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HOW WE ENTERED THE CRISIS CAUSED BY THE COVID-19 PANDEMIC

Kako smo dočekali krizu izazvanu pandemijom kovida 19

Abstract

The paper aims to point out the strength and effects of the shock of the crisis caused by the COVID-19 pandemic on the global and domestic economy. Effects differ depending on the characteristics of individual economies and the response of economic policy makers. The crisis called "the great lockdown" features: 1) suspension of activity in some sectors and huge declines in others, with pronounced asymmetry and 2) implementation of robust packages of monetary and fiscal policy measures.

The paper focuses on the measures adopted in Serbia to mitigate the negative effects of the pandemic on the domestic economy. It elaborates on the temporary measures adopted by the National Bank of Serbia (NBS), which helped preserve stability in the foreign exchange market, ensured efficient functioning of the money market, liquidity support to all sectors and more favourable financing conditions, sustained credit activity and supported the domestic real sector. According to our estimate, if the monetary and fiscal policy measures had not been adopted, the fall in Serbia's economic activity in 2020 would have exceeded 6%, while growth in 2021 would be modest, failing to reach the pre-pandemic growth dynamics even in the medium term. The adoption and implementation of the robust package of measures was possible because Serbia faced the crisis in a good macroeconomic and fiscal position owing to the strengthened economy and implementation of structural reforms in the past period. In fact, Serbia can serve as the example of a country confirming the importance of strengthening the economy on sustainable grounds in the past eight years, which created room for the adoption of comprehensive economic measures to support citizens and businesses, in order to preserve production capacities and jobs.

Keywords: *COVID-19, crisis, packages of measures, monetary policy, stability, confidence, recovery.*

Sažetak

Cilj rada je da se ukaže na jačinu i efekte šoka koje je na svetsku i domaću ekonomiju imala kriza izazvana pandemijom kovida 19, pri čemu se efekti razlikuju u zavisnosti od karakteristika ekonomija i odgovora nosilaca ekonomskih politika. Krizu nazvanu „veliko zaključavanje" karakteriše: 1) obustavljanje aktivnosti u pojedinim sektorima, a u nekim i ogroman pad aktivnosti uz izraženu asimetriju; 2) sprovođenje obimnih paketa mera monetarne i fiskalne politike.

Fokus rada je na merama donetim u Srbiji za ublažavanje negativnih efekata pandemije na domaću ekonomiju. Detaljno se razrađuju privremene mere donete od strane Narodne banke Srbije (NBS) koje su obezbedile očuvanje stabilnosti na deviznom tržištu, efikasno funkcionisanje tržišta novca, podršku likvidnosti svim sektorima, povoljnije uslove finansiranja, očuvanje kreditne aktivnosti i podršku domaćem realnom sektoru. Naša je procena da bi u Srbiji, bez donetih mera monetarne i fiskalne politike, pad ekonomske aktivnosti u 2020. godini iznosio preko 6%, dok bi rast u 2021. godini bio skroman, a ni u srednjem roku ne bi dostigao dinamiku rasta od pre pandemije. Donošenje i sprovođenje velikog paketa mera je bilo moguće jer je, jačanjem domaće ekonomije, kao i sprovođenjem strukturnih reformi u prethodnom periodu, Srbija ovu krizu dočekala u dobroj makroekonomskoj i fiskalnoj poziciji. Srbija zapravo može da posluži kao primer zemlje koji potvrđuje značaj toga što je u prethodnih osam godina ekonomija ojačana na održivim osnovama, što je stvorilo prostor za donošenje obimnih ekonomskih mera podrške građanima i privredi, kako bi se sačuvali proizvodni kapaciteti i radna mesta.

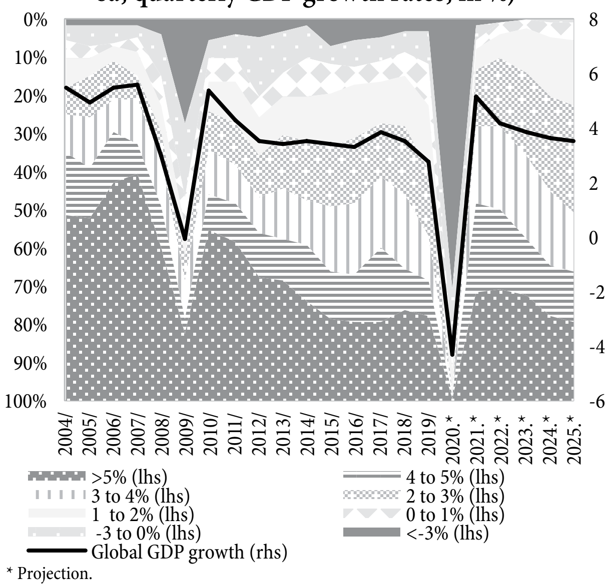
Ključne reči: *kovid 19, kriza, paketi mera, monetarna politika, stabilnost, poverenje, oporavak.*

Introduction

The COVID-19 pandemic broke out amid already elevated uncertainties in the global economy. The scope and pace of the economic downturn it triggered were unprecedented [15, pp. 1-2] and global stock exchanges saw sharpest one-week slumps since the global financial crisis of 2008. Still, there is an evident difference between these two global events. The 2008 crisis began as a financial crisis, spilled over to the real economy and grew into a global economic crisis. While the financial crisis set off a negative demand-side shock, primarily in the credit and real estate markets, the COVID-19 pandemic, with the introduction of containment and physical distancing measures, hit hard the real sector, triggering an exogenous shock both on the supply and demand side. Moreover, the COVID-19 crisis took a different course and produced a much stronger initial effect (Figure 1). What both crises have in common is the fact that central banks were an important pillar of defence against the negative effects of the crisis, and the guarantor of financial and price stability.

To indicate the potential effects at the global level and the importance of the packages of adopted measures for national economies, we shall present estimates of potential effects on different segments of the economy made by different organisations. In its Economic Outlook of September 2020, the OECD stated that monetary policy measures across the world contributed to the easing of financial conditions and higher loan supply and pre-empted a larger drop in consumer and investor confidence [14, p. 9]. In its Autumn 2020 Economic Forecast, the European Commission described numerous channels through which monetary and fiscal policies in Europe mitigated the negative effects of the lockdown on economies, and how they contributed to recovery. The measures adopted by the ECB included the provision of liquidity, collateral easing, further asset purchases, which, combined, led to even more favourable conditions of financing of the real economy. As stated in the Economic Forecast, government spending in the euro area, rising by 2% in 2020, would have a stabilising role by giving a countercyclical impulse to growth. In addition to exerting a direct impact on demand, fiscal and monetary policy measures helped improve investors' expectations concerning economic recovery. Based on the EC's Global Multi-Country Model, discretionary fiscal policy measures in the euro area will raise GDP by 1 pp in 2020, adding to the stabilisation effects of automatic stabilisers, as part of a regular tax system [6, p. 62]. According to the BIS analysis concerning emerging economies, compared to previous crisis periods when central banks of emerging economies responded to depreciation pressures by raising key rates, this time it

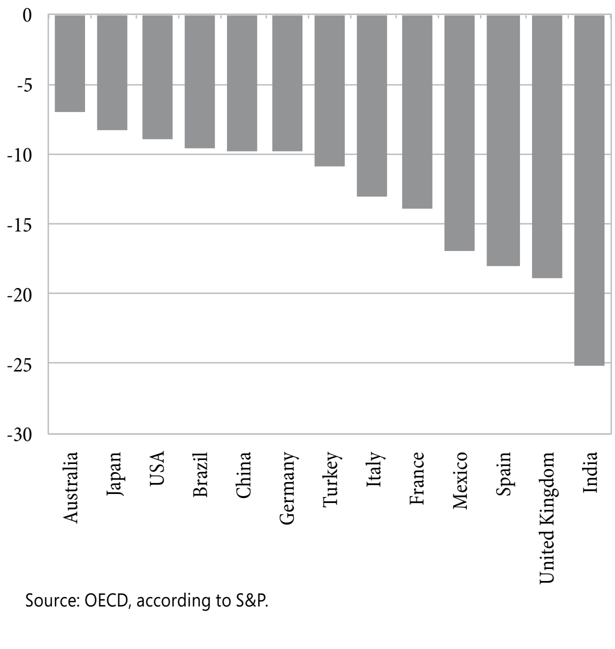
Figure 1: Comparison of the COVID-19 crisis and the global financial crisis (global growth rates in % – rhs; sa, quarterly GDP growth rates, in %)



* Projection.

