone et al (2009) highlight the benefits of autonomous central banks empowered by a Central Bank Act on policy outcomes such as inflation.

Recently, the pandemic-induced recession presented a set of unique challenges to central banks. Specifically, the utilisation of monetary financing by several other EMEs during this crisis presents a threat, given the desire to avoid taking on unwarranted credit risk of the fiscal authority. While legislation is in place to potentially avoid this, proactive measures were taken to avoid the need to resort to such practices. Through its role as financial adviser to the government, efforts have been accorded to the development of the government bond market to minimise frictions. Complementing the market development efforts, BNM additionally allowed for financial institutions to use Malaysian Government Securities (MGS) and Malaysian Government Investment Issues (MGIs) as part of their compliance with the Statutory Reserve Requirement (SRR). While these have ensured sufficient liquidity in the banking system to support financial intermediation activity, it has also resulted in healthy demand for government bonds.

Both longstanding and recent measures allow for assurance within BNM that the risk of direct intervention into monetary policy from fiscal authorities remains remote. However, the threat of fiscal dominance can never truly be eliminated, nor should it be, given that fiscal decisions rightfully remain under the ambit of the MOF. The primary method of mitigating this risk will be proactive engagement. Communication built on the lasting relationship between monetary and fiscal authorities will prove vital.

Broadly, the coordination between BNM and the MOF have proven useful as a way to achieve concerted policy responses to the pandemic-induced recession. The more targeted approach to containment and the rollout of the vaccine, expected to inoculate 80% of Malaysians by early 2022, will help to reduce the risk of more widespread infections and thus mitigate the need for further lockdowns. This will facilitate a more entrenched economic recovery with the existing monetary-fiscal nexus intact. The flexible and proactive nature of this engagement will continue to allow for coordinated policy responses to shocks in the future.

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# Monetary and fiscal policy interactions in the wake of the pandemic

Bank of Mexico  
February 2021

## Abstract

Public spending can only be sustainable if it is financed with sustainable revenue sources. Dislocations between expenditure and revenue may cause increases in market interest rates and the risk premia attached to public debt. To illustrate the challenges for monetary policy in achieving an inflation target when fiscal authorities loosen their stance, we use a semi-structural model of a small open economy. We capture the effects of two exogenous shocks that induce a worsening of the fiscal stance in the model: (i) an increase in the public deficit and (ii) an increase in country risk. Our results show that a loose fiscal policy stance tightens financial conditions while exerting upward pressure on expected inflation, thus increasing the trade-offs for monetary policy. Given the high level of trade openness and the highly liquid markets for the currency, the Mexican economy is highly exposed to external shocks. Therefore, a sound fiscal position helps to bolster the country's resilience in the face of shocks, providing room for monetary policy manoeuvre.

JEL classifications: E31, E52, E62, E63, F41.

Keywords: inflation, monetary policy, fiscal policy, small open economy, risk premium.

## Introduction

A solid macroeconomic framework is a necessary condition for an orderly adjustment of the Mexican economy. Key elements of this framework are a monetary policy focused on achieving low and stable inflation, and a sustainable path for public finances.

Sustainability of public finances relies on the ability to fund public expenditure decisions with sustainable revenue sources. Dislocations between expenditure and revenue may cause increases in the market interest rates and risk premia attached to public debt. This scenario would pose bigger challenges in conducting monetary policy since the trade-offs faced by the central bank, while pursuing low levels of inflation and financial stability, may be exacerbated.

There are multiple combinations of debt, public expenditure and revenue that can be sustainable over time. Hence, it is desirable that a public expenditure strategy aimed at mitigating the economic downturn in the short term is complemented by an increase in tax revenues in the future.

The Federal Budget and Fiscal Responsibility Law in Mexico comprises specific metrics and guidelines for medium term budgeting that relates to fiscal sustainability: (i) a budget balance rule establishes that, excluding investments by the state-owned company Pemex (with some escape clauses), the overall federal public sector balance must be zero; (ii) an expenditure rule caps current spending excluding pensions; and (iii) a medium-term framework establishes that the public sector borrowing requirement (PSBR, the widest definition for the public deficit) must be in line with the financing capacity of the public sector, and is conducive to the stabilisation or reduction of the debt-to-GDP ratio.

In emerging market economies (EMEs), debt levels are a very important element in the assessment of country risk and provide the basis for the financing costs for the economy as a whole. Therefore, in the conduct of monetary policy we closely monitor external evaluations of the performance of the economy, the strength of institutions, and the stance of fiscal policy.

International financial institutions play an important role. For instance, the International Monetary Fund Debt Sustainability Framework provides some useful considerations for EMEs. Specifically, in terms of debt sustainability and gross debt/GDP ratios:

1. Below 50% of debt to GDP, the Debt Sustainability Framework of the Fund considers this a low surveillance range and only basic debt sustainability analysis is performed.
2. Between 50% and 70% of debt to GDP, there is a need for more in-depth surveillance, including fiscal risk analysis and an assessment of the debt profile.
3. Above 70% of debt to GDP, this is a high-risk zone where debt sustainability could be compromised.

Credit rating agencies also provide additional assessments and warnings about sovereign debt sustainability, which influence financing opportunities and market access. Specifically, a deterioration in creditworthiness would increase the overall cost of funds in the economy.

EMEs are capital import economies that need to be mindful of maintaining adequate sources of finance. Thus, we also need to be mindful of the policy space available. Sudden changes in a country's debt sustainability outlook, or in risk appetite (associated to global or idiosyncratic factors), can trigger a rapid shift in investors' portfolios. EMEs which are highly integrated with global financial markets can experience larger portfolio adjustments.

In order to implement a comprehensive package of near-term support, credible medium-term strategies to anchor fiscal sustainability could be pursued, in combination with pro-growth and investor-friendly structural reforms. A strong short-term expenditure programme would alleviate current distress and limit job losses and bankruptcies. Credible medium-term fiscal reforms would increase policy space in the near term, reduce risk premia, and generate needed resources for public investment and social spending.

## Transmission channels from fiscal to monetary policy

In this section, a semi-structural model of a small open economy is used to illustrate how a loose fiscal policy stance, even a temporary one, may imply challenges for monetary policy in achieving an inflation target. Indeed, results show that a loose fiscal policy stance increases the trade-offs that monetary policy faces by tightening financial conditions in the economy and simultaneously causing upward pressure on expected inflation. In particular, a loose fiscal stance increases the country risk premium, causing a fall in the demand for domestic assets and an increase in the funding costs for the economy. This, in turn, translates into a depreciation of the exchange rate via a country-risk-augmented interest rate parity condition. Since the depreciation puts upward pressure on inflation, the central bank raises the policy nominal interest rate. This process prevents the monetary authority from accommodating the increase in funding costs for the economy.

The model features two main blocks, a fiscal and a monetary block. Moreover, external variables determined either in global markets (eg oil prices), or by foreign authorities (eg the US federal funds rate) are modelled as autoregressive processes.

Among the main features of the fiscal block are:

- Tax and oil revenue
- Domestic and foreign debt
- Public spending (excluding interest payments)
- Public sector deficit.

Tax revenue is a function of economic activity, while oil-tax revenue is a function of global oil prices, oil exports and the exchange rate. The stock of both domestic and foreign debt are a function of the public deficit. The latter is, in turn, a function of country risk. Public sector financial costs are a function of both domestic and foreign interest rates, the public deficit, and the country risk. In this model, the country risk premium is endogenous and depends on its observed and expected behaviour, it also depends on the public deficit.

The main features of the monetary block, assumed to have a DSGE-VAR structure, are:

- Country risk premium
- An IS curve
- A Phillips curve
- An uncovered interest rate parity condition
- A Taylor rule.

The IS curve is a function of both the (private sector) output gap and public spending gap. The IS curve features financial channels in the form of country risk premium and the exchange rate. The standard Phillips curve is used to model inflation dynamics. The uncovered interest rate parity condition includes the country risk. Finally, the Taylor rule determines the policy interest rate, and includes the rate's past behaviour, and both inflation and output gaps.

The model is solved sequentially, so that the effects from fiscal policy enter the monetary block and, in turn, the monetary authority sets its policy rate. This strategy corresponds to a fiscal authority and a central bank that each have their own policy rules. The fiscal authority pursues a public deficit target level which makes the debt-to-GDP ratio sustainable over time, while the central bank pursues an inflation target.

It is assumed that both authorities are fully committed to attaining their respective targets. Hence the following impulse-response analysis shows how temporary deviations from a sustainable fiscal policy stance affect the trade-offs that monetary policy faces. In particular, regardless of the level of economic activity and current inflation, the best response from the central bank to said deviations is to raise the monetary policy rate.

The main transmission mechanisms from the fiscal policy stance to monetary policy are now detailed. In particular, it is possible to induce a worsening of the fiscal stance in the model through different shocks:

- An increase in the public deficit (eg due to an increase in public expenditure funded through debt issuing)
- An increase in country risk (eg due to a renegotiation of a long-standing trade agreement, causing uncertainty around investment returns).

Impulse response functions are displayed in Graphs 1 and 2, and shocks are normalised so that they correspond to a 25 basis points of increase in the monetary policy rate from its steady state.

### An increase in public deficit

An exogenous increase in the public deficit may be observed, for example, when the government aims to maintain a level of public spending in the face of lower revenues (Graph 1a). This stance temporarily stimulates aggregate demand but results in tighter financial conditions.

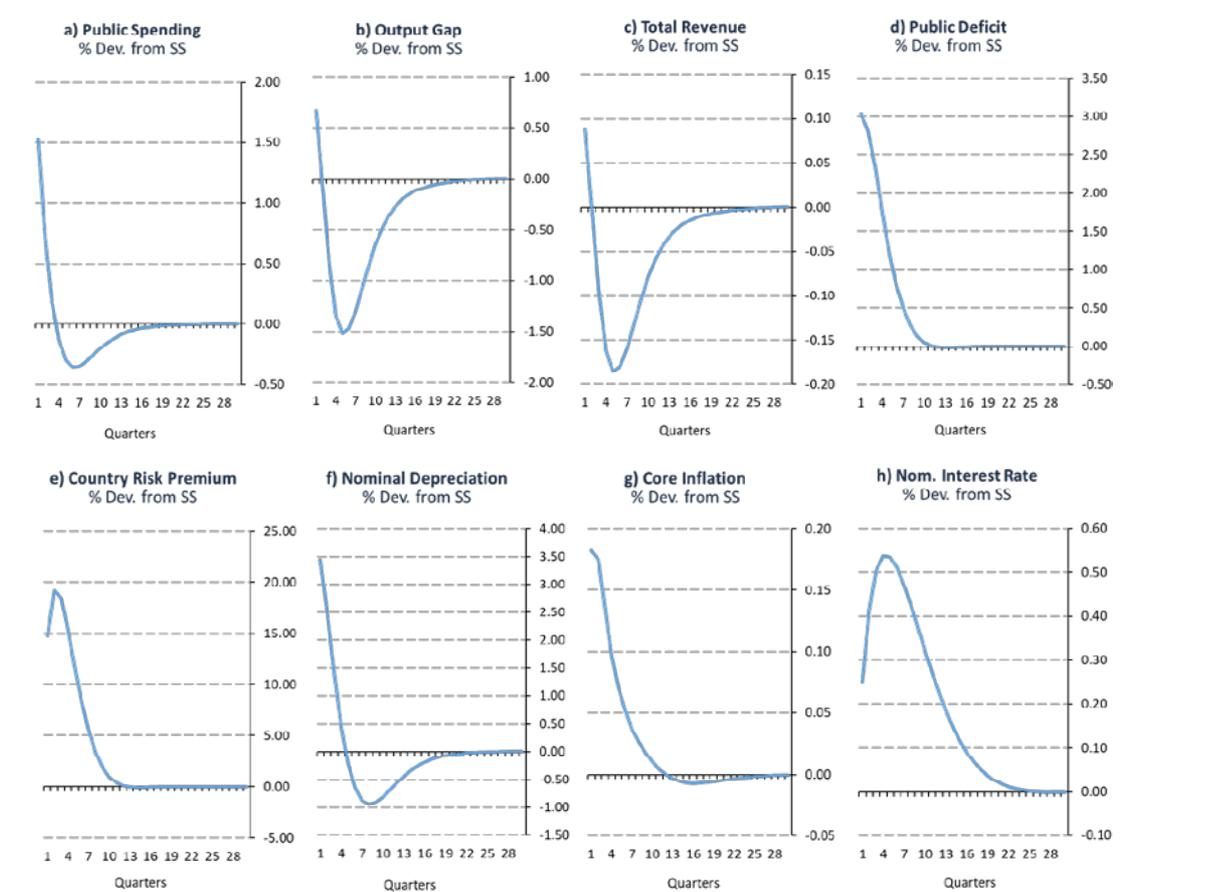
- In this model, the IS curve includes explicitly the (primary) public expenditure, hence the latter exogenous increase induces a (temporarily) positive output gap (Graph 1b).
- Even if the level of tax revenues increases temporarily, given the positive output gap, the public deficit increases (Graphs 1c and 1d).

- In this context, the higher debt-to-GDP ratio raises the country risk premium and the funding costs for the public sector, while reducing demand for domestic assets (Graph 1e). In this model, country risk and debt dynamics depend on the public deficit.
- The fall in demand for domestic assets causes a depreciation of the nominal exchange rate (Graph 1f). In the face of inflationary pressures from the increase in the output gap and the depreciation of the exchange rate (Graph 1g), the monetary authority increases the policy interest rate in order to maintain inflation expectations (Graph 1h).
- In the medium term, public spending decreases in line with the commitment to attain the public deficit target. The latter induces future primary surpluses and a decrease in debt-to-GDP.
- The initial rise in the output gap is transitory, since an increase in the country risk premium translates into lower aggregate demand through, for example, a fall in investment.
  - In this model the IS curve explicitly includes the country risk premium. In particular, increases in risk premium have a negative impact on aggregate demand.

Response to a public deficit shock in percentage deviations from the steady state

(% Dev. from SS)

Graph 1



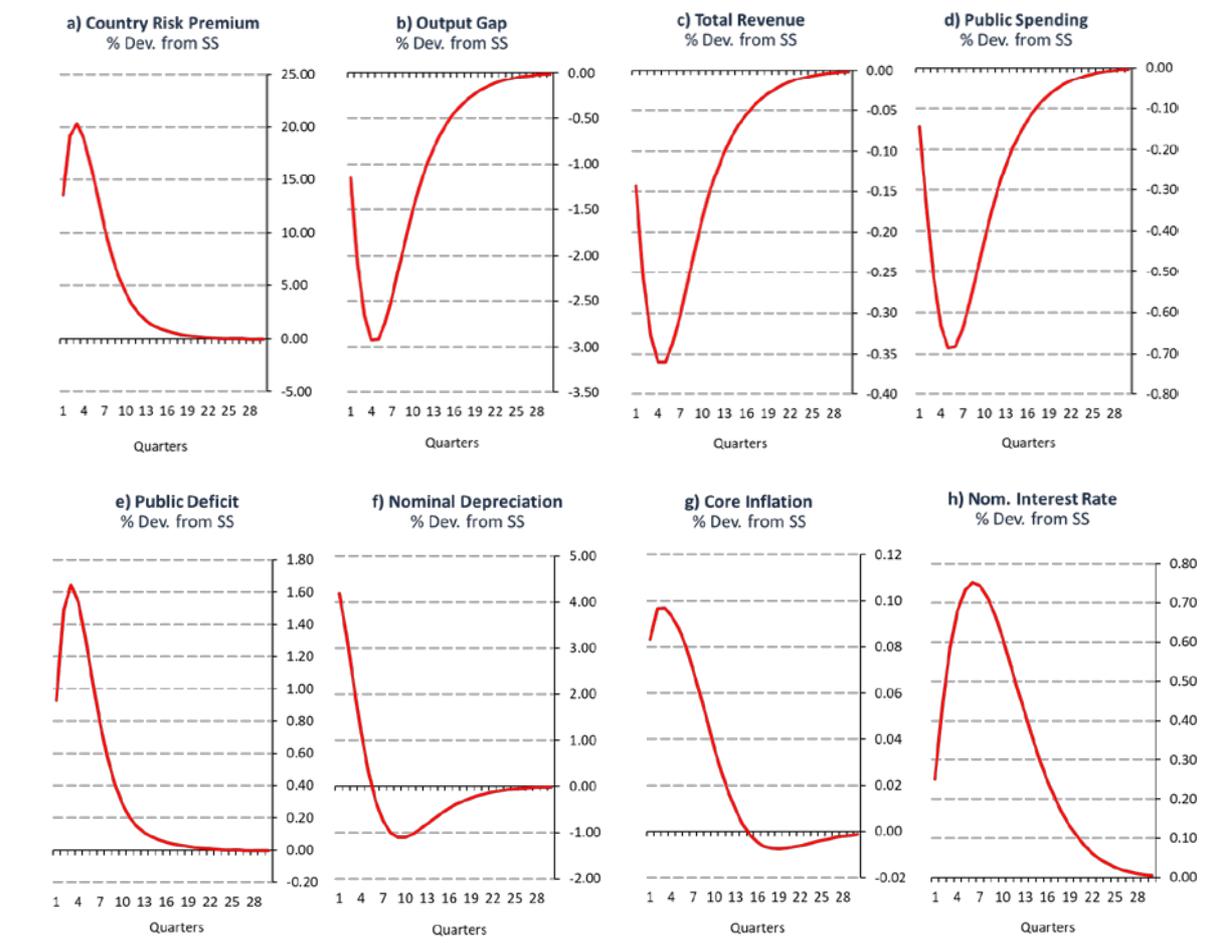
## An increase in country risk

An exogenous increase in country risk premium caused, for example, by the re-negotiation of a long-standing trade agreement, as was the case with NAFTA in recent years, may introduce additional sources of uncertainty (Graph 2a). The latter may deter private domestic and foreign investment, and translate into negative demand and supply shocks. Less benign financial terms for funding the public deficit, in turn, translate into tighter financial conditions for the economy as a whole.

### Response to a country risk shock in percentage deviations from the steady state

(% Dev. from SS)

Graph 2



The increase in country risk premium associated with a less certain outlook for the economy weakens economic activity since, for example, it deters private investment (Graph 2b).

Since the IS curve depends on the country risk premium, increases in risk premium have a negative impact on aggregate demand.

The public deficit increases due to a fall in tax revenue, and an increase in borrowing costs of funds from abroad (Graphs 2c, d and e).

The nominal exchange rate depreciation is induced by a higher risk premium, and the corresponding fall in demand for domestic assets (Graph 2f).

The depreciation leads to inflationary pressures (Graph 2g).

In this model, the upward pressures on inflation from the exchange rate depreciation more than compensate the downward pressures on inflation from the fall in aggregate demand.

The central bank increases the policy interest rate to keep inflation expectations anchored (Graph 2h).

In the medium term, public spending should decrease to achieve the public deficit target.

## Conclusion

A prudent fiscal policy contributes to the reduction of additional risk premia embedded along the yield curve, and consequently, of financing costs. Orderly adjustments of the domestic yield curve are desirable, since the components of the aggregate demand respond to different segments of the curve.

In order to maintain low risk premia, and consequently lower financing costs along the yield curve, it is necessary to preserve a solid macroeconomic framework. If a worsening of the outlook for public finances leads to increases in country risk premia and a fall in the demand for domestic financial assets, it may result in tighter financial conditions for the economy as a whole. The latter may cause exchange rate fluctuations, which are relevant for monetary policy since they may have an impact on price stability and, thus, inflation expectations.

Given the high level of trade openness and the highly liquid markets for the currency, the Mexican economy is highly exposed to external shocks. In this sense, a sound fiscal position contributes to an increase in the country's resilience in the face of said shocks, in turn providing room for monetary policy manoeuvre.

## Appendix: model equations

### Fiscal block<sup>1</sup>

1. Primary Public Spending	$\widehat{G}_t = \psi_1 \widehat{G}_{t-1} - (1 - \psi_1) \psi_2 \widehat{DD}_t + \varepsilon_t^g$
2. Public Revenue	$\widehat{T}_t = \widehat{T}_t^{\text{tax}} + \widehat{T}_t^{\text{oil}} + \widehat{T}_t^{\text{oyses}} + \widehat{T}_t^{\text{other}}$
2.1. Tax Revenues	$\widehat{T}_t^{\text{tax}} = \tau_1 x_t + \varepsilon_t^{\text{tax}}$
2.2. Oil Revenues	$\widehat{T}_t^{\text{oil}} = \lambda_1 \text{WTI}_t + \lambda_2 \widetilde{\text{Xoil}}_t + \lambda_3 \text{RER}_t + \varepsilon_t^{\text{oil}}$
3. Public Deficit (Target)	$\widehat{DD}_t = \widehat{D}_t + \widehat{FC}_t + \varepsilon_t^{\text{DD}}$
3.1 Primary Deficit	$\widehat{D}_t = \widehat{G}_t - \widehat{T}_t$
3.2 Public Sector Financial Cost	$\widehat{FC}_t = \phi_1 \widehat{FC}_{t-1} + (1 - \phi_1) [\phi_2 i_t - \phi_3 \pi_t + \phi_4 i_t^{\text{US}} - \phi_5 \pi_t^{\text{US}} + \phi_6 \widehat{D}_t + \phi_7 \text{EMBI}_t] + \varepsilon_t^{\text{FC}}$
4. Public Debt	$\widehat{B}_t = \widehat{B}_t^h + \widehat{B}_t^f$
4.1. Domestic Debt	$\widehat{B}_t^h = \kappa_1 \widehat{B}_{t-1}^h + \kappa_2 \widehat{DD}_t + \varepsilon_t^{\text{B}^h}$
4.2. Foreign Debt	$\widehat{B}_t^f = \mu_1 \widehat{B}_{t-1}^f + \mu_2 \text{RER}_t + \mu_3 \widehat{DD}_t + \varepsilon_t^{\text{B}^f}$

### Monetary block

1. IS Curve	$x_t = \alpha_1 x_{t-1} + \alpha_2 E_t[x_{t+1}] - \alpha_3 r_t + \alpha_4 \text{RER}_t + \alpha_5 \widehat{G}_t - \alpha_6 \widehat{T}_t - \alpha_7 \text{EMBI}_t + \alpha_8 x_t^{\text{US}} + \varepsilon_t^x$
2. Phillips Curve (Target)	$\pi_t = \beta_1 \pi_{t-1} + (1 - \beta_1) E_t[\pi_{t+1}] + \beta_3 x_{t-1} + \beta_4 \text{RER}_t + \varepsilon_t^\pi$
3. Uncovered Interest Rate Parity	$\text{RER}_t = (1 - \gamma_1) \text{RER}_{t-1} + \gamma_1 E_t[\text{RER}_{t+1}] - \gamma_2 r_t + \gamma_3 r_t^{\text{US}} + \gamma_4 \text{EMBI}_t + \varepsilon_t^{\text{RER}}$
4. Risk Premium	$\text{EMBI}_t = \xi_1 \text{EMBI}_{t-1} + \xi_2 E_t[\text{EMBI}_{t+1}] + \xi_3 \widehat{DD}_t + \varepsilon_t^{\text{PR}}$
5. Taylor Rule (Monetary Policy)	$i_t = \rho_\pi i_{t-1} + \delta_1 \pi_t^g + \delta_2 x_t + \varepsilon_t^i$

### Variables

$\widehat{G}_t$  = Primary Public Spending.

$\widehat{DD}_t$  = Public Sector Deficit.

$\widehat{T}_t$  = Public Revenue.

$\widehat{T}_t^{\text{tax}}$  = Revenue from Income Tax.

$\widehat{T}_t^{\text{oil}}$  = Revenue from Oil-Sector Taxes and Royalties.

<sup>1</sup> All fiscal block variables with a hat are deflated with the CPI and expressed as a percentage of GDP.

$\hat{T}_t^{oyes}$  = Revenue Generated by Government Agencies and State-owned Firms.

$\hat{T}_t^{other}$  = Revenue Composed of Other Types of Revenue.

$x_t$  = Domestic Output Gap.

$x_t^{US}$  = Foreign Output Gap.

$WTI_t$  = Price of US Oil WTI Barrels.

$\widehat{Xoil}_t$  = Domestic Oil Production.

$RER_t$  = Real Exchange Rate.

$\widehat{D}_t$  = Primary Deficit.

$\widehat{FC}_t$  = Public Sector Financial Cost.

$i_t$  = Domestic Policy Interest Rate

$i_t^{US}$  = Foreign Policy Interest Rate.

$r_t$  = Domestic Real Interest Rate.

$r_t^{us}$  = Foreign Real Interest Rate.

$\pi_t$  = Domestic Inflation Rate.

$\pi_t^{US}$  = Foreign Inflation Rate.

$\pi_t^g$  = Domestic Inflation Gap.

$EMBI_t$  = Emerging Markets Bonds Index built by JP Morgan.

$\widehat{B}_t$  = Public Debt.

$\widehat{B}_t^h$  = Domestic Debt.

$\widehat{B}_t^f$  = Foreign Debt.

$\varepsilon_t^g$  = Exogenous Shock to Primary Public Spending.

$\varepsilon_t^{tax}$  = Exogenous Shock to Revenue from Income Tax.

$\varepsilon_t^{oil}$  = Exogenous Shock to Revenue from Oil-Sector Taxes and Royalties.

$\varepsilon_t^{FC}$  = Exogenous Shock to Public Sector Financial Cost.

$\varepsilon_t^{DD}$  = Exogenous Shock to the Public Sector Borrowing Requirements.

$\varepsilon_t^{B^h}$  = Exogenous Shock to Domestic Debt.

$\varepsilon_t^{B^f}$  = Exogenous Shock to Foreign Debt.

$\varepsilon_t^x$  = Exogenous Shock to Domestic Output Gap.

$\varepsilon_t^\pi$  = Cost-Push Shock to the Domestic Economy.

$\varepsilon_t^{RER}$  = Exogenous Shock to Real Exchange Rate.

$\varepsilon_t^{PR}$  = Exogenous Shock to EMBI.

$\varepsilon_t^i$  = Monetary Policy Exogenous Shock.

# Response to the Covid-19 Pandemic

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Central Reserve Bank of Peru

## Abstract

The BCRP's response to the COVID-19 pandemic aimed to preserve the payment chain and support the recovery of economic activity. Policies focused on reducing financing costs, providing adequate liquidity to the financial system and reducing exchange rate and long-term interest rate volatility. The BCRP lowered its reference rate by 200 basis points to a historic low of 0.25% and performed significant liquidity operations. The latter increased by 7.1% of that year's GDP, mainly through repo operations associated with a government-guaranteed loan programme known as *Reactiva Perú*. This response sustained credit flows, thereby avoiding a credit crunch due to a breakdown in the payment chain, which could have exacerbated the pandemic's economic impact. The BCRP also provided the monetary boost necessary to spur recovery starting in mid-2020, while keeping inflation and inflation expectations close to the middle of the BCRP's target range (1–3%).

JEL classification: E43, E58, E65.

Keywords: Covid-19, emerging economies, monetary policy, conventional and unconventional policies.

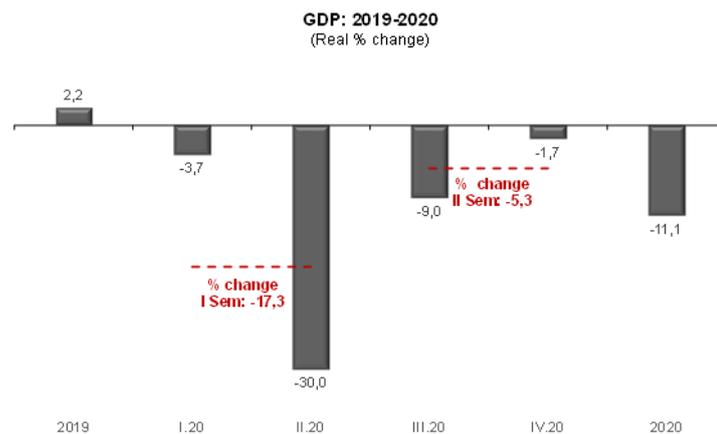
## 1. Introduction

At the beginning of the Covid-19 pandemic, the confinement measures implemented by the Peruvian authorities were among the most rigorous in the world. On 16 March 2020, the government introduced strict sanitary measures, including mandatory social isolation nationwide and a halt to many activities deemed non-essential, including public works and e-commerce, causing the GDP to contract by 17.3% during the first half of the year (contracting by 30.0% in the second quarter).

After the pandemic started, monetary policy adopted an unprecedented expansionary stance – a record low policy rate (0.25%) and massive repo operations with a horizon of up to four years – which was feasible due to the credibility built up by the BCRP for over 30 years. The authorities implemented fiscal stimulus via a range of policies, including cash transfers to households (2.0% of GDP) and – starting in October 2020 – more public investment, which led to a greater-than-expected recovery of GDP in the last quarter of the year (-1.7%) and brought economic activity closer to pre-pandemic levels.

The Covid-19 recession and bounce back

Graph 1



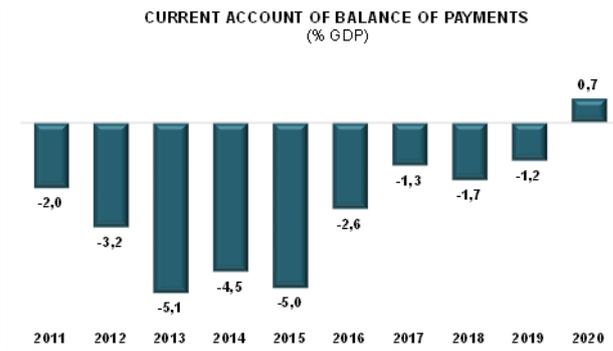
As a result of this uneven quarterly performance, the GDP contracted by 11.1% in 2020, the greatest contraction since 1989 (12.3%) after 21 consecutive years of growth.

External sector developments

Graph 2

Peak-to-trough change in value added, in per cent

Pre-crisis peak, T = 100



The rapid recovery during the second half of the year was also driven by the greatest recovery in terms of trade in the last 10 years (8.2%), caused by a rise in the prices of Peru's export commodities (mainly minerals) and a drop in the prices of imports such as oil and industrial inputs. The resulting positive impact on the trade balance, along with lower import volumes due to weak domestic demand, led to a balance of payments surplus (0.7% of GDP) in 2020. The financial account stood at 3.6% of GDP, mainly due to an increase in net portfolio investment in public assets, which offset the drop in private sector financing. Net International Reserves (NIR) increased by USD 6.4 billion in 2020, to a total of USD 74.7 billion (37% of GDP).

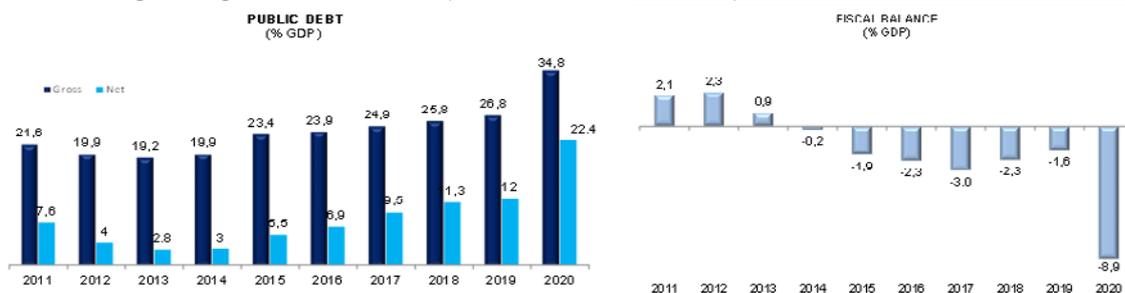
The expansionary fiscal policy included support to households (cash transfers) and companies (reduced/suspended tax payments). Higher pandemic-related expenses and lower tax revenue due to a contraction in local economic activity led to a fiscal deficit of 8.9% of GDP in 2020 (7.3 percentage points greater than in 2019 and the largest since 1990). By end-2020, public debt had risen by 8.0 percentage points to 34.8% of GDP, largely due to global bond issuances, credit from international organisations and, to a lesser extent, an increase in sovereign bonds (domestic currency-denominated debt).

## Fiscal expansion

Graph 3

Peak-to-trough change in value added, in per cent

Pre-crisis peak, T = 100



Sources: BCRP, MEF and SUNAT.

