

# CENTRAL BANKING AND CREDIT PROVISION IN EMERGING MARKET ECONOMIES DURING THE COVID-19 CRISIS \*

Luis Felipe Céspedes and José De Gregorio  
Facultad de Economía y Negocios, Universidad de Chile  
April 2021

## Abstract

*During the Global Financial Crisis (GFC), central banks in emerging market economies (EMEs) deployed expansionary monetary policy as well as a wide variety of tools to secure liquidity and ensure the well-functioning of financial markets. During the Covid-19 crisis, central banks in EMEs have been following a similar route, but they have also been implementing new policies to foster credit flows in their economies. Nonconventional financing facilities contingent on being lent to the corporate sector, the relaxation of regulatory limits, credit guarantees, and other forms of public financing have been critical to generate an expansion of credit to the corporate sector in EMEs, a unique feat as they have always experienced strong reductions in credit flows in previous sharp recessions. The countercyclicality of credit, this time, has helped to avoid unnecessary business foreclosures and job losses. The complementarity between fiscal and monetary support has been critical for this result. Nonetheless, it still cannot be ruled out that the success of these policies could be mainly related to the nature of the Covid-19 crisis. Moreover, the weakening of the fiscal positions of EMEs and the pressures that may arise for central banks to enter in areas beyond their mandate may reduce the effectiveness of these policies in the future or in other contexts.*

Keywords: Central banking; conventional and unconventional monetary policy; Covid-19 crisis; credit; emerging market economies.

JEL Classification Nos. E51, E52, E53, E60, F31

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\* Prepared for the CEPR/IMCB e-book on *Monetary Policy and Central Banking in the Covid Era*. We are very grateful to Maurice Obsfeld for comments and Alberto Undurraga for his very valuable assistance.

## 1. Introduction

By the early 2000s, many emerging market economies (EMEs) had already adopted central bank independence, followed inflation target regimes, and implemented more flexible exchange rate regimes. They had also accumulated significant international reserves, mainly to serve as a buffer for international liquidity needs. These developments, as well as strong financial regulation and better fiscal accounts, the products of previous financial crises, allowed EMEs to navigate the 2008–2009 Global Financial Crisis (GFC) by applying strong monetary expansions that prevented the collapse of their domestic economies. The GFC was the first instance in which a significant group of EMEs implemented aggressive countercyclical macroeconomic policies, both monetary and fiscal, to reduce the impact of global financial turmoil on their respective economies.<sup>1</sup> Moreover, despite the deepness of the financial crisis in advanced economies, the financial systems in EMEs were resilient.

The set of tools implemented by many central banks in EMEs during the GFC were unprecedented. In the weeks after the collapse of Lehmann Brothers, the main goal was to secure the proper functioning of domestic financial markets through the provision of liquidity. Thereafter, macroeconomic policy was aimed at supporting aggregate demand in order to contain the effects of the deterioration in terms of trade and external demand and support the recovery. Despite strong monetary actions, only a few EMEs reached the zero-lower bound (ZLB) on the monetary policy interest rate. Nonetheless, several EMEs implemented a set of unconventional monetary policies that were designed to provide liquidity and increase the monetary policy stimulus.

Given the experience of EMEs during the previous crisis, the monetary policy response to the Covid-19 crisis has been aggressive, in terms of both conventional and unconventional monetary policy.<sup>2</sup> Nonetheless, the mix of unconventional policies has been different across EMEs in the Covid-19 crisis.

Beginning in early 2020, the Covid-19 crisis produced a massive economic collapse around the world. Lockdowns and other social distancing measures halted activity in many sectors; and, as a consequence, many firms and households saw their incomes severely reduced. Initially, a central objective of monetary policy was to alleviate financial conditions to allow credit to flow to firms in distress rather than stimulating aggregate demand. Without credit, many businesses would not have been able to meet their financial commitments resulting in considerable business closures as well as significant and permanent job losses. Conventional monetary policy had less traction during the early stages of the Covid-19 crisis for two main reasons: interest rates were

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<sup>1</sup> See Vegh and Vuletin (2012) for the case of monetary policy. Alvarez and De Gregorio (2013) discuss the changes in macroeconomic policies between the Asian crisis and the GFC, specifically the expansionary role of monetary policy.

<sup>2</sup> See Borio and Zabai (2016) and Gertler and Kiyotaki (2011) for a taxonomy of monetary policy measures.

lower before the onset of this crisis than they were before the GFC, and most firms were constrained by the available quantity of loans rather than loan price.<sup>3</sup> In this context, nonconventional measures implemented by central banks to foster credit and the support of governments, through direct lending to firms or the provision of credit guarantees, were called into action to prevent permanent damage to productive capacity.

When considering the Covid-19 crisis and the GFC from an EME perspective, there is a common element with respect to their origins: both crises have been exogenous shocks. And, crucially, in both cases, the role of financial markets has emerged as a key element of the policy response. As previously noted, the initial monetary policy response to the GFC in EMEs was oriented towards mitigating financial market disruptions associated with the significant increase in domestic rates and spreads, due to the tightening in global financial conditions and an increase in uncertainty. Later, monetary policy was oriented towards providing additional monetary policy stimulus.

During the Covid-19 crisis, the monetary policy response has been aimed at facilitating refinancing and the provision of new credit to firms in the real sector. The response has therefore been more intensively oriented towards credit policy rather than liquidity injections and forward guidance on the balance sheet, which was the focus of the response to the GFC. Notably, the nature of the fiscal policy and prudential regulation has also differed.