Source: IMF WEO, October 2020.

Figure 2: Economic downturn in Q2 (countries by GDP growth rate – lhs)



Source: OECD, according to S&P.

was different. Owing to structural improvements, greater credibility of central banks and synchronised monetary and fiscal policies, introduction of measures of provision of additional liquidity and financial asset purchases, and interventions in the FX market – greater volatility of local currencies, the outflow of foreign portfolio investment and a negative impact on local government securities markets were prevented [1].

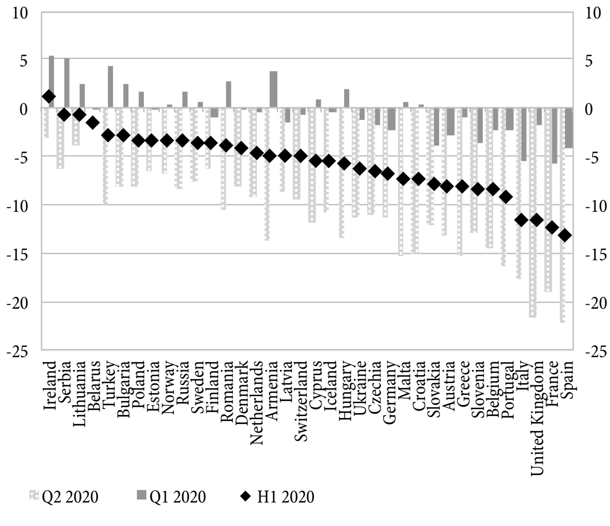
Global shock and outlook

The global economy faced the global shock triggered by the COVID-19 pandemic with already decelerated growth. After average 3.5% in the 2015–2018 period, the real global GDP growth slowed to 2.8% in 2019 (IMF data, WEO October 2020) [8]. In the same period, growth slowed from average 2.2% to 1.7% in advanced economies, and from average 2.1% to 1.3% in the euro area. In most economies, the strongest negative effects of the pandemic were manifested in Q2 (Figure 2), in terms of halts/disruptions to global production chains and disturbances in most commodity markets, primarily in the oil market. The economic effects of the pandemic during the so-called lockdown phase are illustrated by data on the annualised GDP decline in Q2 measuring 31% in the US, almost 50% in Europe, and between 30% and 70% in emerging economies.

The structure of the economy was also one of the factors determining the strength of negative effects of the COVID-19 pandemic, due to the specificity of the shock. The countries with a greater share of tourism, catering and transport in GDP suffered a greater real drop in GDP, which moved between 15% and 22% in Q2 (Figure 3). Furthermore, due to the twin supply-demand shock, the ensuing drop in oil prices caused the worsening of the current account in the countries that are net oil exporters. All this, together with persisting geopolitical risks, makes it considerably difficult to produce macroeconomic forecasts (Figure 4) and conduct policies.

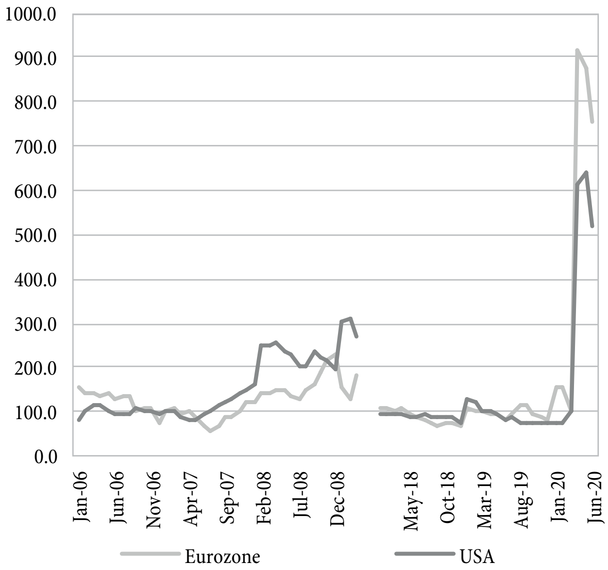
Furthermore, there are economic sectors where the economic effects of the coronavirus will have to be tackled over a longer period, such as the air transport and tourism. One of the hardest hit areas of manufacturing is certainly the automobile industry (for more information about the impact on the automobile industry see the November Inflation Report, Text box 2: Impact of the coronavirus pandemic on global automobile industry and the implications for Serbia). Also, due to the disruption of global value chains and changes in customer behaviour, many small and medium-sized enterprises in different sectors may face challenges in everyday business, including money and revenue flows. Supply- and demand-side shocks cause serious problems in short-term financing of numerous

Figure 3: GDP by country in H1 2020 (y-o-y growth rates, in %)



Source: Eurostat.

Figure 4: Standard deviation of GDP projections (Jan. 2007 = 100)



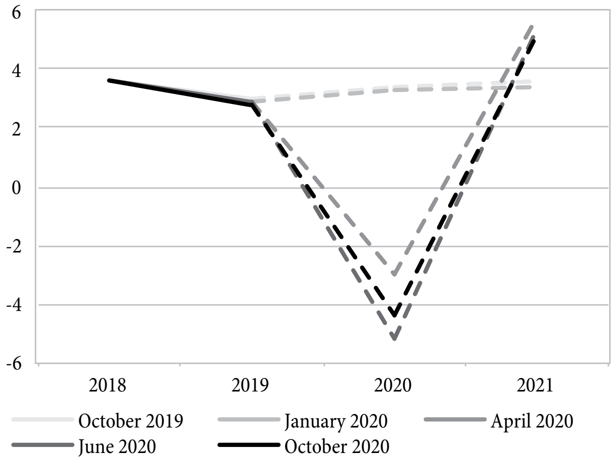
Source: Consensus Economics, IMF calculation, Fiscal Monitor, IMF, October 2020.

companies in need of significant external funds [7, p. 2]. And this is where the policy makers' response played an important role as well.

After the unlocking, most economies saw recovery which, consistent with the nature of the shock, is unevenly distributed across sectors. Owing to the implemented robust packages of measures (monetary, fiscal and financial), global recovery in Q3 was faster than expected in June, which also brought about upward GDP growth revisions for 2020. In line with this, in October, the IMF revised its global growth estimate for 2020 to -4.4%, from -5.2% in June, with a somewhat more optimistic outcome than expected in respect of global trade as well (Figures 5 and 6).

