

Covid crisis: Fiscal, monetary and macro-financial policy responses

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Abstract. *The ongoing COVID-19 pandemic in the world is deepening a profound impact and economic uncertainty. In essence, lockdown and social distancing measures are triggering losses in global production, supply, trades, investments, and employment. This article, to counteract the economic losses and macroeconomic uncertainty, explores the policy evolution of macroeconomic effects during the COVID-19 pandemic. It has communicated different policy responses addressing the potential economic damages in the G-7 countries and 24 emerging market economies (EMEs). The article also illustrates the lockdown and regulatory implications and dynamic economic interventions mandated by the governments, monetary authorities, and central banks. The study demonstrates the potential impact of fiscal, monetary, and macro-financial policy measures on the economic losses caused by regulatory and quarantine measures. Monetary authorities and central banks have lowered the policy rates like repurchase agreement rate (repo), reverse repo, cash reserve requirement (CRR) to ease the liquidity supplies to the economy. Central banks also offered credit facilities to cater to the demand for loans and advances. The study finds that G-7 economies and emerging market economies have implemented a comprehensive fast-track fiscal, monetary, and macro-financial policy to counteract the pandemic's negative economic consequences. The policy measures include the fiscal stimulus package, direct spending, loans, and credit facilities, refinancing schemes, swap agreement, discount loan window, tax cut on credit, short term loan extension, bridge finance, policy rate cuts, bond purchase, SMEs financing. These policy measures, if implemented successfully, are predicted to minimize the impact of the crisis and to stabilize the economies.*

Keywords: COVID crisis; macroeconomic; impacts; policy; G-7; emerging economies.

JEL Classification: B22, E2, E6.

Introduction

The world is now undergoing a wave of economic pathogens released by the crisis from COVID-19, severing the interdependent world economy. The virus outbreak emerged in Wuhan, China, in December of 2019 and persists globally now. The novel pandemic outbreak of coronavirus has been taking its toll on human lives and the economies. The extensive spread has become catastrophic to the global economy, inflicting severe damage to the global production and supply chain. The virus-containment measures have dismantled the economic activity across the globe. The quarantining measures necessary to contain the virus have triggered an economic downturn affecting global production and supply, international trade, FDI flows, international financial markets, and international tourism and travels. To lower the transmission rate of COVID-19 and to decrease the liability on healthcare systems, almost all governments have implemented a wide range of strict public healthcare and quarantine measures including school and factory closures, travel restrictions, and city lockdowns (Atkeson, 2020). Consequently, the economies started experiencing a sharp downturn. The world's largest economies (G7 and China) are among the ones that have been most affected by the Pandemic (Baldwin and Weder di Mauro, 2020). However, the economic consequences of the pandemic will have varying impacts depending on several factors, containing the direct impacts of quarantine measures to limit the spread, the required duration of the lockdown measures, and the degree of intensity at which the direct economic effects amplify and persist.

There are three transmission measures for the pandemic that will hit the global economy hard. First, travel restrictions at the regional and national levels will restrict the flow of goods and services across the borders and within countries. Second, increased uncertainty will translate into reduced spending by households and small businesses. Third, sharp declines in global stock markets, if sustained, will hurt the real economy. Plunging markets stoke fear and uncertainty, reduce household wealth, and therefore erode consumer spending. The discussion in this paper significantly contributes to the financial crisis literature (Allen and Carletti, 2010) (Jagannathan et al., 2013; Mian and Sufi, 2010; Stiglitz, 2010; Ozili, 2019). Moreover, this paper contributes to the growing literature by exhibiting that non-financial factors and non-economic factors can initiate both a financial and economic crisis in unprecedented ways.

1. Related literature

The literature on the economic impacts of the COVID-19 pandemic, as is the recent phenomenon, is substantially growing. There remain only a few studies about the economic loss due to the massive-scale epidemic of contagious diseases to date: (Schoenbaum, 1987) is an example of an initial analysis of the economic impact of influenza. Other studies like (Meltzer and Cox, 1999) examine the potential macroeconomic impacts of the influenza pandemic in the US and evaluate several vaccine-based interventions. They find that at a gross attack rate of 15-35%, the number of influenza deaths is 89-207 thousand, and an estimated mean total economic impact for the US economy is \$73.1- \$166.5 billion. This paper also sheds light on the literature on how crises impact the economy and policy

responses to those crises. In the aftermath of the 2008 Great Recession, a large body of work studied how credit supply shocks (Mian and Sufi, 2009; 2011; Mian et al., 2013) and securitization (Keys et al., 2008; Keys et al., 2012) led to the financial crisis. Finally, this paper joins a rapidly growing body of work studying the impact of the COVID-19 epidemic on the economy. (Eichenbaum et al., 2020; Barro et al., 2020; Jones, 2020).