## 2. Monetary response

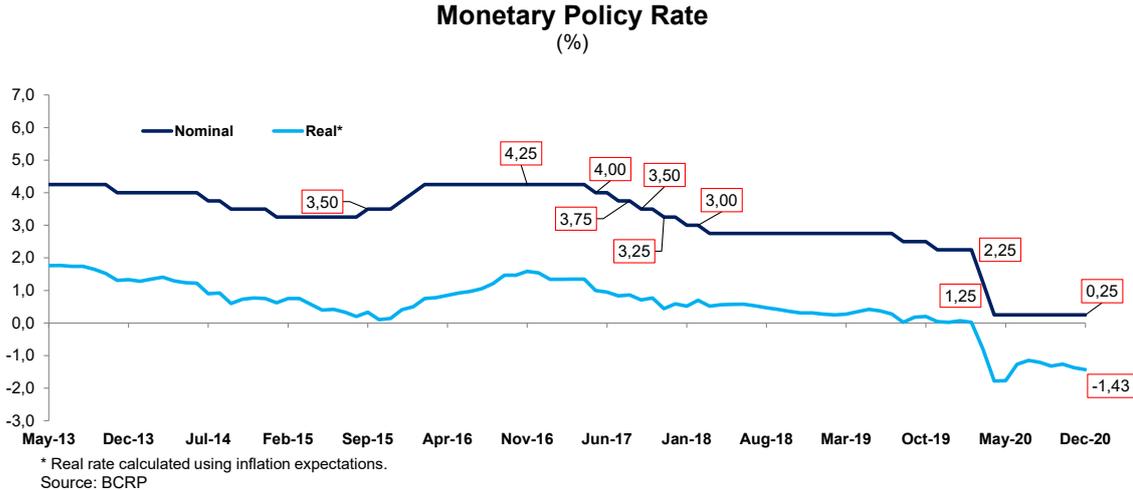
Monetary policy aimed to preserve the payment chain and support the recovery of economic activity, mainly by reducing financing costs, providing adequate liquidity to the financial system, and moderating exchange rate and long-term interest rate volatility. To that end, monetary policy adopted an unprecedented expansionary stance. The BCRP cut its reference rate by 200 basis points to a historic low of 0.25%, the lowest policy rate in the region and one of the lowest among emerging market economies (EMEs). Moreover, the BCRP provided forward guidance on the monetary outlook, indicating that "it considers it appropriate to maintain a strongly expansionary monetary stance for a prolonged period and as long as the negative effects of the pandemic on inflation and its determinants continue." Given the magnitude of the shock and its impact on the economy, the monetary impulse was augmented with additional quantitative measures.

The BCRP took the necessary steps to sustain the payments system and credit flows. In order to ease financial conditions, the maturities of liquidity operations were

extended (up to four years) and the range of guarantees and collaterals that financial entities can use for repo operations was expanded. For example, financial entities can use part of their loan portfolio (subject to appropriate credit standards) as collateral to receive liquidity from the BCRP. This instrument was created in 2009 in the context of the Global Financial Crisis (GFC), but it was used for the first time during the pandemic in April 2020. Reserve requirement rates (RRRs) were also reduced, thereby releasing resources amounting to 0.3% of GDP (PEN 2 billion).<sup>1</sup>

Monetary policy response: the interest rate

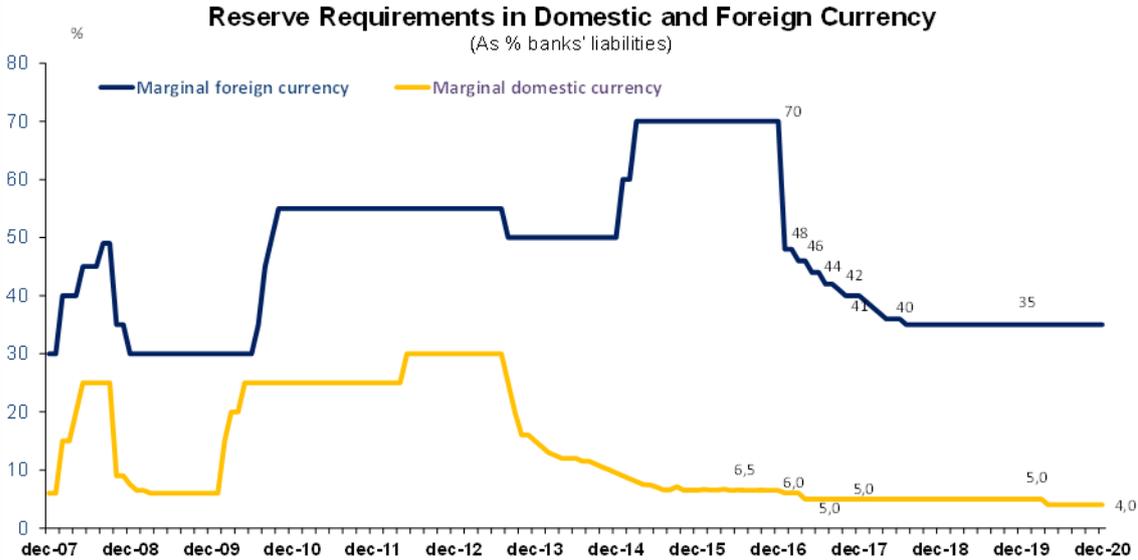
Graph 4



Source: BCRP.

Monetary policy response: reserve requirements

Graph 5



<sup>1</sup> For a discussion on the use of reserve requirements in Peru, see Armas, A, P Castillo and M Vega (2014); Montoro, C and R Moreno (2011); and Pérez-Forero, F and M Vega (2014).

The BCRP's monetary injections found their way into the economy via two programmes that aimed at boosting credit conditions: *Reactiva Perú* (by far the larger one) and repo operations conditional on loan portfolio rescheduling.

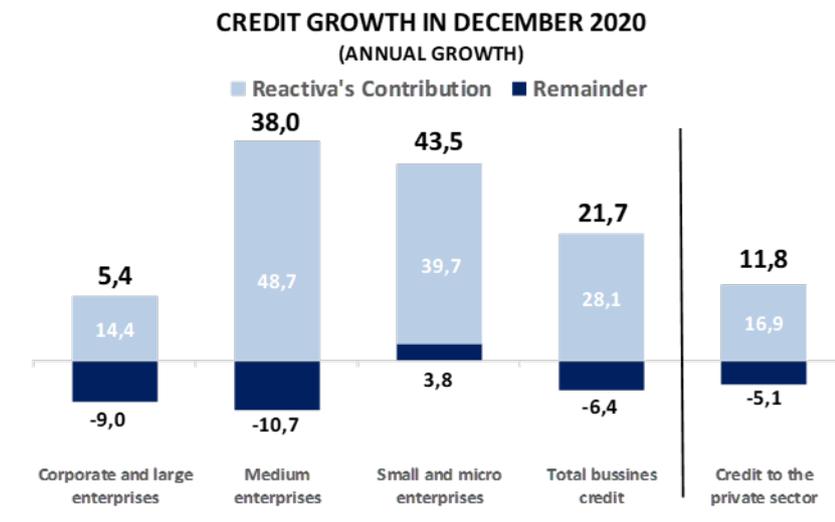
## 2.1 The *Reactiva Perú* Programme

The main challenge during the first half of 2020 was preserving the payment and credit chain. The Covid-19 outbreak was a sudden, transitory and major shock. It triggered a contraction in global demand, which reduced Peru's exports and caused widespread uncertainty among consumers and firms. Moreover, the strict measures introduced to contain the spread of Covid-19 seriously disrupted the supply chain. This affected household incomes and firms' cash flows, thereby limiting their capacity to pay obligations such as salaries, rents and debts owed to suppliers. This vicious cycle of shrinking supply and demand is drawing out the initial shock and could potentially drag the economy into a depression (ie a long and deep recession with negative inflation rates). If allowed to expand, the ripple effect across the payment chain may lead to massive bankruptcies, in turn causing an abrupt drop in production, employment and incomes.

Certain externalities can exacerbate the credit risk associated with a disruption of the payment chain; eg risk-averse financial entities' concerns about their capacity to meet their own obligations may become a self-fulfilling prophecy if they react by contracting credit out of fear that debtors will not be able to repay loans. In this context, government intervention becomes necessary to prevent a disruption of the payment chain by providing adequate liquidity to the financial system.

Impact on credit expansion

Graph 6



Note: Show the annual growth rates as a result of maintaining the classification of companies as of December 2019.

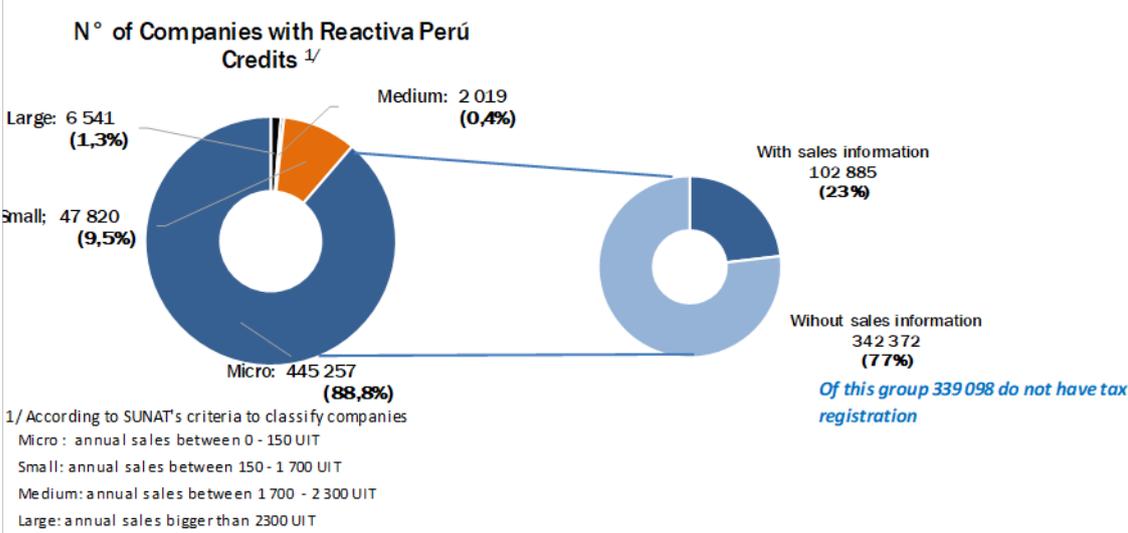
In this context, marked by an abrupt drop in economic activity, the government-guaranteed loan programme known as *Reactiva Perú* was created. Under the programme, the BCRP provides liquidity through repo operations to the financial entities have granted the loans and receives high-quality assets as collateral, ie the government-guaranteed loan portfolio. The loans were granted for three years with

a one-year grace period. The programme sought to partially absorb the increased risk from the pandemic by creating incentives for financial entities to provide companies with the necessary working capital to cover their obligations during the lockdown, thereby improving their viability and reducing market uncertainty.

The programme quickly injected liquidity into the financial system, sustaining credit flows and avoiding a credit crunch and a breakdown in the payment chain. It also provided the monetary boost needed for recovery starting in the second half of 2020. This time, unlike other crisis episodes, such as the sudden stop in capital flows in September 1998 induced by the Russian crisis, credit evolved countercyclically. Business credit grew 22% year-on-year in 2020, instead of the negative growth that likely would have occurred had the programme not been put in place. The programme is one of the largest of its kind in the region (around 8.5% of GDP) and has the highest rate of implementation – defined as actual execution relative to the initial announcement of the programme (around 90%) – among both advanced countries and EMEs.<sup>2</sup>

Coverage of the *Reactiva Perú* programme

Graph 7



The three elements of the programme’s success are simplicity, scope and competition.

Simplicity: It was simple and easy to verify that participants met the conditions for accessing the programme, eg the loan amount was proportional to the sales declared to the tax authority (SUNAT) the previous year and there were no pre-qualification conditions (apart from not being involved in certain prohibited or unlawful activities).<sup>3</sup>

<sup>2</sup> At end-2020, the BCRP also created a liquidity injection mechanism conditional on the expansion of long-term credit in order to help transmit the monetary impulse to long-term interest rates. Participating entities that expand their long-term loans in compliance with certain criteria can access repo operations for up to three years and interest rate swaps up to seven years. As of March 2021, total repo operations under this programme amounted to just PEN 200 million.

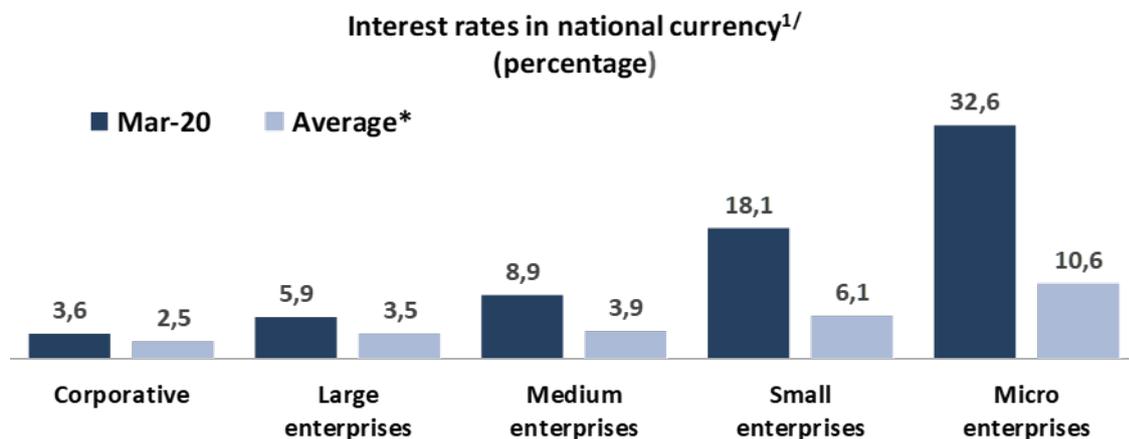
<sup>3</sup> For more details about the *Reactiva Perú* programme, see Montoro (2020) and BCRP (2020), Box 5, available at <https://www.bcrp.gob.pe/docs/Publicaciones/Reporte-Inflacion/2021/marzo/ri-marzo-2021-recuadro-5.pdf>.

**Scope:** Business operating in informality was able to participate in the programme. Peru has one of the highest informality ratios (about two thirds of the labour force are informal workers) among economies with similar levels of per capita income. Micro-enterprises without sales statements had access to the programme and the size of the loan corresponded to the amount they owed to the financial system (with a ceiling of up to PEN 40,000, equivalent to USD 12,000). Of half a million companies that received a loan from *Reactiva Perú*, 98% were micro- or small enterprises and 77% had no sales record.

**Competition:** The BCRP established a repo rate of 0.5% over a three-year period, and resources were allocated to financial entities charging the lowest interest rates to borrowers. This mechanism led to competition between financial entities, helping to speed up the effect that the reduction in the policy rate had on other interest rates. The latter fell to historic lows, especially for smaller companies with higher credit risk premia.

## Impact on borrowing rates

Chart 8



<sup>1</sup> Active interest rates in annual terms of the operations carried out in the last 30 business days for banks. \* Average of the interest rates between May and November 2020. Period in which most of the *Reactiva Perú* credit were disbursed.

## 2.2 Repo operations with loan portfolio rescheduling

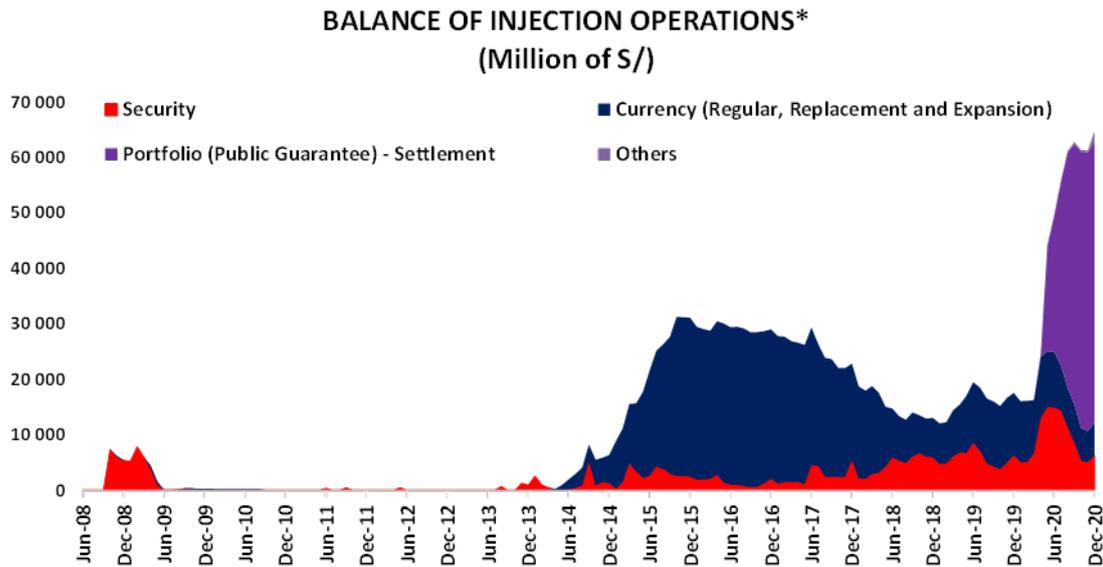
The second repo programme, created in June 2020, aimed to promote loan rescheduling at lower interest rates and longer maturities. Through these operations, financial entities could obtain liquidity in exchange for high-quality collateral (securities, FX or even loan portfolios) on the condition that they refinanced their clients' loans to maturities between 6 and 48 months and set interest rates lower than those initially agreed. This improved conditions for debtors to the financial system, who could thus recover more quickly from the negative shock. As of March 2021, total repo operations under this rescheduling programme amounted to 0.2% of GDP (PEN 1.5 billion).

Between March and December 2020, the balance of liquidity operations reached historic highs, from 2.1% of GDP (PEN 14.8 billion) at end-February to 9.1% of GDP (PEN 64.8 billion) as of end December. Of the latter, PEN 50.7 billion correspond to repo operations with government-guaranteed loans. The BCRP is not unfamiliar with long-term repo operations, but the magnitude, range of collaterals used and financial

characteristics (being conditioned on the extension new loans or reprogrammement of existing ones) of this programme are new. The total balance of liquidity operations as of end-2020 was 8 times higher than that during the GFC (PEN 7.9 billion) and twice that of the 2013–16 drop in commodity prices and the de-dollarisation programme (PEN 31.8 billion). One of the advantages of using repo operations is that the withdrawal of monetary stimulus is automatic and determined by the maturities built into such operations.

Monetary policy response: liquidity injection

Chart 9



\* As of Dec 31

### 3. Policies to moderate exchange rate and long-term interest rate volatility

The Covid-19 pandemic exacerbated currency volatility in EMEs by triggering capital flow volatility in 2020 and an increase on US Treasury bonds yield during the first quarter of 2021. Additionally, local factors such as political uncertainty associated with the vacant presidency in November 2020 and the presidential election cycle in early 2021 resulted in pressures on the exchange rate.

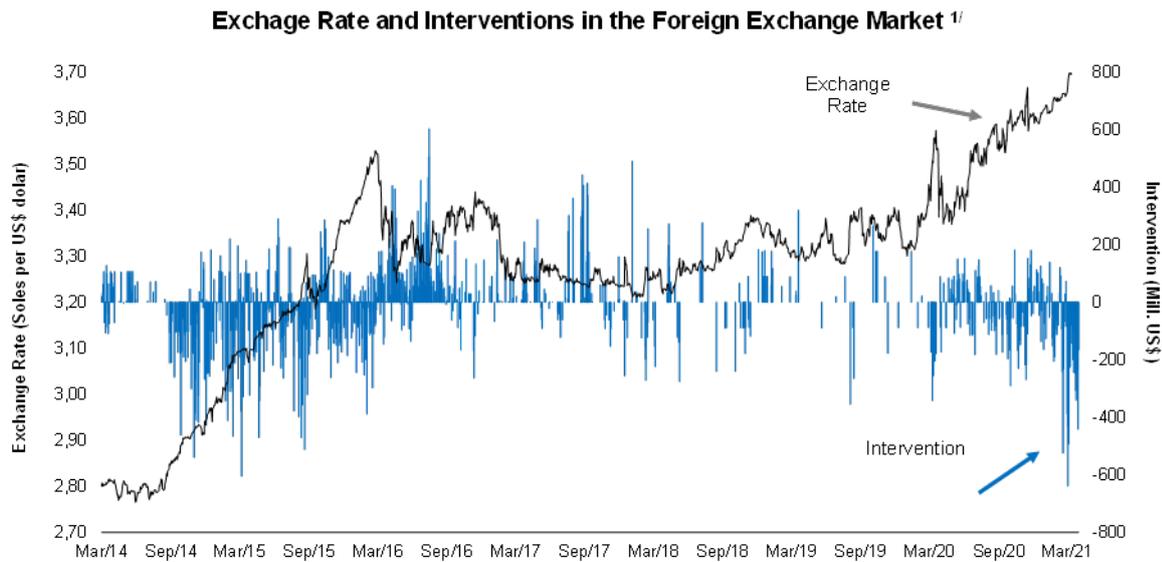
Monetary policy transmission channels are weakened when FX and financial markets experience high exchange and interest rate volatility. Additionally, given that financial dollarisation is still prevalent in the Peruvian economy, reducing excessive exchange rate volatility helps to prevent risks associated with dollarisation (such as FX liquidity risks or credit risks induced by currency mismatches) from materialising.<sup>4</sup>

<sup>4</sup> For more details about financial dollarisation and the Peruvian experience with unconventional monetary policy tools, see Castillo, P, H Vega, E Serrano and C Burga (2016), and Rossini, R, A Armas, P Castillo and Z Quispe (2019).

Given exchange rate developments, the BCRP participated in the FX market using the instruments at its disposal to deal with excessive volatility. Thus, between March 2020 and March 2021, the BCRP sold USD 2.6 billion in the FX market to offset pressures on the currency. FX derivative instrument sales amounting to USD 9.7 billion, including BCRP exchange rate swap sales(SCV-BCRP) and certificates of deposit indexed to the dollar (CDR-BCRP), were used to meet FX demand for exchange rate hedging purposes.

## Central bank interventions in currency market

Graph 10



<sup>1</sup> Includes: Net purchases/sales of dollars in the spot market and net maturity of instruments: CDLD BCRP, CDR BCRP and FX swaps.

Source: BCRP

During the pandemic, the government (and shortly afterwards, Congress) passed legislation authorising a series of fund withdrawals from the Private Pension System (AFPs) to reduce the impact the pandemic had on household's income. AFPs paid out such withdrawals, amounting to 4.5% of GDP (PEN 33 billion), mainly by selling external assets and Peruvian sovereign bonds. In response, the BCRP carried out monetary operations with AFPs to ensure that financial markets functioned normally and to prevent upward pressures on sovereign bond interest rates. If it hadn't, the disorderly sale of sovereign bonds to cover pension fund withdrawals would have lowered bond prices threatening the recovery (by pushing up the interest rate) and the value of affiliates' funds. In this context, the BCRP carried out repo operations with AFPs amounting to 0.7% of GDP (PEN 4.9 billion) for the first withdrawal (May 2020) and 0.2% of GDP (PEN 1.3 billion) for the second withdrawal (November 2020). The BCRP also purchased Peruvian sovereign bonds worth 0.18% of GDP (PEN 1.3 billion) from AFPs throughout December 2020. By law, the BCRP can make annual purchases of government securities for up to 5% of the monetary base as of the end of the previous year.

## 4. Concluding remarks

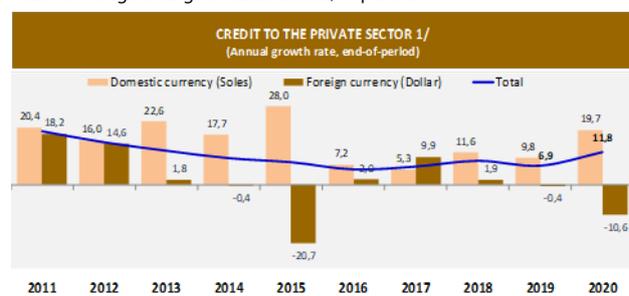
The BCRP's response to Covid-19 preserved credit flows, thereby avoiding a breakdown in the payment chain that would have worsened the pandemic's economic impact. The BCRP also provided the monetary boost necessary to spur an economic recovery starting in mid-2020.

As a result of the BCRP's expansionary monetary policy and liquidity injection operations associated with the government-guaranteed loan programme, growth of credit to the private sector accelerated from 6.9% in 2019 to 11.8% in 2020. As a percentage of GDP, the balance of credit to the private sector rose from 43.1% in 2019 to 52.9% in 2020. PEN credit expansion was greater as a result of the *Reactiva Perú* programme.

### Longer term perspective on credit

Graph 11

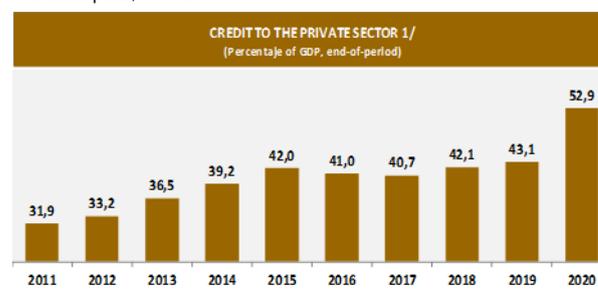
Peak-to-trough change in value added, in per cent



1/ Balances in U.S. dollars are valued at constant exchange rates as of December 2019. Includes receivables from foreign branches of local banks.

<sup>1</sup> Balances in US dollars are valued at constant exchange rates as of December 2019. Includes receivables from foreign branches of local banks.

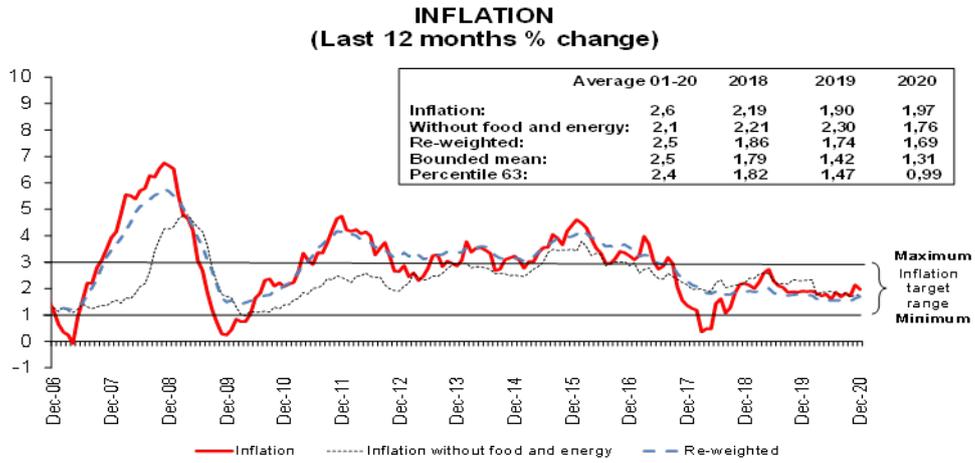
Pre-crisis peak, T = 100



1/ Balances in U.S. dollars are valued at the average end-of-period buying and selling exchange rates. Includes receivables from foreign branches of local banks.

<sup>1</sup> Balances in US dollars are valued at the average end-of-period buying and selling exchange rates. Includes receivables from foreign branches of local banks.

Inflation rose slightly between 2019 and 2020, from 1.90% to 1.97%, closer to the middle of the BCRP's inflation target range (1–3%), and inflation expectations stayed around 2%. Inflation was higher as a result of increasing costs due to sanitary measures, supply-side factors affecting certain food prices, and a depreciation of the national currency. At the same time, economic performance below potential was reflected in lower core inflation (headline inflation excluding food and energy), which decreased from 2.30% in 2019 to 1.76% in 2020.



Source: BCRP

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# Dynamics of monetary policy and fiscal policy during the pandemic: the Philippine experience<sup>1</sup>

Francisco G Dakila, Jr<sup>2</sup>

## Abstract

The severity of the Covid-19 pandemic's impact on the Philippine economy has led the Bangko Sentral ng Pilipinas (BSP) and Philippine fiscal authorities to implement extraordinary monetary and fiscal policy responses. This paper discusses the dynamics of implementing these measures, which require close coordination between the central bank and fiscal authorities.

Institutions for coordination and laws that ensure balance in cooperation have facilitated the smooth collaboration between monetary and fiscal authorities. While the BSP resorted to massive unconventional monetary policy, it was able to maintain ample monetary policy space by subjecting the measures it undertook to the limits stipulated in the BSP charter. This has provided fiscal authorities with the necessary resources to finance its pandemic-response measures. Eventually, however, the government's increasing deficits and ballooning debt could impact the BSP's room for monetary policy manoeuvres. As the Philippine economy gradually recovers, continued coordination between monetary policy and fiscal policy will require monitoring the channels through which fiscal policy affects monetary policy, including the status of the government's fiscal and debt sustainability.

When economic conditions become more favourable and economic recovery has accelerated enough to warrant a scale-down of policy support, monetary-fiscal policy coordination will become even more crucial as the objectives of the BSP and fiscal authorities start to diverge. Continued coordination with fiscal authorities and clear public communication of carefully crafted exit strategies are essential in order to minimise potential policy inconsistencies, thereby ensuring a rapid, immediate economic recovery.

JEL classification: E52, E61, E62, E63, H62, H63.

Keywords: monetary policy, fiscal policy, policy coordination, Philippines.

<sup>1</sup> Article prepared for the BIS Emerging Markets Deputy Governors Meeting, 24–25 February 2021. The usual institutional disclaimer applies.

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## 1. Introduction

Along with the rest of the world, the Philippines has been severely affected by the Covid-19 crisis. The unprecedented economic disruptions caused by the pandemic required extraordinary monetary and fiscal policy responses. The Bangko Sentral ng Pilipinas (BSP) implemented conventional and unconventional monetary policy measures<sup>3</sup> while Philippine fiscal authorities provided fiscal stimulus and income support.

Together, the BSP and fiscal authorities acted quickly to mitigate the economic repercussions of the crisis. The BSP has been complementing the National Government's (NG) efforts by ensuring adequate liquidity and continued functioning of the financial market, as well as providing financial resources for fiscal and health programs, without compromising its mandates to safeguard price and financial stability. To do this, the BSP monitors the economic impacts of the monetary-fiscal policy interaction, including the sustainability of the NG's fiscal and debt positions.

As the country advances along the path to recovery, continued monetary-fiscal policy coordination is essential. However, the BSP recognises that this coordination may present some challenges when political biases emerge and the tendency to overburden monetary policy grows. The BSP makes use of existing government coordination institutions and structures to properly communicate its focus and commitment to its mandates.

This paper discusses the experience of the Philippines with the dynamics of monetary policy and fiscal policy during the pandemic. It starts with a discussion of existing institutions and structures for coordinating monetary and fiscal policies (Section 2), followed by the dynamics of monetary and fiscal policies during the pandemic (Section 3) and their impacts (Section 4). Section 5 explains the unwinding of measures, followed by the conclusion (Section 6).

## 2. Institutions and structures for coordinating monetary policy and fiscal policy in the Philippines

Coordination of monetary policy and fiscal policy is carried out through existing institutions and structures that allow information sharing and cooperation. With an understanding of the importance of policy coordination, these institutions and structures have been developed and improved through the years, reinforced by the lessons learned from past crises.

