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Monetary policy reaction to COVID-19 in CEE economies

Lessons from the use of conventional and unconventional instruments

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About the German Economic Team

The German Economic Team (GET) advises the governments of Ukraine, Belarus, Moldova, Georgia and Uzbekistan regarding the design of economic policy reform processes and a sustainable development of the economic framework. As part of the project we also work in other countries on selected topics.

In a continuous dialogue with high-level decision makers of the project countries, we identify current problems in economic policy and then provide concrete policy recommendations based on independent analysis.

In addition, GET supports German institutions in the political, administrative and business sectors with its know-how and detailed knowledge of the region's economies.

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Executive summary

The COVID-19 pandemic of 2020 triggered the deepest global recession since WWII, disrupting simultaneously global supply and demand. The macroeconomic policy response to this crisis was swift and strong, implying both fiscal and monetary policy contributions, which can be justified based on theoretical considerations. Unlike previous crisis episodes when emerging market economies tended to tighten their policies to avoid capital outflows and the inflationary impact of exchange rate depreciations, the present crisis has seen their policies broadly in line with that of advanced economies.

In this study, we look at the monetary policy response of five more advanced Central and Eastern European countries, see what lessons can be drawn from their anti-crisis actions and discuss the implications for frontier economies. These countries (Poland, Czech Republic, Hungary, Romania, Russia) follow inflation targeting regimes to different degrees (from loose to full inflation targeting). The interesting fact is that some of them started to introduce and/or use unconventional monetary policy measures for the first time thereby following the experience of advanced economies, which use such measures already for some years. Thus, it can be said that they have expanded their policy toolkit in order to fight a new crisis with new tools. Among unconventional monetary policy tools, this concerns asset purchase programmes, (targeted) long-term refinancing operations, collateral measures as well as internationally coordinated measures like swap or repo arrangements with other central banks. In sum, the following lessons can be derived from the experience of the countries looked at within this study:

- Central banks across Central and Eastern European countries first made use of their conventional monetary policy toolkit in response to the crisis. They cut policy rates aggressively and almost to maximum extent whenever operating under full inflation targeting (giving their policies greater credibility). Loose inflation targeting (i.e. less credible) monetary authorities also undertook significant rate cuts but kept some margin.
- On the back of an expansionary global monetary policy stance, and in light of the deflationary pressures spurred by COVID-19, some more advanced emerging market economies went beyond conventional monetary easing, launching some unconventional tools for the first time. Contrary to advanced economies, central banks in the Central and Eastern European region, however, apply unconventional monetary policy instruments not just as a substitute for conventional tools when these are at the limit (i.e. zero- or effective lower bound) but rather in parallel and combination to conventional instruments.
- Among Central and Eastern European economies, there is a strong link between the size of the direct fiscal response to the crisis and the use of unconventional measures. This is partly due to the challenge of a drastic fiscal and monetary response to COVID-19. In fact, large fiscal spending programmes in response to the crisis in some Central and Eastern European economies have spurred the need for an asset purchase programme to support the bond market and hold interest rates down.
- Unconventional tools like targeted long-term refinancing operations facilitate the provisioning of credit to the banking sector and within transmission of monetary policy to the real economy.
- Unconventional measures are the more useful the more developed financial markets are, as there is a more direct link between yield curve changes and aggregate demand.

- A credible monetary regime is essential for a successful and sustained use of unconventional instruments. As small open economies they often have to face limited fiscal space, financial stability concerns and/or higher inflation.
- An active use of unconventional measures in Central and Eastern European economies has benefits, but also carries risks. The most important benefit is that central banks are enabled to put downward pressure on longer term interest rates. The risk, however, is that a too heavy use of these new (and untested) instruments might create financial instability, exchange rate pressures or an inflation rate overshooting. These risks, particularly the risk of inflation rate overshooting, are quite present for the majority of the economies reviewed and can expose them to even greater economic turbulences in the future.

What are the implications of these lessons for frontier economies such as those of the Eastern Partnership of the EU as well as in Central Asia? These countries are often characterised by less credible monetary regimes and weaker economic governance as well as undeveloped local financial markets and a strong reliance upon external financing. As a result, they are faced with a high degree of dollarisation, are prone to sudden stops of capital flows and high exchange rate volatility. Consequently, from a risk-return point of view, we think that (at least for the time being), frontier economies should refrain from introducing unconventional instruments, and rely primarily on the conventional policy toolkit. The expansionary global monetary policy stance mentioned above supports them to utilize this toolkit to create supportive monetary easing in response to the crisis.

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1 Introduction

The COVID-19 pandemic triggered the deepest global recession since WWII, disrupting both global value chains and global demand. It means that policy makers have to cope with a simultaneous supply and demand shock. Currently, as the crisis continues to move in waves, and no effective vaccine is available, there is low visibility on an eventual “return to normal”, i.e. to pre-crisis times, which further complicates the picture.

The macroeconomic policy response to the crisis in advanced economies was swift and strong; both fiscal and monetary policy contributed to this. Even though the crisis originated in the real sector, it could easily morph into a financial crisis and create additional problems. The loose monetary conditions in advanced economies like the US or the Euro area imply a benign external environment for emerging market economies (EME), which gives their central banks the opportunity to loosen their own policies to fight the crisis, if the domestic situation allows for. Thus, unlike previous crisis episodes, when amid increased global risk aversion EME tended to tighten their policies to avoid capital outflows and the inflationary impact of exchange rate depreciations, the present crisis has seen EME’s monetary policy reaction broadly more in line with that of advanced economies. The objectives were to accompany the strong fiscal response, ensure the functioning of monetary policy transmission and to mitigate stress in local bond markets.

In this study, we look at the monetary policy response of a selected group of more advanced Central and Eastern European countries (CEE) in more detail and see what lessons can be drawn from their anti-crisis actions. While such an experience is in general of interest to the countries of the Eastern Partnership of the EU as well as in Central Asia, there are some specific reasons for having a closer look at CEE countries. The interesting fact is that some of these countries started to introduce and/or use unconventional monetary policy measures for the first time. Thus, following the experience of advanced economies, that have used these measures already for some years, CEE economies expanded their policy toolkit in order to fight a new crisis with new tools. This includes (yet modest) purchases of government and corporate bonds as well (targeted) long-term refinancing operations.

The study is structured as follows: In chapter 2 we discuss a theoretical framework in which the specific nature of the COVID-19 economic shock as well as the rationale for a monetary policy response can be understood. Chapter 3 deals with the monetary policy response of five CEE countries¹, separated into the use of conventional and unconventional instruments. The following chapter 4 concludes by drawing some lessons learnt from the CEE experience so far and discussing their implications for frontier economies as well. In the Annex, we will provide some theoretical foundations of the models and classifications used throughout the study as well as an overview of the recent monetary policy actions in countries where the German Economic Team is active.

¹ Poland, Czech Republic, Hungary, Romania and Russia.

2 COVID-19 and the rationale for a monetary policy response

As the COVID-19 pandemic spread around the globe, governments introduced confinement and mitigation measures to prevent from further contagion. These policies called lockdowns can be thought of as severe economic shocks to the real economy. To be more precise, one needs to discern between the triggering shocks and the subsequently unfolding disturbances. While there is consensus that the triggering shocks include supply side features, there is also evidence that demand side disturbances, though smaller regarding their overall effect, were present on impact (Brinca, et al., 2020). Furthermore, researchers have also come up with shock specifications, that explain large demand side effects unfolding from initial supply side contractions (Guerrieri, et al., 2020).

2.1 Nature of the economic shocks: demand and supply

With regard to the reduction of working hours and the enforced closure of businesses as well as the interruption of (global) value chains due to the confinement and mitigation measures introduced by governments; these are clear supply side frictions as they cause a reduction in the production of goods and services. In severely affected sectors, this can even lead to the failure of large businesses and potentially turning the crisis also into a financial crisis. At the same time given the increasing transmission risk of the pandemic and a thereby rising fear of contagion, high-frequency indicators such as the number of restaurant bookings, reveal a significant fall or even stop in consumer demand for affected sectors as well (Tenreyro, 2020). Such demand shocks originate from a lower ability or willingness of consumers to purchases goods and services. Additionally, a rise of job losses in the service sector may also cause consumption for goods of other sectors, as e.g. in the car or entertainment industry, to be significantly lower. The result is that the demand shock is spread to other sectors as well. Increased uncertainty about the evolution of the pandemic can also have negative consumption effects and therefore be taken as a demand shock. Brinca, et al. (2020) use an econometric model to report a decomposition of supply and demand shocks during COVID-19 for different sectors finding that in the US two-thirds of the decline in hours worked can be attributed to supply shocks. While these supply shocks are negative for every sector, some industries such as information technologies and food retailers record positive demand developments.

Though the demand side aspects do not seem to be dominating on impact, this may change if a longer time horizon is considered. Guerrieri, et al. (2020) argue in favour of what they call a “*Keynesian supply shock*” – a shock that causes a reduction in aggregate demand larger than the original reduction in labour supply. Their argument goes as follows: As said before, the shock caused by COVID-19 seems to have a special nature as it affects sectors asymmetrically. Nevertheless, there also seem to be forces at work that, through contagion and general uncertainty, propagate the shock from the most contact-intensive sectors to the less contact-intensive sectors and therefore cause aggregate demand of the economy to be affected. Theses driving forces, they argue, are complementarities across sectors and incomplete markets. With regard to the first, if goods of two different sectors feature a high degree of complementarity, the drop in spending in the one sector will spread to the other.² Nevertheless, complementarities might not be sufficient to produce Keynesian supply shocks as long as markets are

² Once goods are substitutes – e.g. restaurant visits and grocery shopping – the opposite is the case: Consumers will spend more in the other sector.

complete. If markets are incomplete, however, workers in the affected sectors are not perfectly insured against job losses from the pandemic and have to cut back expenses in every sector once they lose their job. The recession could then spread to other sectors as well because “the marginal propensity to consume of the unaffected worker is lower than that of the affected worker, due to the larger income losses of the latter” (Guerrieri, et al., 2020). Besides this effect from incomplete markets, shortages can arise from the natural input-output linkages between goods and services, e.g. restaurant closures also reduce demand for maintenance and repair service for dishwashers. These effects can also have a Keynesian character, i.e. causing a greater fall in demand than the initial supply side effect.

Conclusion 1: COVID-19 caused both supply and demand shocks at the same time. While on impact the supply side effect was dominating, over time the shocks propagated to other sectors as well resulting in even larger reductions of aggregate demand.

2.2 Policy response in theory

Given the above described shock one could then ask: Is there a rationale for a policy response and which policies does the shock call for? Certainly, the specific nature of the COVID-19 shock needs to be considered. On the one hand, governments do not want to counter the objectives from public health policies in lockdown affected sectors by stimulating activity there. On the other hand, lockdown unaffected sectors that are likewise subject to aggregate shocks would well need stimulus to cope with the disturbances. Given that the safety measures effectively remain in place for the time needed, Fornaro & Wolf (2020) argue in favour of drastic combined fiscal and monetary policy interventions to keep the effects on employment and productivity as small as possible. Since “the conventional view is that all economies should enact fiscal stimulus to the extent to which they have space to do so³” (Benigno, et al., 2020), governments around the world have taken action on the fiscal side almost immediately as the economic consequences of the pandemic became apparent. However, EME are often more restricted regarding their fiscal space than advanced economies because of financing constraints. And given the fact that in many EME interest rates are further away from the zero-lower bound, there is therefore a greater call for monetary policy authorities. Nevertheless, it should also be clear that monetary policy alone cannot tackle the difficulties caused by the pandemic – it simply cannot insure individual businesses and households against income losses. Therefore, Tenreyro (2020) emphasizes that domestic monetary policy action needs to go hand in hand with domestic fiscal policies. Furthermore, as we will see later, monetary policy will have to be coordinated with financial stability concerns and potentially with policies of central banks overseas as well.

So how does the typical textbook reaction to such a shock look like? In Annex A, we present a theoretical framework which models the shock caused by COVID-19 as a reduction in labour productivity growth. Using a simple model with exogenous productivity growth, we can show that the shock makes employment fall. In that scenario, an expansive monetary policy such as a reduction of interest rates, can benefit the economy as lower interest rates raise aggregate demand and therefore restore employment. In this very simplified model thus there is support for the idea that central banks might

³ Referring to budget deficits and levels of government debt to GDP.

need to respond to the COVID-19 outbreak by easing monetary policy.⁴ Considering a more advanced model, where labour productivity growth is endogenous (also illustrated in Annex A), the economy at first glance faces the same issue of an artificial decrease in labour productivity as in the simplified model. But now the initial supply shock, particularly when the drop in labour productivity growth is as persistent as it seems to be the case for the shock caused by COVID-19, has a larger effect on employment and induces what Fornaro & Wolf (2020) call a “supply-demand doom loop”. The downward pressure on demand due to the more severe effect on employment leads to a further drop in productivity as firms cut back on their investment. With the lower productivity growth, demand then decreases even more and a vicious cycle – *the “supply-demand doom loop” – unfolds, amplifying the effect on employment and productivity*. As argued before, over time demand side effects are likely to have larger consequences for the economy than the disturbances on the supply side. An expansionary monetary policy response in such a scenario is fairly effective as it has multiplier effects for demand and employment thereby offsetting the initially higher employment losses. Stronger demand encourages firms to invest more and thereby strengthened consumers expectations then support demand further, counteracting the vicious supply-demand cycle. A monetary easing, therefore, contributes to an increase in demand once the lockdown measures are abandoned and economic agents are allowed to spend again. The important role monetary policy actions have in fighting the economic consequences from the pandemic, is thus even more pronounced in the advanced model.