Given the span of the pandemic is just about four months, research on the economics of COVID-19 is at an early stage and still emerging. An extensive set of papers has emerged and is still expanding on macroeconomic issues surrounding the COVID-19 pandemic. As the evidence of economic impacts keeps emerging, research think tanks and media outlets are in a race to publish commentaries, editorials, and analytical pieces. (Baldwin and Weder di Mauro, 2020) compiled with an ebook illustrating the impacts of general macro economy and policy, trade, supply chain, finance, banking, travel, and regional sensitivities. There are also many works on simulation modeling based on previous experience, real-time data, and intuitive and policy perspectives from IMF, BIS, World Bank, OECD, UNCTAD.

Provided the aim of the article, it is worth reviewing them. (Beck, 2020) focuses on finance and banking risks created by the pandemic and argues that the effect would depend on three factors – the extent of the pandemic's economic effects globally, the fiscal and monetary policy reactions to the shocks, and regulatory reactions addressing possible bank fragility. (Mann, 2020) mentions the interlinkage between global commodity markets, financial markets, public sentiment, and the economy is likely to make the situation worse and challenging for policy responses. Other authors also expound that the COVID-19 pandemic is both a demand shock and a supply shock – that are likely to slow down aggregate trade flows significantly and that manufacturing distress and supply-side contagion are imminent through international supply chain distortions. Based on the experiences of modeling the economic effects of the influenza pandemic (Wren Lewis, 2020) suggests that the COVID-19 estimates reduction in economic growth, coming as a result of reduced labor supply, higher production cost, higher temporary inflation, and reduced social consumption. While studying the adverse shock of the pandemic (Fornaro and Martin, 2020) mention that pandemic as an adverse shock to the growth rate in productivity considering a standard New Keynesian representative-agent economy and endogenous technological change with sluggish traps.

In contrast, the article focuses on new shocks to supply due to widespread lockdowns and social distancing measures. (Faria e Castro, 2020) builds on studies different forms of fiscal policy in a calibrated New Keynesian model. A growing number of recent papers, triggered by the recent COVID Pandemic, make contact with epidemiological SIER or SIR models of contagion, merging them into an economic setting⁽¹⁾. (Eichenbaum et al., 2020) consider the single-sector dynamic model analysis and studies the impacts of the pandemic, taking into account optimal rational responses by private agents. Later, they then consider the optimal Pigouvian policy to internalize the externalities. (Alvarez et al., 2020) analyze the optimal dynamic shutdown policy within a SIR (susceptible-infected-recovered) model.

However, none of these papers focus on demand shortages or feature multiple sectors. (Jorda et al., 2020) show the impact on rates of return based on some time-series evidence from historical pandemics. The pandemics are persistent, with large numbers of casualties.

They also find evidence that pandemics lower the inflation-adjusted rate of interest. However, it is not clear if this is comparable to the events as the authors focus on the short-term effects of lockdowns that respond to the pandemic. That entails behavioral measures and policy reactions to the COVID-19 pandemic. (Baldwin and Tomiura, 2020) explain that the containment policies have directly and massively reduced the flow of labor to businesses. The result has been an abrupt and sharp reduction in the output of goods and services. (Gormsen et al., 2020) study the stock price and future dividend reactions to the epidemic, and use these to back outgrowth expectations for a potential recession caused by the virus. (Nikiforos, 2020) mention that the direct impact has both demand and supply implications. As a large share of production has stopped or will stop, the output will decrease from the supply side.

On the other hand, the uncertainty posed by the pandemic, the regulatory restrictions imposed by the authorities, and the drop in the level of economic activity globally will have an adverse impact on most components of aggregate demand. To get an idea of the magnitude of pandemic effects, some preliminary Chinese data reflect that in the retail sales decreased by 20.5 percent compared with last year. In comparison, investment and industrial production fell by and 24.5 percent and 13.5 percent, respectively, in the first two months of 2020 (Nikiforos, 2020). The economic effects became extreme as quarantine measures are taken, and the severity affected various sectors of the economy with travel bans, sporting event cancellations, the prohibition of mass gatherings (Elliot, 2020; Horowitz, 2020). International financial institutions, monetary authorities, and central banks are seeking to mitigate the immediate impact on the real economy through extraordinary fiscal, monetary, and macro-financial measures. Governments in many jurisdictions have introduced extraordinary support measures to alleviate the financial and economic impact of COVID-19.