***Institutional systems for policy coordination.*** Monetary-fiscal policy coordination is carried out mainly through the Development Budget Coordination Committee (DBCC). The DBCC is an inter-agency body that discusses, reviews and

<sup>3</sup> The BSP also implemented regulatory relief and supervisory measures, but these are not covered in this paper.

approves macroeconomic assumptions along with the fiscal and financing programs used to prepare the annual National Government budget.<sup>4</sup>

According to the invitation issued by the DBCC under DBCC Resolution no 98-1 dated 22 June 1998, the BSP participates in DBCC meetings only as a resource institution and thus has no voting powers during deliberations. As a resource institution of the DBCC, the BSP provides technical input on the performance and prospects of macroeconomic indicators<sup>5</sup> that serve as inputs for estimating the NG's growth projection and fiscal program. The BSP also informs the DBCC of the Monetary Board's (MB) recent monetary policy decisions and explains the economic and monetary reasoning behind these policy decisions. The BSP also provides its opinion on the NG's financing program, which is regularly prepared by the Bureau of the Treasury (BTr). The BSP also lends its expertise on matters falling under its purview during congressional deliberations on the national budget. Meanwhile, the BSP uses the information from the DBCC, particularly on economic growth projections and the NG's borrowing and spending program, including taxation plans, as crucial inputs for its inflation, growth and liquidity forecasts. These, in turn, guide the BSP's monetary policy decisions and operations as well as its liquidity management strategies.<sup>6</sup>

The DBCC ensures that the country's fiscal stance is consistent with the latest economic growth targets and macroeconomic assumptions. It is also responsible for setting and periodically reviewing the NG's medium-term inflation target in consultation with the BSP, but responsibility for steering inflation towards the inflation target range rests primarily with the BSP. The DBCC thus serves as an important venue for the exchange of information between monetary and fiscal authorities, thereby ensuring consistency in assumptions, forecasts and targets in the fiscal, real, monetary and external sectors of the economy.<sup>7</sup>

For coordination between the government's economic, financial and fiscal policies and the BSP's monetary, credit and exchange policies to be effective, the BSP Deputy Governor serves as an *ex officio* member of the National Economic and Development Authority (NEDA) Board.<sup>8</sup> The NEDA Board ensures that government policies, including the country's development plans and programs, are aligned with the policies set by the President.<sup>9</sup> The DBCC is one of the Cabinet-level inter-agency committees of the NEDA Board.

<sup>4</sup> The DBCC is composed of the heads of the four member agencies, which include the Department of Budget and Management (DBM) as Chair, the Department of Finance (DOF), the National Economic and Development Authority (NEDA) and the Office of the President. It was originally created in the 1970s but its current composition was based on Executive Order No. 292, signed on 25 July 1987 (Department of Budget and Management (2020)).

<sup>5</sup> BSP macroeconomic assumptions include projections of the inflation rate, Dubai crude oil prices, the peso-dollar exchange rate, interest rates, and trade in goods and services, among others. These serve as inputs in the growth projection (NEDA) and fiscal program (DOF and DBM) of other DBCC members.

<sup>6</sup> See Bangko Sentral ng Pilipinas (2021a).

<sup>7</sup> Ibid.

<sup>8</sup> Based on Section 124 of Republic Act No. 7653, or The New Central Bank Act.

<sup>9</sup> See National Economic and Development Authority (2021).

The current representative of the NG at the BSP Monetary Board is the Secretary of the Department of Finance.<sup>10</sup> The MB discusses the NG's fiscal performance and its implications for fiscal and monetary policy coordination, as necessary.

**Structures that ensure balanced monetary-fiscal policy coordination.** Lessons learned from past crises have led to amendments to the BSP Charter in order to avoid repeating past mistakes and to minimise any unintended negative consequences of policy coordination. In particular, Republic Act No. 7653, or The New Central Bank Act of 1993, created a "truly independent" central bank to insulate the central bank from fiscal authorities' demands for budget deficit financing.<sup>11</sup> Should the MB deem it important for the BSP to provide financing assistance to the government, the New Central Bank Act includes provisions that specifically indicate the amount limit and the duration of the provisional advances that the BSP may provide to the NG, as safeguards. Additionally, to ensure that government borrowing does not adversely affect monetary operations, fiscal authorities need to get an opinion from the MB on their financing program for both domestic and external sources.<sup>12</sup> RA 7653 also made the BSP unamenable to any proposals for engagement in quasi-fiscal activities, even in response to a crisis. It was the previous Central Bank's (the predecessor to the BSP) assumption of the foreign exchange liabilities of government-owned and controlled corporations and private sector companies as well as development banking and financing that saddled the old Central Bank with substantial deficits that eventually led to its restructuring.<sup>13</sup>

### 3. Dynamics of monetary policy and fiscal policy during the pandemic

#### A. Institutional coordination

**Collaboration during the pandemic.** Throughout the Covid-19 crisis, the institutional framework for monetary and fiscal policy coordination in the country has remained almost the same. The DBCC has also served as one of the venues for discussing policies and measures to mitigate the pandemic's economic impact, and it has been holding more frequent meetings between monetary and fiscal authorities.<sup>14</sup> This demonstrates the importance of coherent policymaking by the country's economic managers, consistent with the whole-of-government approach for dealing

<sup>10</sup> The President usually appoints the Secretary of Finance as the government representative at the Monetary Board to ensure monetary-fiscal coordination (Sicat (2012)).

<sup>11</sup> See Sicat (2012).

<sup>12</sup> Section 43 of Republic Act 11211, or an Act Amending the New Central Bank Act, indicates that whenever the Philippine government considers borrowing, be it domestically or abroad, it shall request a written opinion on the monetary implications from the Monetary Board. For external borrowing, the MB's opinion shall be based on the nation's gold and foreign exchange resources and obligations and on the effects of the proposed operation on the balance of payments and monetary aggregates. For domestic borrowing, the MB's opinion shall be based on the probable effects on monetary aggregates, price level, and the balance of payments.

<sup>13</sup> See Tetangco (2003) and Glindro and Oliva (forthcoming).

<sup>14</sup> See BSP (2021a).

with the crisis.<sup>15</sup> Communication and submission of technical reports within the committee have been accomplished mainly through digital channels (eg Zoom, Google Meet and email) to comply with physical distancing protocols.

**Ensuring transparency and accountability.** The DBCC has also remained committed to its practice of transparency and accountability to the public during the crisis through the publication of reports, prompt release of the latest macroeconomic assumptions and fiscal program, and more frequent press statements. As a resource institution, the BSP participates in online DBCC press briefings and in budget deliberations in Congress in order to respond to queries about macroeconomic outlook and policies.<sup>16</sup> Together with other economic managers of the NG, the BSP has also been active in congressional hearings to discuss legislative measures aimed at mitigating the financial consequences of the pandemic and helping the economy recover.

**Strong coordination to prevent policy tension.** The BSP's open and skilful interaction with fiscal authorities, developed through years of regular coordination, has been particularly useful in facilitating the process of addressing the ill effects of the pandemic.

Policy coordination through the DBCC and the BSP's active participation in legislative hearings ensure that policies and laws in response to the pandemic support the independence of the BSP and its commitment to price and financial stability. Through policy discussions, the BSP can draw boundaries regarding its responsibilities and explain the limitations of its policy and tools while ensuring that it firmly supports the government's efforts in dealing with the crisis.

## B. Policy coordination

**Early recognition of the need for greater policy coordination.** At the outset of the pandemic, the government imposed strict mobility restrictions to slow the spread of the virus. Unsurprisingly, such restrictions curb economic activities, subsequently reducing the government's revenue streams. As a source of alternate financing, the domestic debt market<sup>17</sup> was experiencing extreme volatility due to concerns over the pandemic. Immediately recognising the National Government's financing constraints, the MB provided it with emergency financing. In order to maintain the independence and credibility of its monetary policy, the BSP carefully crafted time-bound, market-oriented (eg through a secondary market) bridge financing measures that with legal and binding limits.

**The BSP's response measures and bridge financing for the NG.** Due to the unprecedented economic and financial impacts of the Covid-19 crisis, the BSP took prompt, decisive measures to ensure adequate domestic market liquidity, calm the

<sup>15</sup> See Batac et al (2020).

<sup>16</sup> Ibid.

<sup>17</sup> Based on the Balance Sheet Approach data, prior to the pandemic, the general government's total liabilities were mostly debt securities (84.1 per cent), half of which were held by the domestic banking system and financial corporations (50.6 per cent).

market and boost confidence, and sustain flows and access to credit in order to support economic recovery.<sup>18</sup>

The shift to an accommodative monetary policy stance started with the reduction in the policy interest rate, which the BSP implemented as early as 6 February 2020. By the end of the year, the cumulative reduction in the policy rate was 200 bp. The BSP also cut reserve requirement ratios (RRR) by 200 bp for universal/commercial banks and 100 bp for savings banks and rural commercial banks, in conjunction with other intervention measures to ease liquidity conditions.<sup>19</sup>

To provide bridge financing to the NG, the BSP resorted to large-scale unconventional measures consistent with the provisions of its Charter. Funding assistance consisted of short-term relief measures primarily intended to give the NG additional fiscal flexibility. These are expected to enable the government to quickly meet the expenditure requirements of social amelioration and recovery efforts. The extraordinary liquidity measures taken by the BSP include:

1. **Purchase of government securities (GS) in the secondary market.** On 24 March 2020, the BSP opened a daily one-hour window for buying peso-denominated GS. Availability of secondary market liquidity assures market participants that there will be demand should they decide to liquidate their GS holdings. This encourages market participation in primary GS auctions and has enabled the GS market to continue functioning properly, especially during the peak of the pandemic. The one-hour window will remain open until market conditions return to normal.

The purchase of GS in the secondary market is one of the BSP's open market operation (OMO) tools, which may be used to implement monetary policy when warranted. The BSP has not made use of this instrument before due to the financial system's surplus liquidity position with respect to the BSP prior to the pandemic.

2. **Remittance of dividends.** The BSP also remitted PHP 20 billion in advance dividends to the NG on 26 March 2020. While the BSP is no longer required to remit its dividends to the government,<sup>20</sup> it decided to defer the use of its dividends to increase its capital in order to immediately provide resources to the government.
3. **Provisional advances to the NG.** On 27 March 2020, the BSP entered into a reverse repurchase (repo) agreement with the Bureau of the Treasury (BTr) when it bought GS amounting to PHP 300 billion with a term of three months. This was extended for another three months, with the NG buying back the GS on 29 September 2020. In October 2020, the BSP provided direct provisional advances worth PHP 540 billion, and these were settled by the NG on 18 December 2020.

<sup>18</sup> See Dakila (2020).

<sup>19</sup> The BSP also eased monetary policy settings through the following measures: temporary suspension of term deposit facility (TDF) auctions and zero offering for certain tenors, temporary reduction in the daily offer volume in the RRP facility and temporary reduction of the term spread on peso rediscounting loans relative to the overnight lending rate to zero, among others.

<sup>20</sup> Amendments to the BSP Charter via RA 11211 stipulate that any and all dividends declared by the BSP in favour of the NG shall be released and disbursed for the payment of Bangko Sentral's increase in capitalization.

In January 2021, the BSP granted new loan advances totalling PHP 540 billion, which are scheduled to be settled on 12 July 2021.

This is the first time since the creation of the BSP in 1993 that a provisional advance has been requested by the NG and granted by the BSP. The provisions of the loan were based on Section 89 of the BSP Charter, which states that the BSP is allowed to provide direct provisional advances to the NG in order to finance expenditures authorised in its annual appropriation. However, these direct provisional advances should not exceed 20 per cent of the NG's average annual income for the last three (3) fiscal years. Moreover, these advances shall be repaid, with or without interest, within three (3) months. The maturity may be extended by another three (3) months, as allowed by the MB.

Due to the severity of the crisis, Congress authorised the BSP to provide additional provisional advances to the NG through Section 4(bbb) of RA No. 11494, or the Bayanihan to Recover as One Act. The law authorises the BSP to issue additional provisional advances to the NG, for an amount no greater than 10 per cent of the NG's average income for fiscal years 2017 through 2019. With or without interest, these funds are explicitly earmarked for the government's Covid-19 response programs. The additional provisional advance can be availed of until 2022 and must be repaid within one year. This can also be extended for another year as allowed by the MB. To date, the NG has not taken advantage of this resource.

As of 3 June 2021, the total amount of liquidity injected by the BSP into the financial system through the implementation of monetary instruments and extraordinary measures amounted to PHP 2.2 trillion, or 12.1 per cent of the country's GDP.

***The main consideration behind the responses.*** The key considerations of the measures undertaken by the BSP were price and financial stability objectives. The benign inflation environment<sup>21</sup> in 2020 and inflation forecasts set firmly within the inflation target range of 2–4 per cent from 2020 to 2022 had provided the BSP with ample monetary policy space to deploy policy measures with the government's fiscal stimulus and social programs.

The BSP uses monetary policy to support fiscal stimulus in crisis periods by maintaining an accommodative stance, provided it does not pose risks to the Bank's price and financial stability objectives. In assessing its monetary policy stance, the BSP also considers the possible implications of the government's revenue, spending and borrowing programs on the outlook for inflation and growth, as well as on domestic liquidity conditions. In the current pandemic, the BSP ensures that it maintains ample monetary policy space by subjecting its measures to the limits stipulated in the BSP charter.

***The repo agreement is not a quantitative easing (QE) measure.*** The BSP emphasises that the temporary and time-bound repo agreement with the BTr is not a QE measure. In taking this unconventional measure, the BSP has no intention of bringing down market interest rates over the medium term in order to keep all interest rates low and stimulate the economy. Moreover, it does not constitute a

<sup>21</sup> The inflation rate in 2020 averaged 2.6 per cent, below the government's target for the year of 3.0 per cent  $\pm$  1 percentage point. Inflation expectations were also well-anchored.

large-scale asset purchase since the NG had to buy back the GS within a specified maximum period of six months.<sup>22</sup>

The provisional cash advances to the NG also have their limits in terms of amount and duration in order to ensure that they do not lead to a permanent expansion of the monetary base or the BSP's balance sheet.<sup>23</sup> Requiring the NG to pay out the debt within a specific and short period of time helps avoid the risk of inflation and the build-up of inflation expectations. The BSP recognises that while government debt financing by the central bank can serve as a crisis management tool, it cannot be used as a permanent solution, for this would increase the risk profile of the central bank's balance sheet.<sup>24</sup> A decline in the financial soundness and financial independence of the country's monetary authority would not be sustainable for the economy.

**The importance of careful communication.** The BSP carefully and clearly communicates to the market, media, politicians and the general public that the measures undertaken are and will remain in line with the BSP's primary mandate, which is to maintain price stability conducive to sustainable economic growth and employment. These actions are not intended to provide a long-term source of financing for government expenditures. These are extraordinary measures required only by extraordinary conditions caused by the pandemic. Medical and fiscal policy interventions should remain at the forefront of the government's efforts because the current crisis is a combination of health and economic shocks. Considering the limits of BSP interventions, particularly in terms of monetary policy and its instruments, BSP actions should serve only as a complement to the NG's more comprehensive fiscal and health responses.<sup>25</sup>

## 4. Impacts of policy coordination

**The impact of the BSP's response measures.** The implementation of extraordinary measures, together with other monetary policy responses, helped calm the market, easing domestic liquidity conditions and restoring financial market functioning. Aside from shoring up available funds, policy coordination between the government and the BSP also provided pricing support for domestic issues, quickly restored auction demand and trading appetite for GS, and improved yields secured at auction.<sup>26</sup>

Based on an analysis of variance (ANOVA) previously conducted on key financial market variables between the pre-asset purchase period (13–23 March) and the post-asset purchase period (24 March–8 April),<sup>27</sup> the BSP's asset purchases appear to have calmed market jitters and improved domestic liquidity. This was observed in terms of lower loan rates between banks, the recovery of the PSE index, a decrease in the credit default swap (CDS) and the appreciation of the Philippine peso.

<sup>22</sup> See Robleza et al (2020).

<sup>23</sup> Ibid.

<sup>24</sup> See Glindro, Oliva and Elloso (2020).

<sup>25</sup> See Batac et al (2020).

<sup>26</sup> Development Budget Coordination Committee (2020).

<sup>27</sup> A test of equality of means of selected financial market variables (Dakila (2020)).

Estimates by Robleza et al (2020) indicate that the full economic impact of BSP measures will be felt in 2021. They explain that reductions in the RRP rate and RRRs are seen to contribute to lower market interest rates, faster domestic liquidity growth, and depreciation of the exchange rate, after long and variable lags. These could lead to slightly higher inflation and improved growth prospects over the policy horizon, although inflation is likely to remain firmly anchored within the government's target range.

**Channels of fiscal policy impact on monetary policy.** The BSP considers the main channels through which the state of public finances affects room for monetary policy manoeuvres to be inflation, inflation expectations, output and the domestic yield curve. Since a number of theories indicate that there is a growing relationship between the government's fiscal position and these variables in general, the BSP takes into account the NG's actual and planned borrowing and spending when formulating its strategies for implementing monetary policy. Below are some explanations for the relationship between fiscal position and these channels based on the literature:

1. **Fiscal position and inflation.** Bordo and Levy (2020)<sup>28</sup> list some theories that explain the link between fiscal deficits and inflation. From simple Keynesian and quantity theory of money approaches to modern approaches that incorporate expectations and forward-looking behaviour, they explain that fiscal deficits are, in general, inflationary.

The simple Keynesian model posits that fiscal expansion could increase inflation since it increases aggregate demand. Early monetarists using the quantity theory of money argued that fiscal policy would influence price movements only if financed through monetisation.

In terms of modern approaches, Sargent and Wallace (1981) posit that, when there is fiscal dominance<sup>29</sup> of monetary policy, persistent deficits and ballooning government debt could force the central bank to tolerate additional inflation. In an extension of the quantity theory tradition, Bordo and Levy (2020) explain that this theory implies that even if fiscal deficits are bond-financed, central banks would eventually follow an accommodative monetary policy in order to reduce the real value of debt and satisfy the government's long-run consolidated balance sheet. Meanwhile, the fiscal theory of the price level, which is built on the Keynesian approach, states that fiscal policy leads to a rise in prices caused by increased consumption due to the wealth effect. The perceived increase in real wealth is the result of an increase in nominal government debt.

The historical survey conducted by Bordo and Levy (2020) showed that expansionary fiscal policy led mostly to high inflation, except during the Global Financial Crisis (GFC). Despite soaring fiscal deficits and debt, accompanied by unconventional quantitative easing, advanced economies did not experience a rise in inflation during and after the GFC. The authors explained that this was attributed in part to weak aggregate demand due to risk aversion. Meanwhile, using the average fiscal deficit and average inflation of selected emerging market economies (EMEs), Montoro, Takáts and Yetman (2012) show that less accommodative fiscal policies are weakly associated with lower inflation.

<sup>28</sup> See Bordo and Levy (2020).

<sup>29</sup> Fiscal dominance is the risk that the current fiscal situation could put pressure on the central bank to deviate from its primary objective (Salmeron and García Arenas (2021)).

2. **Fiscal position and inflation expectations.** Inflation expectations are likely to increase when the market perceives the government's fiscal position as no longer sustainable.<sup>30</sup> Moreover, models of fiscal dominance imply that higher debt, when changes in primary surpluses are not offset, could lead to higher inflation expectations.<sup>31</sup>

The significant role that fiscal condition plays in driving inflation expectations was demonstrated by Mello and Ponce (2020), as they found robust evidence of a positive correlation between the fiscal deficit-to-GDP ratio and inflation expectations for Uruguay. More recently, the findings of Coibion, Gorodnichenko and Weber (2021) using US household survey data indicate that a persistently worsening fiscal outlook, with rising debt levels into the future, has a more powerful effect on inflation expectations due to anticipation of future debt monetisation.

3. **Fiscal position and output.** Fiscal policy can affect current and long-term output growth through its contribution to saving and investment and its effects on resource allocation efficiency.<sup>32</sup> The IMF (1995) explains that, since high deficit is a form of dissaving in the economy, it could lead to lower economic growth if government spending is not related to investment in human capital or the development of infrastructure. The makeup of government spending and how it is financed (a type of tax or deficit financing) could also affect the allocation of economic resources. If it causes distortion, this could curb economic growth. During a recession, fiscal expansion could increase output in the short run, but this could be limited by capacity constraints, low responsiveness of domestic supply and the country's inability to sustain a lower balance of payments position. However, an accommodative fiscal stance could also curb economic growth in the short run if the financial market reacts adversely to high fiscal deficit by raising interest rates in anticipation of high inflation and financial instability.

Adam and Bevan (2005) examined this relation empirically, using a panel of low- and middle-income countries. They found that the relationship between output growth and deficit is non-linear and depends on the financing mix and the outstanding debt stock. Their analysis suggests a statistically significant non-linearity in the budget deficit's impact on growth at around 1.5 per cent of GDP. For fiscal deficits less than or equal to this ratio, they observed a positive impact on economic growth, but as the deficit increases beyond that, the impact on growth becomes negative. The magnitude of the estimated impact varies depending on how the deficit is financed and the level of debt stock. A high debt level worsens the adverse effects that high deficits have on output growth.

4. **Fiscal position and yield curve.** High fiscal deficit could raise interest rates as the government increases demand for funds. In addition to cyclical conditions and monetary policy position, the short end of the yield curve is also influenced by the government's borrowing behaviour.

<sup>30</sup> See Montoro, Takáts and Yetman (2012).

<sup>31</sup> See Coibion, Gorodnichenko and Weber (2021).

<sup>32</sup> See International Monetary Fund (1995).

The yield curve slopes upward if large fiscal deficits are expected to continue and there is an excess supply of government debt.<sup>33</sup> When creditors start to worry about debt sustainability, they expect higher interest payments over time to compensate for increased perceived risk. Moreover, higher inflation expectations due to anticipation of debt monetisation could increase the nominal long-term interest rate.

However, the effect of large fiscal deficits on long-term interest rates depends on the overall impact on national savings.<sup>34</sup> A decrease in national savings due to higher fiscal deficits can be mitigated by an increase in private savings due to expected future tax increases (ie Ricardian equivalence). Moreover, the effects of fiscal deficit on the real long-term rate can be reduced, to a certain extent, if the fiscal deficit is financed by foreign savings.

As with other channels, the effects of fiscal deficit and public debt on yield curve are less clear-cut empirically. Baldacci and Kumar (2010) observed a nonlinear impact, the magnitude of which depends on initial fiscal, institutional and structural conditions. They found that the effect of fiscal deterioration on long-term interest rates is greater in countries that enter a crisis with weak fundamentals.

***Monitoring the impact of fiscal policy on monetary policy.*** Correlation and visual analyses of Philippine data show that the relationships between fiscal position and the four channels appear to be ambiguous. Considering the simplicity of these approaches, insights from these discussions should be considered with caution and could be considered useful topics for future research.

Correlation analysis of the relationship between fiscal deficit-to-GDP ratio and inflation indicates a statistically significant negative correlation, while that between the NG debt-to-GDP ratio and inflation shows a statistically significant positive correlation (Table 1). These results are also shown in the scatter plots of these variables (Figure 1). This seems to indicate that, in the Philippines, higher inflation is associated more with higher debt than with higher fiscal deficit.

<sup>33</sup> See Baldacci and Kumar (2010).

<sup>34</sup> Ibid.

Correlation analysis of the relationships between fiscal debt-to-GDP and NG debt-to-GDP ratios and inflation, inflation expectations, real GDP growth and long-term interest rate

Table 1

	Inflation rate	Inflation expectations	Real GDP growth	Ten-year government bond yield
Fiscal deficit-to-GDP ratio	-0.3*** (1993–2019) -2.9	-0.1 (2013–2019) -0.3	-0.1 (1993–2019) -1.1	0.2 (2011–2019) 1.0
NG debt-to-GDP ratio	0.3*** (1993–2019) 3.3	0.1 (2013–2019) 0.3	-0.3*** (1993–2019) -2.7	-0.1 (2011–2019) -0.6

The figure below the correlation coefficient is the t-statistic.

\*\*\* Statistically significant at the one-per cent level.

Inflation expectation data are based on the Business Expectations Survey's next-quarter expectations.

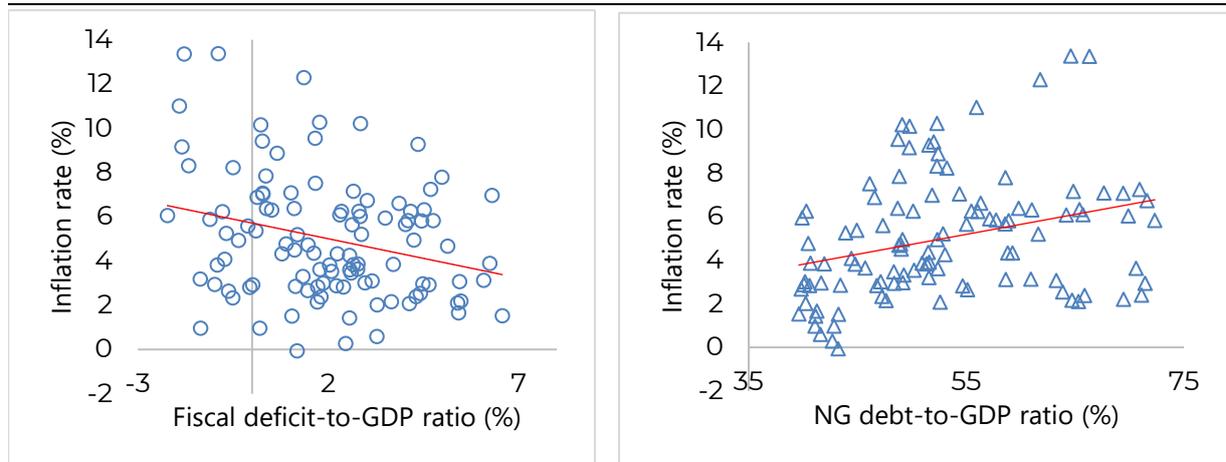
Differences in periods of analysis are due to differences in data availability. The Covid-19 crisis period was not included to avoid distortions.

Sources: Bangko Sentral ng Pilipinas; Bureau of the Treasury; Philippine Statistics Authority; Bloomberg.

Scatter plots of the relationships between fiscal deficit-to-GDP ratio and inflation and NG debt-to-GDP ratio and inflation (in per cent)

1993–2019

Figure 1



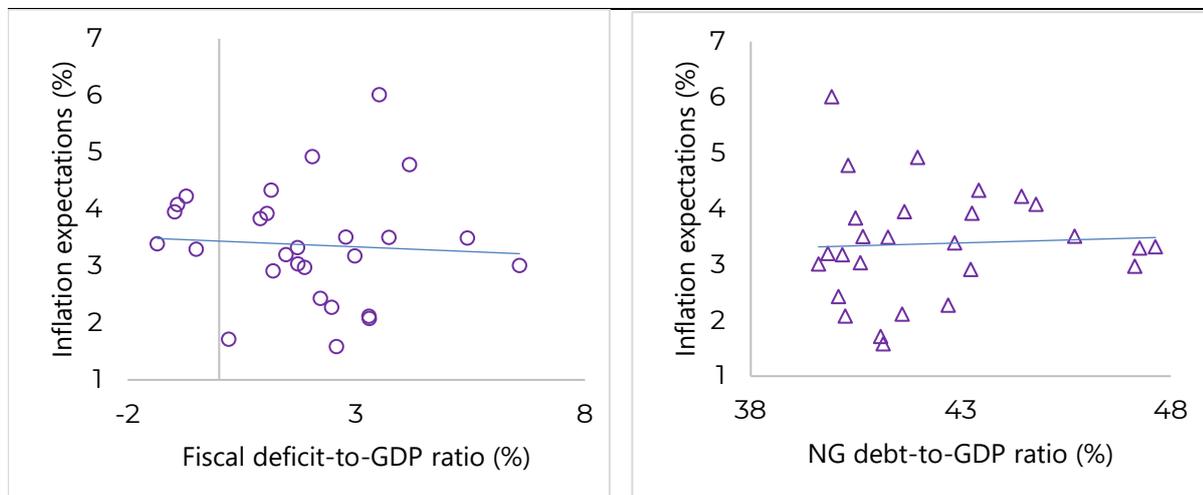
Sources: Bureau of the Treasury; Philippine Statistics Authority.

With regard to the correlation between fiscal position and inflation expectations, the resulting coefficient signs are consistent with that of inflation, but not statistically significant. The scatter plots also appear to reflect these respective signs (Figure 2). España and Santillan (2018), however, showed that a 1-percentage point increase in fiscal surplus-to-GDP ratio could reduce expected inflation by 0.02 percentage points. This implies that prudent management of fiscal resources could help anchor inflation expectations in the country.

Scatter plots of the relationships between fiscal deficit-to-GDP ratio and inflation expectations and NG debt-to-GDP ratio and inflation expectations (in per cent)

2013–2019

Figure 2



“Inflation expectations” refers to the inflation projection in the Business Expectations Survey.

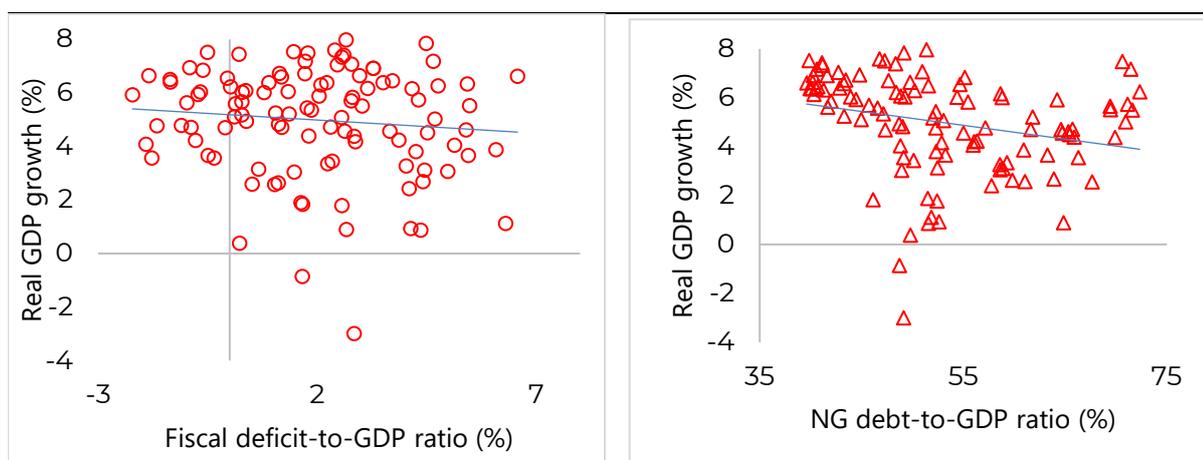
Sources: Bureau of the Treasury; Philippine Statistics Authority.

In the relationship between fiscal position and economic growth, the resulting coefficients are negative but only statistically significant for the NG debt-to-GDP ratio. This is also reflected in the scatter plots of these variables (Figure 3). Akram (2015) showed that, in the Philippines, economic growth has a negative and significant relationship with public external debt but a positive relationship with public domestic debt.

Scatter plots of the relationships between fiscal deficit-to-GDP ratio and real GDP growth and NG debt-to-GDP ratio and real GDP growth (in per cent)

1993–2019

Figure 3



Sources: Bureau of the Treasury; Philippine Statistics Authority.

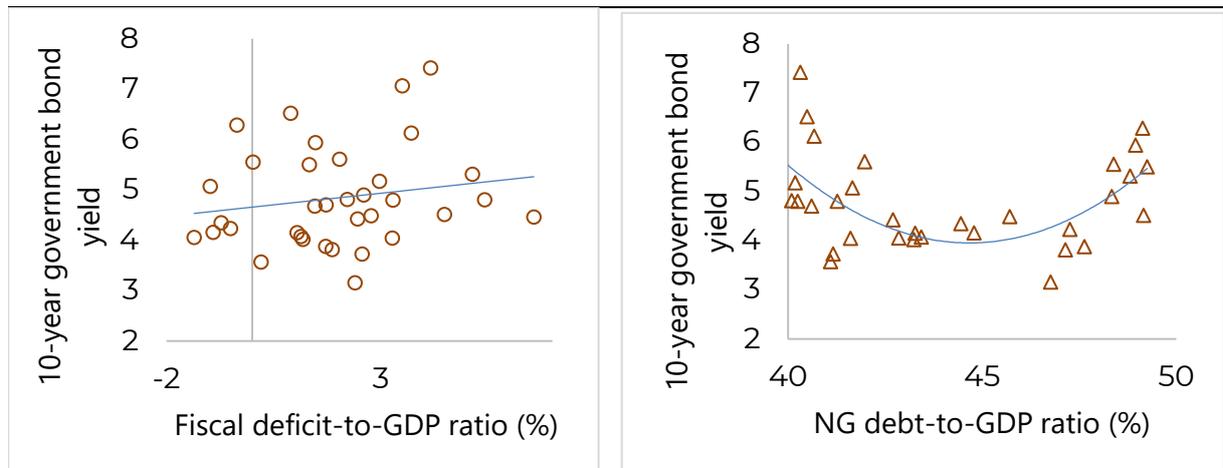
Lastly, while a positive correlation was observed between NG fiscal deficit-to-GDP ratio and ten-year government bond yield, an unexpected negative correlation

was observed between NG debt-to-GDP ratio and the long-term interest rate, though neither is statistically significant. A scatter plot of the relationship between NG debt-to-GDP ratio and long-term interest rate, however, seems to indicate a non-linear relationship (Figure 4). There appears to be a negative relationship when the ratio is lower than 45 per cent and a positive relationship when the ratio is higher. This appears to be consistent with the findings of Baldacci and Kumar (2010).