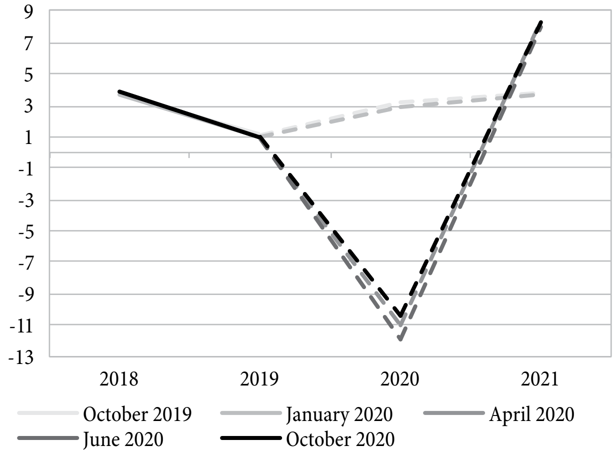
However, despite incipient recovery, the renewed spread of the virus in many countries and the stepping up of restrictive containment measures in October and November fuelled uncertainty as to the speed of the global economic recovery. The elevated uncertainty was also communicated during the ECB's press conference on 29 October, when it was assessed that the renewed spread of the coronavirus (COVID-19) implied new challenges for public health and the growth outlook of the euro area and globally. New data suggest that the euro area's economic recovery is slowing, after strong, although partial and uneven economic recovery was recorded during summer months [9]. Therefore, in December, the ECB revised the euro area growth to -7.3%, from -8% in September and -8.7% in June. In all these circumstances, policy makers demonstrated readiness to adjust measures based on the estimate of the current effects of COVID-19 on economies and growth outlook, which was particularly important for the preservation of business and consumer confidence.

Figure 5: IMF projections of global real economic growth for 2020 and 2021 (in %)



Source: IMF WEO and WEO Update.

Figure 6: IMF projections of the volume of global trade in goods and services for 2020 and 2021 (in %)



Source: IMF WEO and WEO Update.

Table 1: Several factors of the speed of global recovery

Slower recovery	Faster recovery
Spread of the virus and measures of social distancing and effects on supply and demand	Monetary policy measures - ensuring favourable financing conditions, various forms of liquidity support, credit support
Business and consumer confidence	Fiscal measures - support to businesses and citizens (to the extent possible)
Uncertainty in the international commodity and financial markets	Prudential measures
Long-term structural negative effects	

Source: Author's illustration.

How we entered the COVID-19 crisis in Serbia?

By pursuing adequate and responsible economic policy over the past eight years, Serbia laid the foundations for sustainable growth. Since 2014, inflation in Serbia has been continuously kept at a low level, at around 2% on average, and inflation expectations are anchored within the NBS target band (3±1.5%) [17, pp. 93-94]. This result also ensured additional room for the NBS to pursue a more expansionary monetary policy during the COVID-19 crisis than would have been possible had the NBS not been successful in achieving its primary objective – bringing inflation to a low level. An important role in ensuring and maintaining price stability and in anchoring inflation expectations was played by the achieved relative stability of the exchange rate of the dinar against the euro, which at the same time contributed to the strengthening of financial stability. The relative stability of the exchange rate of the dinar against the euro was also one of the pillars of stability of the investment environment, which is why investments were a significant contributor to GDP growth since 2015. In parallel, the strengthening of the domestic economy helped maintain the relative stability of the exchange rate, prevailing over the negative effects of turbulences in the international financial market. The NBS intervened in the FX market exclusively to mitigate excessive short-term volatility of the exchange rate, without the intention to influence its trend. Consistent with macroeconomic developments since 2017, appreciation pressures were stronger and more frequent, which is why from April 2017 until late 2019 the NBS bought in the FX market over EUR 5.3 bn net. This was accompanied by a rise in gross FX reserves to EUR 13.4 bn in late 2019, which is their highest level on record. Such level of FX reserves is an important guarantor of stability in the event of vigorous external shocks.

The achievement of stability objectives (price and financial stability), supported by stability in the FX market, at the same time opened room for successful fiscal consolidation, which in turn allowed for greater monetary policy accommodation. The result of the successful fiscal consolidation and full coordination of monetary and fiscal policy measures is also the eliminated fiscal imbalance, as confirmed by the consolidated surplus of 0.6% of GDP in 2018 and almost balanced public finances in 2019 (a deficit of 0.2% of GDP). At the same time, the monetary policy easing by the NBS since May 2013 fully translated into the interbank money market through a sharp drop in interest rates (for more information about the pass-through effect of the key policy rate see the November Inflation Report, Text box 1: How strong is the interest rate channel in Serbia?), including interest rates on dinar loans to the private sector, which declined by over 12 pp from mid-2013 until October 2020 [12, pp. 18-21]. Economic growth was further encouraged through a higher disposable income and greater availability of funds for new investment. This is also corroborated by the fact that almost the entire growth in corporate lending of over RSD 100 bn in 2019 concerned investment loans, which at year-level went up by over 25% and reached almost EUR 5 bn in late 2019. This growth continued into 2020.

Positive trends also reflected on Serbian exports. The country's exposure to disturbances in individual segments of external demand was reduced through higher geographic and production diversification of exports, which is a strategic commitment of our policy makers. Owing to new production capacities and new export destinations, and despite the slowdown in external demand since H2 2018, the growth in exports of goods and services from Serbia remained dynamic in 2018 (9.6%) and 2019 (10.3%). The rising diversification of production and export capacities was also helped by the FDI inflow which reached EUR 3,825 bn (8.3% of GDP). In line with rising production and investment, in import structure around 70% of growth refers to intermediate goods and equipment.

Owing to the implementation of structural reforms and improvement of the business and investment environment, rising investment in infrastructure projects, FDI inflows channelled mainly to tradable sectors, including increasingly favourable financing conditions in Serbia, investments became the pillar of economic growth. In the 2018–2019 period, fixed investments accounted for three quarters of economic growth, which equalled 4.4% on average.

In 2018 and 2019, Serbia's risk premium was among the lowest in the region (it stood at 19 bp in late 2019). The decline in the country risk premium was supported by global and, even more so, by domestic factors - narrowed internal and external imbalances, reinforced financial stability and favourable macroeconomic prospects of the country. For these reasons, Fitch and Standard & Poor's upgraded Serbia's credit rating to one step to investment grade. Owing to all these results, Serbia was able to prudently manage its public debt by substituting some earlier expensive loans with much more favourable sources of financing (partly owing to more favourable conditions in the global market, and chiefly owing to the lower country risk premium and a better credit rating).

More information about the state of the economy and the scope for policy response is also contained in the August 2020 Inflation Report, Text box 1: A comparison of Serbia's macroeconomic position before the previous global economic crisis and the crisis caused by the coronavirus pandemic [13, pp. 9-13].

Macroeconomic and monetary measures in Serbia to fight the effects of the COVID-19 pandemic

Programmes of economic measures

The first programme of economic measures aimed at mitigating the negative effects caused by the COVID-19 pandemic and supporting the Serbian economy had two priorities: 1) helping economic entities with operating difficulties and 2) preserving jobs and wages. The package of economic support contained nine measures, divided into several groups – tax policy measures, direct support to the private sector, measures aimed at preserving corporate sector liquidity. Total value of package was around 11.0% of GDP, which is around a half of Serbia's annual budget.

The first group of measures relates to tax facilities for private sector enterprises, which include: deferred payment of tax on wages and contributions, with later repayment in instalments, deferred payment of advance profit tax in Q2 and suspended payment of VAT for donors. The second group concerns direct assistance to all enterprises during the state of emergency, primarily entrepreneurs, micro, small and medium-sized enterprises, which received 100% of net minimum wage for each employee. In case of large enterprises, the payment of 50% of net minimum wage was envisaged for employees who were on furlough because of the inability to work. Both sets of measures aimed to maintain an adequate level of business activity and employment, and to release additional funds primarily for the segment of micro, small and medium-sized enterprises. The third group of measures aimed at preserving corporate liquidity was implemented through: 1) loans to enterprises via banks, with government guarantee and 2) loans to enterprises through the Development Fund of the Republic of Serbia. These two programmes together were worth EUR 2.2 bn. Conditions concerning the eligibility of beneficiaries and loan approval were prescribed for both types of financial support to the corporate sector. The fourth group of measures aimed to support demand.