BOX I: Inflation outlook under COVID-19

The common view among economist is that the shock caused by COVID-19 is likely to lead to deflationary rather than inflationary pressures (see e.g. Blanchard (2020)). While large fiscal spending programmes and monetary easing measures in response to the crisis would drive up inflation in theory, in practice they can probably at most compensate the effect from falling commodity and oil prices as well as the depressed labour market. Even if consumer prices and unemployment returned to normal one day, a strong wage push is not expected. Furthermore, high uncertainty lowers investment and precautionary saving suppresses consumption further. This explains why monetary policy makers in some countries, despite recently elevated inflation rates, are confident in delivering meaningful interest rate cuts. Another challenge policy makers are confronted with in the light of the COVID-19 pandemic is a temporary though large change in relative prices and consumption patterns, making inflation data difficult to interpret. These shifts in spending patterns will change the representative household’s consumption basket for the time partial lockdowns persist. Near-term inflation might therefore be a noisy indicator for predictions about future inflation.

And what about fiscal policy? Well, in reality, restoring full employment alone by means of monetary stimuli is likely to be problematic. First, with social-distancing regulations in place, households might not want to or simply cannot react by spending more. The effect from lowering interest rates might, therefore, be weaker than in normal times. And second, when interest rates are low already, there might be less space for further cuts. As said before, the latter is less of an issue for many EME, but as repeated interest rate cuts might become necessary this could still develop into a concern over time.

⁴ Notice that the crucial assumption behind the effectiveness of a monetary policy intervention is the persistent drop in labour productivity growth.

We will later see that for some more advanced CEE economies this issue already played a role within their monetary policy decision making process at the beginning of the crisis. With the space for conventional monetary policy easing being limited, there is, and was from the beginning of the crisis, also a strong call for fiscal policy in order to avoid that the crisis in the real sector morphs into a financial crisis due to a widespread failure of large businesses. Within the model shown in Annex A one can imagine fiscal action to show up in the general government line as an additional term driving up labour productivity growth. Thus, one can conclude that appropriate fiscal spending programmes can also help to reverse the supply-demand doom loop.⁵ And, given the straight forward implications of the proposed model, they do so even more effectively in combination with a reasonable monetary expansion. The call for fiscal and monetary policy working hand in hand is even greater at the zero-lower bound Fornaro & Wolf (2020) emphasize. Furthermore, the usage of unconventional monetary policy measures such as asset purchase programmes reveal another important link between monetary and fiscal policy as the former helps in respect to the functioning of large fiscal programmes.

Conclusion 2: From a textbook perspective, there is a clear economic rationale for a decisive monetary policy response to counter the negative supply and demand dynamics triggered by COVID-19. Nevertheless, theoretical models also make clear that a monetary policy response cannot do the job alone, but a strong fiscal reaction is equally needed.

3 Monetary policy response in CEE economies

Within this chapter, we study the monetary policy response of a group of CEE economies: Poland, the Czech Republic, Hungary, Russia and Romania. In response to the economic consequences of COVID-19, all of these more advanced EME economies have taken considerable action on the fiscal as well as on the monetary side. With regard to the latter, central banks besides making use of conventional instruments have also introduced a set of unconventional measures. In the following, we therefore find it helpful to distinguish our analysis into conventional monetary policy instruments' use and unconventional monetary policy tools put to work in the CEE region.

3.1 Use of conventional instruments

In the space of conventional monetary instruments, we regard the key policy rate as the main conventional monetary policy tool and therefore only look at interest rate changes within this section.

The key policy rate often is the rate charged for main refinancing operations. In its conventional use, this instrument is expected to be positive⁶. However, these days, a zero-policy rate is not unusual

⁵ Fornaro & Wolf (2020) explain that though fiscal interventions in the model act on the supply side, they affect aggregate demand as well. The reason is that higher investment drives up expectations about future growth and income and thereby encourages agents to increase spending already in present times. Higher aggregate demand then gives rise to further investment and productivity growth and so on. Thus, fiscal spending has a positive multiplier effect on economic activity as well.

⁶ The Swedish National Bank as the first ever has also experimented with negative refinancing rates between 2015 and 2019. The evidence collected suggests that this "experiment" is not recommendable. The effect on

among central banks in advanced economies anymore, also meaning that conventional interest rate space would then be fully exhausted. As the deposit rate in the Euro area is lower than the policy rate, the former enters negative territory once the main rate reaches the zero-lower bound (ZLB). Loosely speaking, in times when the main refinancing rate is stuck at the ZLB, the deposit facility rate is the more relevant policy rate. Economically, this means that banks are charged for depositing liquidity in their central bank deposit and credit to the real economy is incentivized. However, also with this rate, the space for further cuts is limited as the ECB's experience shows (de la Rubia & Kirchner, 2020).

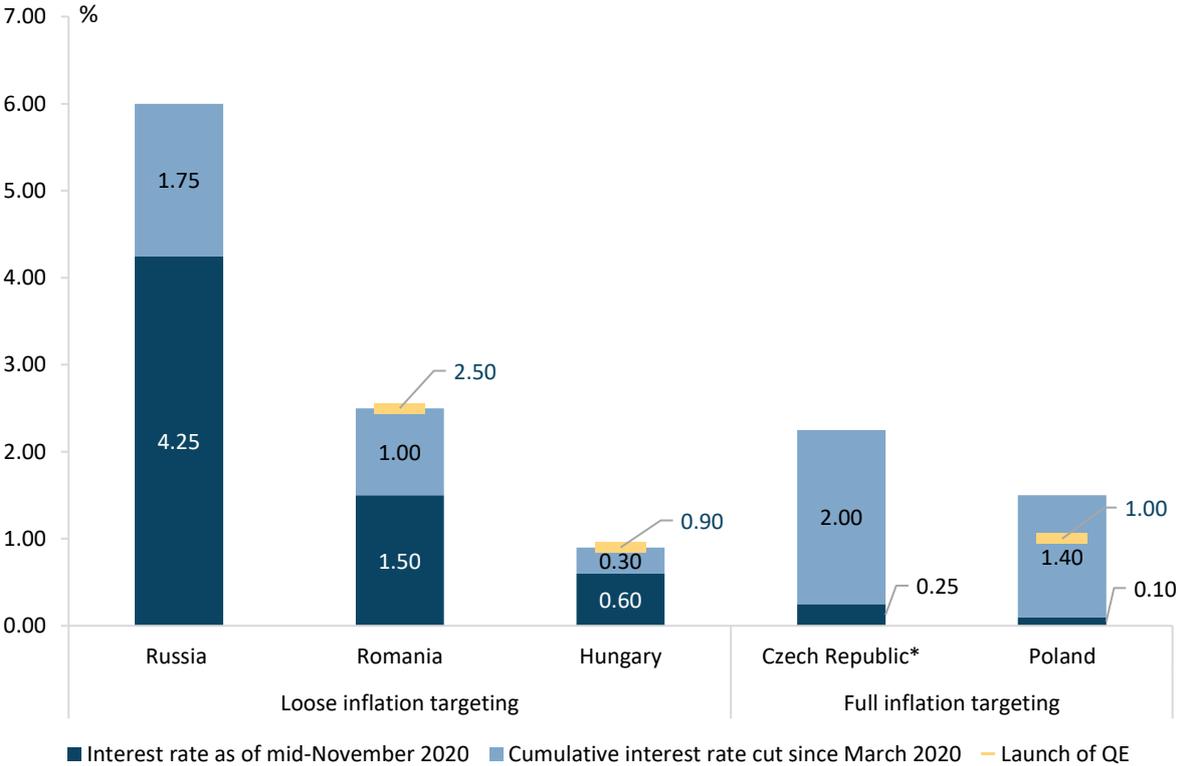
With regard to the group of CEE economies investigated in this study, we first observe from Figure 1 that the interest rate space before COVID-19 hit these economies was far from being exhausted, though certainly limited in some cases as e.g. Hungary. For the other four countries, policy rates ranged between 1.5% (Poland) and 6% (Russia). We then study the size of interest rate cuts (light blue bars) across the five countries in response to COVID-19 as of March 2020. It is worth noting that we group the five countries according to their monetary policy regimes. The monetary regime EME economies today usually operate on is inflation targeting (IT). However, contrary to the classical textbook version with free floating exchange rates, they often allow for more flexibility with regard to exchange rate interventions. Additionally, they also pay close attention to financial stability objectives. Based on these considerations, we follow a classification brought forth by Cobham (2019), outlined in more detail in section 6.2 of Annex A, and categorise Poland and the Czech Republic as full inflation targeting regimes and Hungary, Russia and Romania as loose IT frameworks⁷. The observation emerges from Figure 1 that countries with full IT regimes (right panel) made use of their interest rate space much more aggressively even if only very little margin to the ZLB remained, while loose IT countries acted more conservative on their interest rates keeping a certain margin to the ZLB.⁸ This result is in line with the finding reported by Gelos, et al. (2020) that greater transparency and credibility helps central banks to respond more aggressively to the crisis. Tenreiro (2020) emphasizes also that a credible monetary policy framework which ensures the anchoring of inflation expectations is key to successful monetary policy transmission under COVID-19. Even in a scenario of a potential temporary inflation rate overshooting due to strong currency depreciations potentially caused by easy fiscal and monetary stances, it is crucial for the return to target inflation that inflation expectations remain anchored. The discussion of the interest rate level at which some CEE economies launched a QE programme as also illustrated in Figure 1 is postponed to the following section on unconventional instruments.

inflation was only modest but the negative policy rate lead to an increase in financial vulnerabilities (Andersson & Jonung, 2020).

⁷ Section 6.2 in Annex A gives a detailed overview of monetary policy developments within each country.

⁸ A more detailed description on the sequences of interest rate cuts in each of the countries included in this study is given in the Appendix.

Figure 1: Interest rate cuts and point of entering QE



Note: *) In the Czech Republic, an amended CNB act for extended purchase of government securities and counterparties on secondary markets was passed in April 2020, the central bank, however, declared that it does not plan to start an APP immediately and so far has not done so.

Source: Benecki et al., (2020), own illustration.

Conclusion 3: Before COVID-19 hit the CEE economies looked at in this study, the available interest rate space was far from being exhausted in most cases. In response to the crisis, full IT regimes have used their interest rate space much more aggressively, even almost touching the ZLB. Loose IT countries on the contrary reacted more conservatively, still keeping a certain margin to the ZLB. The reason for full IT regimes responding more strongly seems to be found in the higher credibility their monetary regimes show.

Though certainly “unorthodox” when moving into negative territory, changes in key interest rates are different from unconventional policies in two aspects: First, generally they do not involve changes of the central bank’s balance sheet⁹ and, second, they usually also do not touch upon the central bank’s independence (Bossone 2013). This leads us directly to unconventional policy measures that do affect the balance sheet.

⁹ Under conventional monetary policy conduct this is not the case as balance sheets are predominantly composed of short-term assets and designed such that they align with targeted maturities (McMahon, et al., 2012).

3.2 Experience with unconventional instruments

Non-standard measures are typically designed for the same purpose that conventional instruments were developed for – to achieve price stability and help monetary policy to comply with this and other objectives it might be tasked with, as e.g. financial stability in the context of EME. To distinguish unconventional instruments from standard measures, the literature has reached consensus that the former can be characterized as *balance sheet policies* (Borio & Disyatat, 2010). This means that through the usage of these instruments, central banks actively use their balance sheet to directly influence market prices and conditions beyond the short-term policy rate. These operations therefore affect size, composition and risk profile of central bank balance sheets (as clearly seen in case of the FED and Euro system).

3.2.1 Asset purchase programmes - APP

Historically, APPs developed from the time of the great financial crisis in 2007/2008 when banks stopped lending to one another, which resulted in a credit crunch for households and firms. As policy rates in advanced economies were already near zero, central banks aimed to provide the needed liquidity and stabilize markets through the usage of APPs. These programmes can take the form of *quantitative easing (QE)* or *credit easing (CE)*.¹⁰ While QE and CE both imply an expansion of the balance sheet and increase the monetary base, the difference is explained by Bernanke (2009) as follows: “Under QE the central bank buys default-free government bonds from commercial banks on the secondary market¹¹ and thereby increases its balance sheet, which affects the economy through different transmission channels. The aim is to lower long-term interest rates so that monetary policy transmission would work as expected even as (short-term) monetary policy interest rates approach the zero-lower bound.” Put differently, QE aims at increasing the quantity of money through direct as well as indirect channels and to push up prices and economic activity thereby (see section 6.3 of Annex A).¹² CE on the contrary is supposed to change the composition of assets on the central bank’s balance sheet and to incentivize investors to participate in new corporate or bank bond issues as well as bringing down spreads so that credit conditions for financial and non-financial institutions are eased (Bossone, 2013).

With regard to its practical implementation, under CE the central bank exclusively buys defaultable privately issued bonds on primary and secondary markets, these are e.g. corporate bonds and residential mortgages. Compared to QE, credit easing is therefore more directly addressing the corporate credit market bringing down borrowing cost and thereby helping companies to raise

¹⁰ There are also APPs such as the Pandemic Emergency Purchase Programme (PEPP) announced by the ECB in March 2020 that allow for purchase of public and corporate bonds alike. Such programmes have, however, so far not been used in the realm of CEE economies.

¹¹ Technically, purchases on the primary market would also be possible but for most central banks would go against their mandate since they could be regarded as straight government financing.

¹² With regard to QE, there is new research such as Boehl, et al. (2020) emerging, which, contrary to previous studies, find a mild disinflationary effect for the economy from QE. This is because the supply side effects of facilitated investment, higher production capacities and thereby lower marginal cost for firms prevail over the increase in demand from an easing of borrowing conditions.

finances. Both, QE and CE, can be sterilized in order to mitigate the direct effect of the purchases on the money supply for the economy.¹³

In the Euro area all the unconventional measures the ECB uses today were introduced when the ZLB was reached. This, however, was not the case for some advanced EME that reacted to COVID-19 by embarking on QE with an interest rate still well above zero. Figure 1 also showed the interest rate level at which some CEE economies launched QE (yellow mark). Across countries, the observation holds that QE was launched when interest rates were still well above the ZLB. Only in the Czech Republic, where QE was legally approved but not yet used, is the interest rate almost at the ZLB, i.e. the picture is similar to that of the ECB (Boehl, et al., 2020). One can therefore suspect other motives behind the launch of QE in the remaining CEE economies.