Our contribution to this strand of literature is (1) to analyze the economic effects of the specific non-pharmaceutical interventions relevant for virus containment and (2) to contribute a quantitative analysis to the evaluation of COVID-19 infection externalities to inform the policy debate better. In this paper, we intend to show how the coronavirus outbreak led to spillovers into vital sectors of the world economy, and fast policy response by several governments. The study continues along these lines and aims to contribute to the economic policy debate. Our analysis defends an understanding of what is currently going on in the economy by focusing on fiscal and monetary policy measures to counteract the economic consequences. As the effectiveness of economic policies relies crucially on speculative expectations, our analysis is a necessary first step in the assessment of policy measures.

The rest parts of the paper are structured in the following way. Section 2 discusses the methodological construct of the paper to analyze the policy measures. Section 3 illustrates the transmission channels of the economic effects caused by the pandemic and subsequent regulatory measures. Section 4 demonstrates and analyzes the various fast-track policy responses initiated in the emerging market economies. Section 5 summarizes the findings and concludes.

2. Research questions

This paper aims to

- 1) to address the economic impacts in different sectors of the crisis-hit economy;
- 2) to evaluate the fiscal, monetary, and macro-financial policy measures to counteract economic losses.

The article tries to communicate the comprehensive policy actions taken to survive the losses by the pandemic.

2.1. Methods and data

To predict or quantify the economic damages inflicted by COVID-19 is quite early now and requires an extensive range of assumptions, many of which may not materialize. Therefore, this paper takes an analytic approach to study the policy responses addressing the possible losses in the crisis-hit G-7 countries and 24 emerging market economies (EMEs). Economies are trying many policy measures targeted to survive the effects and restore the normalcy. The study explores the fiscal, monetary, regulatory as well as macro-financial policy measures initiated in 31 countries. Fiscal stimulus packages targeted to GDP-intensive sectors, changes in the policy rates to provide cash facility, credit, and liquidity to support SMEs' measures are the three key parameters, both in the short and long term, to reflect the quantitative changes expected to appear in the near term future. Secondary data were taken from IMF policy tracker, World Economic Forum (WEF), ILO, and central banks' press release.

3. Lockdown implications

The far-reaching outbreak of the novel COVID-19 has severely disrupted economic activity through various supply and demand channels. The pandemic can also have a pervasive economic impact by raising uncertainty. The hit to economic activity will be profound. However, its magnitude and duration are highly uncertain and depend on the success of public health measures to minimize the spread of the pandemic. However, adverse demand shocks and the economic impact of supply chain disruptions will affect investment prospects in other countries. Remittance flows are expected to fall across all regions in 2020 due to the coronavirus, most notably in Europe & Central Asia (27.5%), Sub-Saharan Africa (23.1%), and South Asia (22.1%), meaning a loss of a vital financing line for many vulnerable households. Moreover, remittances to low and middle-income countries (LMICs) are forecasted to fall by 19.7 percent to USD 445 billion (World Bank, 2020). In total, about USD 23 trillion in global market value has been destroyed since the inception of the outbreak.

The outbreak of the novel coronavirus has severely disrupted economic activity through various supply and demand channels. The pandemic can also have a pervasive economic impact by raising uncertainty. The hit to economic activity will be profound. However, the ultimate duration and magnitude are uncertain and depend on the ability of public health capacity to control the spread of the virus, although adverse demand shocks and the impact of global supply chain disruptions will impact investment prospects in many other

countries. The pandemic is severely impacting manufacturing production in developing countries because 1) demand for manufacturing goods and raw materials from high-income countries is decreasing; 2) delays in the delivery of necessary components and supplies from more technologically advanced countries are disrupting the value chains; 3) other factors, restriction of movement of goods and people), inability to reach workstation or the financial limitations, which affect the normal production process. In gauging the impact on manufacturing, economists predicted a USD 50 billion decrease in manufacturing output, and the IMF warns that the adverse economic effects will be “very intensive” mainly in emerging countries that export raw materials. All these negative channels will inevitably have an impact on exports from developing countries. The losses in export volume will be further intensified by the decline in energy and commodity prices. UNCTAD projects that developing countries as a whole (excluding China) will lose nearly USD 800 billion in terms of export revenue in 2020. The pandemic is also dismantling the global workforce. The ILO estimates that almost 38 percent of the global workforce, meaning approximately 1.25 billion workers, are employed in sectors that are now encountering a severe decline in output and a high risk of workforce displacement. Such sectors include retail trade, accommodation and food services, and manufacturing.