Scatter plots of the relationships between fiscal deficit-to-GDP ratio and 10-year government bond yield and NG debt-to-GDP ratio and 10-year government bond yield (in per cent)

2011–2019

Figure 4



Sources: Bureau of the Treasury; Philippine Statistics Authority.

**Channels of impact on monetary policy during the crisis.** The channels connecting fiscal policy to monetary policy remain crucial; the pandemic did not materially affect their importance. In 2020, real GDP declined by 9.6 per cent due to the adverse effects that quarantine measures had on economic activities. However, the inflation rate was within target at 2.6 per cent, inflation expectations remained manageable and well within the government’s target range of 2–4 per cent, and ten-year government bond yield was low, at 3.0 per cent.

In the first quarter of 2021, while the economy still contracted by 4.2 per cent, the inflation rate began to rise, averaging at 4.4 per cent in the first five months of the year. This is mainly due to inflationary pressures on the supply side, particularly from meat and transport prices.<sup>35</sup> Nevertheless, the BSP’s latest inflation forecasts show that the inflation rate will average within the target range from 2021 to 2023 on the back of the government’s ongoing implementation of direct, non-monetary measures.<sup>36</sup> In addition, inflation expectations remain firmly anchored to the target range for the same period. The ten-year Treasury bond rate increased to 4.4 per cent in the first quarter of 2021, but this is still below the pre-pandemic rate.

<sup>35</sup> The elevated price of meat was attributed to tighter supply caused by the outbreak of African swine fever. Higher transport prices were the result of rising international crude oil prices and high inflation for transport services.

<sup>36</sup> See Bangko Sentral ng Pilipinas (2021b): “Monetary Board maintains policy settings,” 24 June.

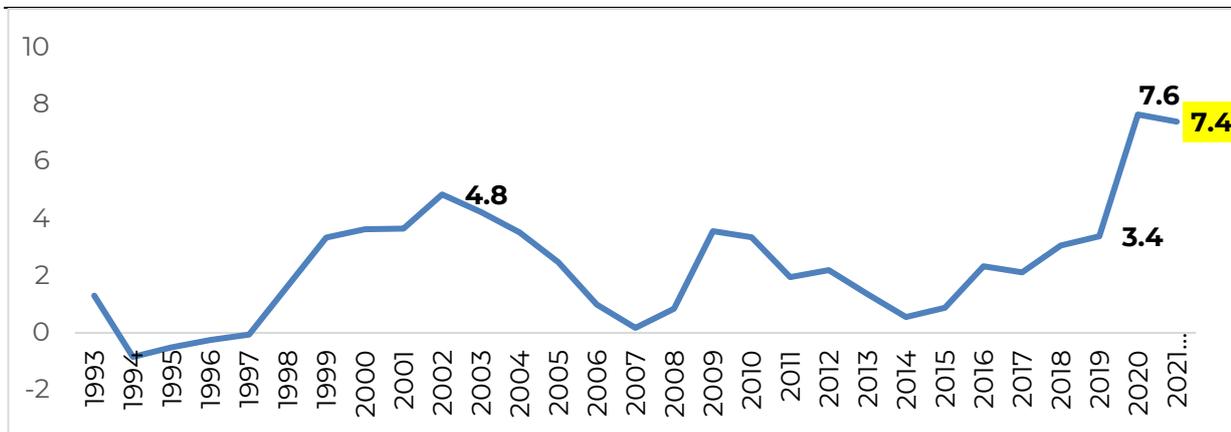
Given these manageable levels, the BSP has sustained its monetary policy support for domestic demand in order to help economic recovery gain more traction. The latest MB decision also took into account continued risk aversion, which is curbing credit activity despite ample liquidity in the financial system.<sup>37</sup>

**Monitoring fiscal and debt sustainability.** A lacklustre recovery in domestic demand and a potentially lengthy adjustment process would make it necessary to deploy fiscal support over a prolonged period of time. This would mean a higher deficit and accumulation of debt by the government in order to steer the Philippine economy back to its pre-pandemic growth track. Since these could have impacts on inflation, inflation expectations and output, which are important considerations in monetary policy formulation, the BSP constantly monitors the sustainability of the government’s fiscal position. The indicators that the BSP typically uses to assess fiscal sustainability include the deficit-to-GDP ratio, the share of the national government’s debt out of total GDP, and projections for real interest rates and growth rates.

1. **The National Government remained fiscally prudent.** The NG is committed to practising fiscal prudence while pursuing an expansionary fiscal stance to speed up domestic economic recovery from the pandemic. The national government deficit-to-GDP ratio more than doubled, from 3.4 per cent in 2019 to 7.6 per cent in 2020, settling at 7.4 per cent in the first quarter of 2021 (Figure 5). The primary deficit likewise increased to 5.5 per cent in 2020 and 4.5 per cent in the first quarter of 2021, up from 1.5 per cent in 2019. This increase in deficits was mainly due to lower tax revenues amid higher spending in 2020. While tax collection improved in the first quarter of 2021, this was offset by a significant decline in the BTr’s income as government expenditures continued to increase.

Government fiscal deficit-to-GDP ratio (in per cent)

Figure 5



Sources: Bureau of the Treasury; Philippine Statistics Authority.

Notwithstanding the sizeable financing requirements of responding to the crisis, the government’s debt profile remains manageable. Total NG debt-to-GDP<sup>38</sup> ratio increased to 62.8 per cent as of end-March 2021, up from 42.1 per cent in 2019 and 57.2 per cent in 2020. This is still tolerable compared to the 87.3 per cent that was recorded when the country experienced a fiscal crisis in 2004

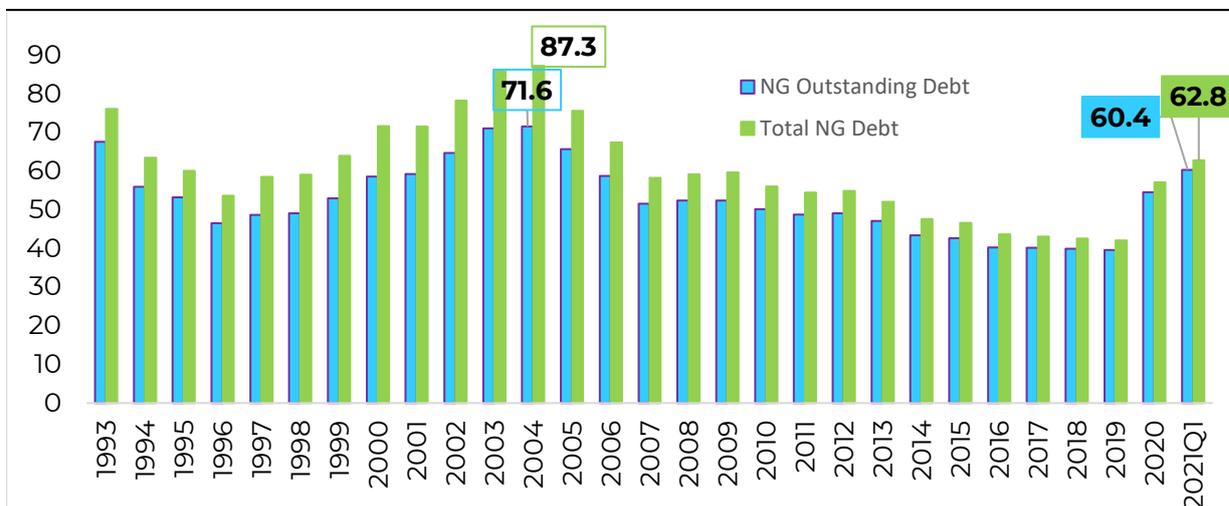
<sup>37</sup> Ibid.

<sup>38</sup> Includes both outstanding debt and contingent liabilities.

(Figure 6). Not counting contingent liabilities, the ratio of outstanding NG debt to GDP was 60.4 per cent as of end-March 2021, up from 39.6 per cent in 2019 and 54.6 per cent in 2020 (Figure 6).

Total National Government debt and outstanding debt (as a percentage of GDP)

Figure 6



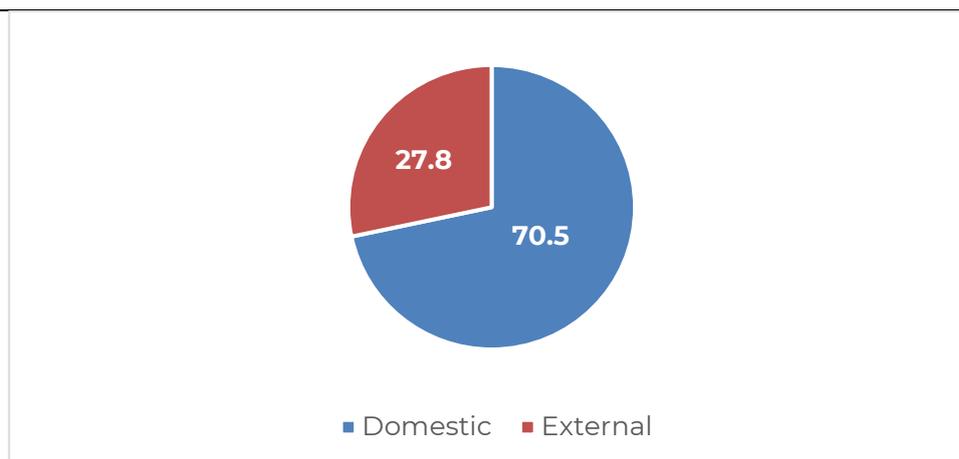
Total National Government debt = NG outstanding debt plus contingent liabilities.

Source: Bureau of the Treasury; Philippine Statistics Authority.

The government taps both domestic and international debt markets in order to cover the shortfall in revenue collections and meet expenditure requirements.<sup>39</sup> The majority of the NG's total debt is sourced domestically, with a 70.5 per cent share as of end-April 2021 (Figure 7). This includes the PHP 540 billion in provisional advances that the government took from the BSP in January 2021.

Sources of total National Government debt (per cent share)

Figure 7



Includes contingent liabilities.

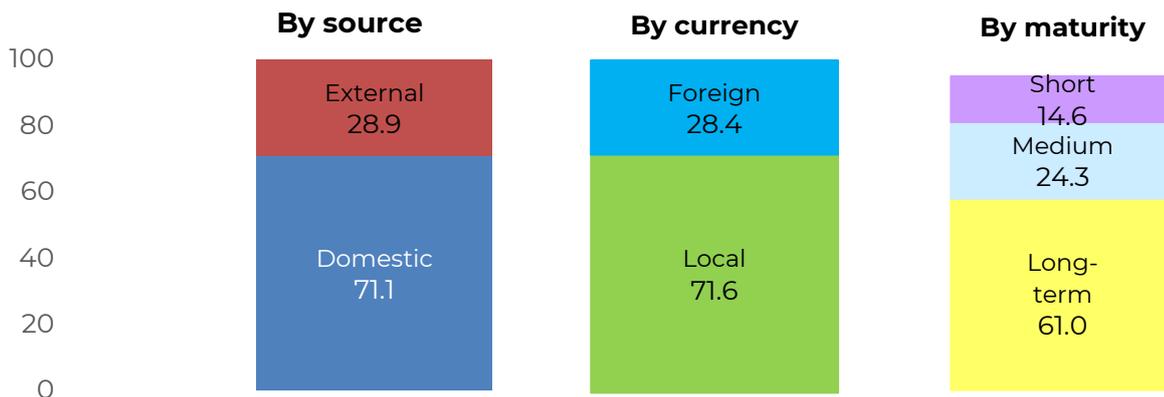
Source: Bureau of the Treasury.

<sup>39</sup> DBCC (2020).

Excluding contingent liabilities, outstanding NG debt was mainly sourced domestically (71.1 per cent) as of end-April 2021 and is dominated by local currency (71.6-per cent share) with medium- (24.3 per cent) to long-term (61.0 per cent) maturity (Figure 8). In 2020, the average maturity of outstanding NG debt was 7.6 years, down from 8.6 years in 2019.

Composition of National Government outstanding debt as of end-April 2021(per cent share)

Figure 8



Source: Bureau of the Treasury.

The NG's total outstanding external debt as of end-April 2021 has no short-term maturities, only medium- (5.6 per cent) and long-term (94.4 per cent) maturity profiles. More than half (56.6 per cent) was obtained from commercial sources, while the rest (43.4 per cent) were concessional loans from multilateral and bilateral lenders. The share of the NG's total external debt denominated in US dollars<sup>40</sup> is quite significant, at 72.0 per cent, but this share only accounts for around 20 per cent of total outstanding NG debt. This indicates that the NG's debt position is less vulnerable to external shocks and foreign exchange risks.

Despite the increase in NG debt amid the pandemic, borrowing costs remained low as the country still maintained a strong credit rating, along with continued fiscal and monetary policy coordination.<sup>41</sup> Amid the Covid-19 crisis, NG interest payments constitute 2.9 per cent of GDP in the first quarter of 2021. This is higher than the 2.1 per cent in 2020 and 1.9 per cent in 2019, but much lower than 5.1 per cent of GDP in 2005, when the country was undergoing a fiscal crisis.

Four credit rating agencies<sup>42</sup> affirmed a stable outlook, reflecting continued trust and confidence in the country's economic fundamentals. These assessments were made between June 2020 and May 2021, attesting to the country's strong external position and healthy financial sector. The S&P believes that the

<sup>40</sup> The next major currency composition is Japanese yen, with a 13.9-per cent share, followed by the Euro, with 10.1 per cent. The Philippine peso accounts for 2.7 per cent.

<sup>41</sup> See DBCC (2021).

<sup>42</sup> Standard & Poor's Global affirmed a BBB+ rating with stable outlook on 27 May 2021, Rating and Investment Information, Inc. affirmed a BBB+ rating with stable outlook on 23 April 2021, Moody's affirmed Baa2 with stable outlook on 16 July 2020, and Japan Credit Rating Agency, Ltd upgraded the Philippines' rating to A- with stable outlook on 11 June 2020.

Philippine government's fiscal performance will strengthen once the Covid-19 pandemic is contained. This S&P projection considers the country's track record of sustainable public finances, which actually helped the government gain fiscal space that ended up being useful in responding to the pandemic.<sup>43</sup> However, worth noting is the more recent adjustment in the outlook of the country's credit rating by Fitch Ratings, down from BBB stable to BBB negative. According to Fitch, this was due to downside risks to the country's medium-term growth prospects and possible challenges associated with unwinding the extraordinary policy response to the health crisis and restoring sound public finances as the pandemic subsides.<sup>44</sup>

Meanwhile, with local government units and social security institutions included in the analysis, the general government debt-to-GDP ratio only increased to 47.9 per cent in 2020, up from 34.1 per cent in 2019. As of end-June 2020, this is mostly made up of domestic debt, with a 64.5-per cent share. The average residual maturity remains at a very comfortable level, at around 7.5 years as of end-November 2020, within the 7- to 10-year target. This is due to the NG's ability and tendency to borrow for medium and long tenors, which could help reduce sovereign exposure to liquidity risk. Meanwhile, the shares of variable rate debt and debt held by foreign residents are 9 per cent and 63 per cent, respectively, as of end-November 2020. In 2019, general government debt denominated in foreign currency reached USD 29.4 billion (at a rate of PHP 50.8/USD).

2. **Fiscal consolidation is an important consideration for fiscal authorities.** The NG pledges to bring down the deficit and debt levels in the medium term. In the midst of the pandemic, the NG continues to maintain a median fiscal position among similarly credit-rated peers and emerging economies with comfortable and sustainable debt and deficit level tolerance. The DBCC sets the medium-term fiscal deficit program at a level that supports economic recovery but ensures that the debt-to-GDP ratio is kept at a sustainable level. The latest fiscal program approved by the DBCC indicates that the deficit-to-GDP ratio will increase to 9.3 per cent in 2021, but will gradually decline to 5.3 per cent by 2024.<sup>45</sup> The same downward path has been planned for the primary deficit, which will improve from 6.7 per cent in 2021 to 2.7 per cent by 2024 (Figure 9).

Even with higher fiscal deficit targets in the near term, the DBCC projects that NG debt will be generally manageable and fall within the internationally recognized sustainability threshold of 60–70 per cent. The debt trajectory is seen to revert to a downtrend upon the restoration of pre-pandemic growth and deficit levels. This appears to be consistent with the initial IMF projection that the country's general government debt will be temporarily higher than 60 percent but still around the median for the Asian region.

3. **The NG's debt position remains sustainable.** Calculation of the national government's simple debt sustainability condition indicates that the negative real interest rate and real growth differential ( $r - g < 0$ ) did not hold in 2020 and the first quarter of 2021 (Figure 10). This is mainly due to negative economic

<sup>43</sup> See Investor Relations Office (2021a).

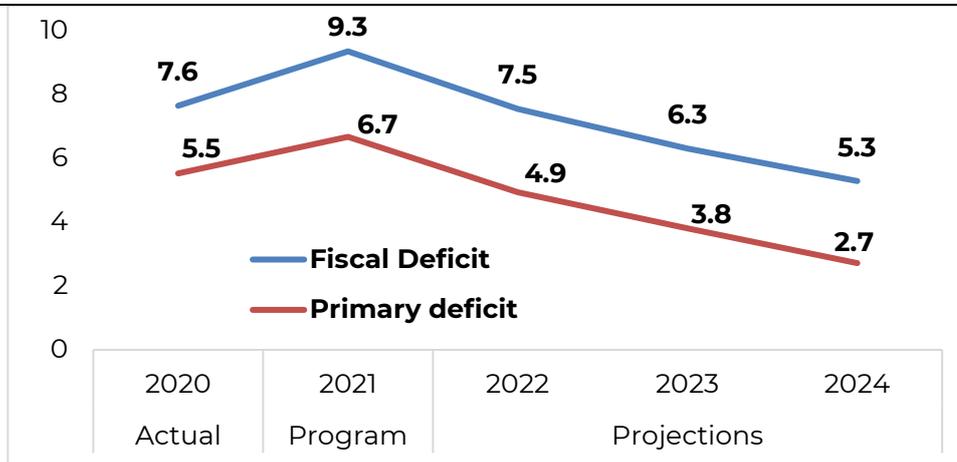
<sup>44</sup> See Investor Relations Office (2021b).

<sup>45</sup> As of 18 May 2021.

growth because the long-term interest rate remained low. Calculation of an effective rate based on interest payments and NG debt showed a similar trend until 2020.

Medium-term plan for National Government fiscal and primary balances (as a percentage of GDP)

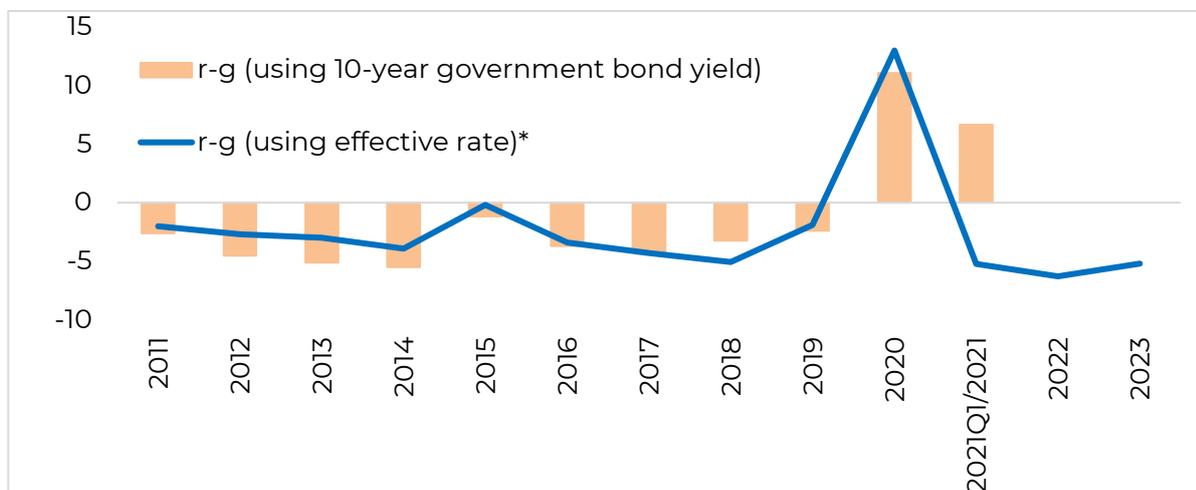
Figure 9



Source: Development Budget Coordination Committee (as of 18 May 2021).

Difference between real interest rate and real growth rate (in percentage points)

Figure 10



\*r – g (using effective rate) for 2021–2023 are full year projections based on the DBCC fiscal program as of 18 May 2021.

Sources: Bureau of the Treasury; Philippine Statistics Authority; Development Budget Coordination Committee.

For the full year of 2021, however, the country is estimated to regain the sustainable debt condition, mainly due to the expected economic recovery. The government projects that real GDP will grow by 6–7 per cent this year. With the BSP’s latest projected inflation of around 4 per cent in 2021, the country only needs positive economic growth by at least 1.5 per cent in order to regain the  $r - g < 0$  condition.

For 2022 to 2023,  $r - g < 0$  is estimated to continue, which indicates that the NG’s fiscal position could remain sustainable over the next two years.

However, this should be viewed with caution, as uncertainty brought by the pandemic remains high and there is a risk of tighter global financial conditions.

The stochastic simulation results produced by the DBCC's Debt Sustainability Analysis (DSA) model predict a moderate risk of more than 60 per cent in 2021. Long-term debt sustainability remains intact because a return to a downward debt path is highly likely if GDP growth and fiscal deficit levels regain their pre-2020 long-run averages beginning in 2023.<sup>46</sup>

## 5. Unwinding monetary policy measures

***The Philippine economy is slowly recovering.*** Currently, the Philippine economy continues to recover at a hesitant pace as the Covid-19 threat lingers on, particularly with the emergence of new coronavirus variants. Since the end of the pandemic is still highly unpredictable, the BSP continues to affirm that it will support the economy for as long as necessary until economic recovery gets fully underway.<sup>47</sup>

Despite inflationary pressures in the first half of 2021, the BSP believes that there is still some room for accommodative monetary policy and liquidity easing measures due to the BSP's latest projections that inflation will still fall within the target range between 2021 and 2023, and risks to inflation outlook remain generally balanced.

The BSP is also staying vigilant in monitoring domestic and international developments in order to gauge the country's evolving needs and identify emerging risks to inflation and growth outlook. The BSP remains ready to adjust its policy settings, if warranted, to meet its price and financial stability objectives.

***Winding down and policy coordination.*** When the macroeconomic environment becomes more favourable and economic recovery has accelerated enough to warrant a scale-down of policy support, the BSP will gradually phase down its monetary interventions. The BSP has consistently reiterated in various meetings, fora and media that unconventional actions to provide bridge financing to the NG are only short-term, temporary relief measures. These need to be unwound when conditions start to normalise in order to prevent the build-up of inflationary pressures and mispricing of risks that could generate systemic risk.

However, winding down presents some decision-making challenges. One is deciding how soon to unwind this monetary support. On one hand, an early exit means greater assurance that inflation will be curbed, but this could undermine economic recovery. On the other hand, waiting too long ensures economic expansion, but could catapult inflation and create an over-leveraged economy.<sup>48</sup>

Another challenge is ensuring that policy actions remain consistent with the BSP's primary mandate as coordination with fiscal authorities continues. During the transition to the new normal, fiscal policy is expected to be continually accommodative in order to ensure economic recovery. Since the BSP has been

<sup>46</sup> See DBCC (2021).

<sup>47</sup> See Bangko Sentral ng Pilipinas (2021).

<sup>48</sup> See Blinder et al (2013).

complementing the government's initiatives to address the effects of the pandemic, it is aware that there could be requests for continued implementation of some of its measures to support the government's efforts. These could be additional provisional loan advances, continuation of the BSP's purchases of GS in the secondary market, maintaining the low interest rate environment to make it easier for the government to finance its debt, or tolerating higher inflation to reduce the real value of NG debt.<sup>49</sup>

The BSP Charter and Bayanihan law are clear on the exit provisions for loan advances from the BSP to the NG. The agreed date of settlement must be enforced, as this serves as an indication of the government's ability to settle its obligations and also affects the BSP's integrity in upholding the law. However, any proposal to further expand the amount and duration of provisional advances through newer versions of the Bayanihan law requires careful assessment. It is important that the BSP stands firm against any political pressure if it deems such additional loan provisions no longer necessary, or it may compromise its commitment to achieving price and financial stability. The existence of policy coordination institutions is an advantage, as these enable the BSP to clearly and carefully communicate to fiscal authorities the reasons behind its policy position. The BSP's active participation in legislative hearings also sends lawmakers a strong signal of the BSP's commitment to protecting its independence and maintaining its credibility in pursuing its mandates.

Meanwhile, the unwinding of the daily one-hour window for the purchase of GS in the secondary market must take into account the overall liquidity condition, appetite for GS during the transition phase<sup>50</sup> and the stability of the financial market. Determining the exact timing of recalibration is also a challenge, as it requires coordination with fiscal authorities since the government is expected to provide continuous support to strengthen economic recovery.<sup>51</sup>

Such is the case for any political pressure to maintain a low interest rate environment or tolerate higher inflation, although these scenarios may be unlikely if the government's borrowing costs remain low and the NG's fiscal and debt positions continue to be sustainable.

**Formulating the exit strategy.** At present, the BSP is carefully formulating its exit strategies, which will serve as a guide on the transition to the new normal. To avoid serious repercussions, the timing for phasing measures out will be based on careful assessment of data, taking into consideration domestic and external developments, inflation and growth outlook, and the stability of the financial system. To ensure a smooth exit process, the BSP will continue its policy coordination with fiscal authorities to minimise possible policy inconsistencies that can send mixed messages to the market. The exit strategies will be properly and clearly communicated to the government and to the public in order to encourage whole-of-society cooperation.

<sup>49</sup> See Salmeron and García Arenas (2021).

<sup>50</sup> See Glindro et al (2020).

<sup>51</sup> See Robleza et al (2020).

## 6. Conclusion

The devastating economic fallout from the Covid-19 crisis highlights the importance of coordinating monetary policy and fiscal policy when responding to a crisis. The Philippines benefited from the presence of existing institutions and structures that facilitate coordination and help ensure that monetary policy responses stay in line with price and financial stability.

As the country continues to recover, it is important to regularly monitor the channels through which the state of public finances affects room for monetary policy manoeuvres. Knowing the status of the government's fiscal and debt sustainability is also useful for better policy coordination.

Moving forward, when economic conditions improve, coordination between monetary and fiscal policy will become even more crucial and challenging as the objectives of the BSP and fiscal authorities start to diverge. Continued coordination with fiscal authorities and clear public communication of carefully crafted exit strategies are essential in order to minimise potential policy inconsistencies, thereby ensuring a rapid, immediate economic recovery.

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# Macroeconomic policy response to the Covid-19 shock

Marta Kightley and Tomasz Jędrzejowicz<sup>1</sup>

## Abstract

The unique shock of Covid-19 has necessitated a large-scale global economic policy response, in order to address the public health challenges, stabilise financial markets and support sectors of the economy affected by restrictions. The unprecedented support packages first launched by Poland's monetary and fiscal authorities in March 2020 have contributed to Poland weathering the shock relatively well compared to peer countries. The cost of fiscal support will substantially raise public debt levels across the world. Among advanced economies this further exacerbates concerns surrounding the concurrence of high public debt and low interest rates, which had already been voiced before the pandemic. However, empirical literature has attributed the decline in interest rates observed in recent decades mostly to private sector factors – notably shifts in saving and investment preferences – and not to pressures on central banks arising from weak fiscal fundamentals. Meanwhile, despite the substantial fiscal support package launched in 2020, Poland's medium-term fiscal sustainability outlook remains sound, supported by a relatively low debt-to-GDP ratio, a low underlying fiscal deficit and solid potential output growth.

JEL classification: E43, E62, E65, H63.

Keywords: monetary policy, fiscal policy, policy mix, interest rates, public debt sustainability.

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The views presented here are those of the authors and do not necessarily reflect the official position of the NBP.

## Introduction

Following the global financial crisis (GFC), which had appeared to be a once-in-a-generation economic shock calling for an unprecedented policy stimulus, in 2020 the world was hit by an even more exceptional shock. Yet again, a large policy response was required, particularly on the fiscal front – according to IMF data the average size of direct fiscal support among advanced economies reached 8.3% of GDP.<sup>2</sup> As a consequence of this support and the 2020 recession, debt-to-GDP ratios in advanced economies are now projected to reach 125% in 2021.<sup>3</sup>

Already prior to 2020 there had been growing concerns that high public debt ratios and very low interest rates were becoming a permanent feature of the economic landscape. The increase in public debt related to the Covid-19 pandemic may further entrench advanced economies in this setting. This entails numerous risks, including that of limited capacity to respond to future shocks and potentially the threat of fiscal dominance, as a hypothetical increase in interest rates would undermine the governments' ability to sustain high debt ratios.

This note explores some of these issues in a global context and from the perspective of Poland and considers the possible implications going forward.

## Economic policy response to Covid-19 shock – general considerations

The unique nature of the Covid-19 pandemic has required a somewhat different type of economic policy support than traditionally provided in response to downturns. The pandemic is an unusual economic shock which negatively affects both supply and demand. However, it is not a shock to aggregate demand and supply as such, but a combination of disaggregated shocks which impact different sectors with different strength in an asymmetric way (Baqae and Fahri, 2020). These shocks then propagate from sectors affected by health restrictions to the rest of the economy, leading to further business shutdowns and layoffs. As shown by Guerrieri et al (2020), breaking this vicious chain calls for unconventional fiscal policy measures targeted at preventing business shutdowns and incentivising companies to maintain employment. In addition, monetary policy should help businesses and households to stay afloat by lowering debt payments.

Beyond the impact of lockdowns, another key channel of impact of the Covid-19 pandemic on economic activity was an unprecedented hike in uncertainty reflected in financial market tensions, which were particularly strong in March 2020. The measures undertaken by the central banks played a major role in alleviating these tensions, as confirmed for example by the event study of Rebucci et al (2021). The study showed that the Fed played a critical role in stabilising bond markets worldwide, but also that country-specific quantitative easing (QE) interventions by other advanced and emerging market central banks contributed to stabilising local bond

<sup>2</sup> IMF Fiscal Monitor Database of Country Fiscal Measures in Response to the Covid-19 Pandemic, data as of January 2021, figure refers to unweighted average of above-the-line fiscal support measures in advanced economies.

<sup>3</sup> IMF Fiscal Monitor Update, January 2021.

and exchange rate markets, after controlling for the impact of the Fed's actions and other factors.

## Monetary and fiscal policy response to the Covid-19 pandemic in Poland

The spreading of the Covid-19 pandemic, the introduction of restrictions in economic activity and the worsening of the economic outlook which started in March 2020, were rapid in nature. The elevated economic uncertainty arising from these developments was also reflected in financial market tensions at the time. Faced with these challenging circumstances, policymakers had to quickly undertake measures to stabilise the situation and provide support to the economy in response to the Covid-related shock. Narodowy Bank Polski (NBP) decided to ease monetary policy in the middle of March, becoming one of the first central banks in Europe to react at a time when the economic downturn was not yet visible in hard data, but could have been expected. This response consisted of interest rate cuts (between 17 March and 28 May the reference rate was cut by a total of 1.4 percentage points to 0.1%) and the launching of structural open market operations consisting of purchasing government securities and government-guaranteed debt securities in the secondary market. These operations were aimed at changing the long-term liquidity structure in the banking sector, ensuring the liquidity in secondary markets for the purchased securities, and enhancing the impact of the NBP interest rate cuts on the economy, ie strengthening the monetary policy transmission mechanism. Additionally, NBP has lowered reserve requirements to equip the banking sector with sufficient liquidity and offered bill discount credit aimed at refinancing commercial bank loans granted to enterprises.