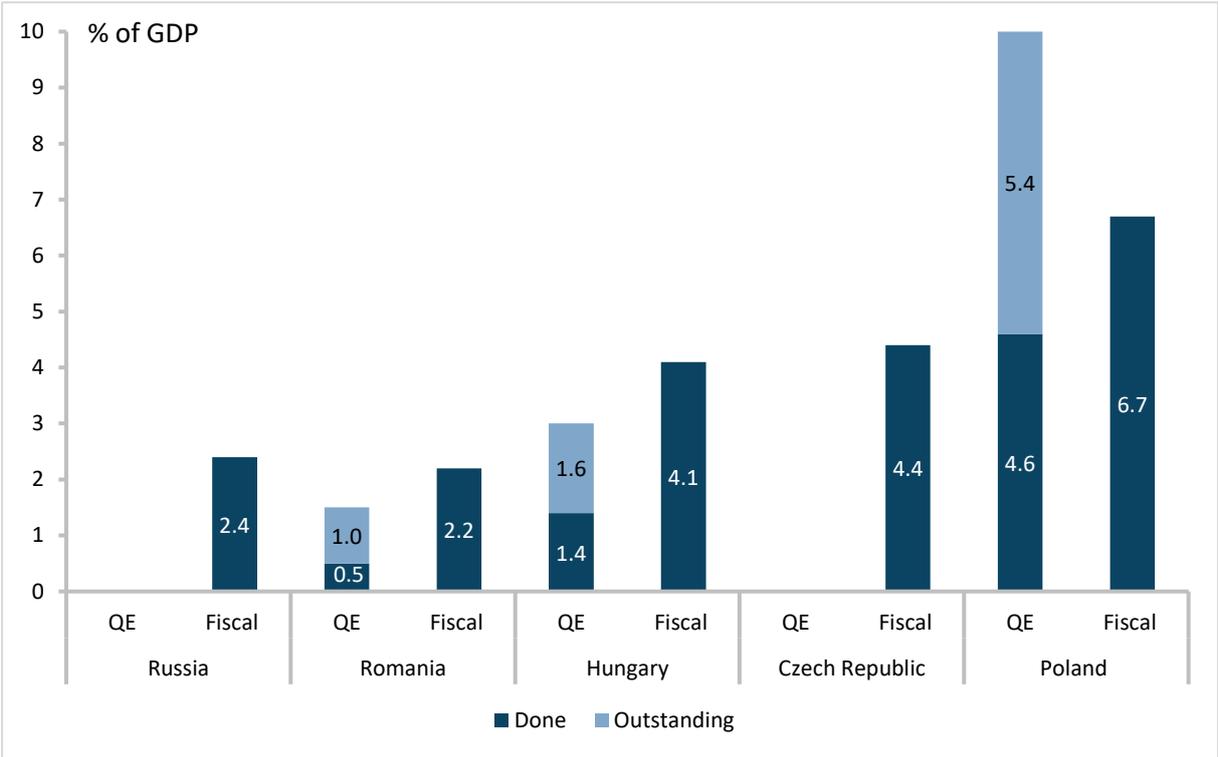
BOX II: QE in the Czech Republic - Not yet implemented, but legal approval

In light of interest rates being close to zero already in the early stage of the crisis, an amended Czech National Bank (CNB) act for extended purchase of government securities and counterparties on secondary markets was passed in April 2020. The central bank, however, declared that it does not plan to start the APP immediately. The main focus, as repeatedly emphasized by the National Bank, would be financial stability (Garvey, et al., 2020). Additional direct fiscal spending in response to COVID-19 is, however, relatively large, amounting to 4.4% of GDP. Due to the CNB's conservative stance, a potential QE programme would, however, be implemented very carefully and therefore not benefit the fiscal side too strongly. Seidler & Krpata (2020) argue that there is a significant risk for the exchange rate from launching a QE programme at this moment in time. Nevertheless, the monetary authorities in the Czech Republic have an "immense firepower" with regard to foreign exchange reserves (approximately 60% of GDP) to their disposal. Thus, even in a scenario where the koruna might continue to suffer, while at the same time active engagement in QE might be needed to support larger fiscal packages, the CNB would be in a position to credibly lean against depreciation pressures.

Other countries, however, did embark on QE. The motivation of central banks that did so might have been to limit the effects from elevated risk and term premia due to COVID-19. Furthermore, in countries such as Poland the response was apparently strongly motivated by its large fiscal response to the crisis. Figure 2 shows the amount of QE and direct fiscal expenditure in relation to GDP split into already carried out (done) and outstanding.

¹³ Described in more detail in Annex A, section 6.3.

Figure 2: Quantitative Easing and fiscal crisis response in CEE



Sources: Additional spending or foregone revenues in response to COVID-19 as % of GDP taken from IMF Fiscal Affairs Department (2020). For QE as % of GDP see Huang et al. (2020) and Garvey et al. (2020) for total estimates. Amounts November 2020.

When buying government bonds, the central bank lowers uncertainty in the market, acting so to speak as a “buyer of last resort” and thereby strengthening demand for these securities. Higher demand in turn brings down bond yields, which enables governments to borrow on financial markets and thereby ensures the functioning of their spending programmes. Figure 2 indicates that this nexus, which is clearly seen for Poland, might have been of consideration in Romania and Hungary as well and could over time also develop into a concern in the Czech Republic when crisis government expenditure rises further.

BOX III: The Polish experience with QE

The National Bank of Poland (NBP) did start to buy government bonds on the secondary market and expanded this programme in April 2020 to eligible assets guaranteed by the state, such as state-owned bank bonds and Polish Development Fund securities (Garvey, et al., 2020). Up until October 2020 the central bank has purchased an amount of 4.6% of GDP (IMF 2020). Of the so far purchased government bonds, around 85% have maturities of 5 years or longer. Estimates of the ING Bank show that in order to support the Polish fiscal programme of 6.7% of GDP in response to the crisis, the NBP's QE could even reach a maximum of up to 10% of GDP (Garvey, et al., 2020). Without QE, the government's fiscal expansion would have been much more reserved. Due to the current lack in credit demand from corporates and households as well as the tighter credit conditions for banks in Poland, QE is limited with regard to credit ignition. This implies that the NBP is largely sterilizing its QE driven liquidity at the moment as commercial banks welcome the opportunity to safely deposit their money holdings in central bank deposit facilities. However, it can be seen that this combination of aggressive interest rate cuts and government purchases lowered Polish treasury bond yields significantly already (Benecki, et al., 2020).

BOX IV: The Hungarian experience with QE and CE

The Magyar Nemzeti Bank (MNB) in Hungary also launched a QE programme. On 5 May 2020, purchases of forint denominated fixed-rate government bonds on the secondary market as well as mortgage bond transactions in the primary market started, both primarily with a maturity larger than 3 years. The MNB primarily wants to control the long-end of the yield curve. The reason is to strengthen monetary policy transmission and improve long-term supply of funding to the banking sector. While there is no fixed size for the QE programme, Garvey, et al. (2020) estimate a scope of 3% of GDP in total of which 1.4% are already conducted by November 2020. They conclude that, though the programme clearly benefits direct fiscal expenditures in response to the crisis summing up to 4.1% of GDP, and helps to stabilize financial markets, it is debatable whether it was necessary. So far, the exchange rate has adjusted flexibly in an orderly manner, indicating no larger depreciation risk. Furthermore, also the existing corporate bond purchase programme was extended. The additional liquidity induced by both programmes the MNB aims to sterilize through offering a preferential deposit facility to banks.

BOX V: The Romanian experience with QE

The National Bank of Romania (NBR) launched a government security purchase programme for the secondary market on 1 April 2020, which as of November 2020 amounts to only 0.5% of GDP. Garvey, et al. (2020) point out that Romania was one of the states where QE was the least expected. The country currently operates on relatively large fiscal deficits and has a poor track of fiscal discipline, which caused a downward trend in its rating reviews already. Furthermore, the central bank sticks to a tightly managed floating exchange rate with existing depreciation pressures. Besides that, the fiscal package passed in Romania (2.2% of GDP), is far smaller than in Poland. Due to the high deficit levels spurred by the procyclical government policies in the past, the fiscal response is very limited (Benecki, et al., 2020). What, however, might have spurred the call for QE were exploding yields on government bonds (by 200-300 bps) in early March 2020. Given limited liquidity and almost no demand for government securities, an almost frozen fixed income market confronted the finance ministry with difficulties to keep public financing running. The Euro crisis in 2011/2012 has shown that stagnation of trading activities in capital markets can trigger a meltdown of the bond market. Also, the NBR's focus on the short and belly part of the yield curve indicates that the programme is rather intended to be of limited size and short-term purpose. Nevertheless, Garvey et al. (2020) estimate a total amount of 1.5% of GDP needed in order to effectively stabilise public finances.

Conclusion 4: In response to COVID-19, contrary to advanced economies in the aftermath of great financial crisis, some CEE economies embarked on QE with interest rates still well above the ZLB. In light of - in some cases fairly large - fiscal spending programmes, this difference seems to be at least partly related to the beneficial fiscal effect QE has for the government.

3.2.2 (Targeted) long-term refinancing operations – (T)LTRO

In light of lower credit supply by banks and signs of funding difficulties on the money market, long term refinancing operations can be used to provide liquidity to banks at favourable conditions over longer terms. One special variant is called targeted long-term refinancing operations, where interest rates are set conditional on the quantity of newly extended loans such that long-term borrowing to corporates is encouraged. The interest rate of these programmes is usually, but not exclusively, set in reference to the average main refinancing rate¹⁴ and according to certain loan extension targets. Official interest rate cuts, therefore, also create a further stimulus with regard to long-term refinancing operations. The instrument well complements APPs as we also discuss further in chapter 4.

¹⁴ For the ECB's recent TLTRO amendment the rate is set in reference to the deposit facility rate. However, interest rates for (T)LTRO's can theoretically also be set uncoupled, which provides ground for further stimulus.

BOX VI: CEE experience with (T)LTRO

Poland: The Polish central bank introduced “rediscount loans” to banks – an unconventional tool similar to the ECB’s TLTRO programme. This measure aims at enabling banks to refinance their loans to the non-financial sector. In the same way as ECB’s TLTRO’s these operations are targeted.

Hungary: In March 2020 the MNB established long-term collateralised lending facilities with maturities ranging from 3 months up to 5 years. The long-term loan is given out to banks in exchange for collateral and with a fixed rate, i.e. banks will pay the interest defined upon announcement of the tender over the entire maturity. At each tender the MNB will define the interest rate of the instrument again, which, however, may not be lower than the base rate prevailing at the time of the tender. While the total amount of the programme is unlimited, the MNB will set the amounts it accepts at specific tenders taking into account current market developments to manage liquidity.

Russia: The Central Bank Russia in April introduced a three-year refinancing tool for banks to finance investment projects. Loans will come with 6.5% interest rate and would apply to projects that qualify for state guarantees. They will, however, only be accessible for large banks with a capital above USD 1.4 bn.

3.2.3 Collateral easing

Which securities can be used as collateral for monetary policy operations is usually strictly defined by central banks. Normally, non-investment-grade securities are not accepted. However, since the quality of collateral assets in turbulent times typically suffers from rating downgrades, funding conditions for banks start to worsen. To ensure, that banks continue to be able to refinance themselves via repo transactions, the temporary easing of collateral is applied. A central bank can increase the pool of collateral that banks have to their disposal and thereby grant them access to the needed liquidity. This policy avoids, in addition, a procyclical behavior by banks, as without collateral easing, banks might begin to sell those securities, which cannot be used as collateral anymore or only with very unattractive haircuts. This instrument also directly complements (T)LTRO’s as well as liquidity management operations in general.

BOX VII: CEE experience with collateral easing

Czech Republic: The CNB decided to increase the range of eligible collateral used in liquidity-providing repo operations including mortgage-backed securities from 18 May 2020.

Hungary: In March 2020 eligible collateral was expanded to corporate loans by the MNB. The adjusted market value of eligible, uncommitted securities so far not used as collateral, but available for use in central bank credit operations, is quite large. After the expansion in March 2020 it amounted to more than HUF 9,600 bn.

3.2.4 Internationally coordinated actions

Internationally coordinated central banking actions can take various forms such as central bank liquidity swap lines or foreign currency repo lines and are observed in response to the crisis in advanced economies and EME alike. These are preferential tools whenever tensions in foreign currency funding markets arise, since liquidity disturbances could impede investment projects and international trade as well as leading to stress scenarios within the banking sector potentially deepening an economic crisis. These liquidity shortages often arise when economies are highly interconnected, as e.g. the Euro area neighbouring states with the Euro area, and therefore have a need for foreign exchange liquidity. A swap or repo line then enables the domestic central bank to extend liquidity loans in the currency of the foreign central bank. In case of a swap line the foreign central bank will receive the domestic central bank's currency in exchange; for a repo line foreign currency denominated collateral is accepted in return. With these measures, spill-overs of liquidity tensions in major reserve currencies to domestic markets can be prevented.

BOX VIII: The Romanian experience with internationally coordinated central bank action

The ECB has set up a Euro repo line with the NBR of EUR 4.5 bn, which was extended until the end of June 2021 in order to provide needed Euro liquidity to the Romanian economy.

Conclusion 5: Beside APP's, other unconventional tools such as TLTRO's and collateral easing facilitate the provisioning of credit, first to the banking sector and second within transmission of monetary policy to the real economy. Internationally coordinated central banking action can further be used to ease liquidity shortages in some countries.

4 Conclusion: Lessons learnt & implications for frontier economies

Table 1 provides an overview of all monetary policy measures discussed in the study and each country's usage of conventional and unconventional instruments in response to the COVID-19 crisis. Starting again with the conventional interest rate tool, it stands out that Poland and the Czech Republic have taken very strong easing actions. Among the other three CEE economies, namely Hungary, Russia and Romania, the interest rate reaction is found to be significant but smaller than in Poland and the Czech Republic.