3.1. Macroeconomic effects

The macroeconomic variables subject to the direct hit of the pandemic crisis are production and supply, international trade, global value chains (GVCs), Investments and FDI flows, capital flight, public debt, solvency, remittance, employment, energy and finally SDGs. For example, a negative supply shock can lead to a demand shortage that causes a decline in output and employment, which may be larger than the supply shock itself. (Guerrieri et al., 2020). The GDP of the crisis-hit economies are predicted to grow significantly slower than usual. In total, about USD 23 trillion in global market value has been destroyed since the outbreak⁽²⁾. The ILO's latest summary states that the current containment measures are affecting around 2.7 billion workers, nearly 80 percent of the global workforce. The crisis is expected to hit workers in low- and middle-income countries particularly hard, where the share of those working in informal sectors, and who therefore have limited access to adequate health and social protection, is higher. To make matters worse, the expected massive job losses among migrant workers will likely have a knock-on effect on economies that heavily depend on remittances. Additionally, the containment measures in advanced economies have already started impacting less developed countries through lower trade and investment (UNIDO, 2020). Nonetheless, (UNCTAD, 2020) illustrates the net debt and equity outflows from the major emerging economies, which amounted to USD 59 billion in the month since the COVID-19 crisis went global (February 21 to March 24). The spread of the pandemic and the regulatory actions necessary to control it means that we now have to incorporate full-scale lockdowns across. The lockdown policies are having instantaneous and subsequent effects on daily economic activity. However, the magnitude of the impact on GDP will depend on how long the lockdowns last. Employing illustration, a two- to a three-month crisis with a five-week 'peak stringency' national lockdown period, which reduces GDP by 20% a day, would translate to a 7% to 8% decline in quarterly GDP (not annualized).

4. Policy response

To mitigate the adverse effects of public health controls on the economy and to sustain public welfare, governments adopted economic packages, including fiscal, monetary, and financial policy measures (Gourinchas, 2020). These economic measures targeting households, firms, health systems, and banks vary across countries in breadth and scope (Weder di Mauro, 2020). Monetary policies adopted by countries usually consist of liquidity support to banks (International Monetary Fund, 2020). Typical fiscal policies include transfers to households and businesses, the extension of social safety benefits, and funds for the healthcare system.

The speed with which the pandemic is evolving has necessitated strict policy measures to contain the virus and survive the damage. To look profoundly into the liquidity in an economy, we see the pandemic shock is mounting enormous pressure on corporates cash reserve. Last year's corporate financial statements show that 50% of the firms do not have the required amount of cash to cover total debt servicing costs over the next years (Banerjee et al., 2020). Business closure during the pandemic may turn the complexity into severe insolvency. To counteract the estimated losses, policymakers introduced the following category of policy measures around the world to cope with the coronavirus. These policies can be divided into four categories: (1) fiscal measures, (2) monetary measures, (3) public health measures, and (4) human control measures. This study deals with the first two measures in the next section.

4.1. Fiscal policy measures

Table 1. Fiscal policy measures to support economic growth

Countries	Direct Spending	% of GDP	Fiscal Support via Loans and Loan Guarantees	% of GDP	Remarks
G7 countries					
US	USD2.8tn	11.0	USD700bn	3.3	
France	EUR 45bn	1.9	EUR 315bn	14.0	
Germany	EUR 70bn	2.0	EUR 757bn	23.0	
Italy	EUR 25bn	1.4	EUR 340bn	19.0	
Japan	Yen 88.90tn	16.0	Yen 28.3tn	5.10	
UK	GBP48.7bn	2.21	GBP330bn	15.0	
Canada	CAD 85bn	3.7	CAD 193bn	8.40	
Emerging Market Economies					
Argentina	-	-	-	1.2	
Bangladesh	USD 588mn	-	Tk. 522 bn	-	
Brazil	US\$ 30.6bn	-	US\$ 119.4bn	-	
Bulgaria	-	1.2	BGN 3.5bn	-	
Chile	USD 2bn	0.8	USD 9.75bn	3.83	
China	RMB 1.25tn	1.2	RMB 1.35tn	1.3	
Colombia	-	-	-	1.5	US\$ 3.6bn
Hungary	HUF 245bn	0.6	HUF 450bn	0.11	
India	INR 150bn	0.1	INR 1200bn	0.8	
Indonesia	IDR 255tn	1.6	IDR 405tn	2.6	