In late July 2020, the second package of fiscal policy measures was adopted, worth around RSD 66 bn, whereby the payment of subsidies for wages of employees in small and medium-sized enterprises was extended by two more months. In addition, the deferral of payment of taxes on wages and social insurance contributions for all private enterprises was lengthened by additional 30 days. In the

Table 2: Conditions in Serbia prior to the two crises

	Inflation, in % (average)	FX reserves, end-of-year (in EUR bn)		Savings (end-of-year)		% of NPLs (end-of-year)	Key policy rate (end-of-year)	Exports of goods and services (% of GDP)	Current account deficit (in % of GDP)	Serbia's risk premium (end-of-year)	Serbia's credit rating (end-of-year)	Fiscal result (% of GDP)
		Gross	Net	dinar (in RSD bn)	euro (in EUR bn)							
2007	6.0	9.6	6.1	10.7	4.8		10.00	25.7	17.3	304	BB-/stable	-1.8
2008	12.5	8.2	5.9	10.6	4.7	11.3	17.75	26.8	20.0	1224	BB-/negative	-2.5
2018	2.0	11.3	8.9	60.5	9.6	5.7	3.00	49.3	4.8	159	BB/stable	0.6
2019	1.9	13.4	11.4	79.0	10.5	4.1	2.25	50.8	6.9	19	BB/positive	-0.2

Source: Statistical Office of the Republic of Serbia (SORS), NBS, JP Morgan, Ministry of Finance.

remainder of the year, measures were adopted to provide additional support to health workers and pensioners, as well as hoteliers, hospitality workers, travel agencies and car rental offices, and total government support in 2020 thus reached 12.7% of GDP. The implementation of measures inevitably raised the general government fiscal deficit in the crisis year. We assess that the one-off deficit rise is fully justified, as the consequences of not doing anything would have been enormous and would imply a reduction in production capacities, jobs, wages, which would take years to compensate for.

NBS measures

The NBS was the first institution in the country and one of the first central banks in the region to respond to the pandemic by adopting concrete measures. We adopted measures almost on a monthly basis, making sure that they are limited in duration, in accordance with the shock caused by the pandemic.

In addition to the listed measures, the NBS maintained the relative stability of the EUR/RSD exchange rate throughout the whole 2020, as an important pillar of overall stability and confidence.

Below we will present the effects of the COVID-19 crisis on some market segments and the results of implemented measures.

Effects of the COVID-19 crisis on the domestic FX market

Heightened uncertainty created significant turbulence in global financial markets, measured by all indices. Currencies of emerging countries are particularly susceptible to the

Table 3: NBS's response to COVID-19

	Measure	Goal
1.	The key policy rate has been cut by 1.25 pp to 1.0%, its new lowest level in the inflation targeting regime.	Enabling more favourable financing conditions in the local currency and encouraging dinar lending, thus contributing to faster economic recovery.
2.	The NBS's main interest rates corridor has been narrowed from ± 1.25 pp to ± 1 pp, and then to ± 0.9 pp relative to the key policy rate.	Enabling additional monetary policy efficiency via the interest rate channel.
3.	Banks' dinar and FX liquidity was increased by way of direct repo operations, swap auctions and bilateral purchases of dinar government bonds from banks.	Efficient functioning of the banking system and more favourable lending conditions for corporates and households.
4.	Inclusion of dinar corporate bonds of Serbian companies in monetary operations. Banks may sell corporate bonds to the NBS in the secondary market, and can also use them as a financial collateral for obtaining dinar liquidity from the NBS.	Additional support to the recovery of domestic companies through an alternative source of financing that relieves the burden from periodic money flows and initial stimulus to the development of the domestic capital market.
5.	Signing of the moratorium on the repayment of obligations under loans and financial leasing for all debtors who opted for that, first for 90 and then for another 60 days. Extending the payment term for housing loans for five years at the most and other loans to households for up to eight years.	Helping citizens and corporates bear the burden of the crisis, increasing their disposable income and thereby reducing the negative effect of the pandemic on domestic demand and economic activity.
6.	Lowering the mandatory down payment for first-time flat purchases from 20% to 10%. Lowering the minimum level of completion of an object whose purchase may be financed by housing loans from banks.	Enabling easier access to housing loans, thus supporting construction growth.
7.	The Serbian Government's Guarantee Scheme introduced stimuli - banks approving loans to clients under the Guarantee Scheme, at rates lower than the ceiling rate (which equals one-month BELIBOR + 2.5 pp) by at least 50 bp, will have a higher remuneration rate on the amount of mandatory reserve requirements in dinars by 50 bp, on the amount of loans extended under more favourable conditions.	More favourable dinar lending conditions for micro, small and medium-sized enterprises and entrepreneurs, and in turn increase in the degree of dinarisation and an additional boost to financial stability.
8.	A pre-emptive repo line was established with the ECB which could provide additional euro-liquidity to the domestic financial system, should the need arise.	Ensuring another form of safety in conditions of pronounced uncertainty in the international financial market.
9.	Adoption of new measures to facilitate loan repayment for debtors stricken by the COVID-19 pandemic (in the form of rescheduling or refinancing existing obligations with a 'six-month grace period').	Facilitating the settlement of obligations of debtors who are faced with difficulties due to the COVID-19 pandemic and responsible management of credit risk of banks-financial lessors in the current circumstances.

Source: NBS.

impact of global developments and global capital flows, where the psychological factor often plays a very important role and adds to increased volatility.

It is this behavioural element, i.e., market psychology, that further heightens their sensitivity. A large number of parameters which dictate movements in the FX market makes them difficult to predict, with consequences spanning almost all economic spheres, which is why it has become particularly important in today's globalised world to carefully analyse and monitor these parameters, especially in countries with huge exposure to FX risk, such as emerging countries, including Serbia.

In practice and in newer theory it has been shown that in case of small and open economies, especially with emerging countries, the exchange rate and FX interventions play an important role in the attainment of the main objectives of monetary authorities. In countries with a high level of exposure to a foreign currency (euroisation or dollarisation), there is a very strong transmission effect of exchange rate oscillations onto prices. At the same time, a more pronounced accumulation of FX risk in these countries, stemming from the high level of euroisation (dollarisation), results in noticeable oscillations in the value of the local currency seriously impairing financial stability, which is particularly pronounced in crisis conditions.

In such conditions, active use of FX interventions aimed at preventing high fluctuations in the exchange rate is one of the pillars for the achievement of multiple objectives. Depending on the specific economy and the market's level of development, different forms of FX interventions can be a very efficient monetary policy tool for maintaining inflation at a target level, preserving financial stability, reducing the accumulation of market risks in the economy and increasing the resilience of the domestic economy to external shocks.

Efficiency, timeliness and adequacy of interventions in the FX market

The example of Serbia clearly shows the efficiency of timely and well-measured FX interventions for the achievement of various objectives. The relative stability of the exchange rate plays an important role in the Serbian economy, which is characterised by the still high degree of euroisation (though with a clear downward path). Besides providing a key contribution to the attainment of its main objectives – price and financial stability – the relative stability of the exchange rate, which the NBS has successfully maintained for the past eight years, has also contributed to the following:

- creation of the room for a successful fiscal consolidation (by mitigating the previous trend of high, almost two-digit annual weakening of the dinar and rise in the prices which constitute significant "living expenses"),
- reduction in the level of non-performing loans (NPLs),
- narrowing external and internal imbalances,
- increasing the certainty of business,
- making the domestic environment more attractive to domestic and international investors,
- lowering the country risk premium, and in turn,
- lowering the country's costs of borrowing in the local and international markets.