With regard to the use of unconventional monetary policy tools, also notable differences among CEE economies appear from Table 1. While the Polish monetary authorities seem to use their unconventional toolkit most strongly, comprising an APP and quasi TLTRO's, Hungary shows the largest variety of unconventional instruments in use, having established an APP, LTRO's and collateral easing. Applying unconventional instruments in concert as well as combining them with conventional interest rate policy seems to bring the greatest benefits. However, at the same time credibility of monetary regimes and good governance are regarded key for the effectiveness of unconventional tools in EME and therefore also in the CEE region. Both of the two countries named above run very transparent monetary regimes effectively communicating their policy decisions and issuing inflation reports regularly, thereby preserving their credibility.

Nevertheless, unconventional monetary policy tools can carry substantial risks and ill-judged use can trigger a decrease of central bank credibility, strong depreciation pressures for local currencies as well as higher risk premiums. The exchange rate channel often plays a more prominent role with regard to the effectiveness of unconventional instruments in EME than in advanced economies. Less developed financial markets and weaker interest rate transmission might also furthermore limit the impact of unconventional measures on long-term rates. With regard to the remaining three countries, some of these concerns might be present, as one observes that they use unconventional instruments far less, with the Czech Republic and Romania still being more active than Russia, but overall very cautiously. While the CNB, which is generally perceived as quite conservative, it is sticking to that reputation also by only formally introducing an APP programme with no active use yet and only relying upon collateral easing measures to further support the economy. The Romanian National Bank has launched only a very small QE programme and engaged in internationally coordinated central bank action, setting up coordinated Euro repo lines with the ECB. This illustrates again the importance of financial stability issues, in particular for small open economies such as Romania, which can be subject to large capital in- and outflows. Russia is the only country that has only launched one instrument, namely LTRO's.

Table 1: Categories of monetary policy measures and degree of usage in CEE in light of COVID-19

Introduction* or easing in response to COVID-19	Conventional		Unconventional			
	Policy rate		APP	(T)LTRO	Collateral measures	International coordinated actions
Poland	Strong		Strong	Yes	No	No
Czech Republic	Strong		Yes*	No	Yes	No
Hungary	Medium		Medium	Yes**	Yes	No
Russia	Medium		No	Yes**	No	No
Romania	Medium		Small	No	No	Yes

Notes: *) Indicates legal approval but no active use of the instrument. **) LTRO only.

Sources: IMF (2020), as of November 2020.

The following lessons can be derived from the country experience looked at within this study:

Lesson 1: In line with theoretical considerations, CEE economies first made use of their conventional monetary policy toolkit in response to the COVID-19 pandemic. The available interest rate space was reduced aggressively and almost to maximum extent, when central banks operate under full inflation targeting giving their policies greater credibility. Loose inflation targeting and therefore less credible monetary authorities also undertook significant interest rate cuts but kept some margin.

Lesson 2: On the back of an expansionary global monetary policy stance, and in light of the deflationary pressures spurred by the COVID-19 pandemic, certain CEE economies went beyond conventional monetary easing, launching some unconventional tools for the first time in their history. Contrary to advanced economies, central banks in the CEE region apply unconventional monetary policy instruments not just as a substitute for conventional tools when these are at the limit (i.e. zero- or effective lower bound) but rather in parallel and combination to conventional instruments.

Lesson 3: Among CEE economies, there is a strong link between the size of the direct fiscal response to the crisis and the use of unconventional measures. This is partly due to the unique economic challenge of a combined fiscal and monetary response the COVID-19 pandemic calls for. Large fiscal spending programmes in response to the crisis in some CEE economies have spurred the need for a supporting asset purchase programme.

Lesson 4: Unconventional tools (TLTRO) facilitate the provisioning of credit, first to the banking sector and second within transmission of monetary policy to the real economy.

Lesson 5: Unconventional measures are the more useful the more developed financial markets are. Economies with well-developed financial sectors have a more direct link between yield curve changes and aggregate demand.

Lesson 6: A credible monetary regime seems to be essential for a successful and sustained use of unconventional instruments. This particularly true for EME and frontier economies. As small open economies they often have to face limited fiscal space, financial stability concerns and/or higher inflation.

Lesson 7: An active use of unconventional measures in CEE economies has benefits, but also carries risks. Beneficial is that the new toolkit features strong complementarities and allows for country specific usage. That leads central banks in the CEE region to apply these tools most often in combination and target specific market failures like liquidity shortages. A downside, however, is that risks associated with a too heavy use of these new (and untested) instruments might create financial instability, exchange rate pressures or an inflation rate overshooting. These risks, particularly the risk of inflation rate overshooting, are quite present for the majority of the CEE economies looked at in this study and can expose them to even greater economic turbulences.

Finally, we ask ourselves what the lessons drawn above can teach us about the use of unconventional instruments in frontier economies such as those of the Eastern Partnership of the EU as well as in Central Asia. Besides being small open economies, these countries are often characterised by less credible monetary regimes and weaker economic governance which typically results in higher and more volatile inflation rates. Other characteristics are undeveloped local financial markets and a strong

reliance upon external financing, which limit fiscal space. A high degree of dollarisation and a certain sensitivity to global risk swings as well as sudden stops of capital flows and high exchange rate volatility are often the consequence. At the beginning of the COVID-19 crisis, the global flight into safe-haven currencies caused bond spreads in those countries to rise dramatically and thereby created a high risk of debt distress. This led to a temporary loss of financial market access and an even stronger need for IMF support than in normal times. In response to that, the G20 countries pushed the Debt Service Suspension Initiative (DSSI) granting debt-service relief to the least developed countries in the world.

With regard to monetary policy, one can say on the one hand that the strong and coordinated monetary easing in advanced economies in response to the crisis has helped to ease stress in global financial markets significantly, which also benefited EME and frontier economies alike. On the other hand, for the time being, frontier economies should refrain from introducing unconventional instruments due to several reasons:

- First, underdeveloped local financial markets and a thereby limited availability of high-quality domestic assets would make it difficult to implement APP's. Where nevertheless possible, these programmes might, however, impair the availability of collateral within the banking system.
- Second, the high degree of dollarisation and the weaker interest channel harm domestic monetary policy transmission. Therefore, the scope to boost asset prices and aggregate demand through lower long-term interest rates, one of the key mechanisms how unconventional instruments work, is very limited.
- Third, frontier economies might rather not experiment with unconventional tools at this point in time since the often more pronounced exchange rate channel could create extra pressures for the exchange rate, which happens to be more volatile than in EME already without the extra easing. The downward pressures that APP's typically create on the exchange rate and yields could in consequence intensify capital outflows and inflationary tendencies in countries with weak fundamentals.
- Fourth, the incautious use of unconventional instruments harbors significant risk for fundamentals along several dimensions. Launching APP's in economies with weak monetary as well as fiscal policy frameworks may lead to concerns about fiscal dominance thereby causing higher risk premia. Furthermore, increased balance sheet exposure to long-term debt may weaken the central bank's credibility to raise interest rates when needed and therefore poses a threat on achieving price stability in the long run. Last, a central bank's lasting presence as buyer of last resort in local currency bond markets could distort the price discovery process and the development of financial markets.

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6 Annex A

6.1 Theoretical frameworks to study the effects from COVID-19

What is a suitable framework to study the effects from the economic shocks COVID-19 causes and what a policy response does it call for? To answer this question, we look through the lens of a stripped-down version of the standard New Keynesian model (Gali, 2009). Employment and output, in the Keynesian set up, are both determined by aggregate demand. The latter in itself is, however, also positively dependent upon labour productivity growth. Increased Productivity spurs agents' expectations on future incomes and, therefore, encourages them to spend more already in present times whereby employment increases (Lorenzoni, 2009). This results in a positive relation between labour productivity growth (g) and employment (l) on the demand side. Furthermore, demand is also positively linked to the real interest rate, i.e. lower interest rates can boost aggregate demand e.g. by encouraging agents to borrow.

6.1.1 A simple model

In such a new Keynesian world Fornaro & Wolf (2020) make two decisive but helpful assumptions in order to derive an expression for aggregate demand: first, that inflation is constant and, second, that central banks set their policy rate by reacting to deviations of actual employment from full employment.¹⁵ The resulting aggregate demand side expression can be illustrated as an upward sloping curve in the g - l space of Figure 3 (left panel). Furthermore, in line with the standard new Keynesian model, one can first assume labour productivity growth to be exogenous and therefore constant (even across different levels of employment), which simplifies things. The supply side of the economy can, therefore, be summarized by the horizontal blue graph in the left panel of Figure 3, which Fornaro & Wolf (2020) also call the general government (GG) line – essentially representing the evolution of the productivity growth rate.

Given this simplified model, we then ask: How would one best illustrate the shock caused by COVID-19? On the supply side, the shock is likely to trigger a persistent drop in the future capacity of production as firms cut back on their investment, workers-firms matches are affected and some firms might even go bankrupt.¹⁶ Fornaro & Wolf (2020) show that the model can capture these effects through a permanent decline of labour productivity growth, which means that the GG curve in the left panel of Figure 3 will be lowered to the future rate g' . Though it might be debatable whether a permanent fall is a realistic scenario, the authors argue that their results generalize to cases in which the decline is at least persistent – a generally realistic scenario given the recent developments of the crisis.

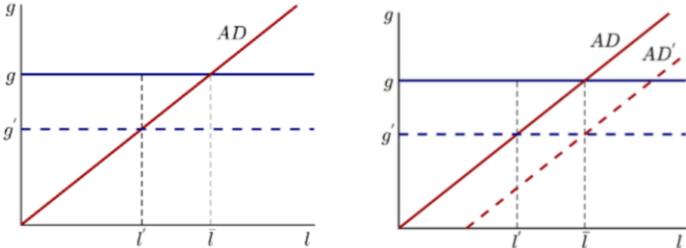
And given the presence of the shock in this simple model, what is the appropriate monetary policy response? The resulting scenario actually calls for a monetary policy intervention since lowering the

¹⁵ Obviously, inflation is not constant in reality and also EU CBs like the ECB might not be responding directly to the employment gap (as e.g. the FED system does), but we follow Fornaro & Wolf (2020) in making these assumptions for simplicity.

¹⁶ Demand side disturbances, in line with the previously reported finding of being small on impact, therefore, are for the moment neglected.

interest rate would push up aggregate demand as illustrated in the right panel of Figure 3 by the shift in the AD curve to the right (AD'). Given that the impulse is strong enough, full employment (\bar{l}) can be restored.¹⁷

Figure 3: Impact of the COVID-19 shock in a simple aggregate model



Sources: (Fornaro & Wolf, 2020), modified by the authors.

6.1.2 An advanced model

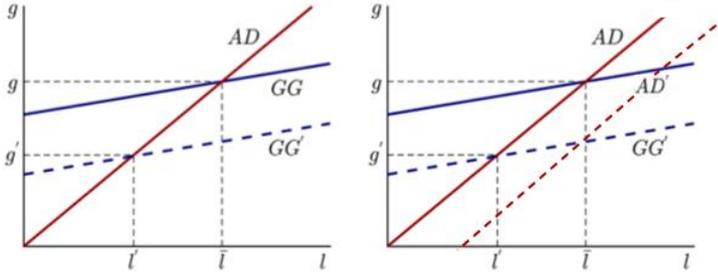
Having said that the simple model gives support to a monetary policy intervention in response to COVID-19, one could ask the same question again for an advanced model where labour productivity growth is endogenous. The rationale behind this is that firms do aim to increase their labour productivity through investment in the capital stock or by developing innovations that lead to improved product quality. For investment decisions it is in turn reasonable to assume that they are based upon aggregate demand and thereby employment: When demand and thus employment is high, the return from investment is expected to be high as well and vice versa. Therefore, we can assume a positive link between labour productivity growth and employment on the supply side as well, which is illustrated by an upward sloping GG supply curve in the left panel of Figure 4.

Given the advanced model, how does the shock look like? The short answer: Almost the same. However, the negative supply shock, particularly when being as persistent as it seems to be the case for the shock induced by COVID-19, in shifting down the GG curve now can initiate what Fornaro & Wolf (2020) call a “supply-demand doom loop”. The elasticity with regard to employment is stronger and therefore the larger employment losses cause aggregate demand to fall as well. This downward pressure on demand due to the initial supply shock now leads to a further drop in productivity as firms cut back on their investment. With the lower productivity growth, demand decreases even more and a vicious cycle – the “supply-demand doom loop” – unfolds, amplifying the effect on employment and productivity.

As argued before, the overall demand side effects are likely to have larger consequences for the economy than the disturbances on the supply side. Figure 4 (right panel) shows that a monetary policy response in such a scenario is fairly effective as it has a multiplier effect on demand and employment. Higher demand encourages firms to invest more. Thereby strengthened consumers expectations support demand further and can actually offset the vicious supply-demand cycle. A monetary easing, therefore, contributes to an increase in demand once the shutdown measures are abandoned and economic agents are allowed to spend again. The important role monetary policy actions have in

fighting the economic consequences from the pandemic thus is even more pronounced in the advanced model.

Figure 4: Impact of COVID-19 shock in an advanced aggregate model



Sources: (Fornaro & Wolf, 2020), modified by the authors.