The sample of EMEs we use in our analysis is based on the classification from the Fiscal Monitor, prepared by the International Monetary Fund, and is presented in the Appendix. One salient feature of this sample is that, during the Covid-19 crisis, credit to nonfinancial companies has exhibited countercyclical behavior, which was not the case during the GFC. Figure 1 shows the evolution of credit to nonfinancial corporations for a group of EMEs during the Covid-19 crisis and the GFC, respectively. The evolution of credit corresponds to the percentage difference between real effective loans to nonfinancial corporations, deflated by CPI, with respect to the previous trajectory.<sup>4</sup>

The countercyclical behavior of credit during the Covid-19 crisis has been crucial to avoiding larger permanent losses in productive capacity in EMEs. Some central banks in EMEs have indicated that the trajectory of credit to nonfinancial firms has been the result of the unconventional policies implemented. From the perspective of future monetary policy, it is important to understand how the context—that is, the mix of conventional and unconventional monetary policy and the interaction of this policy with fiscal and regulatory policy—may have generated this outcome.

The purpose of this paper is to review policies implemented by central banks in EMEs during the Covid-19 crisis. We frame our investigation by using a comparison with the reaction of central banks in EMEs to the GFC. We find that conventional monetary policy has been somewhat less

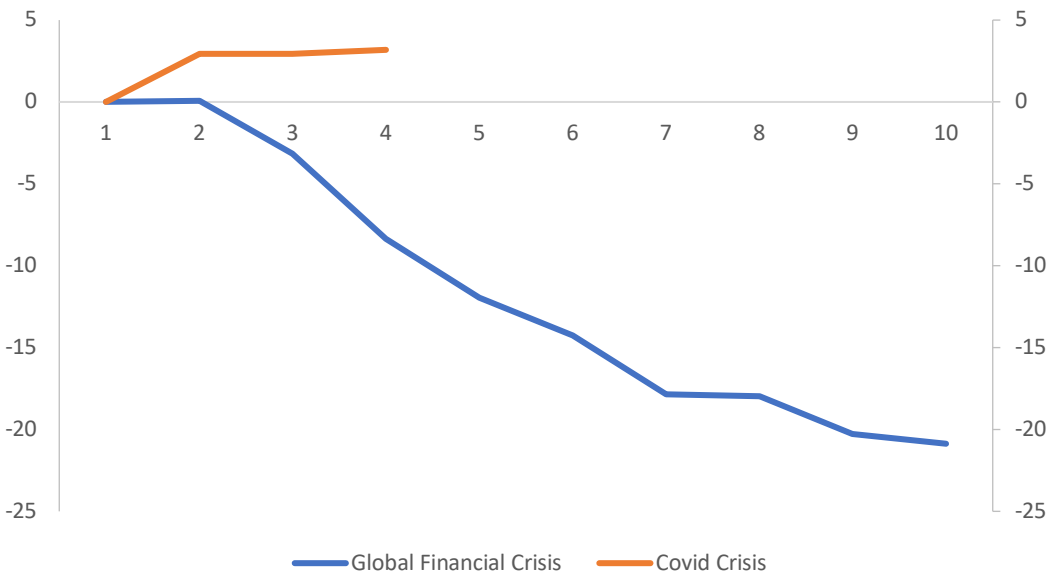
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<sup>3</sup> See Céspedes, Chang and Velasco (2020).

<sup>4</sup> Previous trajectory is computed using the rate of growth that loans exhibited, on average, in the three quarters preceding the crisis. Period one corresponds to the quarter where the initial policy actions were implemented.

strong in the Covid-19 crisis; nonetheless, we also observe massive nonconventional monetary and fiscal policies to ensure the flow of credit to the corporate sector: a critical difference compared to the GFC. It is premature to assume, however, that these types of policies can generate similar effects in different contexts. Moreover, the success of these policies generates significant challenges for the future conduction of monetary policy and its interaction with fiscal policy. In the next section, we characterize the conventional monetary policy response during the Covid-19 crisis and how it differs from the response to the GFC. In section 3 we document the unconventional policy response. We then present the fiscal policies used to support credit in section 4. And, finally, we provide some conclusions in section 5.

Figure 1. Credit in EMEs



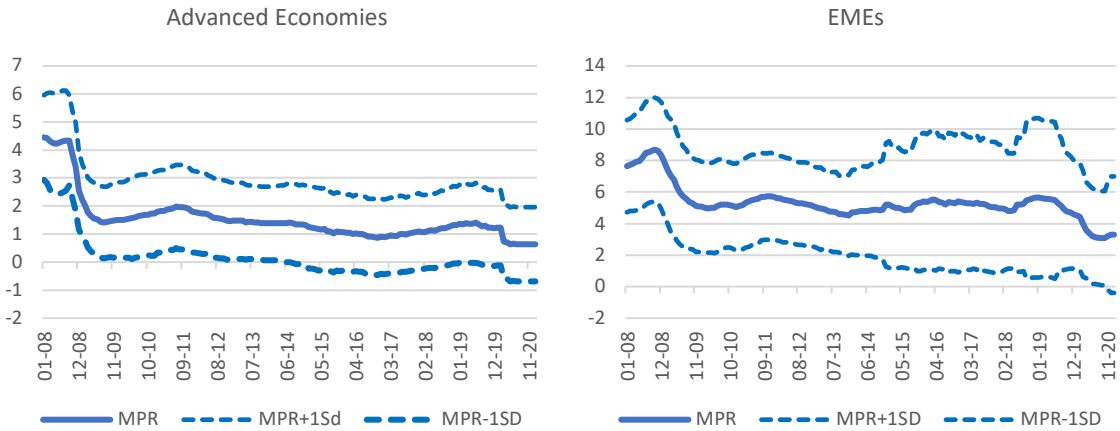
Source: Data constructed from national central banks. Quarterly data, normalized at 100 in Dec. 2008 and Sept. 2019 for the GFC and the Covid-19 crisis, respectively.