The response took into account not only the expected sharp GDP contraction and its likely negative impact on inflation, but also the more exceptional features of this economic shock. The first of these were the aforementioned tensions in financial markets which were common to many countries and which resulted in increased volatility and drying up of liquidity in bond markets, negatively affecting the monetary transmission mechanism. The second was the unique nature of the Covid shock, which – as noted above – implied that large-scale fiscal support to economic entities affected by lockdowns was required. This made it even more crucial that securities markets were liquid and functioning properly, in order for the government to be able to raise the necessary financing in an exceptionally short time frame (see Figure 1).

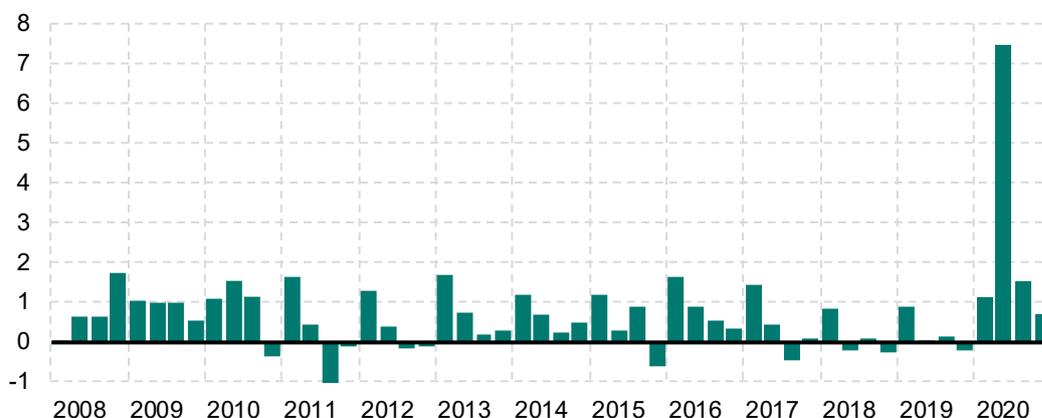
Besides ensuring liquidity in the government debt market, the measures undertaken by NBP have resulted in substantial lowering of the costs of financing and of debt service for the whole economy. Private sector borrowers have benefitted from the lowering of the WIBOR 3M interbank rate – often used as a benchmark in loan agreements – on average by 1.44 percentage points between February 2020 and June 2020, ie by a figure corresponding to the scale of the NBP reference rate cut. This was conducive to lower credit instalments, supporting the financial situation and sentiment of the indebted economic agents. The reductions of the NBP interest rates since March 2020 can be estimated to have lowered the burden on households and enterprises due to interest payments on outstanding loans by PLN 6-7 bn per year (0.3% of GDP).

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## Quarterly net issuance of Treasury and Treasury-guaranteed debt in the domestic market

% of annual GDP

Figure 1



Source: Authors' calculations based on data published by Ministry of Finance and Central Securities Depository of Poland.

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Fiscal policy measures in response to the Covid crisis were initially launched at the end of March, with the bulk of the support delivered to recipients in the second quarter of 2020. According to government figures, the overall size of economic support in 2020 reached 7.5% of GDP, including loans and guarantees. The size of non-refundable support impacting the fiscal balance in 2020 may be estimated at around 5% of GDP. The design of fiscal measures placed a lot of emphasis on preserving jobs. The single largest measure (2.6% of GDP) were repayable advances paid out to micro-, small and medium enterprises in the form of loans, but with up to 75% of the loan amount eligible for write-off upon meeting specified conditions, including maintaining employment. Other support measures focused on protecting jobs included wage subsidies and a three-month exemption from social insurance contributions.

While data limitations constrain comparisons of fiscal support packages between countries, there is some evidence that the fiscal support provided to enterprises in Poland was relatively large and was delivered quickly (see Figure 2). Notably, the swift processing and disbursement of support provided to enterprises was made possible by advances in IT, as financial data included in applications submitted by companies via their online banking channels was automatically verified against the databases of tax and social insurance administrations.

The crisis response measures appear to have helped achieve the goal of protecting jobs. According to Eurostat data, in the third quarter of 2020, the seasonally-adjusted unemployment rate in Poland stood at 3.3%, the second lowest level in the EU, having increased from 3.1% in the first quarter of 2020 (the lowest increase over this period among EU countries). According to preliminary data, Poland's GDP declined by 2.8% in 2020, as compared with the EU average drop of 6.4%.<sup>4</sup> It should be noted, that Poland's relatively strong economic performance during the pandemic is also attributable to other factors, such as a lower share in the

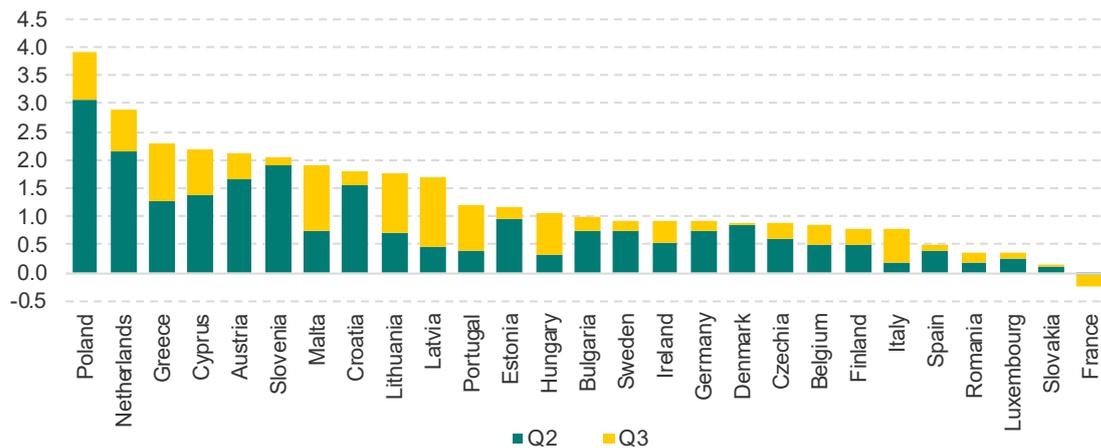
<sup>4</sup> Figures according to releases of Statistics Poland (29 January, 2021) and Eurostat (2 February, 2021).

economy of service sectors most affected by sanitary restrictions, as well as strong trade ties to Germany, which also weathered the crisis relatively well.

### Approximate level of government expenditure on anti-crisis support to enterprises\* in the second and third quarter of 2020

% of annual GDP

Figure 2



\* Calculated as nominal year-on-year change in expenditure on subsidies to enterprises (D.3) and capital transfers (D.9)

Source: Eurostat

## Public debt sustainability – the global context

Following the global financial crisis, public debt ratios globally have increased massively. According to IMF data, among advanced economies, the average public debt-to-GDP ratio increased from just over 70% in 2007 to above 100% in the 2010s. Already this increase has prompted economists to re-examine the limits of public debt sustainability, particularly in the context of persistently low interest rates. Now the Covid-19 pandemic is projected to push this ratio to well above 120% of GDP, making the questions surrounding public debt ratios even more pressing.

The dynamics of public debt depend on two key variables – the government primary balance and the difference between the average effective interest rate on public debt and nominal GDP growth ( $r - g$ ). As argued by Blanchard (2019), under a negative  $r - g$ , which has historically been the norm, a zero primary surplus will eventually result in a decline of the debt-to-GDP ratio, regardless of the size of the initial expansion. Another way to present the implications of the debt dynamics equation is to say that under a negative  $r - g$ , any size of the primary deficit will result in a finite debt-to-GDP ratio. Blanchard also argues that not only is there no fiscal cost to higher public debt (assuming  $r - g$  stays negative), but also the welfare costs are lower than typically assumed, due to a lowering of the marginal product of capital.

An important qualification is that in arithmetic terms, a lower or negative  $r - g$  is very helpful in preventing a further increase in the debt ratio, but not in reducing debt. This is illustrated by examples shown in Table 1. If  $r - g$  is negative, then a country with a higher debt ratio can actually run a higher primary deficit than a less indebted country in order to stabilise the debt. However, when it comes to debt reduction,  $r - g$  makes no additional difference – in order for debt-to-GDP to decline

by 1 percentage point, the primary surplus always has to be 1 percentage point higher than its debt-stabilising level. A meaningful reduction in public debt from current levels would require running substantial primary surpluses over several years, even if  $r - g$  is favourable.

Illustrative examples of primary fiscal balances required to stabilise or reduce public debt depending on  $r - g$

Table 1

Initial debt $r - g$	To stabilize debt-to-GDP			To reach 2007 debt-to-GDP ratio (71%) in 20 years	
	71% (2007 level*)	104% (2019 level)	125% (2021 level)	104%	125%
-1	-0.7	-1.0	-1.2	0.7	1.5
0	0.0	0.0	0.0	1.7	2.7
1	0.7	1.0	1.2	2.6	3.8

\* Average of advanced country group.

Source: Authors' calculations using IMF data.

This is relevant in connection with the second key point of the ongoing discussion on the implications of low interest rates for fiscal sustainability, namely that in such an environment, fiscal adjustments are likely to be more costly. If monetary policy is already at the zero lower bound, it has limited capacity to accommodate the fiscal effort required to generate primary surpluses and reduce public debt (Blanchard et al, 2021). Running substantial primary fiscal surpluses over a number of years in such circumstances may not be viable from the point of view of macroeconomic stabilisation. In other words, low interest rates make it easier to sustain high public debt ratios and more difficult to reduce them.

Economic theory and past experience would indicate that maintaining high debt ratios carries important risks, most notably because there is a positive relationship between the public debt and long-term interest rates, as the risk premium increases with the level of debt. A well-known contribution in this field is Laubach (2009) who studied long-horizon forward interest rates and future government deficit and debt as projected for the US by the Congressional Budget Office. He found that bond yields rise by 20 to 30 basis points in response to a percentage point increase in the projected deficit-to-GDP ratio and by 3 to 4 basis points in response to a percentage point increase in the projected debt-to-GDP ratio. Baldacci and Kumar (2010) examined the impact of fiscal deficits and public debt on long-term interest rates for a panel of 31 advanced and emerging market economies, finding that higher deficits and debt lead to a significant, robust and non-linear increase in interest rates.

When discussing policy implications, Baldacci and Kumar have related their results to the increase in public debt in advanced economies following the global financial crisis, stating: "the results suggest a pronounced increase in debt service costs over the medium term for the advanced G20 economies: given the average increase in debt of about 20 percent of GDP, debt service costs are likely to increase by more than 1.5 percent in these countries". This prediction has not materialised, as despite an increase in public debt by more than 26 percentage points between 2007 and 2019, interest payments in this period declined by 0.3 percentage points.<sup>5</sup> The

<sup>5</sup> IMF data, "advanced economies" country group.

failed prediction is worth noting as an indication that while *ceteris paribus* higher public debt most likely still has a positive impact on interest rates, in the past decade other factors have dominated over this effect.

## The drivers of low interest rates

Indeed, recent literature indicates that over the past few decades a number of factors have exerted strong downward pressure on interest rates in advanced economies, clearly outstripping whatever may have been the impact of the concurrent rise in public debt ratios. Rachel and Smith (2015) examined the causes of the decline of long-term interest rates across the world by about 450 basis points over a period of 30 years. They found that the decline in trend economic growth may have been one of the reasons, but shifts in saving and investment preferences were more important. These shifts are attributed to demographic forces (the declining share of young dependent population and rising share of working age population which is saving), rising inequality, as well as a decline in desired levels of investment, *inter alia* due to the falling relative price of capital goods and lower public investment. The authors expect these forces to persist. Holston et al (2017) reached similar conclusions, finding that natural interest rates for the United States, Canada, the euro area and the United Kingdom have been falling and by 2016 reached historically low levels. This is explained by a decline in trend GDP growth, but also other highly persistent factors. There is a substantial co-movement in the estimates of the natural rates of interest and trend GDP between the four economies, suggesting an important role for global factors influencing natural rates. Mian et al (2020) presented a related, but more extensive theoretical explanation of low interest rates, attributing this development to rising income inequality and liberalisation of the financial sector. In the 'indebted demand' model they propose, wealthy households (savers) save a greater fraction of their lifetime income than poor households (borrowers). As a result, large household debt levels weigh negatively on aggregate demand and lead to a decline in interest rates, as savers have a lower marginal propensity to consume out of the debt payments they receive, than borrowers do out of their disposable income.

Rachel and Summers (2018) directly addressed the issue of reconciling the record low interest rates observed globally in recent years with historically high public debt ratios. They estimated that the increase in public debt-to-GDP ratios observed in advanced economies over the previous 40 years should *ceteris paribus* have raised real rates by between 1.5 and 2 percentage points. However, the private sector forces dragging down on interest rates (broadly in line with those outlined in the previous paragraph) apparently are more powerful than previously anticipated and have more than offset the impact of public debt. The authors expect these forces to persist in the future.

Finally, among the various channels of interaction between public debt and interest rates discussed in the recent literature, there is no evidence of high debt suppressing interest rates via a fiscal dominance channel and no sign of inflation pressures arising from such a scenario, although some authors have pointed to such a risk in general terms. For example, Reinhart et al (2015) have examined the history of past debt reductions and have concluded that whether inflation can be an endgame to modern peacetime debt build-ups is an open question, but it remains on the table. However, several studies show that it is quite debatable whether in practical terms a central bank could significantly reduce the public debt burden by

increasing inflation. For example, Hilscher et al (2014) find, using data from 2012 for the United States, that higher inflation is unlikely to lower the real value of debt by more than a few percentage points of GDP. Krause and Moyen (2016) found that a significant fraction of real public debt can be inflated away only if the change in the inflation target is very persistent – for the US calibration, a persistent 4 percentage point increase in the target erodes after 10 years about a third of the additional public debt accrued during the GFC. A temporary change has much smaller effects, of about 10 percent of debt after 10 years. To sum up, the brief outline of the literature, high public debt ratios and low interest rates are to some extent interrelated, but there is unlikely to be direct causality between them. While the majority of large advanced economies currently carry high levels of public debt, there are also some advanced economies with low public debt and independent monetary policy, in which interest rates were already close to the zero lower bound before the pandemic. This further corroborates the attribution of low interest rates to non-fiscal factors.

## Economic recovery and fiscal sustainability outlook in Poland

With the ongoing rollout of vaccines, a global recovery appears to be on the horizon, though with considerable uncertainty related both to the outlook for health risks, as well as the shape of the recovery from such an unusual economic shock.

In these circumstances, the medium-term policy mix in Poland is also subject to much uncertainty; however, the phasing out of unconventional fiscal measures may be expected. These measures are by design more temporary than traditional fiscal stimuli, as they are designed to support economic agents during periods of restrictions imposed on specific types of activities. Once restrictions are lifted, this form of assistance will no longer be necessary and fiscal balances should improve, without negatively impacting economic activity. Assuming such a scenario, there is good reason to believe that the Covid-related recession and large-scale fiscal support provided in response have not materially changed the outlook for fiscal sustainability in Poland. This outlook remains sound and the three main arguments supporting such an assessment are the same as they had been before the pandemic:

- Public debt, while higher than in 2019, remains relatively low. According to recent IMF forecasts,<sup>6</sup> public debt in Poland will remain below 60% of GDP throughout 2025. This is a level which can safely be sustained. As shown above, maintaining a constant debt-to-GDP ratio is considerably less demanding in terms of the required primary balance, than reducing it. It should be borne in mind, however, that targeting a constant debt-to-GDP ratio in practice implies stabilising this ratio over the economic cycle, ie reducing it during upturns in order to create room for increases during (normal) economic downturns.
- The underlying fiscal deficit is low. The headline general government balance has widened considerably in 2020, although currently available data indicate that its outturn was lower than projected in November by the IMF and European Commission (8.9% and 8.8% of GDP, respectively). However, prior to the pandemic the deficit was low (–0.7% of GDP in 2019) and the majority of its increase is attributable to crisis response measures. Some of these measures are

<sup>6</sup> Republic of Poland: Staff Concluding Statement of the 2020 Article IV Mission, November 20, 2020.

likely to be extended to 2021, as restrictions related to the pandemic are still partly in force. Nonetheless, these measures are by design temporary and once they are phased out, the deficit will improve substantially. According to IMF forecasts, by 2023, the structural primary balance will be close to 0, implying that the current fiscal policy will no longer contribute to the build-up of public debt. The sound structural balance implies that once the pandemic (hopefully) subsides, it will not be necessary to carry out a large-scale fiscal adjustment – as was the case following the global financial crisis – which would hamper the pace of economic recovery.

- A favourable  $r - g$  differential will be supported by relatively strong potential output growth, compared to leading advanced economies, making it easier to stabilise/reduce public debt even if interest rates are not at the zero lower bound, as had been the case in Poland until 2019.

The factors outlined above may be expected to support fiscal sustainability in the medium-term. In the longer run, the outlook is more challenging, in particular due to demographic factors – like all EU countries, in the next 40 years Poland is facing an ageing of its population. This factor will have a downward impact on potential output growth, as will the gradual closing of the productivity gap vis-à-vis leading advanced economies. These are important arguments for prudently managing the available fiscal space and striving to maintain a favourable fiscal sustainability outlook.

## Conclusions

The economic shock associated with the Covid-19 pandemic has compelled policymakers around the world to engage in a policy response on a massive scale. Such response was clearly essential in order to save lives, stabilise markets and prevent unnecessary loss of productive potential.

At the same time, the policy measures have further pushed the limits of monetary policy and led to another jump in the level of public debt, on top of the large increase which took place during and after the global financial crisis. Already before the pandemic, there was an extensive economic debate on the topic of fiscal sustainability in a high-debt and low-interest rate world. Advanced economies have experienced a substantial decline in interest rates over the past decades which has been attributed in the literature to structural changes in saving and investment preferences. While the causes of this phenomenon have not been fiscal in nature, it does have fiscal implications – with interest rates close to the zero lower bound, it is easier to sustain large levels of public debt, but it becomes more difficult to reduce debt.

Current forecasts, albeit still surrounded by a lot of uncertainty, indicate that the lasting damage to output associated with the Covid pandemic will be smaller than in the case of the GFC and the same applies to the increase in public debt. This may serve as some indication, that the relationships between public debt, interest rates and economic growth will not change materially in the wake of the pandemic.

Poland has benefitted from having ample policy space prior to the outbreak of the pandemic, as a result of which both monetary and fiscal policy stimulus measures reached an unprecedented scale. These measures have contributed to Poland weathering the economic shock relatively well, despite experiencing the first annual decline in real GDP since 1991 and should help restore growth once the health risks subside.

While the fiscal support provided to the economy has resulted in a notable jump in public debt, the public debt ratio remains below 60% of GDP, the underlying primary balance may be expected to return to a level close to zero and the  $r - g$  differential is supported by a relatively high potential growth rate. Therefore, the assessment of its medium-term sustainability is broadly the same as it had been prior to the pandemic shock, indicating that fiscal sustainability concerns should not weigh negatively on the macroeconomic policy room for manoeuvre in response to future shocks.

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# Monetary and fiscal policy interactions in the wake of the pandemic: Russia's experience

Bank of Russia<sup>1</sup>  
February 2021

## Abstract

The existing framework for coordination between the government and the Bank of Russia has proven effective enough for authorities to quickly adapt to changing financial and economic conditions with an efficient and timely response, without jeopardising the central bank's independence or monetary and fiscal discipline. Monetary and fiscal policy complemented each other efficiently and appropriately. The borrowing needs of the government, households and companies were provided for by accommodative monetary conditions and other measures. These measures were designed to limit the risks of fiscal dominance; they included a shift to an accommodative stance, with an explicit commitment to return to a neutral stance; temporary enhancement of the emergency mechanism for FX sales to reinforce the stabilising effects of the fiscal rule, which are diminishing due to oil prices dropping below \$25 per barrel; and the introduction of a new Special Refinancing Facility for SMEs, with specific end dates, amounts and conditions.

JEL Classification: E52, E61, E62, E63.

Keywords: Policy mix, monetary policy, fiscal policy, optimal rules.

<sup>1</sup> Article prepared for the BIS Emerging Markets Deputy Governors Meeting, 24–25 February 2021.

## 1. Monetary and fiscal policy before Covid-19

Russia's experience has shown that the unique scale and nature of the pandemic shock, with its unprecedented restrictions on supply and demand, can be swiftly mitigated even by an oil- and gas-producing country facing a dramatic drop in oil demand and prices, like Russia. This was possible because the government and the Bank of Russia have been rebuilding and maintaining policy space for economic stabilisation in case of tail risk events in order to increase the resilience of the institutional framework and the credibility of their commitments to long-term goals, namely achieving balanced and sustainable economic growth under price stability and public debt sustainability over time. Before the pandemic, the resilience of the Russian economy had been steadily improving as a result of the introduction of the Inflation Targeting framework. Before Covid-19, long-term inflation expectations were consistently anchored close to 4%, while the three-year breakeven inflation rate was 3.9%; in 2019 and implied inflation for the period 2023–28 stood at 4.3%.<sup>2</sup> Additional elements included: the shift to the floating exchange rate regime, the introduction of the fiscal rule,<sup>3</sup> conservative fiscal policy featuring budget surpluses (1.9% of GDP in 2019; 2.8 % in 2018) as well as low levels of domestic and external public debt<sup>4</sup> (9.2% and 3.1% of GDP in 2019, respectively; the average share of non-residents in domestic debt is ~30%),<sup>5</sup> and macroprudential policies (aimed at the de-dollarisation of the Russian financial sector and the build-up of capital buffers in the fastest growing segments of credit).

### 1.1 Fiscal policy before the pandemic

In 2018–2019, fiscal policy hinged on the fiscal rule based on a threshold for federal budget spending and the sterilisation of extra oil and gas revenue resulting from oil prices exceeding their baseline level. It was a period of budget consolidation, with the VAT base rate increased from 18% to 20% and the federal budget's non-oil and gas deficit contracting from 8.0% of GDP in 2017 to 5.4% in 2019.

As a result of the fiscal rule mechanism, the economy reduced its dependence on commodity markets, with economic, financial and fiscal conditions becoming more predictable. The accumulation of resources by the National Wealth Fund (NWF) strengthened the resilience of public finance to external economic shocks. As of the end of 2019, the NWF totalled 7.1% of GDP (or \$125.5bn), and another 2.6% of GDP (or \$45.9bn) was added to the federal budget's extra oil and gas revenue accounts. The liquid part of the NWF passed the threshold of 7% of GDP (taking into account the funds in the special transit account), allowing for the funds to be invested in Russian assets. Thus, by the beginning of 2020, thanks to its consistent and well-balanced policy, Russia's budget system had accumulated a substantial safety cushion and thus, extra policy space.

<sup>2</sup> Implied inflation for inflation-linked federal government bonds (OFZ-IN).

<sup>3</sup> The rule entails FX purchases by the Ministry of Finance if the price of oil exceeds the fixed benchmark, and FX sales otherwise.

<sup>4</sup> External foreign currency debt is capped by law at 25% of all liabilities.

<sup>5</sup> Low risk for capital outflows and exchange-rate dynamics in the event that non-residents leave the market.

## 1.2 Monetary policy before Covid-19

The Bank of Russia has been implementing its current monetary policy framework since 2015, when the fully-fledged Inflation Targeting (IT) regime was introduced. The Bank of Russia has been conducting monetary policy (MP) by strictly adhering to the following key principles over time: permanent public quantitative inflation target (close to 4%), floating exchange rate regime, a conventional system of instruments whose main policy tool is the key rate, and transparent and understandable communication of MP.

After the IT regime was introduced, MP was aimed at gradually slowing down heightened inflation (16.9% at its peak in March 2015) caused by negative external factors and inflation expectations, as well as reaching the inflation target.<sup>6</sup> In order to achieve this, the Bank of Russia has implemented a restrictive MP since January 2015, gradually decreasing the key rate from 17% in accordance with actual and expected inflation dynamics relative to target and economic developments over the forecast horizon. This led to a sustainable downward trend in inflation and inflation expectations. Even once the inflation target was reached, the Bank of Russia continued to implement a tight MP, because a moderate inflation path was not appropriate and a sustainable decline in inflation expectations was necessary in order for inflation to become anchored close to 4%. By mid-2019, the key rate was 7.5%. At that time, the Bank of Russia's estimates of the neutral/natural interest rate ( $R^*$ ) were equal to 2–3% in real terms and 6–7% in nominal terms.<sup>7</sup> After that, disinflationary factors substantially impacted inflation, while disinflationary risks prevailed over the short-term horizon. By the end of 2019, inflation had decreased to 3% – below the target – and the Bank of Russia lowered the key rate to 6.25%; towards the end of the forecast horizon, professional market participants' expectations were strongly anchored at the target. Households' and businesses' inflation expectations were at their lowest in Russia's history (but still above target inflation). Therefore, at the beginning of 2020, the MP was neutral and enjoyed considerable space (far above the effective lower bound). Additionally, under the IT framework, the Russian economy's overall macroeconomic resilience increased compared to 2014, which played a significant role in lowering inflation and inflation expectations.

The Bank of Russia also adhered to a strictly conventional MP and has not used asset purchases as a policy tool.

## 1.3 Policy mix before the pandemic

The legal framework in Russia clearly distinguishes between the government's areas of responsibility and expertise and those of the Bank of Russia. The Bank of Russia pursues its objectives through the means it deems fit and carries out its monetary

<sup>6</sup> In 2015, the Bank of Russia was set to reduce inflation to 4% by 2017 and keep it close to this level in the years to come. Then the MP goal evolved into "keeping annual inflation close to 4% on a continuous basis."

<sup>7</sup> The Bank of Russia's estimates of the real natural interest rate were 2.5–3% for January 2015–August 2017, 2–3% for September 2017–May 2020 and 1–2% for June 2020 to date.

policy independently of any level (federal, regional or local) of government authority. This is guaranteed by both the Constitution and federal law.<sup>8</sup>

However, the government and the Bank of Russia do interact with each other on a continuous basis in order to efficiently conduct their own policies. For example, each side considers the key medium-term objectives and parameters of the other's monetary and fiscal policies in its forecasting process. On one side, the government takes into account the monetary policy target for maintaining price stability, ie inflation close to 4%. On the other, the Bank of Russia takes into account projections of the subsistence minimum and other social standards, pensions and social transfers, budget sector wages, and medium-term parameters for federal and consolidated budget revenues, expenditures and deficit financing. This interaction and cooperation is carried out through government correspondence, official meetings, the use of official publications and a working relationship between representatives of the Bank of Russia, the Ministry of Economic Development, the Ministry of Finance and other federal authorities. Regularly exchanging opinions makes it possible to make views on the Russian economy's development more cohesive and effectively deliver stability in the short and long run within fiscal and monetary authorities' individual, independent mandates.

## 2. Monetary and fiscal policy during Covid-19

In 2020, unlike during previous crises, the policy mix in Russia became accommodative and highly congruent due to strong fundamentals; ie both policies took a countercyclical stance. The unprecedented crisis called for prompt and complementary monetary and fiscal policy responses, so the temporary increase in interaction and coordination was a natural step to take. Two-way policy space creation allows for implementation of the stimulus that is most successful without compromising the central bank's independence in the event of tail risks. Covid-19 did not impact the main channels through which the state of public finance affects the room for monetary policy manoeuvres, ie monetary policy's operational independence. The Bank of Russia is still able to freely determine the best way to achieve its policy objectives, including the types of instruments used and their timing. Overall, conventional monetary policy impulse should be enough to support aggregate demand while keeping inflation close to 4%.

### 2.1 Fiscal policy during Covid-19

More sustainable public finance, inflation stabilisation at a record low, the improved stability of the financial sector and the Russian economy's decreased dependence on external factors helped the country weather the pandemic period more easily, and the Russian government was able to implement and fund the appropriate support measures necessary to address negative trends.

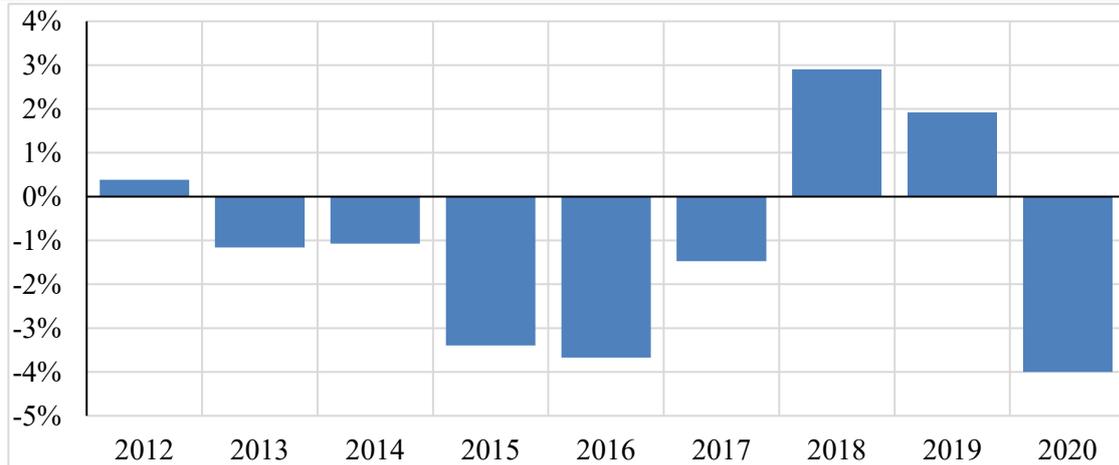
After two years of budget surplus in 2018–2019, the rapid increase in anti-crisis budget spending and declining oil and gas revenues led to a budget deficit in 2020

<sup>8</sup> Federal Law No. 86-FZ, dated 10 July 2002, "On the Central Bank of the Russian Federation (Bank of Russia)."

(Graph 1). The positive effect of Russia’s fiscal policy in 2020 amounted to about 4–5 percentage points of GDP, with the federal budget’s non-oil and gas deficit (excluding the one-time profit from the sale of the equity stake in Sberbank)<sup>9</sup> expanding by 4.4 percentage points of GDP (from 5.4% to 9.8% of GDP) and the budget system deficit by 4.8 percentage points (from 5.3% to 10.1% of GDP).

Budget system balance in 2012–2020, as a percentage of GDP

Graph 1



Sources: Ministry of Finance of the Russian Federation; Federal Treasury; Federal State Statistics Service; Bank of Russia’s calculations.

The government’s measures were largely aimed at maintaining households’ incomes and employment, which helped prevent a deeper slump in final consumption. Companies were granted support both directly (eg through subsidies and preferential loans) and indirectly, namely through a temporary reduction in, write-off of, or suspension of mandatory payments to the budget. The majority of direct aid to businesses was used to maintain employment in the industries hit hardest by the pandemic.<sup>10</sup> Along with that, the government introduced additional measures to aid companies in specific sectors, including construction, air transportation, tourism, and more. To support housing construction, the government expanded preferential mortgage lending programmes to boost households’ demand for housing amid declining incomes. The 2020–2021 anti-crisis measures total an estimated amount of 4.0–4.5 trillion rubles (3.75–4.2% of GDP), of which up to 3.5–4.0 trillion rubles (3.3–3.75% of GDP) were spent in 2020 (Table 1).

As the government adopted anti-crisis measures, expenditures planned for 2020 increased, thus significantly exceeding the threshold under the fiscal rule parameters. In 2020, the government significantly increased its issuance of federal government bonds (OFZ), totalling a gross amount of 5.2 trillion rubles and a net of 4.6 trillion rubles, while actively managing the debt structure in terms of bond types – most of the OFZs placed were variable-rate liabilities (see Appendix 2).

<sup>9</sup> Acquisition of equity stake in Sberbank by the Russian government from the Bank of Russia using the National Wealth Fund’s resources.

<sup>10</sup> Motor transportation; air, water and rail transport; tourism; exhibition activities; hotels; entertainment and leisure; public catering; personal services; culture and sports; non-food retail; dental care services; continuing education and mass media.

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Anti-crisis measures of the Russian government in 2020-2021, as a percentage of GDP

Table 1

	2020	2021
Sanitary and epidemiological measures	0.2	0.0
Incentive payments to fight Covid-19	0.2	0.1
Socio-demographic measures	0.8	0.0
Business support	1.0	0.1
Tax and quasi-fiscal benefits	0.8	0.1
Government guarantees	0.4	0.1
Total	3.4	0.4

Source: Bloomberg, Q4 2019–Q4 2020.

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According to the IMF's estimates, direct budget support expenditures helped minimise the decline in Russia's GDP by 2.25 percentage points. According to estimates based on fiscal multipliers,<sup>11</sup> Russia's fiscal policy helped reduce GDP contraction in 2020 by 1.3 percentage points of GDP (a weaker effect compared to the IMF's estimates, since the model relying on fiscal multipliers accounts for the time lag, due to which a significant part influence on output is expected in 2021).