All of this together makes the relative stability of the exchange rate one of the main pillars of Serbia's monetary, financial and macroeconomic stability, i.e., a monetary anchor for the overall economic stability in the country, taking into account all the specificities of the local economy. Thus, it is no wonder that the relative exchange rate stability has become the "new normal" in Serbia (Figure 7). However, success did not come over night, or by accident, but is the result of hard work and investment in stability, which helped restore the credibility of the NBS to the high place where it belongs.

The credibility which the NBS built up over the past years has contributed significantly to the fact that investor confidence has not been shaken – the confidence in price stability, in financial system stability, as well as in the relative stability of the exchange rate. Timely measures taken immediately upon the outbreak of the COVID-19 crisis, transparency and credibility prevented a negative spiral that could have been caused by psychological and panic reactions of market players, involving a sudden capital outflow and a consequently significant depreciation of the local currency – a scenario experienced by many other emerging markets.

Prudent behaviour implies a certain degree of countercyclical activity in financial markets – for the forthcoming crises which take place at the global level every five to ten years. Thus, amplitudes are shortened, and oscillations distributed over a longer period; combined, this eases the negative impact on the domestic financial market and the economy. The NBS also acted prudently, and the high and adequate level of FX reserves, inter alia, is also a result of such approach. In times of dominant appreciation pressures (from April 2017 through 2019), which have been present over the past years due to the strengthening of Serbia's macroeconomic fundamentals, the NBS acted proactively – by buying foreign currency (in the net amount of more than EUR 5.3 bn), thus increasing the country's FX reserves and creating buffers for potential future shocks, which indeed materialised in March 2020.

In conditions which give rise to downward pressures on the domestic currency, such as the ongoing uncertainty in the international environment caused by the global pandemic, the NBS exercises caution in making use of the FX reserves which it had increased earlier. To preserve the stability of the FX market, the NBS's presence in this market during 2020 was mostly on the side of FX sale. In 2020, the NBS net sold EUR 1,450 mn via FX interventions, while the value of the dinar vis-à-vis the euro remained almost unchanged (Figures 8 and 9).

If we compare the volume of interventions in 2020 with the previous year (2019), when the NBS net bought EUR 2,695 mn via FX interventions, we can see that it is not significantly high (i.e., that it is 46% lower y-o-y), especially taking into account the scope of the pandemic-induced effects on the global economy.

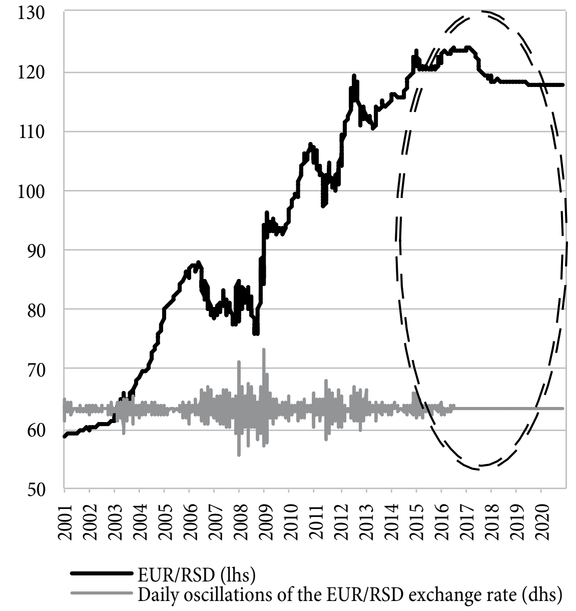
Assessment of the impact of the COVID-19 pandemic on Serbia's FX market

To make an accurate estimate of the effect of the coronavirus crisis on Serbia's FX market, a detailed analysis was conducted into the impact of the crisis on the key factors that affect movements in the domestic FX market, which explain it almost entirely. The analysis shows that all factors that had had an appreciation or a reduced depreciation effect in the previous years, had a stronger depreciation effect in 2020, particularly in Q2 2020, as a direct consequence of the COVID-19 crisis.

The factors explaining almost all of the developments in the Serbian FX market can be classified into five categories:

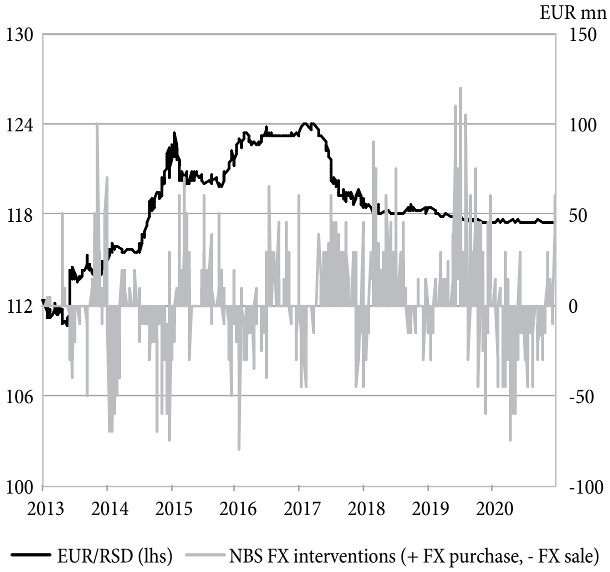
1) residents,
2) non-residents,
3) foreign cash (FC),
4) net indexed bank assets, and
5) non-resident payment cards.

Figure 7: Relative stability of the EUR/RSD exchange rate is the new normal



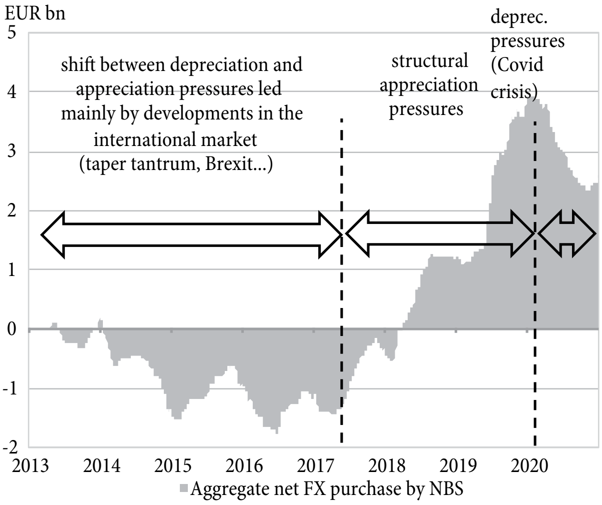
Source: NBS.

Figure 8: EUR/RSD exchange rate and FX interventions



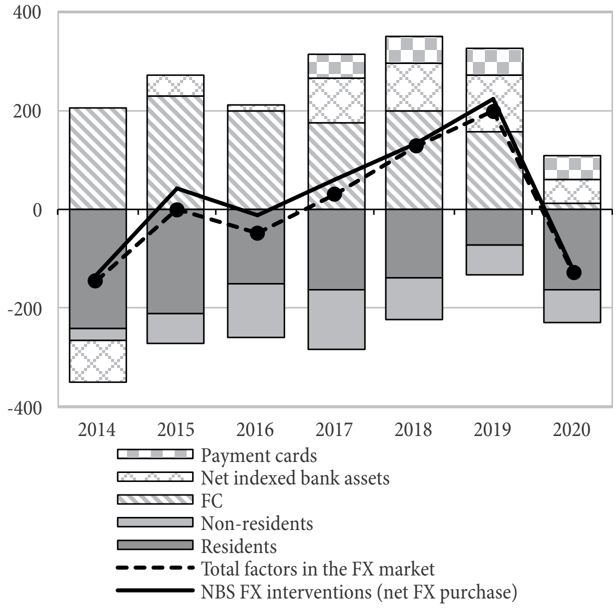
Source: NBS.