## 2. Conventional monetary policy

Central banks in EMEs implemented significant reductions in their monetary policy rates between March 2020 and July 2020. When compared to monetary policy rate reductions during the GFC, the reductions due to the Covid-19 crisis were faster but not larger (see Figure 2). Indeed, during the GFC, it took months for central banks to implement interest rate cuts. Although the peak of the crisis came in September 2008 with the collapse of Lehman Brothers, interest rate cuts only began at the end of that year and early 2009. This may be explained by the differing cyclical conditions faced by EMEs just before the two respective crises. Inflation rates were significantly higher in September 2008 (see Figure 3), on average, in 2008 inflation stood at 8.5%, due to a large extent to high commodity prices, which initially led central banks in EMEs to concentrate on securing liquidity provision before starting a rate cut cycle. Before the Covid-19 crisis, inflation rates were close to their target values; in 2019, the average inflation rate for EMEs was 2.9%. This

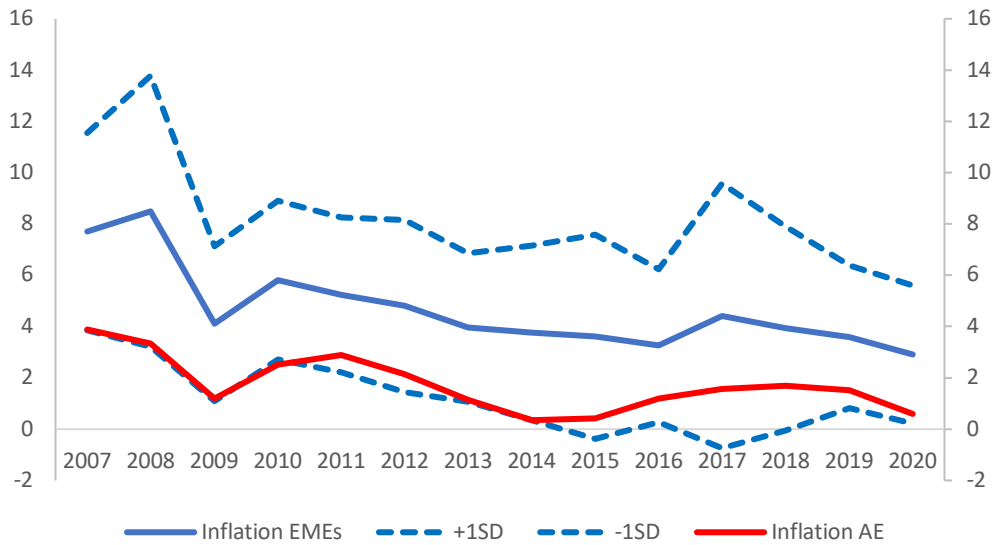
precipitated an almost immediate cut in rates by EME central banks, beginning between March and April 2020.

Figure 2. Monetary Policy Rates



Source: Bloomberg.

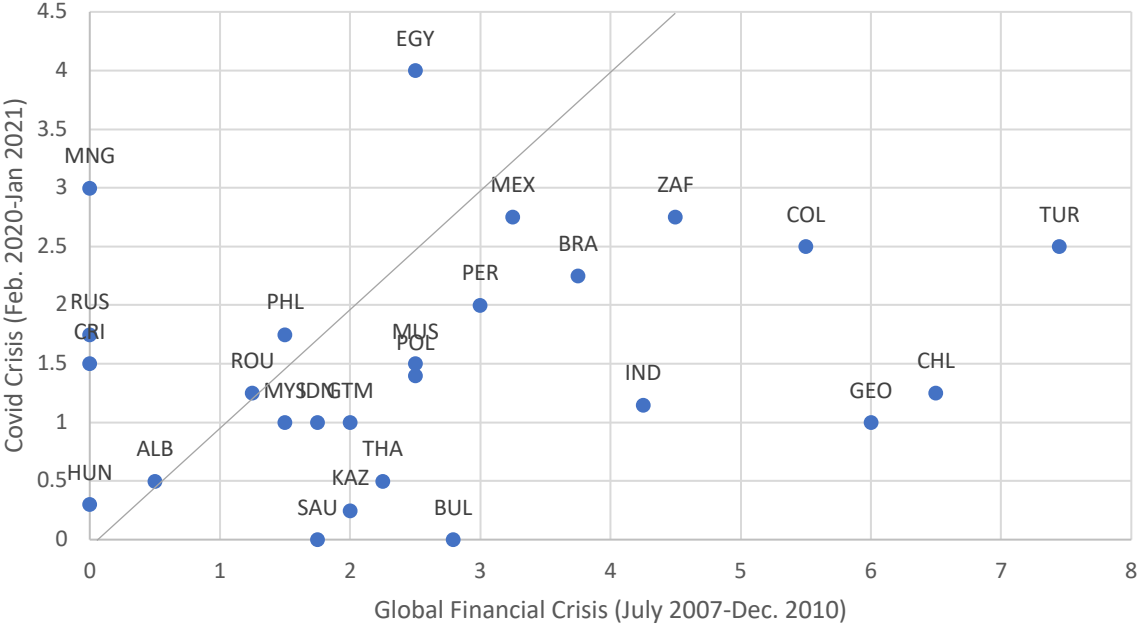
Figure 3. Inflation  
(12-month end of year, percent)



Source: IMF, WEO database.