## 2.2 Monetary policy during Covid-19

The pandemic and the measures taken to contain it put pressure on the global economy, which simultaneously reduced both output and demand, while influencing the behaviour of businesses and households. In addition, the spread of Covid-19 in February and March shook global financial markets and triggered massive capital outflows from risky assets, including emerging markets (EM) bonds. Russia also saw a significant spike in volatility in its financial markets, accompanied by depreciation of the ruble, widening credit spreads, non-residents' abandonment of local bonds and equities, the oil glut and the drop in oil prices. Under the influence of negative external factors, the Russian economy's moderate growth at the beginning of the year became a downturn. Russia's economic growth path depended in many ways on the scale of the fallout from the coronavirus spread and the actions taken to counter it, along with the impact of these actions on production and demand as well as business and consumer sentiment. The dynamics of domestic and external demand had a significant constraining influence on inflation in Russia following a pronounced slowdown of global economic growth and increased uncertainty.

In the early stages of the Covid-19 crisis, key issues involved deciding on the appropriate timing for the shift to accommodative MP and the increments of rate change as financial stability risks also had to be taken into account. In March 2020, the Bank of Russia decided to keep the policy rate unchanged while boosting foreign currency sales under the fiscal rule mechanism (see Appendix 1). Key rate cuts started

<sup>11</sup> See I Zyablitsky, "Estimating fiscal multipliers in Russia's economy", *HSE Economic Journal*, 2020, no 2, pp 268–294.

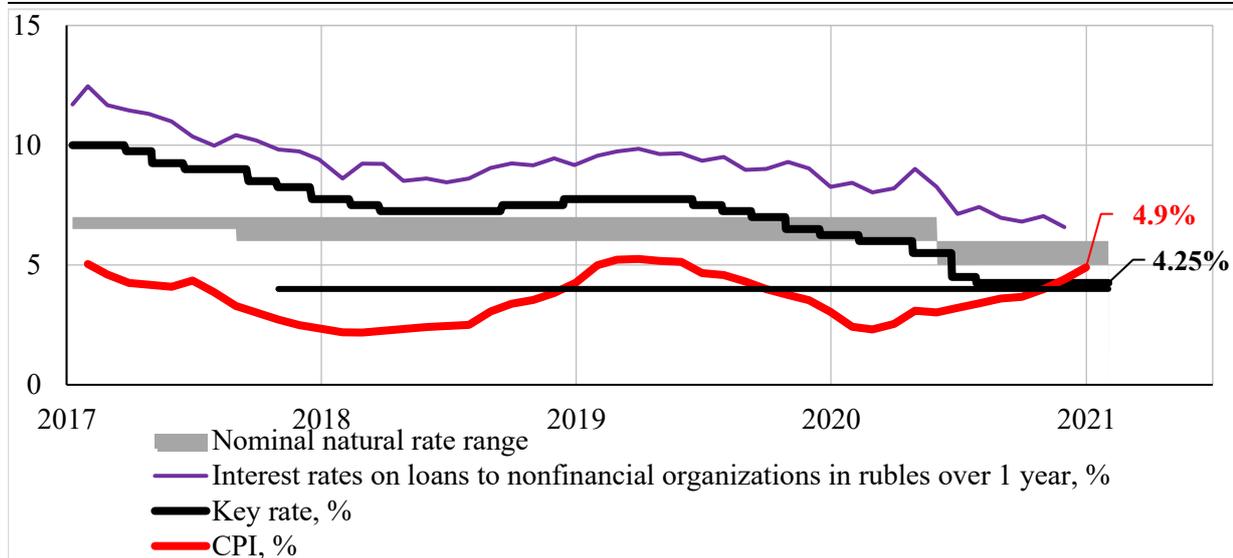
in April as a response to Covid-19. Over five months, the Bank of Russia lowered the key rate from 6% to 4.25% and shifted to an accommodative MP stance. There was still some space for further easing if needed. This monetary policy response was necessary to foster the conditions that would drive the economy back to its potential and to avoid a long-lasting downward deviation of inflation from the target. Thus, in contrast to previous years when pro-inflationary risks predominated, the Bank of Russia implemented measures to mitigate disinflationary risks induced by a significant decline in aggregate demand. Consistent use of the IT regime, along with a prudent macroeconomic policy, made it possible to stay within the traditional range of central bank policies.

As a result, a significant reduction in the key rate translated to the easing of monetary conditions. The local yield curve moved below historic lows in February and, as of 31 August 2020, remains much lower than it was on average in 2017–19: the two-year is down 284 bp (4.46 vs 7.30), the five-year is down 213 bp (5.37 vs 7.50) and the ten-year is down 182 bp (6.28 vs 7.80). The OFZ curve has gotten steeper since the beginning of the pandemic, with the two-year/ten-year slope increasing from around 50 bp to 185 bp. A steep curve is what should be observed at times when accommodative monetary policy is implemented, so the contraction in lending was prevented in 2020. Lending amounts expanded considerably: credits in rubles to non-financial organizations increased by 8.3% (vs 6.9% in 2019), residential mortgages increased by 21.2% (vs 16.9 in 2019), and unsecured consumer credits increased by 8.8% (vs. 20.8% in 2019).

Lending rate, OFZ yields, inflation and the Bank of Russia key rate in 2017–2021

in per cent

Graph 2



Source: Bank of Russia.

*Monetary policy operations.* In March and April, uncertainty about a probable lockdown and its effect on the economy led to a “dash for cash” by households and firms, increasing the cash in circulation and leading to a substantial reduction in banking sector liquidity surplus and shortening the maturity of banks’ liabilities. In light of significant fluctuations in the banking sector’s reserves due to fiscal flows and

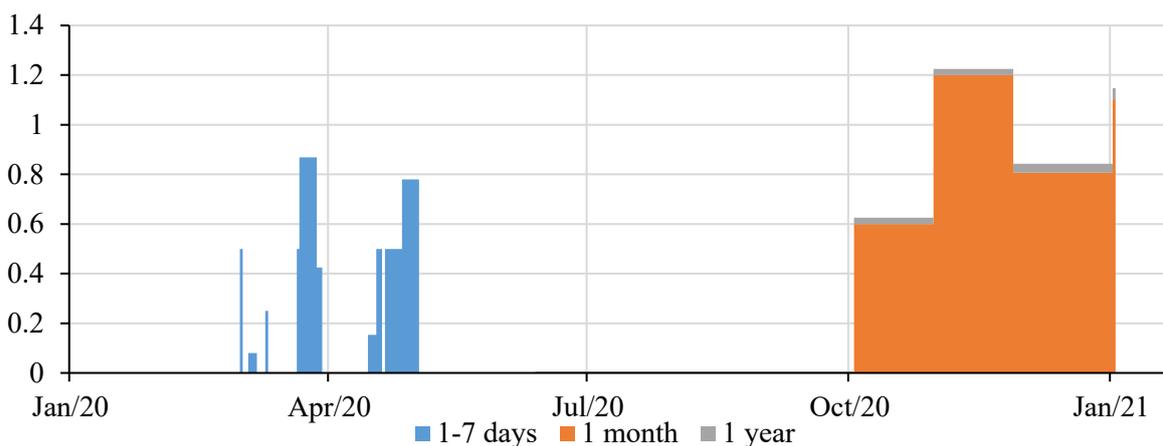
increased demand for cash, the Bank of Russia introduced long-term repo auctions with 1-month and 1-year maturities to ease the financial stress. The collateral pool for long-term repo auctions includes federal and regional government bonds, while the collateral pool for “standard” repos – standing facilities and fine-tuning auctions – also includes a variety of corporate bonds. The limited collateral list for long-term repos and interest rates set above the key rate reflect these operations’ higher risk and encourage banks to primarily use market opportunities.

The take-up in repo auctions, however, was modest until autumn, when the Ministry of Finance substantially increased the volume of OFZs offered on the market. This led to another temporary withdrawal of liquidity which was not fully compensated by government expenditures or increases in Federal Treasury deposits with the banking sector. The liquidity outflow also affected different banks to varying degrees. The resulting inconsistency in the distribution of liquidity between banks translated into an increased demand for long-term repos amid an enduring liquidity surplus. Against this backdrop, long-term repo operations ensured a stable transition from structural surplus to a neutral liquidity level.

The Bank of Russia’s repo auctions by maturity (amounts outstanding)

in trillions of rubles

Graph 3



Source: Bank of Russia.

*Special Refinancing Facilities.* Another supporting mechanism that proved its efficiency during the pandemic was an expanded toolkit of the Special Refinancing Facilities mechanism (SRF) designed to support lending to SMEs. The new SRF was developed jointly with the government and an existing SME support mechanism was changed: industry-related restrictions on loans to SMEs were lifted; the rate on Bank of Russia loans was lowered by 2 pp to 4%; and the final borrower rate was capped at 8.5%. A new SRF with a lending rate at 2 pp below the key rate was introduced to encourage lending to SMEs and corporations for urgent needs and to ensure job security for a total amount of 500 billion rubles, including:

- uncollateralised loans or loans backed by the guarantees of JSC Russian Small and Medium Business Corporation to banks to provide financial assistance to SMEs (and later expanded to other corporations) with their payroll liabilities and other urgent needs, with the effective lending rate for final borrowers established

at 0% for the first six months (interest rates have been subsidised by the government) and

- uncollateralised loans to support lending to SMEs. The actual interest rate on the Bank of Russia loan will depend on the increments of banks' SME ruble loans.

After November 2020, no new loans were created under the new SRF. The Bank of Russia's claims on credit organisations under this SRF amounted to 454 billion rubles as of 1 February 2021.

### 3. Monetary and fiscal policy mix during Covid-19

The economic downturn in 2020 required the government and the Bank of Russia to take decisive measures and boost coordination of their efforts to support households, businesses and the economy in general. As a result, 2020 saw the simultaneous effects of accommodative monetary policy and expansionary fiscal policy; in other words, policies were countercyclical. During previous crises in 2008–9 and 2014–15, responses from the Bank of Russia and the Ministry of Finance went in different directions: contractionary procyclical monetary policy and expansionary countercyclical fiscal policy. These crisis episodes were associated with depreciations of the ruble, high inflation, high dollarisation of the economy and a sharp drop in oil prices. These factors significantly limited monetary and fiscal policy space and did not allow the Bank of Russia to shift to an accommodative monetary policy.

At the start of the crisis, providing a prompt fiscal response was of the utmost importance because fiscal impulse can influence economic agents nearly instantly, allowing the monetary policy impulse to reach the economy with a time lag (inherent in its nature). Countercyclical fiscal policy, support for economic sectors (loan restructuring, FLP for SMEs), and administrative and regulatory relief for the financial sector (banks' capital buffers at approximately 5% of GDP) also helped address the impact of primary shocks on aggregate demand, sustain financial sector intermediation and ensure effective MP transmission. Uniformity in the responses of the government and the Bank of Russia helped reduce the impact of Covid-19 on the Russian economy: in 2020, Russia's GDP fell just by 3.1%, one of the smallest contractions among the major economies.

The fiscal policy measures implemented to support the economy will gradually come to an end, and the fiscal stimulus reached its peak in H2 2020. Subsequent budget consolidation is expected to start in the middle of 2021. According to the path defined by the Ministry of Finance, the budget system balance will be –4.6% of GDP in 2020, –3.2% of GDP in 2021 and –1.3% of GDP in 2022, with budget system expenditures at 38.7%, 36.8% and 35.1% of GDP, respectively. The decreasing fiscal stimulus in H2 2020 will be offset by accommodative monetary policy since its stimulating effect experiences a time lag.

Transparency and certainty about future fiscal policy prospects are positive factors for implementing monetary policy. Despite the substantial increase in budget-funded aid in 2020, the government is scheduled to return budget expenditures to the thresholds provided for by the fiscal rule. The clearly defined path of fiscal consolidation reduces uncertainty regarding the effect of fiscal policy on output and inflation.

The design of these measures has ensured that finance and regulatory relief comes to those most in need and that withdrawal can be conducted in a timely manner. Most of the Bank of Russia's pandemic measures were adopted with an end date, mainly for the period up to September 2020, and some of them were extended. Certain measures had agreements and conditions for financial institutions. Such design communicates the inevitability of a return to conventional/neutral policy over a foreseeable horizon. Timely and transparently and clearly communicated policy normalisation is crucial; it requires the creation of adequate space for further support action and of incentives for market participants to return to a balanced risk management policy.

## 4. Conclusion

Although both monetary and fiscal policy influence aggregate demand and inflation, their respective roles are as follows: during normal times, fiscal policy is conducted for its own purposes, and monetary policy, taking into account the budget's influence on demand and inflation, corrects aggregate demand as necessary while bringing demand to its full potential and inflation to its target. In Russia, due to strong fundamentals, these roles remained unchanged even during the pandemic. Certainly, the coordination and interaction between the Bank of Russia and the government naturally increased in response to the shock and high uncertainty. Both institutions had to track and forecast adopted and potential measures, as well as the effects of the measures taken by the other institution, more closely. However, the fundamental principles of interaction between monetary and fiscal policy remained intact. Therefore, the risks of fiscal dominance remain low in Russia.

## Appendix

### 1. The Bank of Russia's operations in the foreign exchange market under the fiscal rule

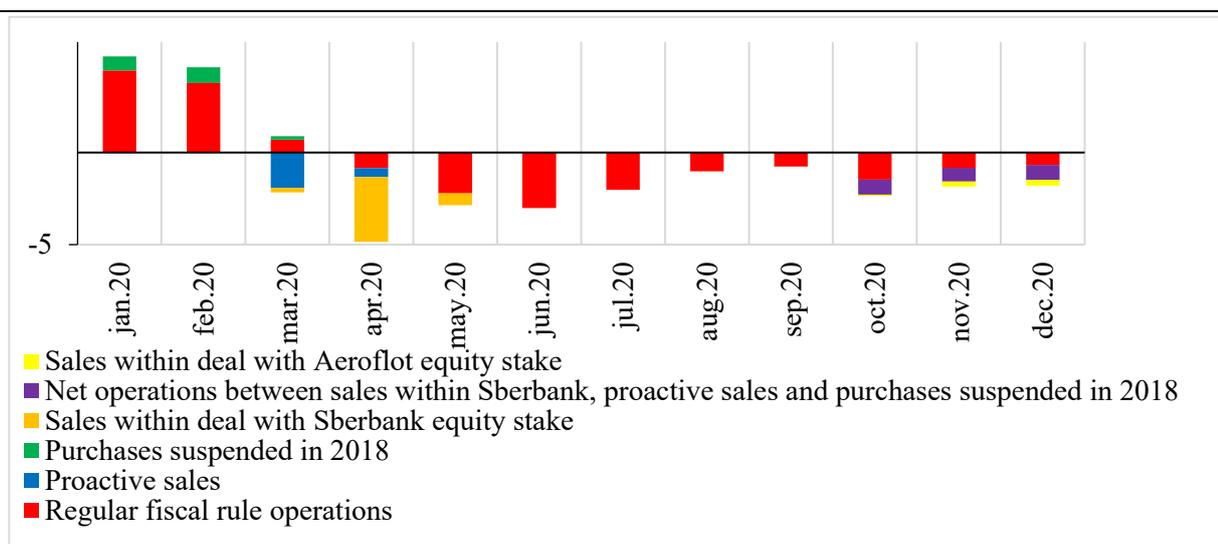
Due to increased volatility in the financial markets, the Bank of Russia developed a foreign currency sale mechanism intended to reinforce the stabilising effect of the fiscal rule amid low oil prices and thus contribute to financial stability. In accordance with this mechanism, additional foreign currency sales were calculated to fully offset the shortage of foreign currency supply in the domestic foreign exchange market due to a decline in export revenues from the sale of oil, petroleum products and natural gas against the backdrop of the slump in the Urals crude price to less than \$25 per barrel. Taking into account price levels in the oil market, the Bank of Russia did not conduct these operations between 19 March 2020 and 12 May 2020. The mechanism of proactive foreign currency sales was used through 6 April 2020.

In Q4 2020, the Bank of Russia netted against each other the remaining amount of foreign currency to be sold in the Sberbank deal, the amount of proactive sales carried out in March and April and the purchases postponed for this period, as well as the amount of foreign currency purchases suspended in 2018 and not performed until this time. The Bank of Russia also started to sell foreign currency via the transaction for Aeroflot shares purchased by the Russian government using the NWF's resources (50 billion rubles through the end of 2020).

Given the amount corresponding to these extra operations and their uniform execution, there was no significant impact on the domestic foreign exchange market. Nonetheless, the Bank of Russia's efforts in March and April 2020 helped prevent excess exchange rate volatility amid the unprecedented slump in the price of oil and the decline in export revenues (Graph 5). Since January 2021, the Bank of Russia has only been carrying out fiscal rule-based operations in the foreign exchange market.

The Bank of Russia's operations in the foreign exchange market in 2020, in billions of US dollars

Graph 4



Sources: Ministry of Finance of the Russian Federation; Bank of Russia.

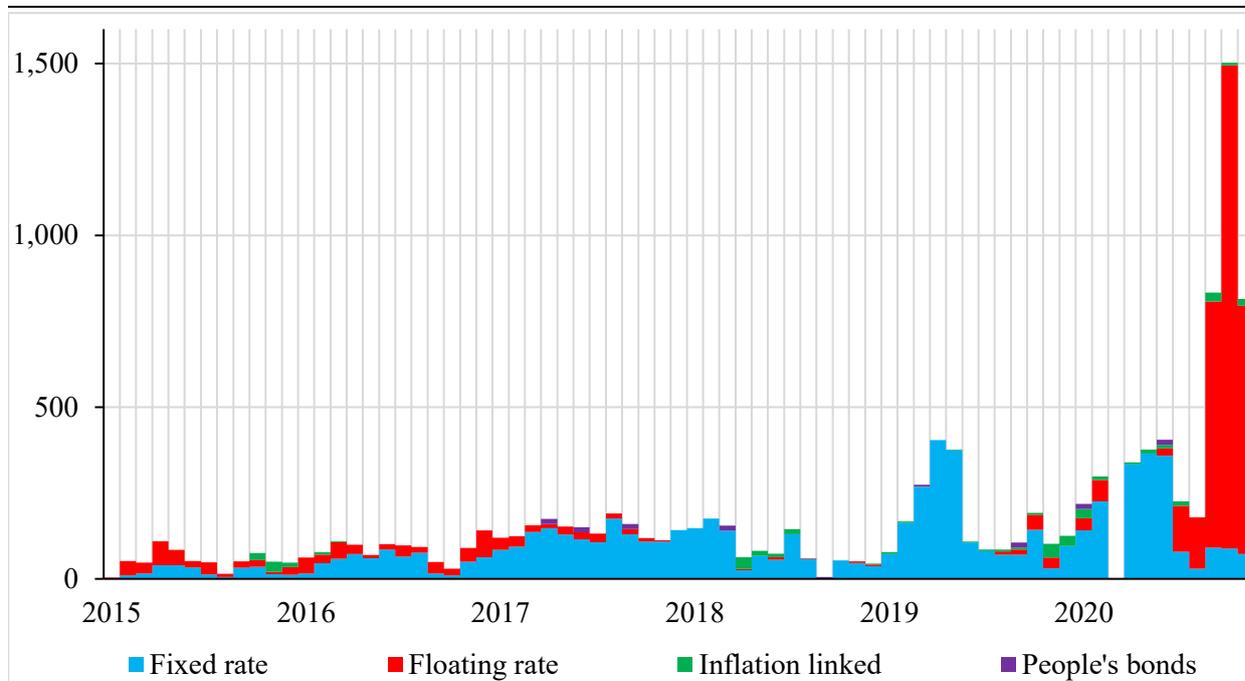
## 2. The effects of variable-rate sovereign debt

The growing share of floaters (Graphs 2 and 3) makes the transmission mechanism more efficient, speeding up the impact of monetary policy impulses (key rate changes) on the cost of borrowing and further servicing of public debt, with these effects then spreading to other debt market segments (corporate bonds, lending to the non-financial sector, etc).

The depth, capacity and liquidity of the public debt market increased as a result of extensive borrowing to finance the budget deficit in 2020–2021, paving the way for expansion of the range of collateral assets (the Lombard List) under the Bank of Russia's traditional liquidity-providing operations. In addition, as the amounts of listed OFZ bonds rise along the entire yield curve, the pricing quality of corporate bonds with various lengths (weighted-average maturities) increases, which also improves monetary policy transmission.

Types of OFZ placed in 2015–2020, in billions of rubles

Graphs 5



Sources: Ministry of Finance of the Russian Federation; Moscow Exchange; Bank of Russia's calculations.

# Monetary and fiscal policy interactions in the wake of the pandemic

Saudi Central Bank

## Abstract

The outbreak of the Covid-19 pandemic in 2020 has had a significant impact globally, resulting in a severe economic contraction in most economies. Moreover, oil-exporting economies faced additional shocks as a result of the substantial decline in oil prices earlier that year. These developments have forced countries to use a policy mix to safeguard their respective economies. However, their policies have varied, depending on the available monetary and fiscal space, as well as other macroeconomic and structural factors. Coordination between monetary and fiscal policies has been essential to achieve the desirable objectives, and an integral factor in supporting economic recovery. Actions taken by the Saudi Central Bank have played an essential role alongside the fiscal response by enabling the financial system to complement the government's efforts in combating the pandemic and mitigating its financial and economic impact, especially on the private sector.

JEL classification code: E58, E6, E62.

Keywords: Monetary policy, fiscal policy, coordination, coronavirus, Covid-19.

In the Kingdom of Saudi Arabia, the National Financial Stability Committee (NFSC) is the main channel for coordination between the fiscal and monetary authorities. The NFSC's primary objective is to identify, monitor and coordinate between the regulatory authorities. These are the Capital Market Authority, the Ministry of Finance, the National Debt Management Center and the Saudi Central Bank. The NFSC charter serves as a formal guideline for processes and procedures. Although it is not a decision-making body, the committee provides a platform for the discussion and monitoring of potential risks to financial stability and for enhancing coordination between the regulatory authorities with a view to maintaining financial stability.

The NFSC notably aims to promote financial stability in Saudi Arabia by enhancing the formation of a shared assessment regarding the financial system's ability to manage internal and external shocks.<sup>1</sup> The NFSC's members meet on a quarterly basis in normal circumstances. However, due to the Covid-19 developments, the implications for financial stability and the ensuing need for more coordination, the NFSC met more frequently and on an ad hoc basis in the course of 2020.

The global economic shock caused by the outbreak of Covid-19 sparked a deterioration in risk sentiment, with adverse global growth implications, resulting in a severe economic contraction as well as rising debt levels. In addition, the substantial decline in oil prices deepened the burden on oil-exporting economies such as Saudi Arabia. Different countries have used varying forms of policy mixes to combat the crisis, depending on the depth of their domestic recession, the available monetary and fiscal policy space at the start of the downturn, and private and public debt conditions.

The policy mixes applied by advanced economies (AEs) differ from those of emerging market economies (EMEs). The fiscal response to the pandemic in EMEs has been smaller than in AEs, owing to their more constrained fiscal space. For commodity-exporting countries, fiscal space has been limited due to the fall in commodity prices. Moreover, gross government debt had risen in EMEs prior to the outbreak of the pandemic, further limiting their fiscal space.

Most countries around the world, nonetheless, used similar fiscal policy tools, deploying measures such as credit guarantees, social support, one-off payments and temporary standstills in fees and payments. In terms of monetary support, central banks have resorted to tools such as lending and credit provision at lower cost in addition to funding and liquidity operations, and specific market tools to maintain market functioning. A number of EME central banks have broken new ground by introducing asset purchase programmes for the first time.

In Saudi Arabia, both the monetary and the fiscal policy authorities have reacted promptly and decisively by deploying a wide range of tools to mitigate the unprecedented shock to domestic economic activity. The measures deployed by the central bank included, but were not limited to, the Deferred Payments Program, the Funding for Lending Program, and the Loan Guarantee Program in addition to the direct injection of SAR 50 billion to support the banking sector's liquidity. Moreover, the approved fiscal measures included an allocation of SAR 50 billion via the unemployment insurance system (SANID) to expedite payment of private sector dues as well as extending the deadlines for filing tax returns and offering a 30% discount for two months on utility bills for the commercial, industrial and agricultural sectors.

<sup>1</sup> See IMF, *Saudi Arabia Financial System Assessment*, Financial Safety Nets, 2017.

The swift and effective response through these measures has helped mitigate the impact of the shock by reducing the cash flow burden on the private sector and providing credit provision as well as liquidity support. The fiscal and monetary authorities each did their utmost to combat the negative effects of this unprecedented shock to the economy. Additionally, coordination at the international level, as the G20 ministries of finance and central banks made a joint commitment to undertake measures under an agreed G20 Action Plan, has amplified these effects and induced a positive spillover.

The coordination and internal communication between fiscal and monetary policy authorities have been pivotal in supporting economic recovery since the outbreak of Covid-19. In Saudi Arabia, both the central bank and the government continue to implement their respective policy agendas to support the economy and maintain monetary and financial stability. Indeed, in the context of Saudi Arabia's Vision 2030 programme, the central bank, in coordination with the Finance Ministry and the Capital Markets Authority, are implementing the Financial Sector Development Program (FSDP), with the aim of creating a thriving financial sector. The implementation of the FSDP has not slowed down as a result of the pandemic. On the contrary, the pandemic has underscored the importance of some of the FSDP targets, among them a faster pace of financial sector digitalisation. The FSDP's overall aim is to arrive at a more developed, inclusive, digitalised, efficient and diversified financial system, which will include a sound domestic capital market with robust infrastructure.

## Fiscal position in Saudi Arabia

Fiscal policy space in Saudi Arabia has generally been adequate, given its large reserves and relatively low debt levels. This enabled the authorities to cope immediately and decisively with the unforeseen economic shock caused by the outbreak of Covid-19.

Given that government spending is the main driver of the Saudi economy, the fiscal position has a direct and an indirect impact on output, financial system liquidity and economic activity. Consequently, this should reflect on local consumption and demand for imports.

At present, Saudi Arabia's public debt remains within a stable range, commensurate with the size of the economy and its absorptive capacity. Saudi Arabia also ranks high among a group of developed and developing economies with the lowest public debt-to-GDP ratio (32.5% of GDP in 2020). In addition, external debt represents about 41.1% of the total public debt or around 13.4% of GDP.

Despite the negative impact of the pandemic on economic activity, the Saudi economy was found to be resilient. The government has undertaken a plethora of economic measures aimed at supporting economic growth while also keeping public debt in check. The government was able to maintain fiscal stability and sustainability by shifting public investment spending, reorienting expenditures and raising spending efficiency, as well as increasing revenues (via, for example, VAT rates, which increased from 5% to 15%). This fiscal stability will, in turn, assist in fostering the appropriate investment climate needed for the economic recovery and achieving the diversification objectives of Vision 2030.

Together with other Vision Realization Programs working towards that end, the Fiscal Balance Program is a key component of Saudi Arabia's Vision 2030. It offers a fiscal framework that allows the Kingdom to follow flexible fiscal and economic policies that keep pace with local and global developments and seek to maintain fiscal discipline by controlling the deficit and public debt in order to achieve sustainable economic growth.

## Monetary policy in Saudi Arabia and its fiscal ramifications

The Saudi Central Bank is committed to maintaining its pegged exchange rate regime, which has supported economic growth since the mid-1980s. The Saudi Central Bank aims to maintain monetary stability primarily through a wide range of tools

With the fixed exchange rate regime as its policy anchor, the Saudi Central Bank's monetary policy has worked well, even in the post GFC environment when major central banks in AEs adopted unconventional QE. The Saudi Central Bank's monetary policy consists of interest rate and market operations, in addition to reserve requirements. The combination of passive interest rates and active liquidity management is effective in preserving exchange rate stability, in line with the central bank's objectives of maintaining monetary and financial stability as well as supporting the country's economic growth. In 2020, the Saudi Central Bank announced the enhancement of its Open Market Operation framework to enrich its liquidity management apparatus. In addition, a working group including bank representatives has been established to develop a legal and operational framework for the interbank repo market in order to establish country-specific guidelines suited to local and international investors and compatible with both sharia and conventional standards.

As indicated by the development of Saudi Arabia's credit markets, credit to the private sector recorded an increase of 14.8% year on year by Q1 2021. The non-performing loans of the banking sector in Q1 2021 remained stable at 2.2%, indicating strong financial soundness. In addition, the loan-to-deposits ratio was 77.6 in Q1 2021, well below the central bank's guideline, reflecting banks' ability to extend further credit.

The Saudi Central Bank's foreign exchange reserves reached USD 453.7 billion in December 2020, representing 79% of the aggregate money supply (M3). According to the IMF's reserve adequacy metric, the Saudi Central Bank's foreign exchange reserves remain adequate.<sup>2</sup>

To conclude, the scale and severity of the pandemic presented the Saudi economy with an unprecedented challenge. However, the well coordinated policy mix of the Saudi Ministry of Finance and Central Bank have dampened the impact of the economic shock, mitigating its toll on businesses and individuals. Moreover, the strong macroprudential framework has maintained the stability of the financial system and paved the way for the recovery in the coming years.

<sup>2</sup> See IMF, *External Sector Report*, August 2020.



# Background note on macroeconomic policy responses to Covid-19: the Singapore experience

Submitted by the Economic Policy Group, Monetary Authority of Singapore

## Abstract

Covid-19 has led to an economic crisis of historic proportions. This note considers the unique characteristics of the Covid-19 shock and outlines some implications for the design of macroeconomic policy responses. It examines the impact of Covid-19 on the Singapore economy, explains the macroeconomic policy mix adopted, and concludes with some key takeaways.

JEL classification: E32, E52, E62, H63.

Keywords: Covid-19, fiscal policy, monetary policy, public debt, recession, Singapore.

## Introduction

Covid-19 has led to an economic crisis of historic proportions. While monetary policy has played an important role in stabilising financial markets and ensuring sufficient liquidity for corporates and households, it was recognised at an early stage of the crisis that fiscal policy would bear a larger share of the burden for ensuring macroeconomic stability. At the same time, economists have also pointed out that the Covid-19 shock differs in fundamental ways from those that have precipitated economic recessions over the past century, which complicates the application of traditional macroeconomic frameworks used to calibrate the optimal macroeconomic policy response.

The first part of this note identifies the characteristics of the recession induced by Covid-19 that set it apart from past crises and outlines some implications for the roles of fiscal and monetary policies in managing the economic fallout from the pandemic. The next section examines the impact of the pandemic on Singapore's economy, and assesses the macroeconomic policy response. A concluding section with key takeaways follows.

## Direct supply and demand effects of a pandemic

Pandemics, like other natural disasters, are typically regarded aggregate supply shocks. That is, spreading infection in the population reduces the amount of factor inputs available for production, leading to a temporary decline in short-term aggregate supply.

The Covid-19 shock to aggregate supply has reduced the productive capacity of the economy via temporary reductions in factor inputs and factor productivity in several important ways.

- The spread of infection in the population reduces labour supply as workers fall ill, with further declines due to quarantining of those in close contact with infected persons. Closure of schools forces many parents of younger children to work from home while taking on additional childcare duties, also reducing the effective labour supply.
- Temporary closures of physical workplaces to reduce disease contagion also increase the stock of available physical capital that lies idle (eg factories and machinery).
- Trade disruptions may reduce the supply of imported intermediate inputs and/or increase import prices, exposing countries to cost-push shocks and reducing aggregate supply temporarily.

The pandemic has also had direct negative impact on aggregate demand, via both external and domestic channels.

- Trade and mobility disruptions from cross-border movement restrictions aimed at slowing infection spread have negative effects on external demand, which are particularly significant for countries that are highly dependent on trade and tourism.

- Distancing restrictions within countries also reduce consumer spending on categories associated with social activities. This effect has been only partially offset by increases in spending on other items, such as electronics.
- Uncertainty about the trajectory of the Covid-19 shock can also be a drag on aggregate demand. Facing uncertainty about their future income earning capacity, households and firms may increase their precautionary savings by scaling down their consumption and investment plans, which further reduces aggregate demand.

The simultaneous supply and demand effects of a pandemic are neatly illustrated in a simple macroeconomic model by Eichenbaum et al (2020). The authors show that a growing fraction of the population infected with the disease results in both aggregate supply shocks, from infected individuals being unable to work, and aggregate demand shocks, from households reducing consumption to avoid infection.