Figure 9: Aggregate amount of NBS's FX interventions – contribution to growth of FX reserves in the period of appreciation pressures and cautious spending in times of crisis



Source: NBS.

Figure 10: Factors affecting movements in Serbia's FX market – monthly averages by year (in EUR mn)



Sources: NBS and author's calculations.

The first factor pertains to bank transactions with local companies, that is, it describes the activities of local companies, mostly import-export ones. The second factor pertains to bank transactions with non-residents, mostly foreign investment banks and funds. This factor directly reflects foreign investments in domestic dinar securities and, in addition to portfolio investments, it also includes other non-resident activities in the local market (e.g., dividend payments). The third factor pertains to the transactions of banks and authorised exchange dealers in foreign cash. The fourth mostly indicates the disbursement or repayment of FX-indexed loans and deposits to residents, i.e., domestic companies. To align their FX positions and reduce exposure to FX risk on this account, the disbursement/repayment of FX-indexed loans often leads to the need for banks to sell/buy foreign currency in the interbank FX market. The fifth factor mostly pertains to the non-resident use of payment cards in Serbia with an almost identical effect on banks' FX positions as the disbursement of FX-indexed loans, which creates the need for banks to appear on the interbank FX market to close their open positions in their balance sheets due to the fact that when non-resident FX cards are used for dinar payments, the foreign currency must be converted to dinars, therefore this factor mostly creates an appreciation effect.

To obtain a relevant image of the impact of individual factors, monthly averages by year were analysed in the period from 2014 until 2020. In previous years, a certain trend was established with individual factors, and changes in the movements of all factors following the outbreak of the COVID-19 crisis (as of March 2020) are visible and can be directly attributed to the impact of the pandemic on the economy. An analysis of these factors in combination with data about the NBS's FX interventions shows that almost the entire gap between FX supply and demand was absorbed via FX interventions, i.e., that they were neither too high (they did not lead to a change in the established trend of the real exchange rate), nor too low, but sufficient and adequate in the amount so as to be efficient in alleviating pressure on the exchange rate (Figure 10).

Considerably higher FX demand relative to the supply created a gap generating depreciation pressures, which was mostly absorbed by the central bank's FX interventions. In 2019 we saw an entirely different situation, when the FX supply was higher than the demand, creating appreciation pressures on the dinar – which were again mostly absorbed by the central bank's FX interventions, though in the opposite direction. The major part of the change from net FX supply in 2019 to net FX demand in 2020 and the consequent creation of depreciation pressures in the FX market in the wake of the COVID-19 crisis outbreak can be explained through the effect of two factors – the first and the third one – residents and the FC. This shows that the COVID-19 crisis had the greatest impact on these factors, notably in the second quarter of 2020, when the effects of the crisis on developments in the real sector and the FX market were the most pronounced. In Q2 2020, the NBS net sold EUR 845 mn in the interbank FX market, which is more than a half (58%) of the total amount of net FX sale in 2020. In the remainder of the year, the effect of the COVID-19 pandemic on the economy was weaker, therefore the need for the NBS's FX interventions also diminished. It was precisely the NBS's staunch determination to reaffirm its unambiguous intention to preserve the stability of the domestic financial market during the crisis that averted a stronger exit of non-resident investors from the Serbian market. During May, one of the major non-resident participants implemented a "hedging strategy" in a larger amount, instead of doing a classical exit (by selling in the secondary market) from dinar positions (long-term government securities). Having confirmed that stability in the domestic FX market has no alternative and that the NBS is firmly resolved to prevent the transmission of uncertainty from the global to the local market, after only around ten days we had transactions in the opposite direction, hedging positions were closed, and the NBS's FX purchases almost annulled the effect on FX reserves. In legal terms, a clear signal of stability created a *restitutio in integrum* (return to the original condition).

If we observe resident activity in the previous years, there is a noticeable growth trend in FX supply and demand of domestic companies, indicating rising economic activity in Serbia. FX supply recorded faster growth than FX demand (mostly due to the increase in exports and FDI), sending net FX demand down for the past several years, which indicates increasingly better-balanced FX supply and demand flows. However, in 2020 we saw a significantly higher net FX demand of domestic companies, notably due to the reduced FX supply by local corporates. In 2020, net FX demand of residents was 124% higher on average than the monthly average in 2019 (and the highest since 2015). Growth in net FX demand is primarily the result of the lockdown and enforcement of containment measures to protect the lives of people, which led to the expectedly much lower FX inflow under export and FDI, i.e., it opened the gap between FX supply and demand of domestic companies. On the other hand, the need to pay for the import of certain strategically important companies – energy importers, as well as the import of the necessary medical equipment, with stepped up activities of companies in the ICT industry, maintained a somewhat higher level of FX demand in an environment of dampened economic activity.

During the previous years, the FC has been a factor with a strong appreciation effect. Since the outbreak of the coronavirus crisis, specifically in Q2 and Q3 2020, the net supply of FC changed into net demand for foreign cash, which is largely a consequence of the reduced supply of and to a lesser degree of growing demand for foreign cash. This can be correlated with: 1) the spread of the COVID-19 epidemic, enforcement of the emergency state and subsequently much lower FC inflow from the local population, 2) subdued inflow of remittances, and 3) reduced inflow of foreign tourists to Serbia.

These two factors (residents and FC) explain three fourths (73%) of the change in the trend in the FX market in 2020 relative to 2019, i.e., the shift from an environment of excess FX supply (appreciation pressures) to an environment of excess FX demand (depreciation pressures). At the same time, the largest percentage of

Table 4: Contribution of individual factors in the local FX market to the explanation of the change in the trend in 2020 relative to 2019

	Factors affecting movements in the domestic FX market				
	Residents	Non-residents	FC	Net indexed bank assets	Payment cards
"% of explanation of the change in the trend in 2020 relative to 2019 (% of the explanation of the gap between FX supply and demand in 2020 relative to 2019)"	28%	3%	45%	20%	3%

Sources: NBS and author's calculations.

the explanation (45%) pertains to transactions with FC (Table 4). The biggest impact of the COVID-19 crisis on both factors was recorded at the very onset of the crisis, that is, in the first months after it broke out.

Observing the activity of non-residents over the past several years, we see that FX demand of banks' foreign clients was on the rise until 2017. However, in 2018 and 2019, the years in which all of the positive macroeconomic changes that had been implemented in Serbia began to be reflected, we also saw a much higher foreign capital inflow – non-residents increased their FX supply and their investment in long-term dinar government securities. FX supply in 2018 increased by almost 50%, and in 2019 it was even higher. Along with a constant FX demand, this subdued foreign companies' net FX purchase and lowered depreciation pressures, i.e., contributed to appreciation pressures. However, since the outbreak of the COVID-19 crisis, there was a slowdown in investment activities during the period of heightened global uncertainty, which resulted in an increase in net FX demand by non-residents. Simultaneously, the reduction in non-resident FX supply was much bigger that the cut in the demand (comparing monthly averages for 2020 and the prior year, non-resident net FX demand was 17% higher this year than the year before). Still, not even then did we record a major capital outflow from Serbia or an exit from dinar government securities. Stepped-up FX demand is largely attributable to hedging activities implemented at the very onset of the crisis, which were promptly relaxed, creating situations in which the NBS appeared on the FX purchase side in certain periods during the crisis.