Nonetheless, because monetary policy rates were already low before the Covid-19 crisis, the magnitude of the cuts has been lower than during the GFC. As Figure 2 shows, in advanced economies the sharp reduction in rates has not been repeated, mainly because rates were already close to the ZLB when the Covid-19 crisis began. In EMEs, monetary policy rates are still, on average, away from the ZLB; however, the rate reduction has been less than what was implemented during the GFC. Indeed, rates fell from an average of 8.6% at their peak in November 2008 to 5% at their lower level in February 2010. In contrast, from a maximum of 5.6% in January 2019 rates fell to a minimum of 3.1% in August 2020. As can be seen in Figure 2, interest rates started falling before the Covid-19 crisis erupted. In February 2020, the average monetary policy rate for EMEs was 4.5%, so the Covid-19 crisis rate cut was only 140 basis points (bp) compared to 360bp in a period of the same length during the GFC. Figure 4 shows there is heterogeneity across countries; however, most countries made larger cuts during the GFC.<sup>5</sup>

Figure 4. Change in Monetary Policy Rates in EMEs (percent)



Source: Bloomberg.

Since the GFC, monetary policy frameworks in many EMEs have evidently become more robust. The implementation of monetary policy is more effective if the policy actions are well understood by the public, as these actions operate through the expectations of public agents. It is also true that the Covid-19 crisis generated a global cut in interest rates which mitigated the pressure on

<sup>5</sup> The GFC represents a longer period than that of the Covid-19 crisis. However, making the period the same length does not change the conclusions because most of the cuts took place during the first half of 2009.

exchange rate depreciation in EMEs, depreciation that on other occasions has been blamed as a limiting factor for the countercyclicality of monetary policy due to currency mismatches and high pass-through from depreciation to inflation.

### **3. Unconventional monetary policy**

During the GFC, many countries implemented unconventional monetary policies. In EMEs, unconventional monetary policies were initially oriented towards providing international and domestic liquidity to financial markets and later to increase the monetary policy stimulus. In all cases, except for Chile and Saudi Arabia, monetary policy rates did not reach the ZLB. We have seen this course of action repeated in the Covid-19 crisis, unconventional monetary policies have been aggressively implemented from the beginning with the objective of generating a flow of credit to firms in distress.

Unconventional policies have a clear connection to the size of central bank balance sheets. In order to analyze the extent of the monetary policy stimulus, commonly known as quantitative easing, across countries, we compute the changes in central bank assets as share of GDP, normalized by 2008 for the GFC and 2019 for the Covid-19 crisis.

The evidence is shown in Figure 5. Only in major advanced economies (the euro area, Japan and the U.S.) was the expansion of central bank balances higher during the Covid-19 crisis. These economies increased central bank assets by between 15% and 23% of GDP. In the advanced economies, except for Norway and Switzerland, there were no major expansions in central bank balance sheets during the Covid-19 crisis. In EMEs, the increase in central bank assets was similar in both crises, although during the Covid-19 crisis there was less heterogeneity and most countries increased their assets. In the cases of Chile and Mauritius the expansion was sizable, representing 25% and 14% of GDP, respectively. One main difference between the GFC and the Covid-19 crisis with respect to balance sheet expansion is the types of unconventional policies implemented. In what follows we will review these different types of unconventional policies.

#### ***Foreign exchange market interventions***

The GFC and the Covid-19 crisis had different origins, and they have produced different outcomes. During the GFC there were significant exchange rate depreciations in EMEs, and they were lasting. In the Covid-19 crisis, the depreciations have been much smaller, and shorter in duration, as shown in Figure 6.

The GFC triggered a flight to safety, which caused a sharp depreciation in the currencies of EMEs, a tightening of external financial conditions, and a significant spike in risk premia (see Figures 6 and 7). The Covid-19 crisis, however, is global and did not involve initial global financial market dislocations. For these reasons, depreciations have been milder and the widening of spreads more limited.

Figure 5. Central Bank Assets  
(percentage change, as share of GDP)



Source: Bloomberg.

Note: The GDP for 2008 and 2019 are used to scale central bank assets in the GFC and the Covid-19 crisis, respectively. For the GFC, the period is July 2008 to December 2010. For the Covid-19 crisis, the period is February 2020 to January 2021.

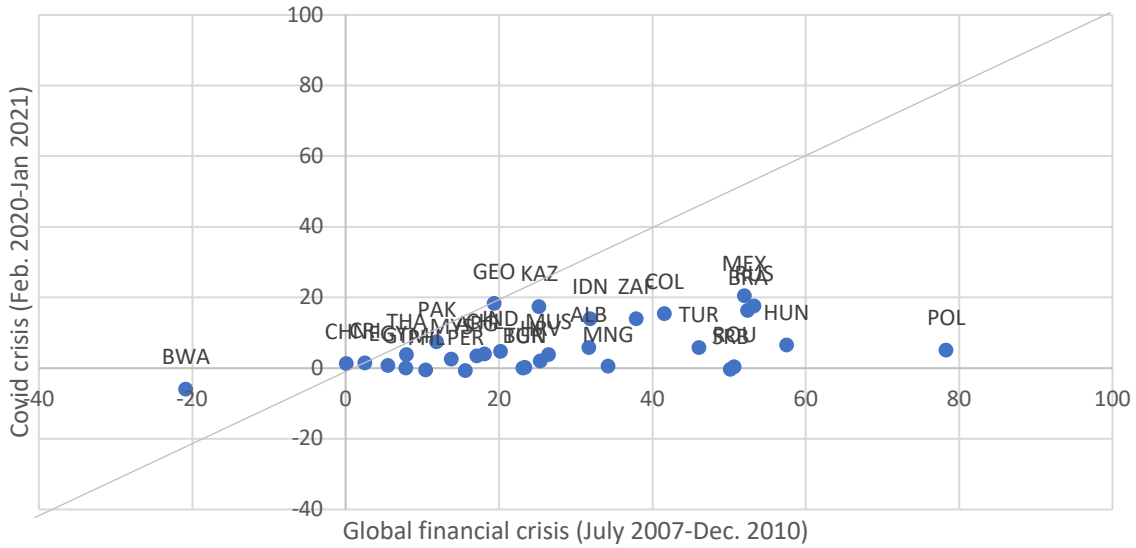
In both crises, EME central banks intervened early on to stem the currency pressures by injecting international liquidity into financial markets. In Figure 8a, we show the maximum decline in reserves for the period between the beginning of each crisis (July 2008 for the GFC and February 2020 for the Covid-19 crisis) and the date the reserves reached their minimum. In our sample of EMEs, the decline during the GFC was about 15%, whereas for the Covid-19 crisis it was about 5%. Towards the end of our sample periods (December 2010 for the GFC and January 2021 for the Covid-19 crisis), central banks had accumulated reserves above the initial levels, as shown in Figure 8b. Uncertainty regarding the evolution of the pandemic and future global financial conditions may explain this accumulation of international reserves.<sup>6</sup>