Countries	Direct Spending	% of GDP	Fiscal Support via Loans and Loan Guarantees	% of GDP	Remarks
Malaysia	RM 25bn	1.7	RM 6bn	0.4	
Mexico	Peso 180bn	0.7	Peso 50bn	0.19	
Morocco	-	-	-	-	2.7% of GDP
Pakistan	PKR 225bn	-	PKR 725bn	-	
Peru	Soles 3.4 bn	0.4	Soles 1.1bn	0.14	
Philippines	PHP 200bn	1.1	PHP 27.1 billion	0.15	
Poland	PLN 93 billion	4.2	PLN 75 billion	3.3	
Romania	RON9bn	0.9	RON12.5bn	1.2	
Russia	RUB300bn	0.3	RUB 1800bn	1.8	
South Africa	R230bn	?	R270bn		
Thailand	THB 1tn	5.93	THB 500bn	2.97	
Turkey	USD 11.6bn	1.5	USD 3.8bn	0.5	
Ukraine	-	-	-	-	
Vietnam	VND 180 trillion	2.4	VND 106 trillion	1.1	

Source: IMF Policy Tracker, KPMG reports, and Central Banks' press release.

4.2. Monetary policy responses by G-7 and emerging market economies

Monetary and Macro-Financial Policy Measures taken by the Group of Seven (G-7) countries and Emerging Market Economies are presented in Table 2.

Table 2. Monetary policy and macro-financial measures As of April 24, 2020

Countries	Monetary Policy Rate		Asset Purchase	Credit and liquidity Measures	Macro-Financial Measures
	Cut in Basis points	Current rate (%)			
G-7 Countries					
US	150bp	0.25		Lowered community bank leverage ratio to 8%.	1. Lowered cost of discount window lending; 2. Primary Dealer Credit Facility; 3. Money Market Mutual Fund Liquidity Facility; 4. Paycheck Protection Program Liquidity Facility.
France	25bp	0	EUR 870 bn	-	
Germany	25bp	0	EUR 150bn	Additional purchase of EUR 750bn from PEPP.	-
Italy	25bp	0	EUR 120bn	Additional purchase of EUR 750bn from PEPP.	-
Japan	-	-	-	Lowered 25 bp on USD liquidity SWAP.	-
UK	65bp	0.25	GBP 200bn	GBP 1bn for driving innovation and development.	-
Canada	150bp	0		Credit facility CAD 65bn to under stress firms;	1. Launching the Bankers' Acceptance Purchase Facility; 2. Extending bond buyback program across all maturities; 3. Increasing settlement balances to \$1,000 million from \$250 million.