6.2 Monetary Policy regimes in CEE

A monetary regime encompasses the constraints on the ability of the monetary authorities to influence the evolution of macroeconomic aggregates. Therefore, the instruments monetary policy makers can use, e.g. in response to COVID-19, are predetermined by the underlying monetary policy regime it operates on. Therefore, transmission and success of monetary policy measures depend on the monetary policy regime. Cobham (2019) has invented a classification for monetary policy regimes in advanced economies and EME which brings together monetary policy and exchange rate policies. The reason is particularly relevant for EME: How they set their exchange rates directly influences the monetary policy choices their authorities have and vice versa. Based on regular IMF consultation documents Cobham (2019) distinguishes between different target variables, such as inflation, money and/or the exchange rate, the degree to which the target is followed (narrow or wide, stationary or converging) and different types of discretion (from incoherent to well-ordered).¹⁸

Many EME today run a *flexible inflation targeting regime*, allowing their exchange rate to float within a certain corridor. This is somehow different from a classical textbook inflation targeting framework under which price stability is pursued by interest rate adjustments while the exchange rate is allowed to float freely. FX interventions in the textbook framework are therefore an exception. In practice, however, large capital inflows and strong exchange rate appreciations after the great financial crisis, spurred by advanced economies’ near zero interest rate policies and asset purchase programmes, caused EME to control the floating of their exchange rate through FX interventions. Furthermore, these regimes were often also effectively combined with macroprudential policies to protect domestic financial markets from loose global financial conditions (BIS, 2019).¹⁹ As indicated by their macroeconomic performance over past decades, these complementing policies in EME apparently helped to successfully offset a worsening in the tradeoff for central banking stabilization policies due to large capital flows and exchange rate volatility.²⁰ In that regard the established inflation targeting

¹⁸ The latter will not be a discerning feature in the underlying analysis and therefore is not further considered.
¹⁹ In some cases, capital flow management measures were used as well.
²⁰ The technical appendix contains a formal representation of the tradeoff that exists for an EME central bank when trying to reduce the inflation gap and the output gap. It also shows graphically that capital flows and

regimes in EME differ from their respective textbook counterparts as they are not solely aiming at stabilizing prices but also financial conditions. This twofold focus is quite crucial since EME, as said before, are often more restricted in their fiscal space than advanced economies because of financing constraints. The critical strength to issue sovereign debt in local currencies was achieved over the last decade thanks to a decrease of exchange rate risk in government balance sheets and monetary easing in advanced economies flooding the market with abundant liquidity.²¹ The above described modification of a textbook inflation targeting regime is fairly common among EME and also most countries in the CEE region implicitly take this approach. We, therefore, follow Cobham (2019) and distinguish the regimes in the CEE area rather based on the degree they are committed to full inflation targeting.

6.2.1 [Full inflation targeting](#)

These regimes are characterized by the specification of narrow stationary targets that typically are attained. A narrow inflation rate target implies setting a point target or a target range of 2% or less. The wording “typically attained” refers to outcomes within 1% of the target range or within 2% of the point target. Furthermore, one larger deviation from the target every 3 years or even more regularly are allowed for if inflation expectations further remain anchored (Cobham, 2019).

[Poland](#)

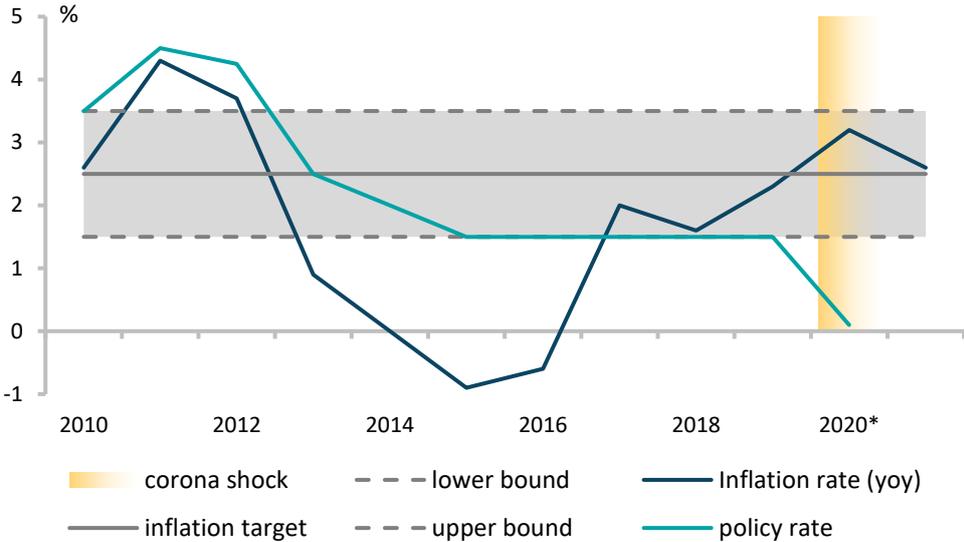
In 1998 the National Bank of Poland (NBP) formally started to converge to inflation targeting, but rather erratically. The narrow targets were missed in two out of 6 years. Since 2004 the NBP applies full inflation targeting. Though the inflation target of 2.5% with a permissible fluctuation band of ± 1 percentage point was missed between 2011 and 2013 as well as strongly undershot between 2014 and 2016, long term inflation expectations remained anchored. Since 2017 inflation converged back to the target rate and stayed within the band as seen in the figure below.

With regard to monetary policy actions, the figure below shows how the NBP lowered its policy rate (green line) since 2011. Recent years were marked by constantly low interest rates of 1.5%. The monetary policy stance before COVID-19 hit the economy in 2020 was therefore rather expansionary.

exchange rate volatility further worsen this tradeoff in terms of overall welfare and how FX interventions and macroprudential policies can help to offset the negative welfare effect.

²¹ We will see in the next chapters that this was an important step towards the availability of unconventional instruments.

Figure 5: Inflation rate, its target and the policy rate in Poland



Notes: *) indicates forecasted values. Inflation (yoy) based on yearly average.

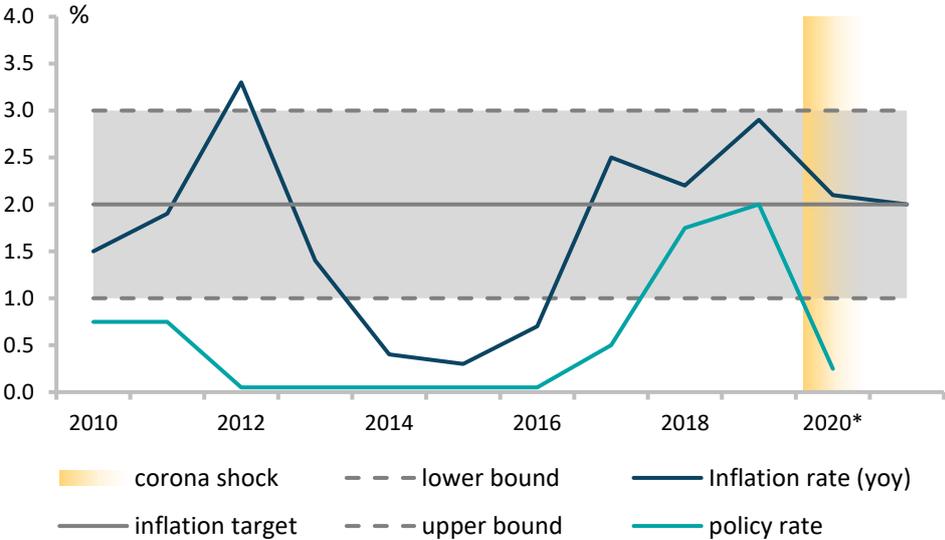
Sources: Data based on IMF (2020). Inflation target and band taken from national sources at the NBP.

Czech Republic

The Czech Republic had to undergo a similar path as Poland to achieve full inflation targeting. From 1998 to 2005 loose convergence to inflation targeting was observed. Declining inflation targets were met or near-met with some exceptions in 2003. In 2006 the Czech National Bank (CNB) made the move to full inflation targeting and from there onwards generally met its target, which today is set at 2% with a band of ±1 percentage point. During temporary over- or undershootings anchored inflation expectations helped to quickly move inflation back into the target zone again (Cobham, 2019).

With regard to the policy rate (green line) one observes a different pattern than for Poland. While interest rates were kept very low between 2012 and 2016, recent years before the COVID-19 pandemic rather reveal a tight monetary stance. The policy rate was raised repeatedly up to 2% in 2019 and interest rate space gained.

Figure 6: Inflation rate, its target and the policy rate in the Czech Republic



Notes: *) indicates forecasted values Inflation (yoy) based on yearly average.

Sources: Data based on IMF (2020). Inflation target and band taken from the national sources at the CNB.

6.2.2 Loose inflation targeting

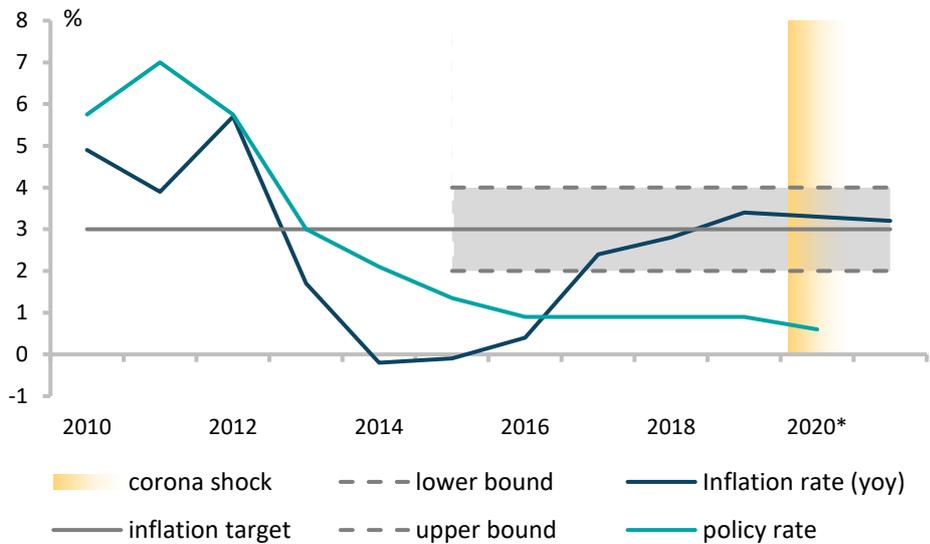
Cobham (2019) classifies a monetary policy framework as loosely inflation targeting once the narrow stationary targets are not well hit or wider targets are attained. A regime still counts as loosely inflation targeting once the target range is missed by no more than 2% or the inflation rate stays within 3% off the point target. The wording “wider targets attained” implies less clearly specified inflation targets and deviations of 2-5% from the target. Hungary, Romania and Russia count into this group.

Hungary

In 2001 Hungary’s central bank (MNB) formally converted to inflation targeting, establishing inter alia quarterly inflation forecasts. Their effort to reduce inflation were, however, only partly successful. Inflation targets were missed more than once and the policy interest seemed to respond to exchange rate dynamics and fiscal interventions as well. From 2007 onwards, static and continuous inflation targets were introduced and the exchange rate band abandoned. While professional forecasters’ inflation expectations remained broadly anchored, inflation still moved above or below target frequently as the figure below shows. Closer inflation targeting was only established in 2015 when the target rate of 3% was complemented by a band of ±1 percent point. Though inflation remained within its target zone in recent years, the regime is therefore rather classified as loose inflation targeting.

Concerning monetary policy actions, the graph below shows that the MNB lowered the policy rate repeatedly since 2011 and kept it unchanged at a very low rate from 2016 to 2019 – a strongly similar pattern to Poland. Also did the MNB in 2016 already lower the overnight deposit rate to -0.05% - reaching negative interest rate territory for the first time. The policy stance before the corona crisis was therefore rather expansionary.

Figure 7: Inflation rate, its target and the policy rate in Hungary



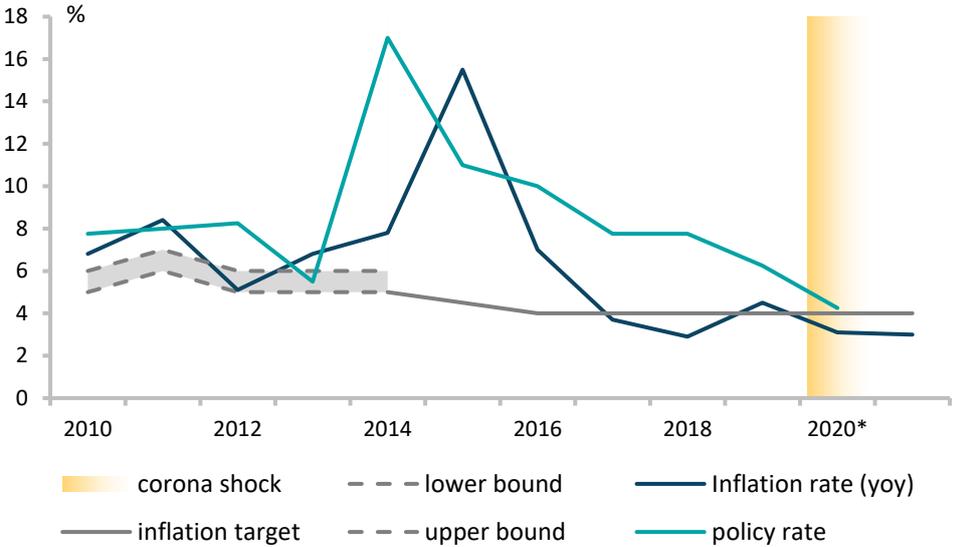
Notes: *) indicates forecasted values. Inflation (yoy) based on yearly average.
 Sources: Data based on IMF (2020). Inflation target and band taken from national sources at the MNB.

Russia

Between 2001 and 2013 the Russian central bank (CBR) used target ranges for inflation. From 2014, however, concrete targets were established as a result of stronger preferences for inflation objectives than for exchange rate dynamics. While the desired targets were largely overshoot in 2014, 2015 and throughout most of the time in 2016, in more recent years inflation aligned very well to its current target of 4% as the graph below shows. As target horizons and central bank communication are, however, still far from being fully-fledged, Cobham (2019) classifies Russia as a loose inflation targeting regime.

The policy rate (green line) in Russia was at around 8% before the Russian crisis in 2014 – 2017 forced the CBR to correct interest rates upwardly to prevent further depreciations of the ruble. Only slowly the policy rate could be lowered to similar values as before the crisis reaching 8% in 2017. In 2018 the policy rate was kept constant and only slightly lowered to 6% in 2019. The monetary stance the CBR entered the corona crisis with can therefore be described as slightly expansionary.