One has to be cautious when interpreting the evolution of reserves because they may also respond to valuation changes. This is discussed in Dominguez et al. (2012) where the authors show that despite valuation changes there was active reserve management during the GFC. Valuation changes may have also been important during the Covid-19 crisis, as the U.S. dollar in its broad measure had weakened by about 10% between March 2020 and early 2021.

<sup>6</sup> Céspedes and Chang (2020) develop a model in which it is optimal for the central bank to accumulate international reserves when facing an increase in uncertainty regarding future global financial conditions. The accumulation of reserves allows the central bank to provide international liquidity to domestic markets in case a crisis occurs.



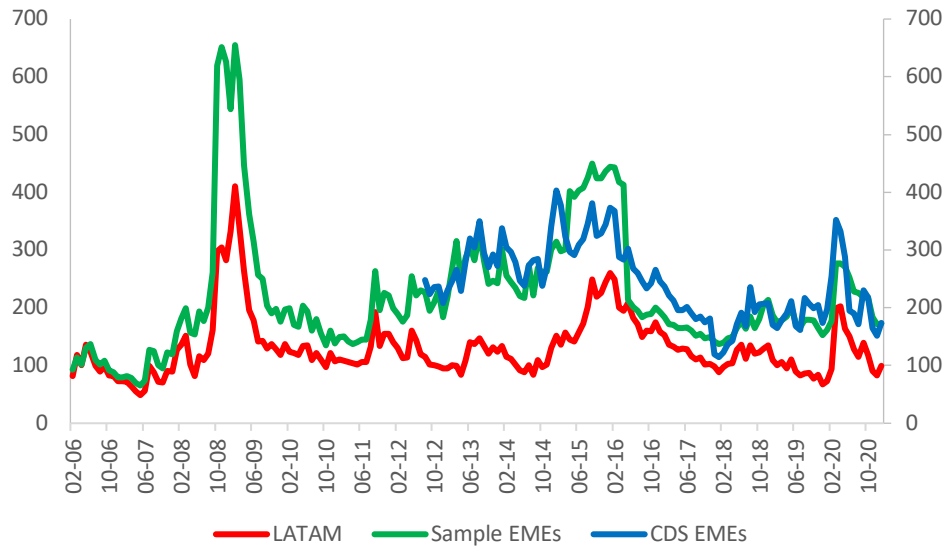
Figure 6. Exchange rates in EMEs  
(percentage change)



Source: Bloomberg.

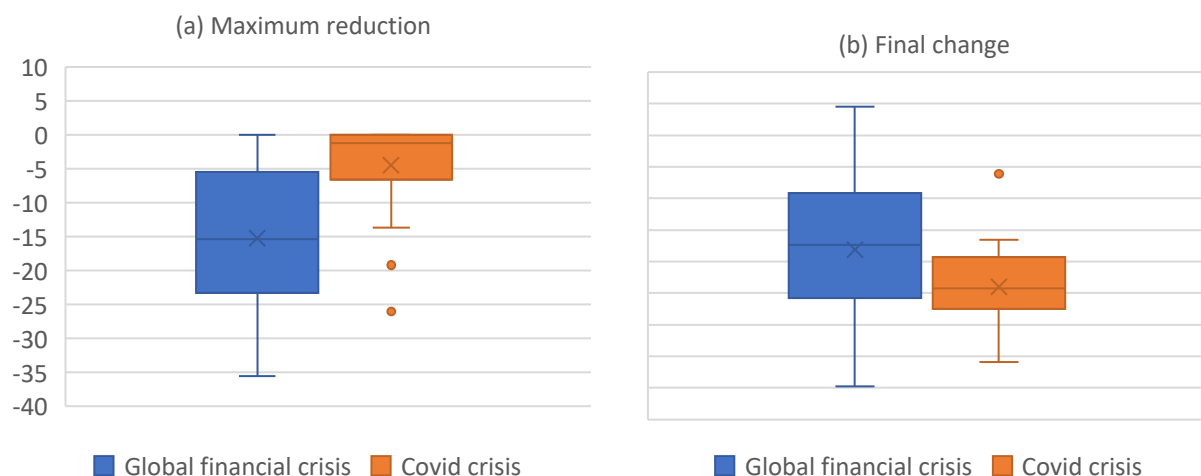
Note: This figure considers the period of maximum depreciation across EMEs during both crises. For the GFC the period is July 2008 to February 2009, and for the Covid-19 crisis the period is February 2020 to March 2020.

Figure 7. CDS Emerging Market Economies  
(basis points)



Source: Bloomberg. The CDS EMEs correspond to the Markit CDX 5y, and LATAM as well as Sample EMEs are the countries of Latin America and emerging market economies, respectively, from our sample shown in the appendix.