Emerging Market Economies				
Countries	Rate cut	Current rate %	Credit and liquidity Measures	Macro-Financial Measures
Argentina	-	-	17% reduction of the bank debt tax.	1. 95% reduction of employer contributions to the social security system; 2. 59% reduction of the bank credit tax; 3. Central Bank provides incentives, so banks grant credits at preferential rates to SMEs.
Bangladesh	175bp	5.25	1.CRR reduced from 5 to 4.5% (daily-basis); 2. Increased ADR and IDR by 2% to make credit available.	1.Tk 50 billion Pre-shipment Refinancing scheme to support exporters; 2.Tk 50 billion Special Refinancing Scheme for the agriculture sector; 3. Tk 30 billion Refinancing Scheme to support micro-finance; 4. Tk 150 billion refinance scheme to facilitate the implementation of the government stimulus package.
Brazil	50bp	3.75	Reduced RR from 25 to 17%.	1. A swap facility of US\$60 billion through the central bank; 2. 60-day extension of maturing debt liabilities for Individuals and SMEs.
Bulgaria	-	-	-	1. BGN 7bn liquidity support through banking systems (6% of 2019 GDP); 2. Allocation of BGN 800mn to provide guarantee/credit to SMEs; 3. Allocation of BGN 418mn for long-term investment and working capital financing; 4. BGN 200mn to provide interest-free loans to employees on unpaid leave.
Chile	75bp	0.50	-	1. Special treatment of provisions for deferred loans; 2. Use of mortgage guarantees to safeguard SME loans.
China	30, 10, 30*bp	-	1. Banks' credit extension to MSEs (RMB 350 billion); 2. Bond issuance by financial institutions to finance SME lending; 3. Provisioning higher NPLs for loans by crisis-hit sectors and SMEs.	1. RRR cuts by 50-100 bps for large- and medium-sized banks; 2. Reduction of 100 bps for eligible joint-stock banks; 3. Reduction of 100 bps for small- and medium-sized bank; 4. Interest rate cut on excess reserves from 72 to 35 bp.
Colombia	50bp		1. Lowered the RR applicable to savings and checking accounts from 11 to 8 percent; 2. Lowered the rate of fixed-term savings accounts (less than 18 months) from 4.5 to 3.5 percent.	1. Expansion of their liquidity operations (REPOS) allotment to 23.5 trillion; 2. COP 10tn program to purchase securities issued by credit institutions; 3. COP 2tn in TES purchases in the secondary market.
Hungary	90bp	1.85	-	1. QE by buying government securities on the secondary market, and the mortgage bond purchase program; 2. Short-term loan extension to businesses until June 30; 3. Repayment moratorium on all existing corporate and retail loans; 4. Reduced Foreign Exchange Coverage Ratio from 15 to 10 percent.
India	Repo 75bp	4.4	Exempted CRR for all retail loans to ease funding costs.	1. a three-month moratorium on loan repayments for companies; 2. Special refinance facilities for rural banks, housing finance companies, and SMEs; 3. Ways and Means Advance limits have been increased by 60%.

Emerging Market Economies				
Countries	Rate cut	Current rate %	Credit and liquidity Measures	Macro-Financial Measures
Indonesia	50bp	4.5	Lowering reserve requirement ratios for banks;	1. Financing the deposit insurance agency(LPS)and Purchasing government bonds in the primary market, and for bank solvency problems; 2. Relaxed loan classification and loan restructuring procedure.
Malaysia	25bp	2.50	Lowered the Statutory Reserve Requirement ratio by 100 basis points.	Combined measures to release approximately RM 30bn worth of liquidity into the banking system;
Mexico	100bp	6.0	1. Provided USD liquidity to banks by drawing on the \$60 billion swap line with the Fed; 2. Reduced the mandatory regulatory deposit with Banxico (by 50 billion pesos).	1. Pesos 25 billion lendings to SMEs; 2. Liquidity support by development banks 3. Workers' access to loans against social security accounts; 4. Swap agreement with the Fed auctioned already US\$ 5 billion to commercial banks.
Morocco	25bp	2.0	-	1. Suspension of Loan payments for SME businesses people until June 30; 2. Government's guarantee of 95% of banks' new short-term loans; 3. Provided FX swaps to domestic banks; 4. Increased the central bank's refinancing operations to support banking credit to (V)SMEs.
Pakistan	425bp	9.0	1. Reduced the capital conservation buffer by 100 basis points to 1.5%; 2. Increased the regulatory limit on an extension of credit to SMEs by 44 percent to PKRs 180 million.	1. Relaxed the debt burden ratio for consumer loans from 50% to 60%; 2. Allowed banks to defer clients' payment of principal on loans by one year; 3. Relaxed regulatory criteria for restructured/rescheduled loans for borrowers who require relief.
Peru	200bp	0.25	1.Reduced reserve requirements 2. Provided liquidity through repo operations.	1. Package of 30 billion soles in liquidity assistance to support lending and the payments chain.
Philippines	125bp	2.75	Lowered the reserve requirement ratio by200 bps for banks.	1. Temporarily relaxed the provisioning requirements for easier access to the BSP's rediscounting facility; 2. The temporary relaxation of requirements on compliance reporting, penalties on required reserves, and single borrower limits.
Poland	100bp		Reduced the required reserve ratio by 300 bps to 0.5%.	1. Purchased Polish Treasury securities in the secondary market; 2. Repealed 3% systemic risk buffer for bank capital requirements; 3. Introduced a funding program for bank lending to non-financial private enterprises.
Romania	50bp	2.0	Provided liquidity to credit institutions via repo transactions.	1. Purchasing government securities on the secondary markets; 2. Facilitated operational measures to smooth the functioning of payment settlement.
Russia	50bp	5.5	1. Sold FX reserves from the National Welfare Fund; 2. Introduced temporary regulatory easing for banks to help corporate borrowers.	1. A new facility of RUB 500bn for SME lending; 2. Reduced Deposit Insurance Fund contribution from 0.15 percent to 0.1%.
South Africa	200bp	4.25	1. Increasing the number of repo auctions to provide intraday; 2. Cash support to clearing banks at the policy rate.	1. Purchase government securities in the secondary market; 2. Issued guidelines to provide debt relief to bank customers.
Thailand	50bp	0.75	1. Reduced the contribution from financial institutions to the FIDF	1. Provide bridge financing up to THB 400 billion to high-quality firms;