Figure 8: Inflation rate, its target and the policy rate in Russia



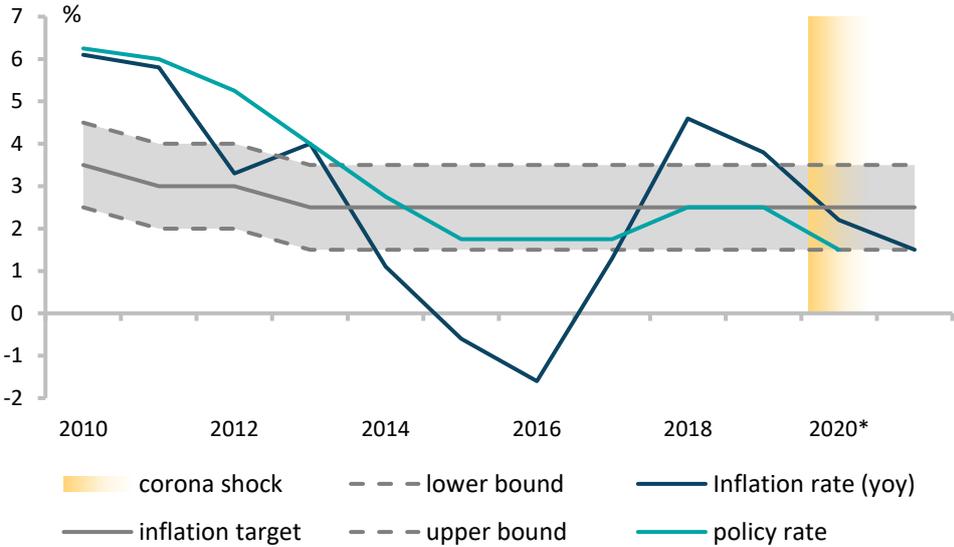
Notes: *) indicates forecasted values. Inflation (yoy) based on yearly average.
 Sources: Data based on IMF (2020). Inflation target taken from national sources at the CBR.

Romania

The Romanian central bank started loose inflation targeting in 2005. Convergence to inflation targeting was, however, rather erratic with several large overshoots and nearby missed targets in the following years. While there was some evidence that inflation expectations remained anchored in the top half of the target band, a recurring difference between the policy rate and the effective rate was an indication for a non-fully-fledged inflation regime. As seen from the graph below, downward adjustments of targets and their bands took place between 2010 and 2013. In 2014, however, the National Bank of Romania (NBR) established a regime with a static inflation target of 2.5% and a target band of ± 1 percentage point. The regime can, nevertheless, rather be categorized as a loose inflation targeting framework due to the large undershoots in 2015 and 2016 which happened because of tax cuts (Cobham 2019). After a brief overshooting in recent years inflation in 2020 seems to move towards its target again.

With regard to the monetary stance it appears that Romania followed a similar interest rate path as Poland and Hungary. While the policy rate (green line) was still relatively high in 2010, the years thereafter were marked by repeated rate cuts down to 1.75% in 2015. While the rate was then similarly as in Poland and Hungary kept their rate constant at this low level, the slight increase in 2018 was not as pronounced as in the Czech Republic. Also, in 2019 the rate was kept at this relatively low level compared to the past. It can be concluded that the NBR was already operating on a rather expansionary monetary policy stance before the corona crisis hit the Romanian economy.

Figure 9: Inflation rate, its target and the policy rate in Romania



Notes: *) indicates forecasted values. Inflation (yoy) based on yearly average.
 Sources: Data based on IMF (2020). Inflation target and band taken from national sources at the NBR.

6.3 Transmission channels of QE

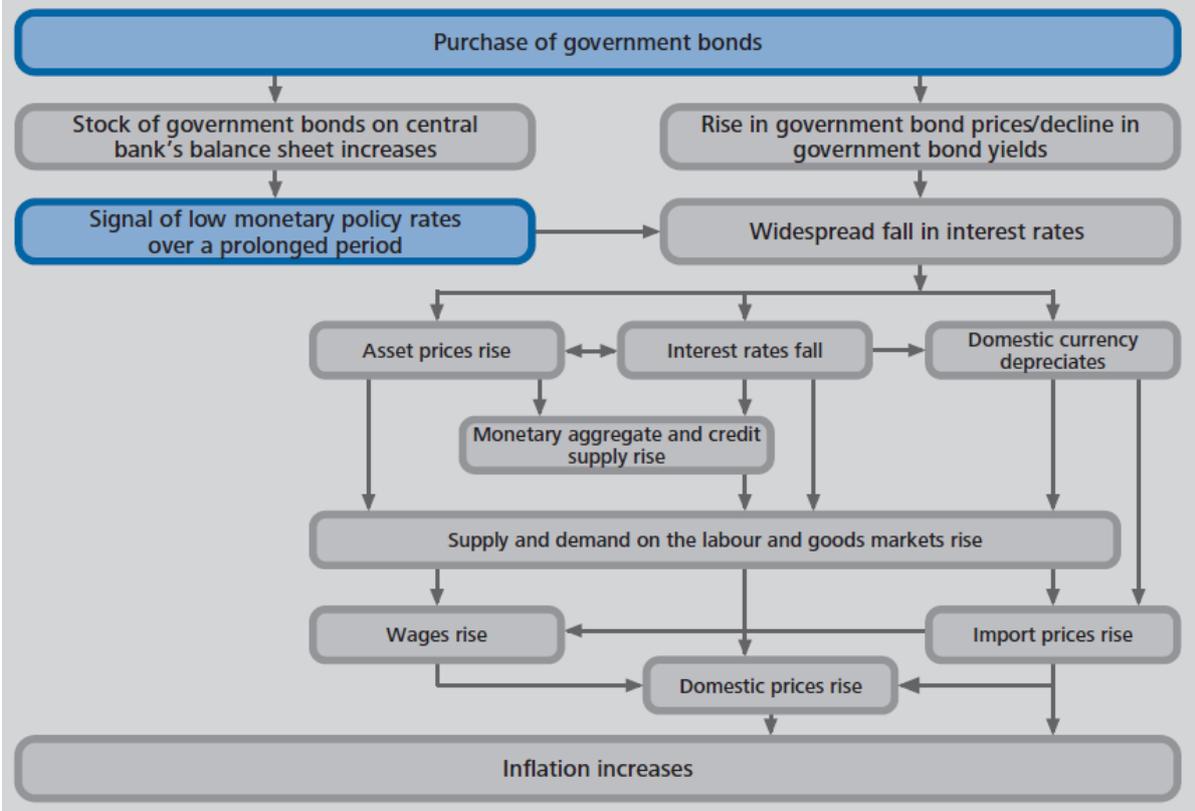
Technically, there is a direct effect of QE working through a bank lending channel. In exchange for selling government bonds to the central bank, banks’ reserves at the central bank are increased. Theoretically, banks could use these newly gained reserves to increase lending to the economy. In practice, there is, however, less and mixed evidence for this channel’s existence (see e.g. Horst & Neyer, 2019). It rather seems that banks, potentially out of concerns about their financial health e.g. have accumulated excess reserves in recent years (Horst & Neyer (2019)).

With regard to the indirect effects of QE, there is, first, a *portfolio rebalancing channel*: As shown in the figure below, the central bank’s purchase of government bonds drives up prices of these bonds and causes their yields to fall. The decrease in yields of government securities will, first, lead to a widespread fall in interest rates. And second, as investors might sell government securities for the reason of lower yields and rebalance their portfolios with other assets instead, prices of these other assets will increase as well (Deutsche Bundesbank, 2016). Given the decreased costs of borrowing from lower interest rates, credit supply will rise which fosters overall supply and demand on the labour and on the goods market. As a consequence, wages and prices will increase leading to higher inflation. The portfolio rebalancing channel can be further reinforced once negative rates are charged for reserves and holding excess reserves becomes costly (Hammermann, et al., 2019).

Second, via the *signaling channel* APPs underscore the central bank’s intention to keep policy rates low over an extended period of time providing the necessary monetary stimulus to the economy. Signaling an expansionary monetary policy stance through usage of APPs lowers interest rate expectations along the yield curve and generates easy financing conditions which in turn spur credit demand and, as a result, push aggregate demand and inflation. Furthermore, the resulting lower yields

on sovereign bonds also help financial markets to stabilize and governments to access funding for their spending programmes.

Figure 10: Transmission process of APPs



Notes: The blue fields denote the central bank's active intervention in the transmission process. For reasons of clarity, the chart does not take into account any feedback effects.

Source: Deutsche Bundesbank (2016).

Third, there is the *bank capital and balance sheet channel*: The rise in asset prices in response to the APP implies that total wealth in the economy is increased as well. For banks this means higher profits, which increase banks' capital. More capital in turn helps banks to extend more loans but also facilitates their access to funding needed for the refinancing of loans to enterprises ultimately increasing the banks' willingness to provide credit (Deutsche Bundesbank 2016).

Fourth, within the special focus of this study, there is also the *exchange rate channel* to be mentioned. By lowering interest rate, APPs often lead to higher depreciation pressures of the domestic currencies. The effect works through the interest rate channel as lower rates lead to capital outflows and a drop in foreign demand for the domestic currency. While this effect has positive implications for output and inflation, it could be problematic for EME once foreign reserves are very limited and capital outflows run out of control.

Sterilization of QE

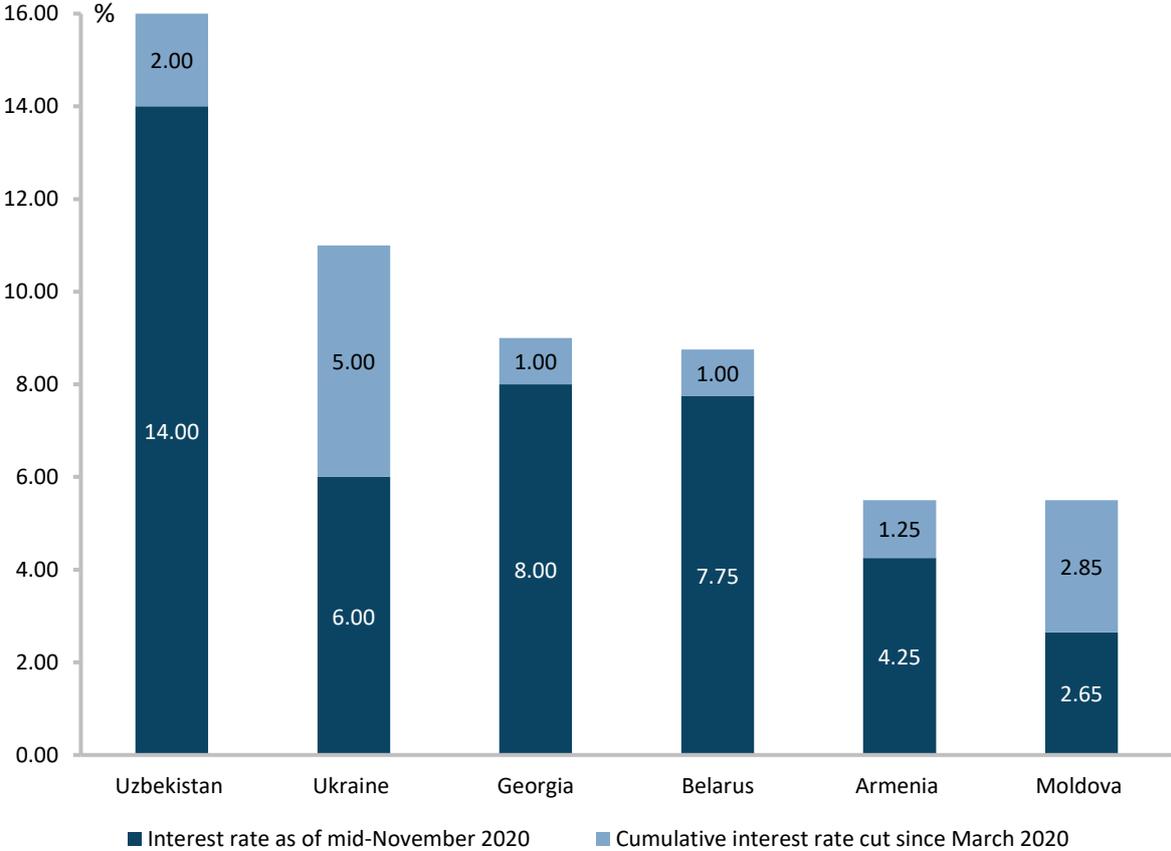
As said before, under the APP a central bank buys government bonds from banks and in exchange creates new reserves for banks in their central bank deposits. These newly gained excess reserves count into the base money and push up the central bank's liabilities. The asset side is also altered through holding more government bonds, meaning the central bank's balance sheet grows. In itself

the newly created excess reserves are fully liquid and banks can use them in the interbank market. Sterilisation now happens, when such new reserves are somehow withdrawn from the system. A central bank might e.g. create new short-term deposits for banks at favourable interest rates in order to do so. Both, reserves and short-term deposits at the central bank count into the base money, but only larger amounts of reserves can via the interbank market transmit into the higher monetary aggregates (M1-M3) raising the supply of money in the economy. If the central bank sterilises the rising money supply (M0), it counteracts the direct impact of APPs on inflation (McMahon et al. 2012). However, under usual conditions credit will still be stimulated via the above described indirect effects of APPs driving up inflation as well. A priori it is difficult to say whether a central bank should sterilise its QE programme or not. In favour speaks that, the overall effect might be stronger than intended leading to higher inflation in the long run. But against it there is the concern that QE could not be effective enough in scenarios when banks are reluctant to serve the economy with credit and/or borrower are unwilling to take loans.

7 Annex B: Comparative analysis of GET countries

Figure 11 shows the conventional monetary policy reaction for countries the German Economic Team advises. It stands out that interest rate cuts were, except for Ukraine and Moldova, rather conservative and carefully taken. There might be several reasons explaining this reaction, we only list some here: First, in some cases inflation is well above target (Uzbekistan and Georgia). Second, as small open economies that need to take into consideration currency depreciations once the monetary stance becomes very expansive, there might be fixed exchange rate policies or limited foreign reserves holding back monetary authorities. And, third, none of the following countries passed fiscal packages as large as Poland or Hungary, that would call for further support from the monetary side. As said before, there might be many more reasons relating to financial stability issues or country specific characteristics present, which we do not touch upon in greater detail in this study. The following provides a short overview of each countries monetary regime, the specific economic consequences the COVID-19 pandemic caused with the country and the monetary policy response policy makers took in order to counteract the effects.