## Interactions between supply and demand

The initial supply shocks may also negatively affect aggregate demand, leading to the large output gaps that are prevalent in traditional crises. For example, Guerrieri et al (2020) demonstrate that in the Covid-19 context, an initial negative shock to aggregate supply has the potential to cause an even larger decline in aggregate demand. The supply shock induced by Covid-19 has affected some sectors disproportionately, especially contact-intensive industries that have seen forced closures in many countries. As workers from these sectors see their incomes decline (if social insurance against income shocks is incomplete), they may cut back on spending, reducing demand in sectors that did not experience a supply shock. The demand shortfall is compounded if expenditure in sectors that have shut down is not reallocated to those that remain open, possibly because sector outputs are poor substitutes. In aggregate, this implies that the demand shock may be larger than the initial supply shock, a dynamic that the authors call a “Keynesian supply shock”.

The sharp and broad-based decline in revenues across the real economy could result in disruptions to financial stability in the presence of liquidity constraints and other financial frictions. While the economic effects of Covid-19 did not emanate from the financial sector, the potential for financial sector disruptions to amplify the economic damage for the rest of the economy remains a threat. As seen during the Global Financial Crisis (GFC), a financial crisis that results in synchronised tightening of financial conditions and plunging asset prices can have devastating and prolonged effects on aggregate demand.

## The role of macroeconomic policy in a pandemic

The nature of the Covid-19 shock has complicated the macroeconomic policy response to the crisis in at least two ways. First, the contemporaneous supply and demand shocks have led many economists to argue that traditional aggregate demand management via countercyclical monetary or fiscal stimulus is ineffective and that the macroeconomic response should instead aim at maintaining the productive

capacity of the economy. Second, until a sufficiently large proportion of the population is vaccinated, the public health threat from Covid-19 will continue to suppress economic activity, preventing a full economic recovery from taking hold. Maintaining fiscal support beyond the duration of a typical business cycle recession is very costly and societies will have to contend with the resulting excessive debt accumulation.

In the Aggregate Supply/Aggregate Demand framework, standard demand stimulus in the presence of supply constraints is ineffective at raising output and may even be inflationary. Instead of boosting aggregate spending, macroeconomic policies should aim at ensuring that the economy retains its productive capacity by preventing demand shortages during Covid-19 from causing widespread firm and household defaults. The macroeconomic policy response by most advanced economies reflects a general adherence to these prescriptions, as they have focused on facilitating credit to the broader economy and incentivising firms to retain workers.

Rather than using interest rates within a conventional monetary policy framework to stimulate lending and restore aggregate demand, central banks have largely employed credit policies to ensure sufficient liquidity in a broad class of lending markets, as well as to limit defaults by borrowers during the pandemic. Liquidity provision and debt deferment schemes have been widely implemented not just by central banks, but also by fiscal authorities. In effect, these policies ease the cash flow constraints of firms and households during periods when negative income shocks are likely to tighten them. As such, credit policies aim to reduce defaults among solvent households and firms that are facing temporary liquidity shortages.

Instead of aiming to stimulate aggregate demand by boosting public and private spending, fiscal support during the pandemic has mainly sought to limit the severity of economic dislocations from large-scale firm shutdown and job loss. Perhaps the fiscal policies that best embody the principle of maintaining the economy's productive potential are furlough schemes that have mainly been employed in Europe, and which have accounted for a large portion of the budgetary outlay in these economies. By retaining workers on payrolls, these schemes preserve the worker-firm matches that would allow production to recover quickly when economic activity resumes, while providing indirect cash transfers to households.

## Potential side effects of the macroeconomic response

Economists broadly agree that early intervention to support financial markets and the historically large fiscal response to Covid-19 were crucial in preserving the economy's productive potential while government-imposed lockdowns suppressed economic activity on an unprecedented scale. The sharp increase in government outlays and accumulation of public debt were inevitable, and indeed, justifiable consequences of the policy response to what was seen as a temporary shock. However, the pandemic has yet to run its course even after a year, and the forceful fiscal and monetary responses have raised concerns over debt sustainability and other potential side effects.

## Unwinding of credit and income support

As continued fiscal largesse will be unviable even for countries with healthy public sector balance sheets before Covid-19, fiscal support must be gradually unwound. An extended period of public sector support is not only costly but could delay the adjustments necessary for businesses to adapt to the post-pandemic economy. As conditions, constraints and resources differ across countries, there is no one-size-fits-all solution. However, a premature unwinding of official support measures—before the private sector is ready to take up the slack—could potentially set back the recovery and may lead to a deterioration in debt sustainability.

Credit policies and income support are generally targeted at liquidity problems faced by households and firms during Covid-19. However, the prolonged nature of the negative income shock may have eroded household and firm balance sheets sufficiently to induce solvency problems, which are likely to be most prevalent among lower-wage workers and firms with income streams that may not recover sufficiently over the foreseeable future. In these cases, continuing fiscal support through credit policies and short-term cash transfers may simply be postponing insolvencies. Thus, the cessation of fiscal support may lead to a sharp deterioration in balance sheet positions and a spike in defaults. A fundamental challenge for policymakers is bridging firms facing near-term revenue and liquidity strains to the post-pandemic economy.

## A world awash with liquidity

Central banks' efforts to keep financial conditions easy have led to an abundance of liquidity in global financial markets. This has resulted in a situation similar to the aftermath of the GFC, when the world was awash with liquidity and interest rates reached record low levels.

Excess liquidity and low interest rates may drive investors with aggressive near-term return mandates, such as pension funds, towards more risky investments in a search for yield. Low interest rates may also affect incentives to invest, with negative consequences for productivity growth. This may occur if a decline in long-term interest rates triggers a stronger investment response by market leaders relative to market followers, thereby leading to more concentrated markets, higher price mark-ups and lower aggregate productivity growth (Liu et al (2020)). Another possibility is that low interest rates reduce financial pressure on "zombie firms", which crowd out investment in and employment at more productive firms (Caballero et al (2008); Banerjee and Hoffman (2018)).

When interest rates eventually rise, highly indebted firms attempting to deleverage may have to either defer investments or take greater risks to ensure survival, leading to a drag on productivity growth. Further, the combination of low growth and high indebtedness may lead to elevated financial stability risks.

## Rising public debt

A fiscal deficit is said to impose a cost if the service of the accompanying debt generated necessitates either expenditure cuts or tax increases in the future. Deficits have fiscal costs if the interest rate  $r$  that the government pays on its debt is higher than the growth rate of the economy  $g$ . At present,  $r - g < 0$  holds for most countries, and additional debt does not necessarily entail a fiscal cost. Cochrane (2020) argues that even if  $r - g < 0$ , there is likely to be a threshold beyond which the private sector

would demand higher interest rates to hold government debt. This could trigger an explosive path for the debt-to-GDP ratio in the absence of primary surpluses.

History has shown many examples of how sovereign debt crises unfold. As debt rises, creditors understand that there is an increased risk of debt repudiation or monetisation, so they increase their assessment of the probability of higher inflation, caused by debt monetisation or outright default. This prompts perverse dynamics as domestic and foreign debt holders attempt to reduce their exposures to the overindebted sovereign, often reflected in reductions in government debt maturity, shifts in debt composition towards US dollar-denominated bonds and exchange rate depreciation pressures. Under high debt circumstances, monetary policy may be rendered ineffective as the government increasingly finances itself at short maturities, implying that a tighter monetary policy stance further worsens the fiscal situation. This mechanism underlies the unpleasant monetarist arithmetic described in the seminal paper by Sargent and Wallace (1981).

As the rise in debt is set to be a global phenomenon, there is a risk that isolated sovereign defaults by large emerging market economies (EMEs) could trigger tighter financial conditions for all other EMEs. Although the world has seen increasing convergence of inflation rates among advanced economies and EMEs, particularly after the GFC, this trend may reverse if EMEs collectively face difficulties rolling over large stocks of sovereign debt.

### A resurgence of high inflation

Recent articles have considered the possibility that the fiscal response to the Covid-19 crisis could lead to a resurgence of high inflation in some countries. While regarding high inflation after the pandemic as highly improbable, Blanchard (2020) argues that it may occur if the following three conditions come to pass: (i) high debt levels relative to GDP; (ii) large increases in the neutral real rate; and (iii) fiscal dominance of monetary policy. He argues that a debt-laden fiscal authority may be incentivised to maintain low interest rates, even when the neutral rate rises after the pandemic, potentially leading to high inflation.

In other words, while high debt levels are likely to be the end-result of the Covid-19 crisis for many countries, these are not inflationary as long as the real neutral rate is low (which supports debt sustainability) and monetary policy is dominant (which requires fiscal policy adjustment to maintain debt sustainability).

## How the Singapore economy was impacted by Covid-19

The Covid-19 recession in Singapore has been unprecedented in its intensity, having resulted in a cumulative 14% decline in GDP from pre-crisis levels in Q4 2019 to the trough in Q2 2020. This compares with an average contraction of 6.1% across past recessions.<sup>1</sup> Where the Singapore economy took about four quarters to fall from peak to trough in previous recessions, the trough in GDP had occurred by the second quarter in the current episode and was much deeper due to the nature of the Covid-

<sup>1</sup> Past recessions refer to the Asian Financial Crisis in 1997–98, the IT Downturn in 2001 and the Global Financial Crisis in 2008–09.

19 shock, which had disproportionately affected domestically oriented sectors with more extensive production and consumption linkages (Graph 1).

Activity rebounded after the exit from the “circuit breaker” measures in the third quarter, but the momentum of the recovery has since slowed. Even though many countries are likely to have vaccination campaigns in place by the end of 2021, the threat of repeated outbreaks in Singapore and globally will prolong the recovery in the interim. This incomplete recovery contrasts with the symmetrical recovery profile in past recessions, with the economy typically taking around three quarters to return from the trough to its pre-crisis level (Graph 1).

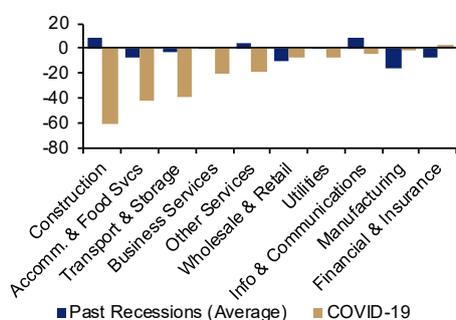
## The current downturn is deeper and likely more protracted than past recessions

Graph 1

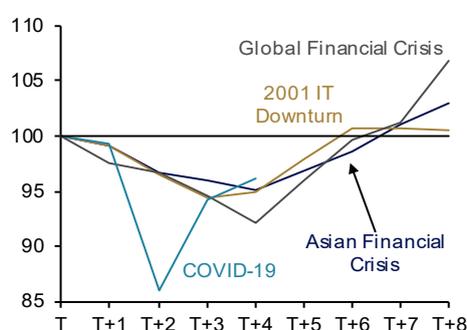
Domestically oriented and travel-related sectors were hit harder<sup>1</sup>

Quarterly GDP profile across downturns<sup>2</sup>

Peak-to-trough change in value added, per cent



Pre-crisis peak, T=100



<sup>1</sup> Past recessions refer to the Asian Financial Crisis in 1997–98, the IT Downturn in 2001 and the Global Financial Crisis in 2008–09. <sup>2</sup> T refers to the pre-crisis peak in GDP levels. T = Q4 2019 for Covid-19, Q1 2008 for the Global Financial Crisis, Q4 2000 for the 2001 IT Downturn, Q3 1997 for Asian Financial Crisis. Latest quarter for Covid-19 recession is Q4 2020.

Sources: Singapore Department of Statistics; EPG, MAS estimates.

## Singapore’s macroeconomic policy response to Covid-19

Faced with the most severe recession in Singapore’s history, the Monetary Authority of Singapore (MAS) and other government agencies formulated a decisive policy response to alleviate the economic cost of the public health measures taken in response to the outbreak. By providing immediate financial relief to businesses and households, the aim of the substantial and timely countercyclical support was also to prevent the severe shock from inflicting lasting damage to the economy.

### Monetary policy

With fiscal policy expected to provide the primary offset to the decline in incomes during the crisis, monetary policy played a complementary role in stabilising economic activity.<sup>2</sup> In January 2020, the outlook for the Singapore economy began to deteriorate after China placed Hubei province under lockdown and cases of Covid-

<sup>2</sup> Given the openness of the Singapore economy, monetary policy is centred on the exchange rate with the target of attaining low and stable inflation as the basis for sustainable economic growth.

19 emerged in Singapore. On 5 February, MAS clarified that the monetary policy stance remained unchanged, but noted that with the worsening outlook for growth and inflation there was sufficient room in the exchange rate policy band to accommodate an easing of the trade-weighted Singapore dollar (S\$) nominal effective exchange rate (S\$NEER), which had hovered near the upper (stronger) bound of the policy band since the October 2019 Monetary Policy Statement. The S\$NEER subsequently declined towards the mid-point of the policy band.

As the outlook for Singapore's growth and inflation deteriorated amid the escalating transmission of Covid-19 domestically and abroad, the S\$NEER eased further in an orderly manner over the following weeks. This was facilitated by the flexibility afforded by MAS' monetary policy framework, notably the policy band. By end-March, the S\$NEER had fallen to a level slightly below the mid-point of the policy band. On 30 March, MAS announced that it would adopt a zero per cent per annum rate of appreciation of the S\$NEER policy band starting at the then-prevailing (lower or more depreciated) level of the S\$NEER. Given the magnitude of the shock in relation to Singapore's small open economy, MAS assessed that the equilibrium level of the real exchange rate had stepped down, and that the decline in the S\$NEER between late January and end-March was congruent with the weaker growth and inflation outlook. The zero per cent appreciation of the band going forward would also impart a degree of stability to the trade-weighted exchange rate.

### Credit policy

The outbreak of Covid-19 caused income and revenue streams to dry up for some households and businesses in Singapore. Consequently, many required external financing to smooth consumption or meet their continuing financial obligations. Local banks reported a sharp rise in loan applications from small and micro enterprises in the early stages of the crisis, particularly in the retail trade, food services and hospitality sectors. There was thus a need to ensure that bank credit was widely available, and at a fair cost, to avoid unnecessary insolvencies and financial hardship. To this end, MAS introduced new facilities and worked with financial institutions to reduce the hurdles for firms and individuals to access credit.

First, MAS' liquidity measures ensured the effective functioning of the domestic financial system. Singapore's financial institutions entered the crisis in a strong position, and providing banks easy access to funds better allowed them to intermediate credit to businesses and households and provide essential financial services. MAS also stepped up its provision of US dollar liquidity to the banking system when financial conditions tightened in Q1 last year. MAS increased the volume of foreign exchange swaps transacted in its daily money market operations and also established a new facility to provide up to US\$60 billion of funding, drawing on the swap line between MAS and the US Federal Reserve. These actions supported stable US dollar funding conditions in Singapore, facilitating lending to businesses in Singapore and the region.

Second, MAS collaborated with the financial industry to roll out a package of targeted measures for individuals and businesses adversely affected by Covid-19. Individuals financially affected by the virus outbreak could defer payments on residential property loans, as well as on their life and health insurance premiums. Those who suffered a loss of 25% or more of their monthly income after 1 February last year would also be eligible to convert their outstanding credit card balances to lower-interest term loans. Similarly, small and medium-sized enterprises (SMEs) were

allowed to defer principal repayment on secured loans and pay their general insurance premiums in instalments in order to improve their cash flows.

Third, in partnership with the Ministry of Trade and Industry, MAS launched a facility to lend Singapore dollars at an interest rate of 0.1% per annum for a two-year tenor to eligible financial institutions to support their lending to SMEs under the Enterprise Singapore Loan Schemes. The facility reduced the cost of funds for financial institutions and complemented the government's risk-sharing initiative to make loans to SME borrowers more affordable. As a whole, this package of measures helped ease financial conditions facing individuals and businesses and sustained the flow of credit to all sectors of the economy.

### Fiscal policy

In response to the unprecedented crisis precipitated by the pandemic, the Singapore government swiftly introduced an array of budgetary measures to mitigate the fallout on the economy. Four budgets and a ministerial statement were announced over the period of February to August 2020, amounting to nearly S\$100 billion in fiscal support, or around 20% of nominal GDP. Of this, S\$70.9 billion (14% of GDP) constituted direct fiscal injections, while S\$22 billion (4% of GDP) was earmarked as capital for loan guarantees.

About two thirds of the direct fiscal injections were dedicated to cushioning the impact of revenue losses on firms via wage subsidies and other cost-saving measures. The remaining measures provided financial assistance to vulnerable households and individuals and aimed to strengthen the security of Singapore's food and medical supplies, as well as the capacity of its public healthcare system.

A key goal of the relief measures has been to preserve jobs and forestall a sharper rise in unemployment.

- The Jobs Support Scheme (JSS) is the centrepiece of the fiscal response and provides firms with wage subsidies for local workers for 17 months until March 2021. Firms in the hardest-hit sectors, such as the travel-related industries, received higher levels of subsidies (75% for the first 10 months and 50% for the subsequent seven months). The scheme has been extended from September 2020 to March 2021 for most industries as pandemic impacts persisted.
- The SGUnited Jobs and Skills Package was rolled out as a public-private partnership to create around 100,000 new jobs (15,000 new jobs in the public sector), traineeships and training opportunities for first-time and mid-career job seekers. Under the programme, the government would pay a portion of wages and traineeship allowances for new positions created, allowing firms to continue hiring at lower wage costs. The government also subsidised course fees and provided monthly allowances for individuals who underwent training.
- More recently, the Jobs Growth Incentive was announced in August 2020. Under this initiative, the government would pay between 25–50% of the first S\$5,000 of gross wages for all new local hires for 12 months.

At the same time, the government helped households to adapt to remote work and learning during the pandemic, and provided resources to encourage businesses to transform and digitalise, taking advantage of the pandemic-driven leap in the adoption of digital technologies. For instance:

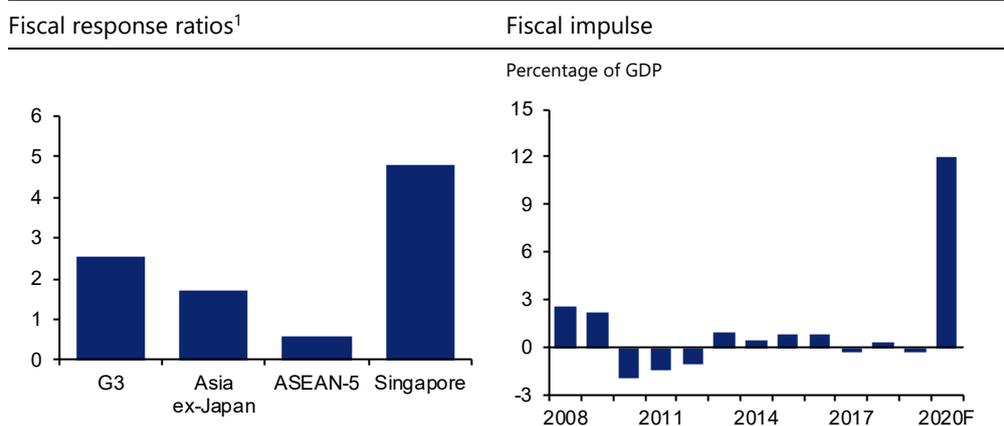
- Cash bonuses were paid to food and beverage firms and retailers that adopted digital payments and e-invoicing solutions.
- Other ready-made digitalisation solutions and funding support for their implementation were also made available to small businesses.
- Students were provided with digital learning tools to facilitate home-based learning during school closures.

## Assessing Singapore’s macroeconomic policy mix

Singapore’s macroeconomic policy mix has given due consideration to the unique characteristics of the pandemic shock. In particular, since it would not have been appropriate for macroeconomic policy to compensate fully for the contraction in private demand when public health measures were curtailing economic activity, Singapore’s response has primarily sought to preserve the productive potential of the economy by keeping workers employed and minimising firm shutdowns, using a mix of income support and credit policies.

Singapore’s fiscal response has been one of the largest globally, even after accounting for the varying size of output losses across countries (Graph 2). The fiscal impulse in 2020 is estimated to be 12.1% of GDP and represents the most expansionary fiscal policy stance on record. The composition of fiscal support measures – which mainly comprises business cost relief, as opposed to direct government expenditures – reflected the recognition that the latter might be less effective on its own due to constraints on aggregate supply.

Singapore’s fiscal response has been substantial Graph 2



<sup>1</sup> Fiscal response ratio is calculated by dividing fiscal outlays (excluding loans and guarantees) as a share of 2019 nominal GDP by the expected percentage deviation in real GDP from pre-pandemic projections at end-2021. Country groupings are weighted by 2019 PPP-adjusted GDP. G3 = JP, US, EA. Asia ex-Japan = CN, HK, IN, TW, KR, ID, MY, PH, TH, VN. ASEAN-5 = ID, MY, PH, TH, VN.

Sources: National data; World Bank; Singapore Department of Statistics; Ministry of Finance; EPG, MAS estimates.

Singapore’s monetary policy settings have supported macroeconomic stability by keeping the trade-weighted exchange rate stable and facilitating the adjustment of the real exchange rate towards a level consistent with MAS’ medium-term price stability mandate. The decline in the trade-weighted exchange rate in Q1 provided an initial buffer to the economy when the Covid-19 shock hit. This forestalled a

broadening of disinflationary pressures and helped to keep inflation expectations anchored, thereby reducing the risk of a deflationary spiral taking hold. The fall in the S\$NEER had also reduced expectations of Singapore dollar depreciation, which ensured that Singapore dollar interest rates fell in tandem with global rates. In turn, this complemented MAS' credit policies and other initiatives to keep credit accessible to firms and avoid costly defaults.

The cumulative fiscal injection so far is expected to offset the GDP contraction by some 5.6% in 2020 and 4.8% in 2021.<sup>3</sup> Correspondingly, the resident unemployment rate would have been 1.7% points higher in 2020 in the absence of these measures. A large part of this impact is attributable directly to jobs-related measures, with the JSS alone estimated to contribute 0.9% point of 1.7% points. In sum, fiscal and monetary policies are estimated to reduce domestic economic contraction by 6.7% in 2020 and 5.6% in 2021. MAS estimates that government demand will compensate for about 40% of the drag on growth in 2020 posed by the decline in private sector demand.<sup>4</sup>

However, the full impact of the overall policy mix on the economy is likely to be larger than that quantified above. The government's fiscal response has been supported by liquidity and other financial measures, which were not directly accounted for in the estimates above. These measures helped to avert a credit crunch that would have exacerbated the initial income shock. Also, the estimates of fiscal policy impacts conservatively employed multipliers conditioned on historical relationships, and there are reasons to believe that the fiscal multiplier during the Covid-19 pandemic may be larger than usual. Cross-border leakage, which typically tempers fiscal impacts in Singapore's small open economy, will be reduced by the closure of borders to outbound tourism. Moreover, the size of the output gap that has opened up diminishes scope for crowding-out effects from public spending.

Broadly, the mix of macroeconomic policies put in place is likely to have alleviated the scarring effects of the Covid-19 shock on Singapore's growth potential over the longer term. Saving jobs and preserving firms' capabilities are a critical part of ensuring that ongoing restructuring efforts have the requisite base of skills and capacity to develop the engines of future growth.

### The next phase of Singapore's Covid-19 response

Potential side effects of unsustainable public debt accumulation from the large fiscal outlay are a less pressing concern for Singapore because the government has been able to finance its response to the crisis by drawing on past fiscal surpluses. With the recovery under way, fiscal policy in Singapore has increasingly turned from the exigencies of the crisis towards enabling the structural changes required for the transition to the post-pandemic economy. The government will continue to partner with the private sector in pursuing the transformation initiatives that were in place before the pandemic, in order to promote higher value-added, technology-intensive production processes, inclusive growth and broader labour market engagement.

<sup>3</sup> Estimates from MAS' Monetary Model of Singapore. These estimates are expressed as percentage deviations from a baseline level of real GDP.

<sup>4</sup> This estimate excludes residential investment as the breakdown of the contribution between public and private residential investment is unavailable.

## Conclusion

As global economies recover from Covid-19 impacts, the immediate challenge for policymakers is to devise ways of sustaining support until the recovery gains traction, while managing the fiscal sustainability and financial stability risks that come with rising debt burdens.

Despite recent breakthroughs in vaccine development, it will take until the second half of 2021 before widespread immunity is achieved (and possibly longer in EMEs). The wave of infections that forced several European countries back into lockdowns at the beginning of this year underscores the considerable uncertainty that remains over the near-term outlook. Thus, there is a continuing need for support to prevent negative feedback effects from rising firm closures and insolvencies from derailing the recovery.

However, in extending support to deal with a protracted recession, policymakers will have to contend with unintended side effects from rising fiscal expenditures that could impinge on the eventual recovery. It would be unwise to place our faith in  $r - g$  staying negative over the long term: monetary policy alone cannot sustainably raise  $g$ , and there are limits to fiscal capacity that monetary policy cannot obviate. Stretched government balance sheets mean that the risk premium embedded in the government borrowing rate  $r$  could become more sensitive to fears over sovereign solvency or the perceived loss of central bank credibility, particularly for EMEs. As such, further fiscal support should be measured and targeted, with the level of support adjusted as economic activity normalises (Menon (2020)).

Singapore's considerable fiscal space, accumulated from a consistent history of medium-term budget surpluses, has enabled it to mount a prompt and aggressive fiscal response to the pandemic without drawing on future tax revenues or an increase in public debt. Nevertheless, it remains important for Singapore to shift the weight of its policy response from providing short-term income support towards encouraging businesses and workers to prepare for the post-pandemic economy. The pandemic has accelerated several long-term trends, including increased digitalisation of production processes and remote work. This creates substantial scope for pro-growth budgetary measures to support the private sector in generating complementary streams of productive investment – new technologies, complementary human capital and capable infrastructure – that will underlie longer-term sustainable economic growth. These considerations should take centre stage in fiscal policy design as we move towards the latter stages of the Covid-19 episode.

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# Monetary and fiscal policy interactions in the wake of the Covid-19 pandemic

South African Reserve Bank (SARB)

## Abstract

Interactions between the South African Reserve Bank (SARB) and National Treasury (NT) have been robust, even while South Africa navigated its pathway in mitigating the impact of Covid-19. Despite these interactions, central bank independence remained uncompromised and the NT's mandate to implement fiscal policy was respected. In March 2020, liquidity strains and volatility appeared in money and capital markets due to the Covid-19 pandemic. As a result, the SARB implemented several measures to provide liquidity to stabilise markets and ensure their orderly functioning. Among the measures was a programme of purchasing government bonds in the secondary market. The programme had a direct effect in restoring market functioning within the domestic bond market. While the premise of the bond purchase programme (BPP) was to smooth market functioning within the domestic bond market, it inadvertently presented the fiscal authorities with several benefits, as lower bond yields eased the government's cost of funding and resulted in increased participation in non-competitive auctions, thus leading to higher than expected proceeds.

JEL classification: E44, E52, O16, H62, F31, G01, G21.

Keywords: financial markets developments, monetary policy, monetary policy implementation, monetary policy transmission, sovereign deficit, foreign exchange, macroeconomic impacts, financial crisis, banks.

## Session I

*How did the Covid-19 crisis change the interaction between monetary and fiscal policy? Did the extraordinary circumstances make policy coordination and interaction easier? What, if any, have been sources of tension?*

In March 2020, volatility in South Africa's financial markets increased significantly, largely in response to concerns about the impact of the Covid-19 pandemic, but also due to a sovereign credit rating downgrade by Moody's to sub-investment grade and the exclusion of South Africa from the World Government Bond Index. Risk aversion led to capital flight from longer- to shorter-term investments and from riskier to safe-haven assets. Liquidity in financial markets deteriorated, and banks became concerned about their ability to meet redemptions of short-term money market instruments, as well as regulatory requirements such as the Liquidity Coverage Ratio (LCR). High-quality liquid assets (HQLAs) decreased in value due to negative mark to market adjustments caused by sharp increases in government bond yields. The South African Reserve Bank (SARB) initiated several liquidity provision operations, as well as an unsterilised bond buying programme in the secondary market to ensure the continued functioning of capital markets. The government bond market is the largest and most liquid bond market in South Africa. The SARB generally does not buy bonds in the primary market, although legislation permits limited purchases. The SARB ensured that none of its liquidity interventions undermined its price stability mandate.

The SARB and National Treasury (NT) engaged robustly and frequently with each other while respecting the central bank's independence in monetary policy and the NT's mandate to implement fiscal policy. Mounting fiscal challenges affect monetary policy insofar as they impact lending rates, risk premia and overall macroeconomic stability. Rising government debt and poor economic performance continue to stoke challenges to the SARB's independence. There were public debates on whether the SARB should be doing more to support the economy and whether it should expand bond purchases to reduce the government's cost of borrowing. However, the SARB continues to pursue its constitutional mandate with integrity and focus.

The SARB and NT discussed the requirements, roles and responsibilities of the two institutions in providing the Loan Guarantee Scheme to the private sector in response to the pandemic. The Standing Committee on Banking and Financial Markets (SCBFM)<sup>1</sup> met more regularly to monitor market developments, share market intelligence and better understand the financing needs of NT and how this would impact the operations of the central bank in the money market. The Macro Standing Committee also met regularly to share information and perspectives on the economy's performance and outlook.

The SARB is responsible for conducting government bond and treasury bill auctions and managing the country's foreign exchange reserves. The receipt of large-scale USD loans from international financial institutions (IFIs) required frequent consultation, so these conversions could be timed to meet government's cash flow needs while also minimising distortions in foreign exchange markets. The SARB and NT maintain a cooperative, collaborative and transparent relationship, despite

<sup>1</sup> A joint committee of the SARB and NT to deliberate on matters related to financial markets, banking, public debt management and foreign exchange reserves.

occasionally having differing views regarding the management strategy of common objectives.

*What were the key factors that led to central bank large-scale domestic asset purchases?*

The SARB must ensure that financial markets operate smoothly and efficiently. In March 2020, the Covid-19 pandemic created liquidity strains and volatility in money and capital markets. The SARB implemented several measures to provide liquidity to stabilise markets and ensure orderly functioning. One measure was a programme of purchasing government bonds in the secondary market. Purchases were conducted across the yield curve and helped to reduce excessive volatility in the price of government bonds and supported price discovery, thus reducing dysfunctionality.

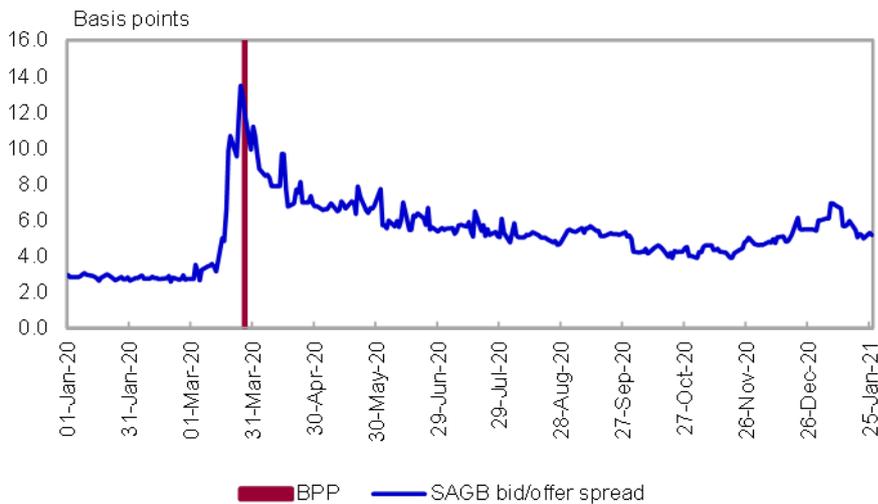
In addition to providing liquidity and promoting the smooth functioning of domestic financial markets, the bond purchase programme (BPP) allowed the SARB to enhance its monetary policy portfolio (MPP). The MPP is one of the instruments in the SARB's toolkit for managing money market liquidity and is used to inject or drain liquidity from the market.

The bond purchases were conducted in accordance with the SARB's responsibility to ensure that the local currency bond market was functioning in an orderly manner and was transmitting the price signals as closely as possible to the economic realities of the bond market at the time. Ensuring that the bond market functions in an orderly manner is important to the SARB, considering the role that this market plays in transmitting monetary policy stances to the broader economy.