Emerging Market Economies				
Countries	Rate cut	Current rate %	Credit and liquidity Measures	Macro-Financial Measures
			from 0.46 to 0.23% of the deposit base.	2. Purchased government bonds over THB 100 billion to ensure the functioning of the govt. bond market; 3. Soft loans by the Bank of Thailand to financial institutions amounting to THB 500 billion.
Turkey	200bp	8.75	1. Longer-term instruments at discounted rates; 2. reduced the reserve requirements on foreign currency deposits by 500 bps.	1. Introduced lending facility for SMEs in the export sector; 2. Purchases of sovereign bonds 3. Reduced the minimum payment for individual credit cards was reduced to 20%.
Ukraine	200bp	8.0	1. Decrease the minimum LCR reduce reserve requirement ratios.	1. Announce unscheduled liquidity assistance tenders; 2. Eliminated the tariffs for banks using electronic payments system; 3. Interest rate swaps banks can rely on to minimize interest rate risk.
Vietnam	100bp		1. Lowered the short term lending rates cap for priority sectors by 50 bps; 2. Short-term deposit rates cap by 25-30 bps.	1. Announced a credit line worth of VND 285 trillion; 2. Injected liquidity through refinancing windows.

Source: IMF Policy Tracker; Central banks' press release.

All of the 31 developed and emerging market economies except Argentina and Bulgaria primarily resorted to lowering the policy rates, where the highest cut was 425 basis points by State Bank of Pakistan. The lowest cut is at least 50 basis points. The cut in the repurchase agreement rate (Repo rate) can help banking with increased liquidity through the financial system. Many central banks also lowered the reverse repo rates by at least 20 basis points to ease the liquidity pressure during the pandemic. Lowering the reserve requirements (CRR and SLR) is also another policy decision that is helping the economies to cope up with the transaction demand of cash. Some governments initiated foreign exchange operation (FXO) to supply more local currencies to the market. Besides, interest rate SWAP, purchase of sovereign bonds, long term lending facilities for SME and export sectors, relaxation of regulatory criteria for restructured/rescheduled loans, special refinance facilities, bridge financing, and other quantitative easing policies are also put into practice to counteract the economic shock. However, there are also some other fiscal and accommodating policies to materialize targeting the inflicted damages to the world economy.

Conclusion

In this paper, the article demonstrated the fiscal, monetary, and macro-financial policy responses addressing the economic damages inflicted by the lockdown in the emerging market economies. The study analyzed the direct impacts of the regulatory measures taken by the governments to contain the virus spread. In addition to the human toll, the (COVID-19) pandemic is causing far-reaching economic disruption, including in developing countries. Central banks and govt are deploying fast-track financing to help keep companies in business and preserve jobs. The findings suggest that the concerned

monetary authorities and governments shall address the GDP-intensive sectors to ensure liquidity and credit support. Governments, to foster the economy in the long run, shall consider the fiscal stimulus to support SMEs, retail and service sectors, transports and aviation, and tourism. Social safety net facilities shall also be introduced to keep the marginal people fed and the consumer trend afloat. The export-oriented industries shall be facilitated with lower interest loan programs and credit support.

In addition to the human toll, the coronavirus pandemic is causing far-reaching economic disruption, including in developing countries. Central banks and govt need to deploy dynamic fast-track financing to help keep companies in business and preserve jobs.

Notes

- ⁽¹⁾ Of course, a more substantial prior literature in history, health, and development economics studied pandemics, and just to name a few recent examples, Philipson (1999), Greenwood et al. (2019), and Fogli and Veldkamp (2020).
- ⁽²⁾ See The Economist, “Covid carnage”, March 21, 2020.

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