Figure 11: Interest rate cuts in GET countries as of March 2020

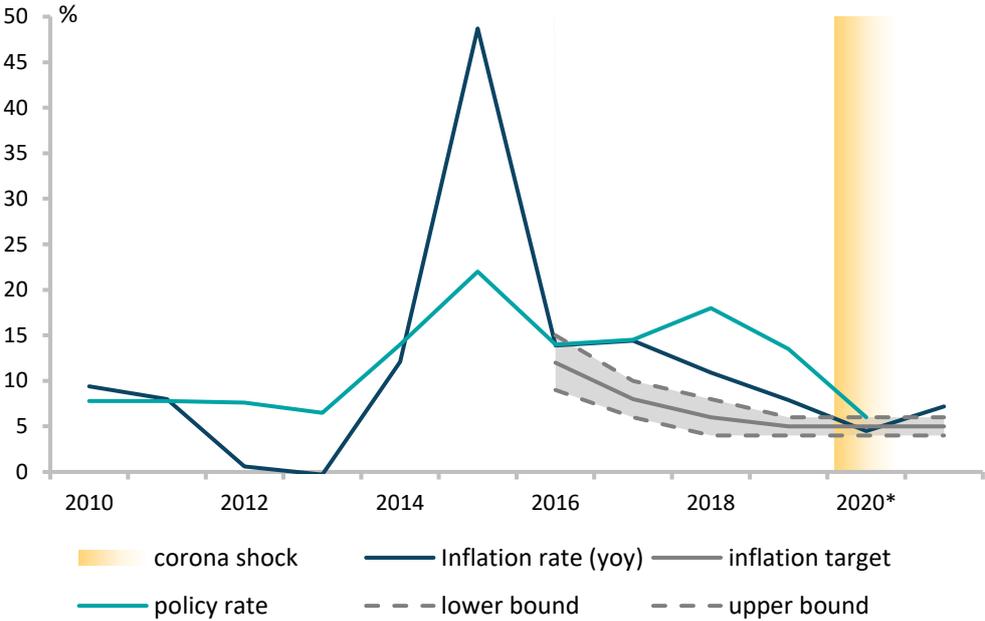


Source: (IMF, 2020), own illustration.

Ukraine

In September 2015, the National Bank of Ukraine (NBU) approved targeting price stability, which implies ensuring a flexible exchange rate regime. An inflation targeting regime was introduced only in 2016 and a medium-term goal was aspired as a gradual disinflation strategy. While an inflation target of 12% having a range of ± 3 percentage points was set for 2016, the target rate for 2019 and thereafter was 5% with a range of ± 1 percentage point. First results of the pursued strategy are observable in 2020, when the inflation rate is forecasted to settle at 4.1% nearby its lower bound. The NBU uses the key policy interest rate as its main instrument. Since 2018 this rate was continuously lowered and a rather expansionary monetary stance was followed.

Figure 12: Inflation rate, its target and the policy rate in Ukraine



Notes: *) indicates forecasted values.

Sources: Data based on IMF (2020). Inflation target taken from the National Bank of Ukraine (2020).

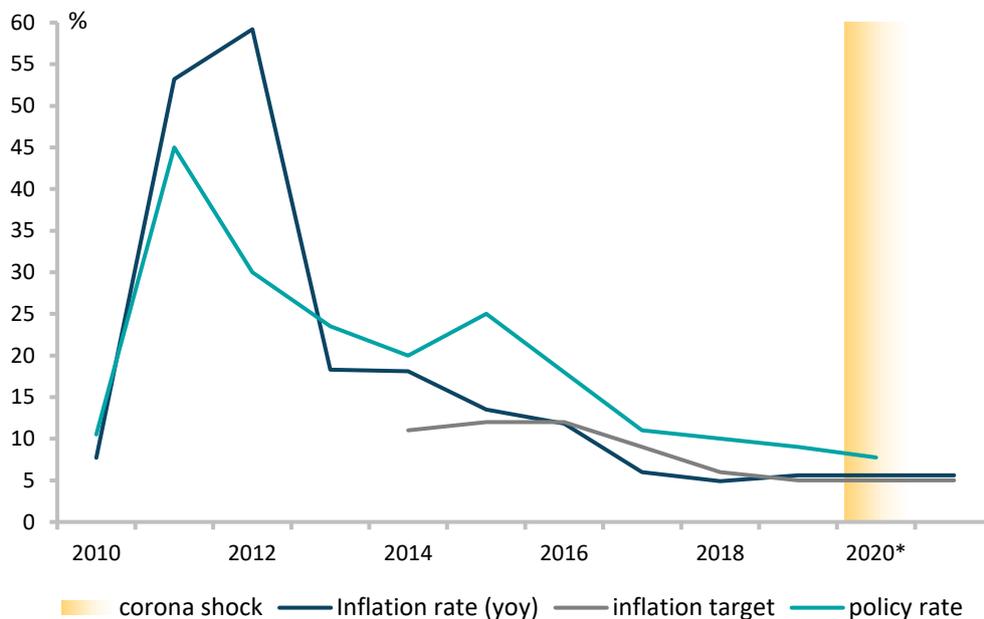
After moderate GDP growth of 3.2% in 2019, the IMF forecasted a similar growth rate for 2020 in January 2020. However, Ukraine was severely hit by the COVID-19 pandemic. A decline of GDP by 5.3% for 2020 is expected. Investment and private consumption will lead this decline. On the supply side, industry, trade and transport face significant negative growth rates. On the external side, a significant drop in remittances reduces current account inflows, but imports will drop even stronger than exports resulting in a current account surplus. The Hryvnia faced depreciation pressure in March and April of 2020, but sales of foreign reserves (USD 2 bn in March) eased the pressure. Furthermore, past years of conservative fiscal policy allowed the government to significantly increase the budget deficit to -7.5% in 2020 in response to COVID-19.

In response to COVID-19, the NBU from 13 March 2020 onwards cut the key rate by in total 500 bps down to 6%. Interest rate cuts of 2% happened in April and June 2020. Simultaneously the central bank narrowed the corridor on overnight standing facilities from 2% to 1%. Furthermore, as of 11 April reserve requirements were modified in order to free up domestic currency liquidity. Also, to ease liquidity access, the NBU has increased the frequency of liquidity tenders and on 23 April 2020 extended 14-days refinancing loans granted through these tenders to a period of up to three months. On top of that, the list of eligible collateral was expanded, now incorporating municipal bonds and government-guaranteed corporate bonds. On 8 May 2020 auctions were introduced for the long-term refinancing instrument (up to 5 years). And yet as another new tool, on 2 July 2020 the NBU made interest rate swaps available in order to minimize interest rate risk and revive long-term bank lending (IMF, 2020).

Belarus

Since 2015 the National Bank of the Republic of Belarus (NBRB) has been implementing its monetary policy under a monetary targeting regime. The move to the new framework was spurred by the need for a more efficient policy with greater control of inflation. Therefore, price stability was declared as the main objective. In order to achieve this goal in the medium-term, inflation targets are set annually, while the broad money supply serves as the actual intermediate target. The main instrument the NBRB uses to control its intermediate goal is the overnight interbank market interest rate. Under the new regime the exchange rate was also allowed to float. The graph below shows that inflation and the policy rate comoved since the huge spike in inflation in 2012 (with exception for 2015 when the policy rate rose but inflation continued to fall). And more importantly, inflation closely aligned with its target since the new regime was introduced in 2015. In recent years inflation seems to have settled at 5% while the NBRB carefully continued to lower the policy rate, most recently by 1.25 bps in response to the COVID-19 pandemic.

Figure 13: Inflation targeting and rate of inflation in Belarus



Notes: *) indicates forecasted values.

Sources: Data based on IMF (2020). Inflation target taken from the National Bank of Belarus (2020).

In 2020, Belarus was exposed to several external and internal shocks. While disruptions of Russian oil supplies hit the economy hard during the first quarter of 2020, COVID-19 added to this negative dynamic in the following quarters. It should be noted, however, that Belarus did not impose any restrictive domestic measures (such as a lockdown) during the crisis. Moreover, many state-owned enterprises continued to produce regardless of the drop in global demand, leading to a build-up of inventories. A major impact of COVID-19 is rather linked to the weak global demand and price-decay for oil and oil products, which on top of a weak Q1 further plumped exports and manufacturing. GDP over 8M 2020 fell by a relatively moderate 1.3% (IMF forecast 2020: -6%), even already showing some signs of recovery. Since August, however, the country is engulfed in mass-protest following the presidential election. As a result, the Belarussian Ruble experienced a major devaluation in 2020

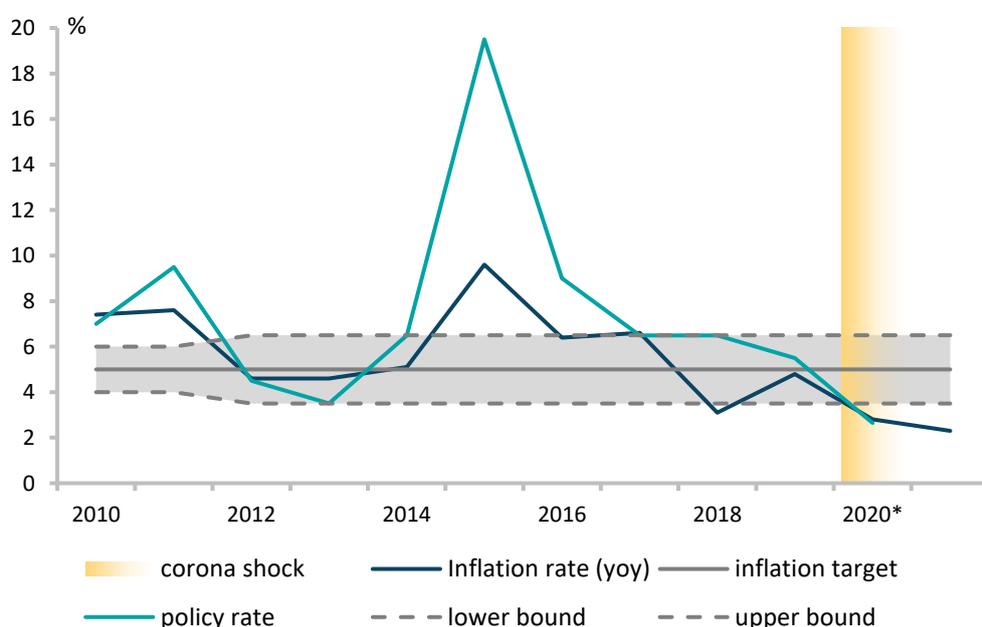
(around 26% compared to Jan-20) and international reserves declined by a significant amount (USD 7.5 bn in Sep-20 vs USD 9.4 bn in Jan-20).

In response to the economic consequences from COVID-19, the National Bank of the Republic of Belarus on 13 May 2020 brought the refinancing rate down 8% per annum. Another adjustment downwards was taken on 22 June 2020 when the rate was set to 7.75%. Furthermore, the maturity of the central bank's refinancing loans for banks was extended and banks were advised not to raise interest rates on restructured debt. Additionally, a set of prudential measures were taken including e.g. the release of capital conservation buffers (IMF, 2020).

Moldova

Between 2010 and 2012, the National Bank of Moldova (NBM) developed the underlying conditions for the implementation of an inflation targeting regime. During this period a gradual decrease of annual inflation could be achieved finally reaching single-digit levels after 19 years of double-digit inflation previously. Inflation even fell into the target of 5% ±1.5 percentage points by the end of 2012. To maintain price stability over the medium term, the NBM will aim inflation at this level to provide good conditions for growth and development of Moldova's economy over the medium term. After strong deviations from the inflation target in 2015, they were more successful in recent years. In 2020 inflation is even predicted to fall below the lower target band. The policy rate has therefore been adjusted downwardly since 2018 showing an expansionary monetary policy stance in recent years.

Figure 14: Inflation targeting and rate of inflation in Moldova



Notes: *) indicates forecasted values.

Sources: Data based on IMF (2020). Inflation target taken from the National Bank of Moldova (2020).

Amidst the global pandemic caused by COVID-19, the government of Moldova was forced to enact strict containment measures in order to avert a public health crisis. This led to a decline of GDP by 6.3% in 2020. Consumption, investments and exports are all expected to decline but lower imports and higher government spending can mitigate the negative effect on GDP at least partly; the economy is

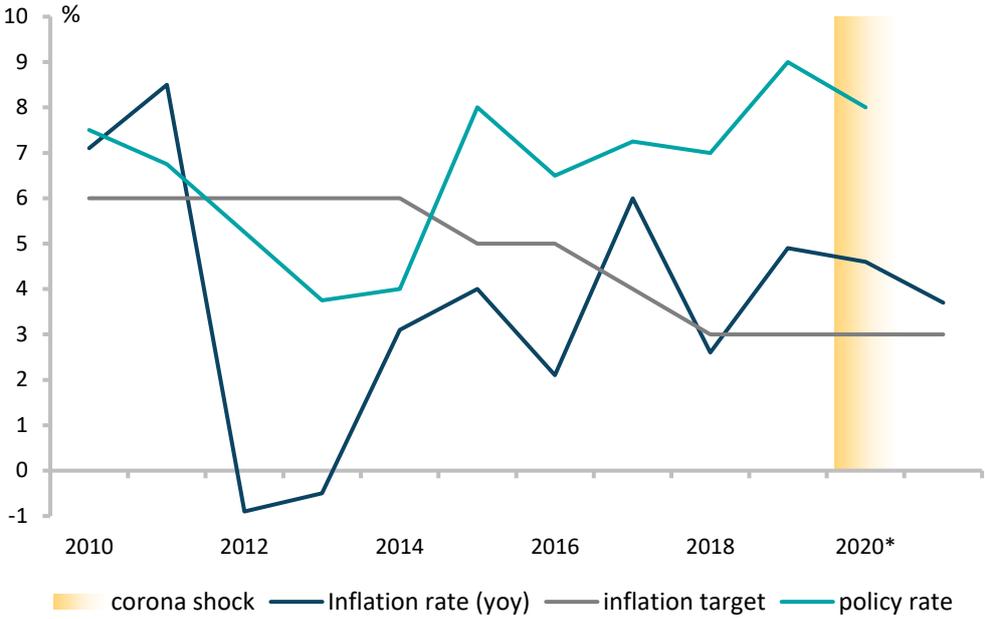
expected to recover strongly by 5.5% in 2021. The exchange rate is holding up so far amidst the support by the National Bank, but a moderate depreciation is certainly possible in 2021 as economy opens up again. The Increased public expenditures and falling revenues results in a budget deficit of 5.4% in 2020 assuming that the government can also continue to access external assistance, which so far was worth 2.5% of GDP.