Despite depreciation pressures caused by the impact of the COVID-19 crisis on economic and investment activity and citizen behaviour, the dinar remained stable relative to the euro as a benchmark foreign currency in Serbia. What contributed to the dinar remaining stable is the timely and well-measured reaction of monetary authorities – measures implemented to mitigate the negative effects of the pandemic on the domestic economy which had a soothing effect on market participants, economic entities and citizens, together with FX interventions.

In an environment of psychologically increased citizen demand for FC at the very start of the coronavirus crisis, one of the activities critical for maintaining the stability of the financial system's functioning in a state of emergency was associated with supplying foreign cash to banks. In a situation where the borders of all European countries were closed, i.e., when correspondent banks (which supply cash to banks in ordinary times) did not carry out their activities in terms of supplying this form of foreign money, the NBS was the only resort for banks. The NBS also responded by adopting appropriate regulations, which create a legal framework for banks to have enough foreign cash to meet household demand at any point.

To this end, the NBS adopted two instructions in mid-March:

1. Instruction about bank conduct in order to regulate the need for foreign currency in a state of emergency, and
2. Instruction about the highest daily deposit payment to natural persons in foreign currency in a state of emergency.

According to the first instruction, the bank shall settle up to 75% of the stock of FC as at 16 March 2020 (a day after the emergency state was declared) from its own assets, after which it shall reach out to the NBS to obtain additional assets, should a need arise. The adoption of this instruction ensured adequate conduct of banks in their requests for FC so as to realise all client applications without jeopardising financial system stability. This way, banks were directed to make a rational use of their own assets, knowing that they would be able to get the amount they needed from the NBS at any time. Accurate mechanisms were also developed to establish the stock of and the need for FC. This assuaged the negative psychology that initially emerged in the market. Even after the termination of the emergency state, the NBS continued to ensure the necessary amount of FC to banks in accordance with this instruction.

The second instruction prescribed that a natural person may draw a maximum of EUR 50,000 in FC in a single day, from a single bank. The aim of this instruction was to ensure adequate liquidity risk management by banks. At the same time, this alleviated the panic behaviour of households in the form of requests for high daily pay-outs of FC at the very start of the crisis, given that such inadequate behaviour of wealthier individuals could have posed a threat to pay-outs to other citizens who queued in banks waiting to draw much smaller amounts. In July, as the situation relaxed, the average daily limit was raised to EUR 100,000.

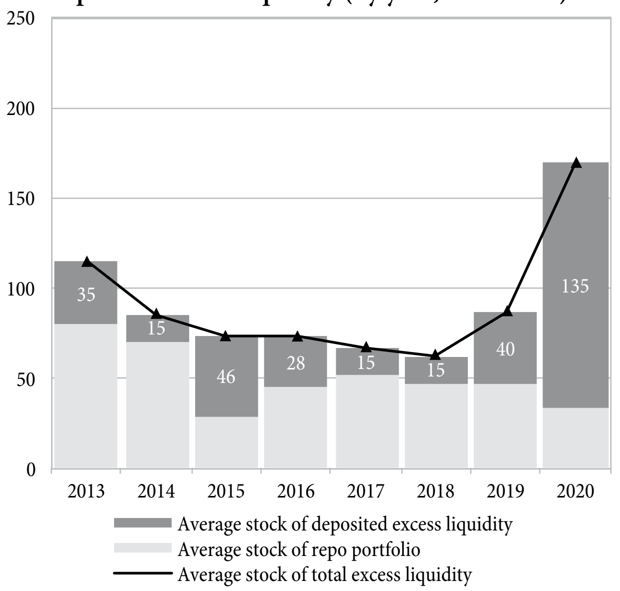
Effects of the COVID-19 crisis on liquidity

The NBS responded to the crisis not only in the FX market, but maintained stability in all segments of the financial system. This also meant providing liquidity to ensure continuous and unhindered functioning of all financial flows. Another indicator that the NBS and Serbia were well prepared to face the heightened uncertainty is the fact that the banking sector entered the crisis in an environment of high excess liquidity. Dinar surpluses (funds held by banks with the NBS in the form of repo portfolio or deposit facilities, which exceed the level of reserve requirements) averaged over RSD 100 bn in the pre-crisis period. In order to alleviate a potentially negative psychological effect (i.e., to prevent panic), and by applying a proactive approach, apart from the initial lowering of its main interest rates, the NBS also implemented a set of conventional and unconventional measures to boost the liquidity of the banking and, by extension, of the real sector.

Bank demand for liquid assets peaked at end-March 2020 as bank clients – companies facing financial turbulences, demanded an unusually high amount of dinar cash fearing potentially sharper reductions in cash flows. However, in contrast to 2008, banks managed to meet the elevated demand for liquid assets without financial constraints because bank liquidity and capital were much more robust on the eve of the COVID-19 crisis compared to the period preceding the 2008 crisis. An additional reason was that the total liquidity supply of central banks came at the right time – at the very start of the crisis, with central banks taking the role of lenders of first resort [10]. This is also confirmed by the example of the NBS, which at the very onset of the COVID-19 pandemic in Serbia responded by applying well-calibrated instruments, sending a clear soothing signal to the financial market, corporates and households that it would give full support to the domestic financial and overall economic system in order to minimise the consequences of the virus.

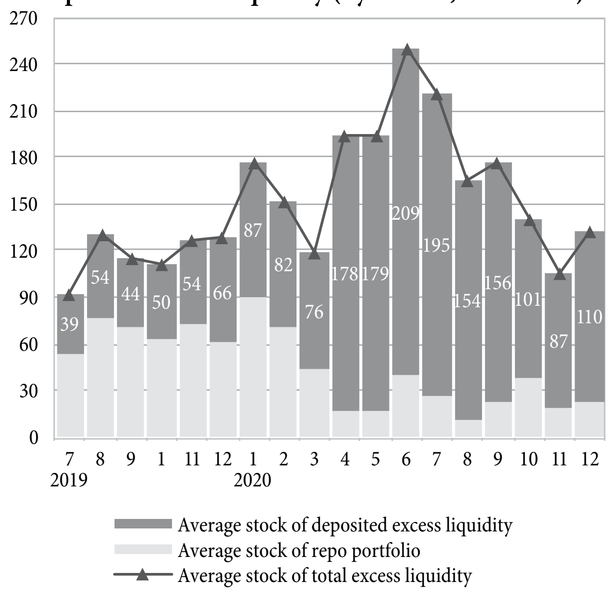
Comparing liquidity movements in the period before and during the COVID-19 crisis, it can be concluded that the Serbian banking sector enjoyed excess liquidity over a longer period and that bank liquidity was extremely high even before the crisis-motivated activities and operations of the NBS (Figures 11 and 12). Excess dinar liquidity observed as a sum of deposit surpluses and repo stock averaged around RSD 130 bn since mid-2019 until the state of emergency was declared (March 2020). After the

Figure 11: Average stock of repo securities sold and deposited excess liquidity (by year, in RSD bn)



Source: NBS.

Figure 12: Average stock of repo securities sold and deposited excess liquidity (by month, in RSD bn)



Source: NBS.

measures taken by the NBS, excess liquidity expanded further, averaging over RSD 170 bn from March until December 2020, and declining to around RSD 133 bn[1]in December.

The analysis of factors which determined liquidity movements in the prior period indicates a change in the direction and significance of individual factors which affected liquidity movements before and after the COVID-19 pandemic. While banking sector liquidity increased in the last two years, the direction and intensity of the most important factors which impacted liquidity creation and withdrawal was entirely inverse. Thus, in 2019, banking sector liquidity rose by RSD 71.8 bn, owing to monetary policy factors, i.e., NBS activities in the FX market which drove liquidity up by RSD 357.1 bn, while open market operations resulted in the withdrawal of RSD 53.5 bn worth of liquidity. Still, that volume is smaller than liquidity withdrawn through government activities – RSD 241.7 bn. On the other hand, a RSD 93.0 bn liquidity increase in 2020 was driven primarily by NBS open market operations (RSD 180.0 bn), and to a lesser extent by government activity (RSD 70.2 bn), while the major portion of liquidity created in this way was withdrawn through NBS activities in the FX market (-RSD 153.2 bn).