Figure 8. Central Bank Reserves  
(percentage change, as share of GDP)



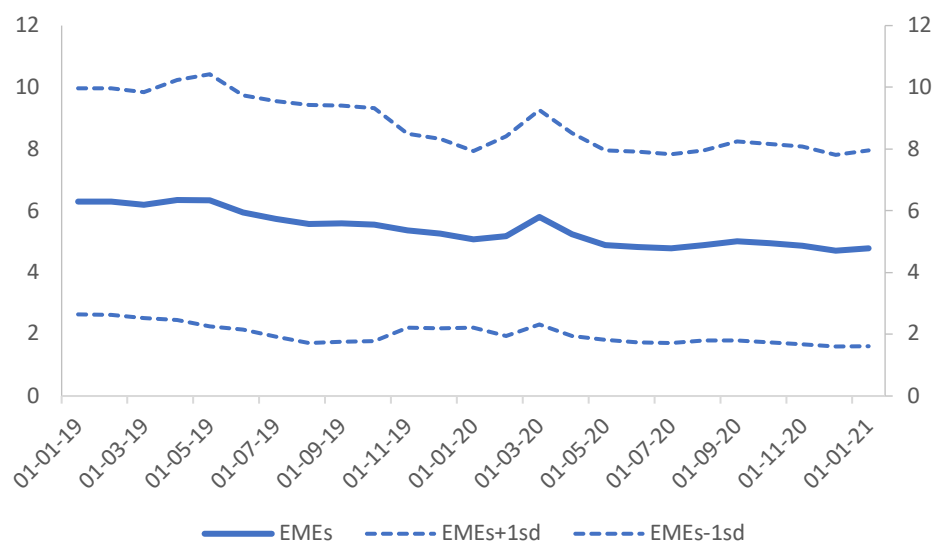
Source: IMF.

In summary, in both crises the financial systems in EMEs were able to cope with the weakening of the currencies and, in particular, with the increase in risk premia. Having said that, the policy of injecting international liquidity into financial markets was more predominant during the GFC, as the increase in risk premia was significantly higher than it has been during the Covid-19 crisis.

### ***Domestic liquidity injections***

The initial Covid-19 shock put pressure on domestic bond markets. Global risk aversion generated the withdrawal of investment from some EMEs that increased local currency bond yields (see Figure 9). Central banks in EMEs responded by providing additional liquidity lines, extending existing facilities or generating new ones, and by expanding eligible collateral for repo operations. From government bonds and bank debt, several central banks also allowed corporate debt as collateral. In some cases, central banks in EMEs implemented local currency bond purchase programs. And in most of those cases, the central banks intervened by purchasing local currency sovereign bonds in secondary markets. In other cases, they intervened in mortgage and bank bond markets. The situation was so severe that even changes in the legal framework were implemented to deal with the Covid-19 crisis. In the case of Chile, the country's central bank was legally not allowed to buy government bonds in secondary markets. A constitutional amendment was passed to allow the Central Bank of Chile to do so.

Figure 9. Sovereign Bond Yields in EMEs  
(percent)



Source: Bloomberg.

It is important to distinguish these (traditional) liquidity injections from the types of liquidity facilities discussed in Gertler and Kiyotaki (2011), which were intensively implemented in advanced economies during the GFC in the context of credit policy. As we discuss later in this paper, central banks in EMEs also implemented liquidity facilities of this type during the Covid-19 crisis, but not during the GFC. The intention of the traditional liquidity injections discussed in this section was to address market dislocation arising from investor risk aversion. And, as can be seen in Figure 9, they were effective in reducing bond yields.<sup>7</sup>

### ***Credit policies***

Although central banks in developed economies had ample experience with credit policies during the GFC, previous to the Covid-19 crisis central banks in EMEs had limited their use of unconventional policy tools to liquidity injections of the type discussed above—that is, to the provision of liquidity not directly connected to the provision of credit by financial intermediaries to businesses. However, the Covid-19 scenario has seen a change in their approach and many EME central banks have implemented credit policies aimed at supporting the flow of funding to businesses.

<sup>7</sup> See Arslan, Drehmann and Hofmann (2020) for details.

Central banks in EMEs offered term funding facilities for banks, in some cases subject to increasing credit, refinancing programs, or loan guarantee schemes. Additionally, in some cases corporate asset purchase programs were established. The magnitude of these operations has been significant. In Chile, the special credit line available to domestic banks, conditional on the provision of new loans by private banks to firms, can reach up to 14% of GDP.

As shown in Figure 1, the expansion of credit to nonfinancial corporations has been quite remarkable during the Covid-19 crisis as compared to the GFC, particularly in a context of a significant decrease in economic activity. In the second quarter of 2020, quarterly GDP in EMEs fell almost 13% in annual terms. Compare this to the GFC scenario where, when considering only the worst quarter in terms of year-on-year GDP growth for our sample of EMEs, for the period between the fourth quarter of 2008 and the fourth quarter of 2009, quarterly GDP only fell by 4%.

It would be reasonable to think that the credit policies implemented by EME central banks play a crucial role in explaining the dynamics of credit to firms. But it is also important to take into account that these actions were complemented by or were a complement to other policies implemented by governments (such as direct lending to firms and loan guarantee schemes) and by regulatory authorities (such as changes to prudential regulation oriented towards increasing the capacity of banks to lend). In the next section, we discuss the fiscal policy side of the Covid-19 macroeconomic interventions to support credit.