In response to the economic consequences of COVID-19, the monetary policy stance seems to stay expansionary, even more than before the crisis, keeping interest rates low for the foreseeable future. The policy rate was stepwise lowered from 5.5% before the crisis to 2.65%. While strong interest rate cuts were taken within the first half of 2020, the latest adjustments in August, September and November 2020 were only of small size. At the same time, interest rates on overnight loans and deposits were lowered to 5.15% and 0.15% per annum respectively. Furthermore, did the NBM reduce the required reserve ratio in local currency by 6.5% to the level of 34%, while increasing the reserves ratio in freely convertible currencies by 1% to the level of 21%. The measures were taken to ease liquidity conditions, enhance the financial system's resilience and thereby support the economy (IMF, 2020).

Georgia

Since 2009 the monetary regime the National Bank of Georgia (NBG) follows has been inflation targeting. Though inflation still was very volatile up until 2013, the early 2000's were the first years marked by single digit inflation rates (Kavtaradze 2014). As shown in the graph below, inflation has, however, gained more stability in recent years. Further steps towards greater transparency and credibility such as more forward-looking inflation reports since 2013, incorporated forward guidance in MPC press releases starting in 2014 and the publication of the future path of the policy rate from 2016 onwards certainly strengthened this positive trend (Mestvirishvili 2018). Also, inflation moved much closer to the target rate, which was lowered sequentially from 2014 and is now kept at 3% since 2018. The current inflation forecast of 4.6% for 2020 provided by the IMF (2020) is slightly above target. However, in 2021 inflation seems to move towards its target again, given also the depression pressures caused by the COVID-19 crisis. The policy rate in Georgia set by NBG was first lowered between 2010 and 2013, but then corrected upwardly in the years thereafter reaching its peak in 2019 at 9%. The period before COVID-19 hit the Georgian economy was therefore marked by a rather tight monetary stance.

Figure 15: Inflation rate, its target and the policy rate in Georgia



Notes: *) indicates forecasted values.

Sources: Data based on IMF (2020). Inflation target taken from the National Bank of Georgia (2019).

Georgia was severely hit by the corona shock economically. Prior to the crisis, the IMF expected real GDP growth to be around 4.3%. After an initial adjustment to -4%, the latest update (September 2020) now stands at -5%. The tourism sector, which accounted for about 8% of GDP in 2019, is experiencing a sharp downturn. Although travel restrictions for five European countries were eased in July, current data from August shows international visitor trips to be down by 96% year-on-year, meaning an almost total loss for the important summer season for international tourism. Remittances, which serve as an important source of household income and accounted for 10% of GDP in 2019, are expected to decrease. Initial estimates by the NBG projected a drop by 30%. However, in light of better than expected developments in remittances flows in the last months, this has been revised to -10%. Lower goods exports, the collapse of tourism revenue and the drop in remittances will contribute to a deeper current account deficit, which the IMF projects to reach -11.3% of GDP compared to an estimate of -5.3% at the beginning of the year. Public finances are also expected to deteriorate sharply, as a result of the decline in tax revenue combined with anti-cyclical spending to counteract the recession. The budget deficit is projected to increase to 8.5% of GDP (previous estimate: 2.4% of GDP). At the start of the pandemic, the Lari experienced significant volatility, depreciating around 20% in only three weeks in March from approx. 2.80 GEL/USD to 3.48 GEL/USD. In the following months, the Lari re-appreciated to around 3.00 GEL/USD.

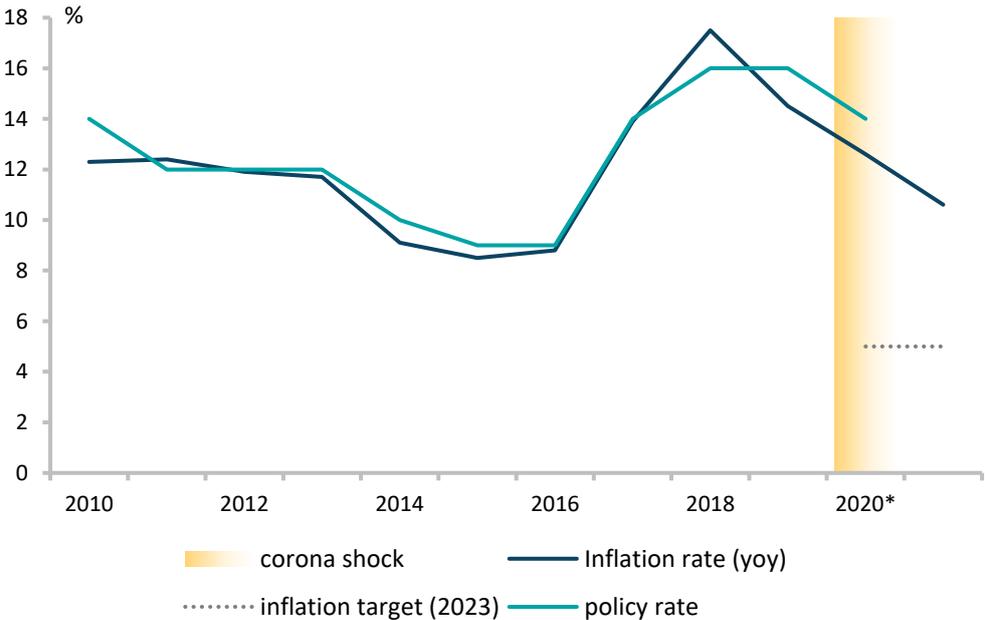
In response to the economic consequences from COVID-19, the NBG took on an easier monetary stance correcting short-term interest rates repeatedly down to 8%, which was the largest interest rate cut since 2016. A closer look on recent monetary policy actions reveals that the 50 bps interest rate cut on 29 April and two subsequent cuts by 25 bps on 24 June and 5 August were accompanied also by further measures. First, new FX swap lines with banks and microfinance institutions were introduced in mid-April to ease Georgian Lari liquidity pressures. Firms are thereby granted reliable access to local currency while the NBG extends FX reserves (Martikian 2020). Currently foreign reserves at the NBG

amount to USD 3.5 bn. And second liquidity for SME was further eased on 1 June, when the NBS extended loans against collateral of SME loan portfolios and microfinance institutions. The economic support index also shows that efforts to support the economy on the fiscal side increased as well. Government spending, however, is issued in local currency. In order to provide sufficient lari liquidity for these programmes the NBS sells dollar in the foreign exchange market (IMF, 2020).

Uzbekistan

The Central Bank of the Uzbekistan (CBU) is currently in the phase of a staged transition to inflation targeting. By 2021 the CBU hopes to establish an inflation target of 5%. Within this transition process the establishment of an economic and legal basis for the effective management of price stability in the country is key. While inflation jumped up to almost 18% in 2018, in more recent years it adjusted downwardly and is also forecasted to further move towards the aimed target of 5% for 2021. The IMF prediction of 10.6% for 2021, however, illustrates that it will still be a long way to go. Over the time from 2010 to 2020 the policy rate also closely comoved with the rate of inflation staying only slightly above (14%) in 2020.

Figure 16: Inflation targeting and rate of inflation in Uzbekistan



Notes: *) indicates forecasted values.

Sources: Data based on IMF (2020). Inflation target taken from the National Bank of Uzbekistan (2020).

The COVID-19 crisis has had a strong negative impact on the economy in Uzbekistan, especially on services for tourism and restaurants. Other sectors such as industry and agriculture were, however, less affected by the pandemic. As services account for only 40% of the economy in Uzbekistan, the shock is less severe than in other countries. But still, the IMF reduced its growth forecast from 6.0% to 1.5% in 2020. Remittances also decreased due to quarantine measures in host countries, especially in Russia. In April 2020 remittances were 50% lower than in April 2019 according to data from the CBU. Despite a recent increase in June/July 2020, the level for the whole year 2020 should be lower than for 2019. Trade was also severely affected by the pandemic. Imports decreased as well as exports of

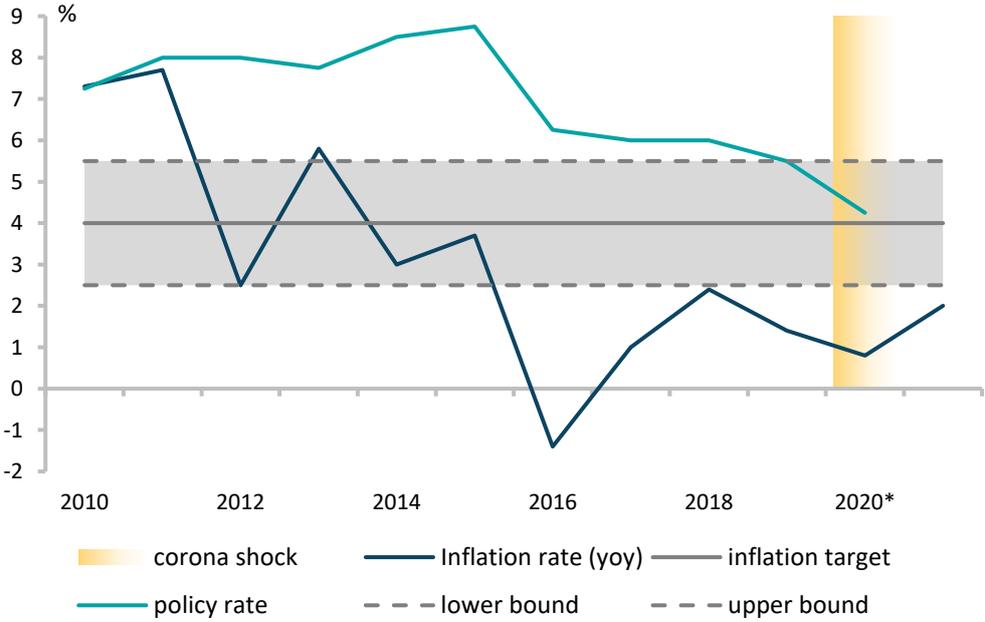
manufactured goods and services. The current account balance is expected to worsen to 9.6% of GDP. However, this effect could be cushioned by the growth of gold exports, which reached up to 50% of total exports in the last months of Q3 2020. The budget deficit is expected to widen due to higher spending accounting for 5.6% of GDP in 2020 (previously a deficit of 1.9% of GDP was estimated). The exchange rate was also affected by the crisis. As such the Som depreciated by around 8% between March and September 2020 from 9,500 to 10,300 Som per Dollar.

In response to the economic shock from the COVID-19 pandemic, the CBU lowered its interest rate only slightly by in total 2 percentage points throughout 2020. A first interest rate cut of 100 bps happened in the early stage of the crisis on 15 April. In September 2020 then another loosening of the main rate by 1% was taken. While being at 16% before COVID-19 hit the economy, the key policy rate now stands at 14%. So far, the Central Bank of Uzbekistan has taken no further measures regarding reserve requirements or other liquidity easing (IMF, 2020).

Armenia

The Central Bank of Armenia (CBA) adopted inflation targeting in 2006. While monetary policy was particularly stable from mid-2010 to mid-2013 with hardly any changes in the policy rate, in 2015 the CBA first introduced a cycle of monetary easing in order to bolster private consumption as well as inflation amid a crisis in neighbouring Russia. From 2017 onwards, the CBA was more cautious about cutting rates, though inflation has remained below the target level of 4% ever since 2014 and from 2016 even materialized outside the target band of ±1.5 percentage points. While there was a hope for inflation returning into the target band in 2018, the year before the corona crisis was marked by a falling inflation rate again.

Figure 17: Inflation targeting and rate of inflation in Armenia



Notes: *) indicates forecasted values.

Sources: Data based on IMF (2020). Inflation target taken from the National Bank of Armenia (2020).

While in 2020 GDP growth in Armenia had already been expected to slow down to 5.5% (from 7.6% on the back of strong consumption in 2018), the COVID-19 crisis led to a strong reduction of private consumption and investment and, thus, a revised IMF forecast of -1.5%. However, an increase in government spending (including an assistance package worth 2% of GDP) as well as an augmentation of the IMF stand-by arrangement are key to returning to overall macroeconomic stability. While exports are strongly affected, particularly due to the drop in tourism, a decline in remittances and a strong recession in its largest export market, Russia, the trade balance has hardly been affected due to a sizeable drop in imports. Thus, the current account is expected to only increase by 0.2% percentage points of GDP from a level of 8.6%. The IMF plays a key role in financing it as well as the budget deficit, which is predicted to amount to 5.0% of GDP (up from a 2.3% prediction prior to the crisis). The exchange rate has remained largely stable over the course of the crisis, also due to the supportive measures taken by the Central Bank of Armenia. After a sharp depreciation of 5% in March 2020, the CBA sold US dollars, while a consequent appreciation was met with purchasing USD. Since May, the Dram has been fluctuating around 480 AMD/USD, slightly above 2019 average.

In response to the economic consequences from COVID-19 and on the back of low inflation, the CBA was able to reduce the policy rate several times in 2020 to support the economy and mitigate the adverse effects of the crisis. The policy rate currently stands at 4.25%. In fact, the inflation rate remains below the target (4%) in both 2019 (0.7%) and 2020 (1.5%) and is only expected return close the lower end of the target band in 2021. Further liquidity-inducing measures include the lowering of the core capital adequacy ratio from 10% to 9%. In line with its inflation targeting policy, the CBA intervened on the foreign exchange market during the crisis as described above (IMF, 2020).