*What have the effects been on financial conditions so far?*

It is important to note that the SARB's BPP was not quantitative easing, nor was it a programme conducted for economic stimulus purposes. Rather, it was aimed at restoring orderly functioning to the bond market. Therefore, bond purchases were not executed with an expectation that they would eventually have an impact on macroeconomic variables, nor were attempts made to measure the potential impact.

The BPP has had both direct and indirect effects on financial conditions. The programme had a direct effect in smoothing market functioning within the domestic bond market. In the first two weeks of the programme, the SARB purchased ZAR 6.5 billion of government bonds. In the same period, yields across the South African government bond (SAGB) curve fell by an average of 60 basis points, while bid-offer spreads compressed by an average of 6 basis points after initially widening by close to 14 basis points (as shown in Graph 1 below). The SARB continued purchasing bonds, totalling ZAR 38.8 billion by the end of October 2020 (the last purchases conducted). In this period, bid-offer spreads continued to improve, with spreads currently trading around 2.5 basis points above their pre-Covid-19 levels.



BPP = bond purchase programme ; SAGB = South African government bond.

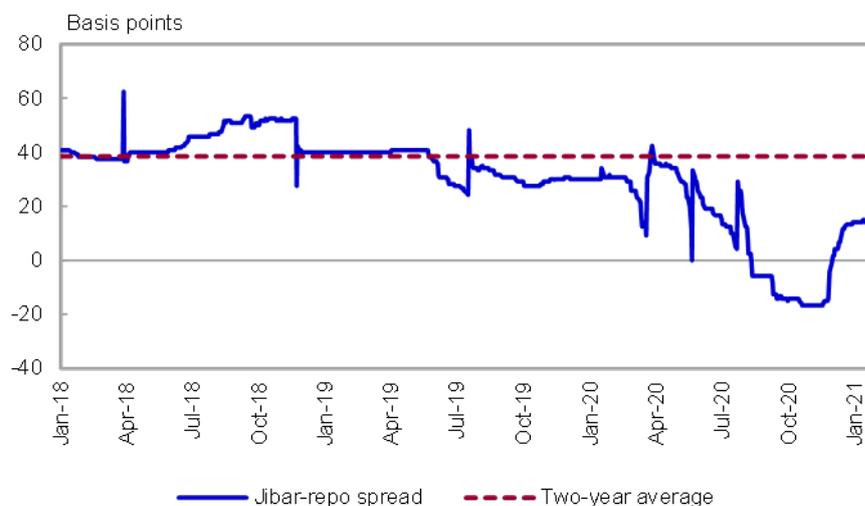
Source: South African Reserve Bank

Beyond a direct impact on the bond market, it is difficult to dissect spillover effects of the BPP to the broader financial conditions in isolation from the series of liquidity provision measures implemented by the SARB.

The unprecedented amount of unsterilised liquidity (through the BPP, among other things) is believed to have contributed to a widespread decline in cash market rates. For example, the most widely referenced three-month Johannesburg Interbank Average Rate (Jibar) declined sharply to trade at a negative spread to the policy rate. The Jibar-repurchase rate (repo) spread was significantly below its two-year average. While money market rates will inevitably decline in line with the reduction in the policy rate, Graph 2 shows that the spread of the three-month Jibar over the policy rate declined into negative territory, well below its two-year average of around 40 basis points. Note that the SARB also launched other partially sterilised liquidity facilities, which are believed to have had a much larger impact on cash market rates.

## Jibar-repo spread differential

Graph 2



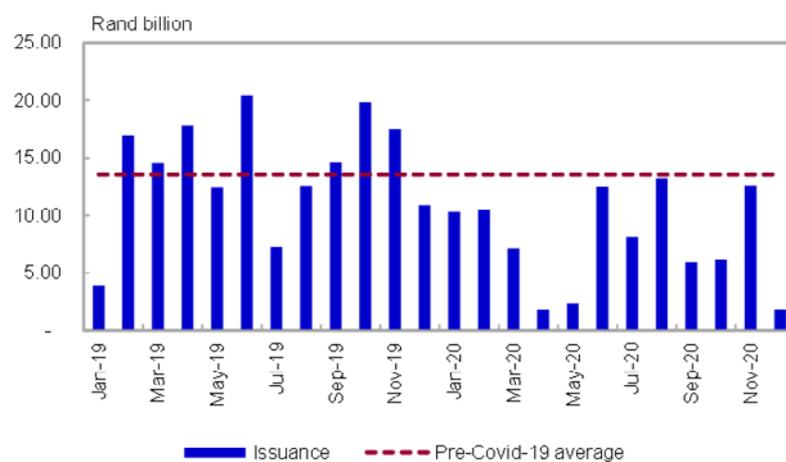
Jibar = Johannesburg Interbank Average Rate.

Source: South African Reserve Bank

The corporate bond market came to a near complete halt during the onset of the Covid-19 crisis. As shown in Graph 3, corporate bond issuance declined to a low of ZAR 1.75 billion in April 2020 compared to an average of ZAR 9.3 billion in the preceding three months and ZAR 17.8 billion in April 2019. As market functioning began to improve following the implementation of liquidity measures, confidence within the corporate bond market returned, with issuance rising to as much as ZAR 12.46 billion in June 2020. More recently, corporate bond issuance fell to ZAR 1.82 billion in December 2020; however, this is mostly a function of seasonal dynamics, where issuance generally tapers during this time of the year.

## Corporate bond issuance

Graph 3



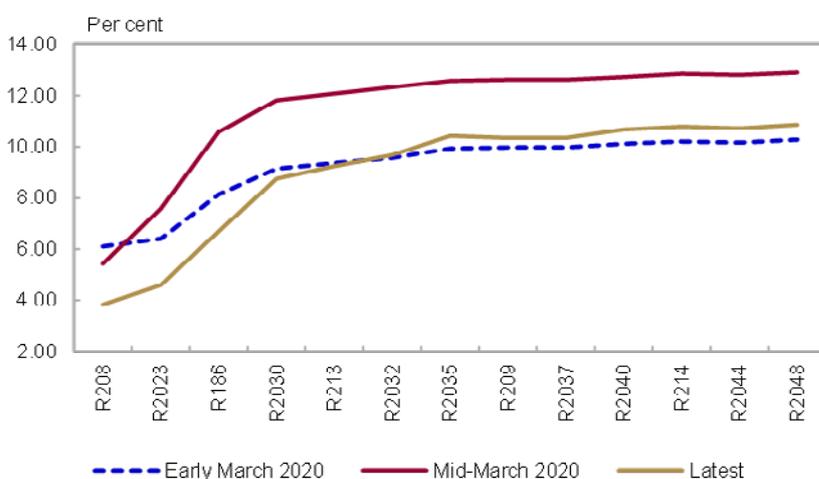
Source: South African Reserve Bank

### *Have asset purchases affected the fiscal policy room for manoeuvre?*

While the premise of the BPP was to smooth market functioning within the domestic bond market, it inadvertently presented the fiscal authorities with several benefits. The SARB's bond purchases were not limited to a specific point on the curve and were undertaken across the spectrum of the SAGB curve. This approach resulted in falling yields across the curve, as reflected in Graph 4. Lower yields essentially eased the government's cost of funding despite a deterioration in the country's fiscal backdrop. Moreover, declining yields increased participation in non-competitive auctions, thus leading to higher-than-expected proceeds. This created opportunities for the government to reconsider its funding strategy, as there were now opportunities to reduce the size of government bond auctions.

SAGB yield curve

Graph 4



Source: South African Reserve Bank

## Session II

*Does the increase in fiscal deficits and public debt raise macroeconomic and financial stability risks? Is monetary policy likely to be constrained by fiscal policy going forward? Through what channels? How large is the threat of fiscal dominance, including because of greater political pressures?*

South Africa's fiscal deficit reached double digits in the 2020 financial year owing to Covid-19 relief spending, reduced revenue and a diminished gross domestic product (GDP). Many projections see debt breaching 100% of GDP within five years.<sup>2</sup> During the 2010s, South African government debt grew rapidly – by 31 December 2020, total gross loan debt as a percentage of GDP was 77.1%. It is estimated to be 87.3% in 2023–24. The SARB expects GDP to recover to 2019 levels in 2023. The risk

<sup>2</sup> National Treasury sees debt peaking at around 95% of GDP.

premium has been elevated as a result. These developments have raised concerns around macroeconomic and financial stability risks.

Talking points included consequences for credit ratings and the impact on lending rates throughout the economy and the extent to which government borrowing could crowd out the private sector. There is also concern about increasing reliance on foreign investment and the risks of capital flight and sudden stops. Other concerns include the growing interest bill, which has reached 4.6% of GDP, and the increasing exposure of the banking sector to sovereign debt through HQLAs. Further fiscal deterioration could erode the value of HQLAs (mostly government bonds), negatively impacting bank balance sheets.

To the extent that increased government borrowing and a higher term premium may influence lending rates, rising debt issuance could reduce the expansionary effects of the SARB's recent series of rate cuts (which totalled 300 basis points in 2020). This, in addition to the sovereign debt-related risks listed above, maintains the position of fiscal policy as a relevant concern for the SARB.

While public political pressure tends to rise during economic crises, the SARB does not perceive the challenges to its independence to be an imminent threat. Its mandate is protected by the South African Constitution. The SARB is also not prepared to engage in quantitative easing at this time, as its governor has frequently stated. The SARB continues to focus on its constitutional mandate to pursue price stability in the interest of balanced and sustainable economic growth.

### Additional stimulus, undertaken independently

NT provided various other relief measures, including budgetary support to strengthen the health sector, labour and firms, as shown in Table 1. The SARB provided unprecedented rate relief, cutting the repo rate by 300 basis points in 2020 to cushion consumers and businesses. The SARB also instituted capital relief measures which made about ZAR 250 billion available to meet the commercial banks' liquidity demands and to support continued credit extension.<sup>3</sup>

<sup>3</sup> The SARB's Prudential Authority reduced the LCR from 100% to 80%, lowered Pillar 2A capital requirements from 1% to 0% and provided capital relief on loan restructures.

## Total Covid-19 package

Table 1

ZAR millions	2020/21
Budgetary support (spending)	130 000
Credit Guarantee Scheme	200 000 <sup>4</sup>
Measures for income support (including further tax deferrals, Skills Development Levy holiday and Employment Tax Incentive extension)	70 000
Drawdown on government balance sheet for wage protection (eg UIF, Compensation Fund)	40 000
Contingent amount for additional employment and wage support	60 000
Repo rate reduction estimate	80 750
Regulatory relief measures	250 000
Total Covid-19 package	830 750
Percentage of GDP	16.78%

Note: The Pillar 2A relief amounts to a further ZAR 31.2 billion and if we assume that the average minimum capital adequacy ratio of all banks amounts to 12.48% and the average risk weighting of exposures to bank clients is 100%, an additional amount of ZAR 250 billion could be supplied to the South African economy.

Source: National Treasury and SARB

*Do large-scale domestic asset purchases make the exchange rate more vulnerable to confidence crises? Could they increase the risk of higher inflation? Under what conditions?*

Large-scale asset purchases have become a relatively common tool for central banks, which means they are less likely to provoke adverse reactions in foreign exchange markets. Nonetheless, they could have negative effects where they are not proportional to central bank mandates (price stability and financial stability). For instance, South Africa's 2020 asset purchases, at about 0.6% of GDP, have been fairly modest. Their scale has been consistent with restoring financial stability goals (market functioning has normalised without additional assistance) and maintaining price stability (the policy rate remains well above the zero lower bound and inflation is expected to stay within the target range for the foreseeable future). By contrast, larger purchases could have raised difficult credibility questions.

In an extreme scenario, large-scale asset purchases might have been perceived as signaling the onset of fiscal dominance, and potentially a breakdown of central bank independence, indicating much higher inflation in future. South Africa's strained fiscal position, and its decade-long failure to achieve debt-stabilisation commitments, would have made this outcome more plausible. In a less extreme scenario, markets could also have come to fear a SARB bias towards low rates, both to reduce government borrowing costs and to protect the central bank's own balance sheet, which would be exposed to interest rate risk on asset holdings as well as ongoing sterilisation costs for the liabilities created to purchase the assets. Unlike conventional short-rate operations, asset purchases expose central banks to risks and costs, which may distort policymakers' incentives. In turn, market perceptions of weakened monetary policy credibility would weaken exchange rates.

<sup>4</sup> An amount of R100 billion was immediately availed, with the option to avail another R100 billion.

Some observers tend to draw a close connection between money creation to finance asset purchases and inflation. Expert analysis, however, has largely moved on from this diagnosis, recognising that asset purchase policies after the 2009 global financial crisis did not lead to inflationary upsurges. It has become clearer that central bank money is not lent on through a fixed money multiplier (as textbooks may suggest). In situations where central banks are constrained by the zero lower bound or where money creation is sterilised, asset purchases are unlikely to lower interest rates materially and drive up inflation.

There are nonetheless inflationary risks in several scenarios. As discussed, asset purchases create risks for central banks, which could dilute their commitment to price stability. If the solvency of central banks is undermined by losses on asset holdings or by sterilisation costs, then it might be necessary to request recapitalisation by the government, potentially compromising central bank independence. A central bank's reputation could also suffer in the public eye if it were accused of losing money or being bankrupt. Finally, it is possible that government could become dependent on central bank financing and might be able to co-opt monetary policy to this end, creating a situation of fiscal dominance. There are many historical examples of states which dealt with fiscal unsustainability by giving up price stability.

It is also possible that asset purchases could drive up inflation for more technical reasons. While it is possible to sterilise bank reserves in abundant quantities, as the Board of Governors of the Federal Reserve System has demonstrated with its policy of paying interest on excess reserves, not all central banks have developed the tools to sterilise large-scale money creation and thereby retain control of policy rates (assuming they are set above zero). In South Africa, for instance, reverse repos and SARB debentures have not always attracted adequate uptake, weakening the SARB's ability to sterilise even moderate amounts of liquidity. Inadequately sterilised liquidity interventions could impair monetary policy transmission and drive up inflation.

# Monetary and fiscal policy interactions in the wake of the pandemic

Bank of Thailand  
February 2021

## Abstract

Covid-19 poses enormous challenges to many countries around the world, including Thailand. Fiscal and monetary policy interactions were necessary to ensure swift economic recovery. Thailand was fortunate to possess strong initial conditions prior to the crisis with a low public debt level, strong financial institutions and robust external position. These factors allowed macroeconomic policies to mitigate large economic shocks. Coordination among public authorities became more prominent without compromising the Bank of Thailand's independence. Fiscal policy played an important role in supporting income recovery, while monetary and financial policies were essential in improving balance sheets of businesses and households. Despite increasing public debt in the short-term, to the extent that substantial fiscal stimulus accelerates economic recovery it would lower public debt-to-GDP in the medium-term. Nonetheless, fiscal reforms were necessary to ensure fiscal sustainability in the long-term which would provide a cushion against future crises. Given Thailand's financing structure and current challenges, measures such as large-scale asset purchases were deemed inappropriate at this juncture, whereas soft loans and credit guarantee schemes would directly address the liquidity distribution problem currently faced by small and medium-sized enterprises.

JEL classification: E52, E58, E61, E62.

Keywords: Bank of Thailand, monetary policy, fiscal policy, policy interactions, Covid-19, public debt, large-scale asset purchases.

## 1. Interactions between monetary and fiscal policies

The Covid-19 pandemic induced unprecedented and severe effects on countries around the world. Large negative shocks disrupted economic activity in almost all sectors, while simultaneously increasing the stock of debt and reducing the flow of income. The Thai economy has also been hurt because of its reliance on tourism and exports, which exacerbated already elevated household debt. This poses enormous challenges to policymakers who must combat and mitigate the adverse impacts of these unprecedented shocks efficiently. Interactions and policy coordination between monetary and fiscal policies are necessary to ensure swift economic recovery and to promote economic resilience and sustainability.

Fortunately, Thailand entered this crisis with relatively strong initial conditions, which offered some degree of shock absorption and therefore some room for policy manoeuvres. First, given the low level of public debt prior to the pandemic, the government had sufficient fiscal space to promptly introduce relief measures and stimulus packages to support the economy in a countercyclical manner without a significant threat to sustainability (at least in the short run). Second, financial institutions were equipped with strong balance sheets, reflected by an average BIS ratio of 19.4% among commercial banks registered in Thailand at the end of 2019. This enabled banks to withstand the shocks and maintain their financial intermediary roles during the crisis. Third, solid external positions on the back of a strong current account continued to register surpluses, as well as ample international reserves relative to short-term debt – all of which helped to insulate Thailand against the risk of capital flight.

Various ratios indicate sound pre-Covid-19 conditions for Thailand

Table 1

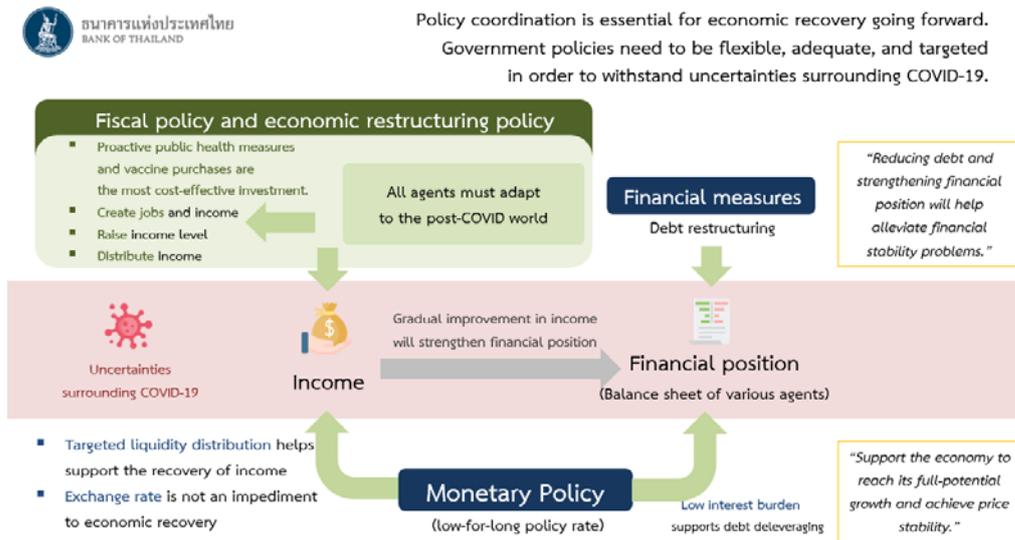
Key ratios		Pre-Covid-19 (end-2019)	Latest (Q3 2020)
Fiscal sustainability	Public debt to GDP ratio (%)	41.2	49.4
Financial institution stability	BIS ratio (%)	19.4	19.4
External stability	Foreign reserves (US\$ billion)	259.0	275.2
	Foreign reserves to short-term external debt (times)	4.3	4.5

Sources: Bank of Thailand and Public Debt Management Office

Policy coordination between fiscal authorities, public agencies and the central bank during this crisis was enhanced without compromising central bank independence. In normal times, the Bank of Thailand (BOT) coordinates with the Thai government and other regulatory agencies to support economic growth and promote stability. For example, the price stability objective is agreed upon in the form of a memorandum of understanding (MOU) regarding the annual and the medium-term inflation target between the Monetary Policy Committee (MPC) and the Ministry of Finance every year. During this crisis, the coordination became more prominent in several ways.

Fiscal policy, monetary policy and financial measures synchronised and complemented each other (Graph 1). These measures supported flows of income and repair of private sector and household balance sheets, which in turn helped to mitigate economic scars and maintain economic resilience. Fiscal policy played a

major role in supporting flows of income. During the pandemic targeted income transfers and various incentive measures helped sustain employment. In the aftermath of the pandemic, government facilitated economic restructuring should provide an uplift the country's productivity in response to the changing environment.



Sources: Bank of Thailand and Public Debt Management Office

Meanwhile, monetary policy provided immediate support to private sector balance sheets via lower interest burdens. Thailand was among the first central banks to lower the policy rate in response to the pandemic. Also, debt restructuring and debt holidays were crucial in repairing balance sheets and facilitating deleveraging. These policies were designed to secure output, price and financial stability objectives. At the same time, to ensure adequate liquidity distribution to firms and households in need, the BOT closely coordinated with government agencies to ensure the credit channel was functioning well. A policy mix of the BOT's soft loan programme in conjunction with the government's credit guarantee scheme helped to ensure that ample liquidity in the financial system could be distributed to those in need, especially to SMEs which tend to face higher credit risks than large corporates. Overall, these policies were holistically designed to secure output, price and financial stability objectives.

## 2. Fiscal deficits, public debt and fiscal sustainability

As fiscal policy plays a crucial role in supporting the flows of income in the economy, the Thai government launched a series of stimulus packages worth approximately THB 2.6 trillion<sup>1</sup> or 15% of GDP. One of these packages was a THB 1 trillion baht Emergency Decree Loan for a public health plan, a financial relief plan and an

<sup>1</sup> This included three phases of stimulus packages approved by the Thai cabinet between March and April 2020 and additional measures launched in the period January–February 2021.

economic restructuring plan which would be expedited as necessary over the period 2020–2021. Another included financial relief measures of approximately THB 400 billion through tax reliefs, financial assistance from the social security fund via direct transfers and a reduction in the required contribution, together with financial support from public utility companies including a reduction of utility bills and refunding meter deposits. The third was a provision of liquidity support totalling THB 1.2 trillion, including a collaboration between the Ministry of Finance, the BOT’s THB 500 billion soft loan programme, the setup of the THB 400 billion corporate bond stabilisation fund (BSF) and the specialised financial institutions’ soft loans and credit guarantee schemes.

The sizable fiscal response was possible because of the strong fiscal position Thailand was in prior to the pandemic. Notably, the fiscal deficit had been lower than 4% of GDP over the past 10 years. The public debt<sup>2</sup> remained well below 60% of GDP over the past decade. As of December 2019, public debt stood at 41.2% of GDP. Thailand’s public debt is subject to minimal risks given: (1) the average remaining time to maturity is approximately 10 years; (2) most public debt is subject to fixed interest rates; and (3) almost all of the public debt is denominated in Thai baht. Almost all foreign currency debt was hedged against foreign exchange risks. Moreover, the management of fiscal policy and positions was further enhanced by the enactment of the Fiscal Responsibility Act, B.E. 2561 (2018), which set up fiscal rules and guidelines to ensure fiscal discipline including more transparent public spending practices and better governance for overall fiscal management.

An example of fiscal rules under the Fiscal Responsibility Act, B.E. 2561 (2018)

Table 2

Fiscal rule		Recent threshold
Public debt	Public debt outstanding*	< 60% of GDP
	Foreign currency debt*	<10% of public debt
	Foreign currency debt service*	<5% of exports of goods and services
	Government debt service*	<35% of government annual revenue
Government expenditure	Principal repayment*	2.5–4.0% of total annual budget
	Capital expenditure	>20% of annual budget and not less than the budget deficit
Quasi-fiscal measures	Outstanding of compensation for expenses/revenue loss*	≤30% of total annual budget

\* These ratios are set by the Fiscal Policy Committee.

Source: Fiscal Responsibility Act, B.E. 2561 (2018) and related notifications issued by the Fiscal Policy Committee

Nevertheless, public debt increased significantly during the Covid-19 crisis. Thailand’s public debt-to-GDP ratio increased from 41.2% in December 2019 to 51.8% in December 2020 and was projected to reach 57.6% by 2022, due to the fiscal stimulus packages and lower government revenue collections.<sup>3</sup>

<sup>2</sup> According to the Public Debt Management Act, B.E. 2548 (2005), public debt means a debt incurred by the Ministry of Finance, a state agency or a state enterprise through the raising of loans or a debt guaranteed by the Ministry of Finance but does not include debts of state enterprises which conduct money lending business, asset management business or credit insurance business where such debt is not guaranteed by the Ministry of Finance, as well as debt incurred by the Bank of Thailand.

<sup>3</sup> According to the medium-term fiscal framework for the fiscal year 2022–2025.

Rising public debt in the short term would not pose a threat to fiscal sustainability in the medium term given a rebound in economic activities after the pandemic ends. The public debt-to-GDP ratio could be stabilised if the economy expands at a faster pace than public debt after the pandemic abates. After the 1997 Asian Financial Crisis, Thailand's public debt-to-GDP ratio declined to 47.5% within three years, down from the peak of 57.8% in fiscal year 2000.<sup>4</sup> This was mainly attributed to a strong rebound in economic activities after the crisis, although the government continued to run budget deficits every year afterward, except for the fiscal years 2005 and 2006 when balanced budgets were introduced.

Going forward, an earlier than warranted fiscal cutback could entail a greater risk of derailing the much needed economic recovery and would be likely to incur larger fiscal costs in the future. This is because other economic engines are not expected to recover rapidly while the economic outlook remains highly uncertain, with a considerable number of downside risks. As such, it is crucial that flexible fiscal policy is continuously put in place and borrowings are effectively spent to alleviate the adverse impacts and prevent economic scars which would potentially put the economy into a prolonged sluggish recovery. If this happens, more stimulus would be needed from the fiscal authorities, which could be far more costly.

Fiscal reforms are indispensable to ensure fiscal sustainability in the long term. Once the outbreak subsides, fiscal policy should have a greater emphasis on economic restructuring, such as upskilling and reskilling of existing labour, and accelerating infrastructure investment. These policies are key to maintaining the productive capacity of the Thai economy. Moreover, the Covid-19 crisis highlighted the importance of having sufficient fiscal space to cushion unprecedented shocks. Once the economy returns to normal, the government should expedite fiscal reforms ensuring that sufficient fiscal space is available by improving the imbalance between government revenue and expenditure. This imbalance between revenue and expenditure would be likely to deteriorate sooner than expected due to the impaired balance sheet of the private sector and rapid transition to an aging society. These developments further require the government to play an important role in improving income distribution and strengthening the social protection system. Fiscal reforms are crucial to ensure fiscal sustainability and provide the government with resources to fulfil its objectives for years to come.

### 3. The need for large-scale asset purchases (LSAPs) in the case of Thailand

In the previous financial crisis, many central banks adopted unconventional monetary policies, including large-scale asset purchases (LSAPs) and yield curve control. In general, such unconventional monetary policies are implemented mainly to provide further accommodation when conventional tools face constraints (eg when the effective lower bound is reached) and to address financial market dysfunction.

Given weaker economic conditions and lower fiscal and monetary policy spaces following the Covid-19 pandemic, some central banks have started to employ LSAPs

<sup>4</sup> World Economic Outlook Database, IMF.

more aggressively and, specifically, adopt direct monetary financing to fund fiscal deficits.

Bond purchases by the BOT are warranted if they are in accordance with fulfilling the price, output and financial stability mandate. Bond buying with the intention of monetary financing is prohibited by law. Since 1999, the BOT has regularly participated in government bond purchases as part of its open market operations to ensure that money market interest rates move consistently with the announced policy rate.

In March 2020, the BOT engaged in government bond purchases to enhance liquidity in the financial markets in response to excessive yield volatility and runs on money market funds. In addition, the BOT established the Mutual Fund Liquidity Facility (MFLF) and the BSF as temporary facilities to provide liquidity for mutual funds through commercial banks and to provide bridge financing to high-quality firms with bonds maturing during 2020–2021 at the higher-than-market rate.

These measures were designed to stabilise the volatile bond market and not to provide further stimulus by lowering long-term yields. Consequently, the outstanding transactions of the MFLF has been zero since the end of November 2020 while the BSF has never been drawn. This indicates that the facilities served their purposes in rebuilding confidence and reducing panic in the financial markets.

For Thailand at this juncture, employing LSAPs to provide further accommodation would not address the uneven liquidity distribution problem and would only provide limited benefits compared with measures that work through the banking system channel. Overall liquidity in the financial system remains ample but the challenge is to channel the liquidity to those who need it most. More than 70% of non-financial corporate debt has been financed through bank credit, while only large corporates have access to the bond market. Thus, LSAPs – which help to lower funding costs by lowering bond yields and inject liquidity into the private sector – would only benefit large corporates who do not have liquidity shortages and could worsen inequality problems. The bond market continues to function well. Bond yields are already low, in line with the low level of the policy rate and the easing global financial conditions. Liquidity distribution is a key challenge for Thailand and measures that reduce credit risks are desirable. A combination of soft loans and credit-guarantee schemes are more relevant in boosting the effectiveness of policy transmission through the credit channel. Furthermore, benefits of an LSAP to emerging market economies may not be as large as in advanced economies; whereas the costs, especially to financial stability in the longer run, may pose larger concerns to policymakers.

Finally, the rising fiscal burden would not constrain monetary policy or affect the BOT's monetary policy operations. The central bank and the fiscal authorities understand the importance of the common goal-integrated mandate to achieve macroeconomic stability. During the Covid-19 crisis, the BOT and the Public Debt Management Office have been collaborating on public sector bond issuance. In particular, the BOT suspended several central bank bond tenors to accommodate government bond issuances, taking into account the government's rising financing needs during the pandemic. This ensures suitable bond supply and minimal effect on market yields.

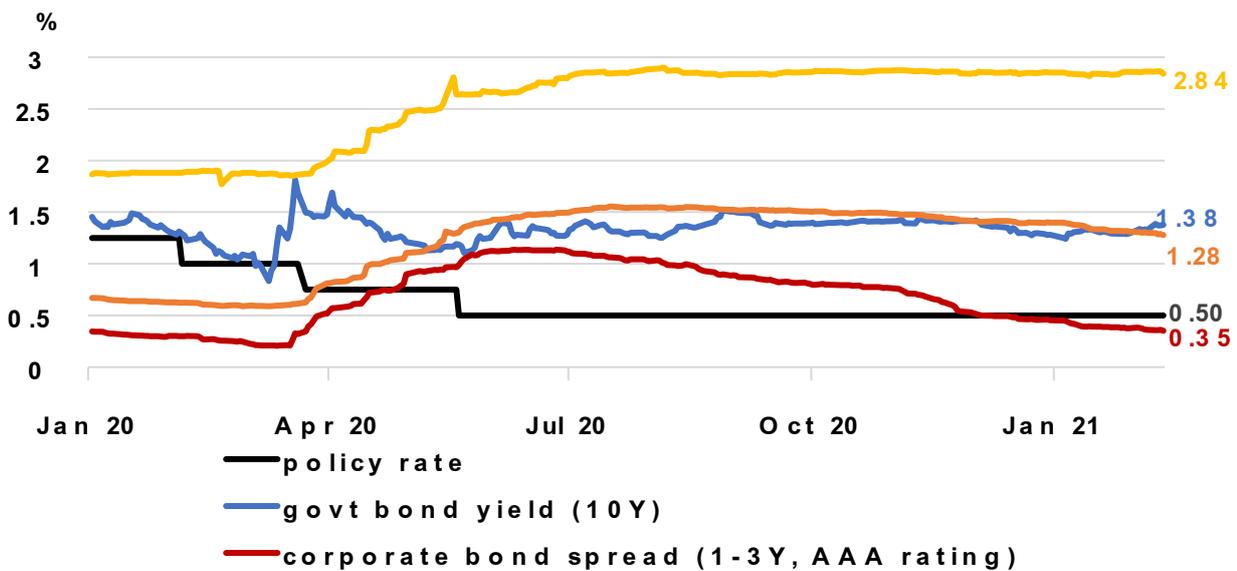
Strong macroeconomic stability prior to the Covid-19 crisis and sound policy coordination between monetary, fiscal and public health authorities enabled Thailand to issue timely policy packages in response to the crisis. This policy coordination has

become more prominent and complementary. Legal provisions and sound macroeconomic performance allowed the BOT to maintain independence.

Amid high uncertainty surrounding the crisis, policymakers saw the importance of scenario planning and policy coordination, where policies need to be flexible to withstand such uncertainties.<sup>5</sup> The monetary and fiscal authorities will continue to work closely to ensure smooth monetary policy normalisation and fiscal consolidation to achieve sustainable growth and restore policy space for any future need.

Bond yields remained low in line with the policy rate

Graph 2



Source: Bank of Thailand, the Thai Bond Market Association (ThaiBMA)

<sup>5</sup> For example, the THB 1 trillion loan decree allows for the reallocation of the budget to cater to different objectives.

## List of Participants

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Central Bank of Argentina	<b>Sergio Adrian Woyecheszen</b> Deputy Governor <b>German David Feldman (B)</b> Deputy General Manager, Economic Research
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