#### **4. Fiscal support for the expansion of credit and regulatory changes**

In order to contain the effects of the Covid-19 crisis, fiscal authorities have used a wide range of instruments including credit guarantees, public loans, tax deferrals, and subsidies to payroll. Out of the 34 EMEs in our sample at least 24 implemented credit guarantees, particularly for small- and medium-sized enterprises. Fiscal authorities also used direct credit from public institutions and banks.<sup>8</sup>

Indeed, as we illustrate in Figure 10 using two indicators, on average, fiscal policy during the Covid-19 crisis was more aggressive in terms of fiscal expansions than it was during the GFC. The increase in the cyclically adjusted primary balance is displayed in panel (a); and the increase in government expenditure as share of GDP is shown in panel (b). In both cases, we compare the periods 2008–2009 and 2019–2020. On average, the cyclically adjusted deficit increased by 1.5% of GDP during the GFC, whereas this increase was 3.8% of GDP during the Covid-19 crisis. Similarly, government expenditure increased by 1.6% and 3.7% of GDP during the GFC and the Covid-19 crises, respectively. Other indicators also show the greater expansiveness of fiscal policy

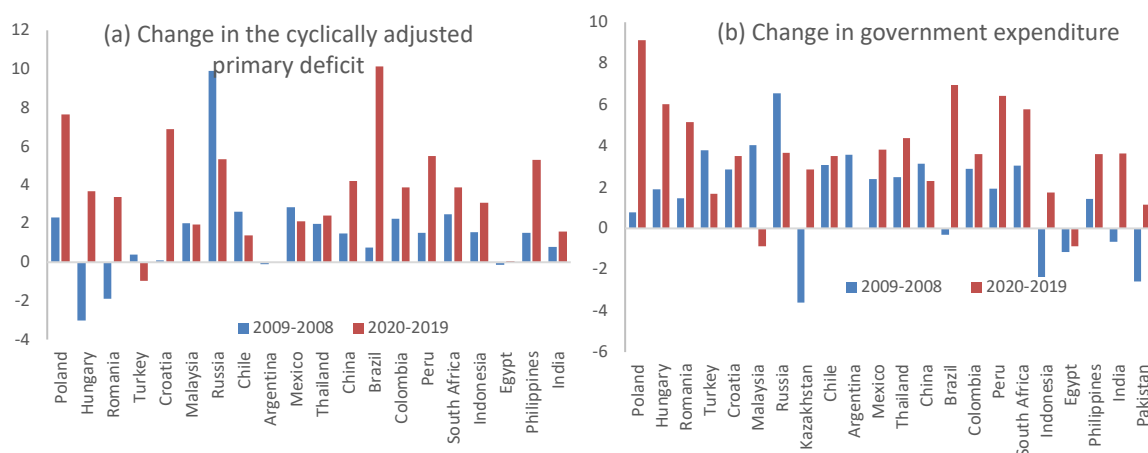
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<sup>8</sup> For details see the IMF review of policy response to Covid-19 crisis (<https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19>). In the data that follows we exclude Saudi Arabia and United Arab Emirates because their extreme reliance on oil represents outliers in terms of fiscal performance.

during the Covid-19 crisis: net debt increased by 9.9% of GDP as compared to 4% of GDP during the GFC.<sup>9</sup>

Another crucial policy dimension aimed at stimulating the flow of credit to firms during the Covid-19 crisis has been the regulatory adjustments made by supervisory agencies or central banks. The reduction of reserve requirements, changing risk weights, broadening the range of institutions to receive liquidity support, and reducing conservation capital were among the principal tools used by regulators. The aim of these tools has not only been to prevent liquidity crunches but also to foster the expansion of credit to nonfinancial corporations.

Figure 10. Fiscal policy  
(percent of GDP)



Source: IMF Fiscal Monitor.

## 5. Future challenges for monetary policy implementation

The flow of credit to nonfinancial firms during the initial stages of the Covid-19 crisis has been quite remarkable. It has been a critical element that has prevented further business closures and the destruction of productive capacity. A clear understanding of the differences between the Covid-19 crisis and the GFC in terms of the effectiveness of the policies implemented to sustain credit flow is quite relevant from a policy-making perspective. And, although a more empirical and theoretical analysis must be developed in order to provide more conclusive evidence, the discussion of some elements may give us an indication about why credit behaved differently during the Covid-19 crisis as compared to the GFC.

The shock created by the Covid-19 pandemic was truly exogenous and global. And the aggressive monetary policy response to the crisis in major advanced economies generated the space for more expansive monetary policy implementation in EMEs. On previous occasions, monetary

<sup>9</sup> All fiscal data are taken from the IMF fiscal monitor database published in October 2020.

policy responses in some EMEs have been limited by concerns that sudden exchange rate depreciations may generate significant financial turmoil.

Additionally, as discussed by García (2021), central bank concerns regarding moral hazard issues were limited at the onset of the Covid-19 crisis. The critical question, however, is whether the policy response to this crisis will change the perception of market participants regarding future monetary policy actions in related contexts. We think that this should not be a major concern for now, but that perceptions could change depending on the response of the authorities to a potentially negative scenario in terms of loan performance.

The provision of domestic liquidity related to the Covid-19 crisis has been massive. And, as Calvo (2010) argues, liquidity shocks could trigger a sudden stop in credit provision that may generate significant output losses. Thus, avoiding liquidity crunches may be a necessary condition to avoid credit crunches. Nonetheless, liquidity provision may not be a sufficient condition to avoid sharp contractions in credit flows. Liquidity provision was massive in the GFC, but credit flows were still much lower than during the Covid-19 crisis, as we have indicated in this paper.

A crucial difference between the Covid-19 crisis and the GFC was the specific context for financial intermediaries. It was certainly to the benefit of private banks to postpone any liquidation of clients. The shock was massive: liquidating clients could have been devastating in terms of capital needs and also in terms of the liquidation of solvent clients affected by a liquidity shock. In addition, regulatory adjustments allowed banks to provide refinancing and additional credit with significantly lower capital requirements.

The set of complementary fiscal policy actions also differed between the two respective crises. Fiscal support to firms during the Covid-19 crisis, in the form of loan guarantees, capital injections, liquidity injections (through a reduction in taxes and a postponement in the payment of taxes) and measures oriented towards supporting wage bills, significantly helped to avoid balance sheet deterioration for businesses, an actuality that would have made firms ineligible for credit.

Overall, we think that the coordination and complementarity of policy actions must be praised as crucial components of the policy response. Transparency and the clear definition of objectives were also key elements in this regard. The fact that no significant imbalances were present at the time the Covid-19 shock hit the economy was also quite beneficial for policy actions. And it is clear that a sound monetary policy framework has been a crucial foundation for many EMEs during the Covid-19 crisis.

Yet, it is also important to recognize that all the necessary activism on the macroeconomic policy side has increased the vulnerability of EMEs. One facet of this vulnerability stems from the fact that businesses operating in EMEs will find themselves with higher levels of debt when the Covid-19 crisis comes to an end. Moreover, sudden changes in financial conditions could trigger episodes of financial fragility that may generate disruption in the provision of credit, bringing

about an irrecoverable scenario for some companies. In this context, a relatively more rapid recovery of the U.S. economy is a potential risk for some EMEs.

Another facet of EMEs vulnerability is on the fiscal front. At the beginning of the GFC, the fiscal position of EMEs was much stronger than it was in 2019: most commodity exporters, for example, had been taking advantage of a significant commodity price boom. However, increases in government expenditure to mitigate the effects of the GFC were not completely undone after the crisis, generating fiscal inertia and a persistent deterioration in public finances (De Gregorio, 2014). Despite this deterioration in fiscal dynamics, EMEs had fiscal space to respond to the Covid crisis. And they used it. Fiscal policy was central to keeping firms afloat and providing the population with compensation for partial income loss. But despite the fact that borrowing rates are about 220bp lower today than they were 10 years ago, which is good news for servicing the debt, the fiscal positions of EMEs have become more vulnerable to increases in interest rates and the curtailment of financing than they were during the exit from the GFC. Issues relating to fiscal sustainability will become relevant if EMEs are not able to withdraw the exceptional fiscal expansions that are in place.

Central banks in many EMEs have been operating in uncharted territories during the Covid-19 crisis in terms of policies to foster credit. The creation of new financing lines to the banking system to support the corporate sector has been broadly used, for example. The expansion of eligible collateral to include corporate bonds has brought some credit risk to EME central bank balance sheets, but it has also broadened liquidity lines. These policies have been implemented under exceptional circumstances, and their goal has been to foster the provision of credit. With the support of fiscal policy this has been achieved at the aggregate level; however, there has been heterogeneity in the effectiveness of these policies in terms of credit provision given the different impacts that the Covid-19 crisis has had in economic sectors and in firms. Limiting the amplification of the credit cycle, through changes in regulation and by providing special financing lines to the financial system, is a positive lesson that can be taken from the Covid-19 crisis.

In the future, there is a possibility that central banks may come under some pressure to implement these kinds of measures in the context of a more moderate economic slowdown. And their implementation could be conceivable as long as the policies are consistent with reducing the cost of the business cycle. However, taking credit risk onto central bank balance sheets may undermine the independence of monetary policy. Moreover, as the support of credit is mainly a fiscal policy tool, the principal policy to maintain credit should be fiscal. Of course, in the future this policy may be more difficult to implement as public finances will be much weaker after the Covid-19 crisis has come to an end. Regulatory measures may help, if they are used in a countercyclical way and without jeopardizing the stability of the financial system. Central banks have to remain focused on price and financial stability while maintaining the necessary flexibility to adapt to new circumstances.

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Appendix.

Table A1. Emerging Market Economies in each figure

Country \ Figure	1	2	3	4	5	6	7	8	9	10a	10b
Albania		✓	✓	✓	✓	✓					
Argentina			✓			✓	✓	✓		✓	✓
Botswana			✓		✓	✓					
Brazil	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Bulgaria	✓	✓	✓	✓		✓	✓	✓	✓		
Chile	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
China			✓		✓	✓	✓		✓	✓	✓
Colombia	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Costa Rica	✓	✓	✓	✓	✓	✓	✓		✓		
Croatia			✓			✓	✓	✓		✓	✓
Egypt	✓	✓	✓	✓		✓	✓			✓	✓
Georgia		✓	✓	✓	✓	✓		✓			
Guatemala		✓	✓	✓	✓	✓	✓	✓			
Hungary	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
India	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Indonesia	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Kazakhstan		✓	✓	✓	✓	✓	✓	✓			✓
Malaysia	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mauritius		✓	✓	✓	✓	✓		✓			
Mexico	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mongolia	✓	✓	✓	✓		✓	✓	✓			
Pakistan			✓		✓	✓	✓		✓		✓
Peru	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
Philippines		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Poland	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
Romania	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Russia	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Saudi Arabia	✓	✓	✓	✓			✓				
Serbia			✓		✓	✓	✓				
South Africa		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Thailand	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Tunisia			✓			✓	✓				
Turkey		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
United Arab Emirates			✓				✓				

Table A2. Advanced economies in each figure

Country \ Figure	2	3	5
Australia	✓	✓	✓
Austria		✓	
Belgium		✓	
Canada	✓	✓	
Cyprus		✓	
Czech Republic	✓	✓	
Denmark	✓	✓	✓
Estonia		✓	
Euro Area	✓		✓
Finland		✓	
France		✓	
Germany		✓	
Greece		✓	
Hong Kong SAR		✓	
Iceland		✓	✓
Ireland		✓	
Israel	✓	✓	✓
Italy		✓	
Japan		✓	✓
Korea	✓	✓	✓
Latvia		✓	
Lithuania		✓	
Luxembourg		✓	
Netherlands		✓	
New Zealand	✓	✓	
Norway	✓	✓	✓
Portugal		✓	
Singapore	✓	✓	
Slovak Republic	✓	✓	
Slovenia	✓	✓	✓
Spain		✓	
Sweden	✓	✓	✓
Switzerland	✓	✓	✓
United Kingdom	✓	✓	
United States	✓	✓	✓