If the government and the NBS are observed as a single "state economic apparatus", i.e., two interconnected institutions working on the same task (which some modern economic theories advocate as one of the starting premises) – preserving stability and growth and ensuring favourable macroeconomic conditions for sustainable growth – their coordination and joint actions can also be confirmed on the example of liquidity movements. In 2019, same as throughout the period of fiscal consolidation initiated in late 2015, the government impacted liquidity withdrawal, which was more than compensated for by liquidity creation based on monetary policy factors, i.e., NBS activities – mainly FX purchases in the FX market, which was supported by the appreciation trend in place since mid-2017. Conversely, liquidity created through government activities in 2020, taken predominantly to overcome the consequences of the COVID-19 pandemic and support citizens and businesses, although significantly supplemented by liquidity created in NBS open market operations, was also largely withdrawn in NBS FX market operations (Figure 13). The NBS's presence in the FX market was characterised mainly by FX sale interventions, prompted by depreciation pressures present in a major part of 2020, which also determined the sterilisation effect of monetary policy measures.

Being one of the key factors channelling liquidity, the government impacted liquidity withdrawal mainly through higher collected revenue which exceeded expenditure, while in the major part of the period observed securities had a much weaker net effect of liquidity withdrawal and in 2016 and 2017 even worked towards liquidity creation (Table 5). However, in 2020 this trend was reversed and liquidity was created based on actual expenditure exceeding revenue, with 67% of liquidity created in this manner being withdrawn based on the net effect of sale exceeding the maturing/early redemption of government securities. The highest amount of liquidity in terms of expenditure exceeding revenue by RSD 225.3 bn was created in the period from March until end-June, primarily as a result of measures taken by the government within the Programme of Economic Measures to Mitigate the Negative Effects Caused by the COVID-19 Pandemic and Support the Serbian Economy in the areas of tax policy, direct support to the private sector, preserving corporate liquidity, a moratorium on dividend payment until the end of the year, one-off assistance to households, and corporate loans based on the Guarantee Scheme (although slightly higher liquidity in the amount of RSD 54.6 bn was created in December, which is usual for the end of the year).

From March until end-May, banking sector liquidity rose by RSD 137.6 bn, and in the period thereafter, concluding with October, it gradually declined by a total of RSD 83.3 bn. Already in November, there was a slight increase in liquidity in the amount of RSD 7.8 bn, to intensify its creation in December in the amount of as much as RSD 61.4 bn, which is, although usual for December, slightly higher than in previous years. Based on government activity only, banking sector liquidity in this period increased by RSD 70.2 bn (from March until June in the total amount of RSD 148.7 bn), while NBS activities since

1 On 10 June 2020 total dinar excess liquidity equalled as much as RSD 331.9 bn, the highest level on record.

the introduction of the state of emergency, until the end of the year, created RSD 50.3 bn worth of liquidity (more precisely, via its open market operations the NBS provided support to the banking sector supplying RSD 180.0 bn worth of liquidity, while its FX market operations resulted in the withdrawal of RSD 129.7 bn).

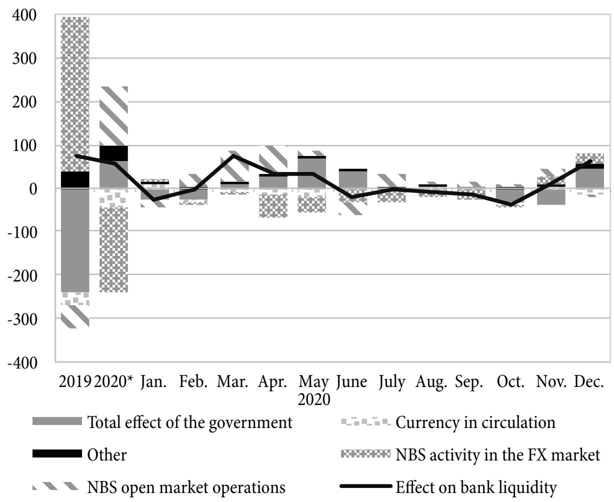
Although the banking sector had excess dinar liquidity at the start of the COVID-19 crisis, the NBS acted pre-emptively and proactively by providing banks with additional dinar and FX liquidity, in order to create conditions for unhindered lending activity. To this end, it implemented repo and swap operations already in March and continued to apply such changed method of FX swap auctions until end-June. After these initial measures, liquidity grew mainly as a result of transactions of bilateral purchases of government securities from banks (RSD 97.0 bn) in April and May and, to a certain extent, as a result of outright purchases of corporate bonds (RSD 25.2 bn) in September (Table 6). Along with the reduction of liquidity surpluses before the end of the year, the NBS met the needs of banks by reorganizing swap and repo purchases on a

Table 5: Government effect on liquidity (in RSD bn)

	Total effect of the government	Expenditures exceeding revenues	Net effect of securities
2015	-43.4	25.8	-69.2
2016	-39.8	-93.7	53.9
2017	-145.6	-200.4	54.8
2018	-226.5	-185.3	-41.1
2019	-241.7	-214.7	-27.0
2020	70.2	211.7	-141.5
Jan-20	-25.0	-27.4	2.4
Feb-20	-25.0	-12.8	-12.3
Mar-20	11.9	18.3	-6.4
Apr-20	28.8	34.3	-5.5
May-20	70.1	112.3	-42.2
Jun-20	37.9	60.4	-22.5
Jul-20	-3.2	3.1	-6.3
Aug-20	-2.9	3.5	-6.4
Sep-20	1.4	3.2	-1.8
Oct-20	-34.4	-19.8	-14.6
Nov-20	-35.7	-18.1	-17.7
Dec-20	46.3	54.6	-8.2

Source: Ministry of Finance and NBS.

Figure 13: Liquidity creation factors in 2019 and 2020 (in RSD bn)



Source: NBS.

Table 6: NBS activities in the FX market and open market in emergency situation (in RSD bn)

	NBS activities in the FX market				NBS open market operations						Total
	NBS interventions - net	Regular swaps	Additional swaps	Total FX market	Reverse repo - main operation	Repo purchase - longer maturity	Repo purchase - fine tuning	Outright purchase of gov. securities	Outright purchase of corporate bonds	Total open market	
March*	3.5	0.0	14.9	**18.4**	60.0	20.5	1.0	0.0	0.0	**81.5**	**99.9**
April	-46.4	-5.6	0.0	**-52.1**	-5.0	0.0	-1.0	70.1	0.0	**64.1**	**12.0**
May	-31.2	-2.1	0.0	**-33.3**	-5.0	-9.8	0.0	26.9	0.0	**12.1**	**-21.1**
June	-20.0	2.8	-15.0	**-32.1**	-20.0	-10.7	0.0	0.0	0.0	**-30.7**	**-62.8**
July	-34.7	6.5	0.0	**-28.2**	25.0	0.0	0.0	0.0	0.0	**25.0**	**-3.2**
August	-18.8	-1.5	0.0	**-20.3**	2.0	0.0	0.0	0.0	0.0	**2.0**	**-18.3**
September	-17.6	0.0	0.0	**-17.6**	-17.0	0.0	0.0	0.0	25.2	**8.2**	**-9.4**
October	-11.8	0.0	0.0	**-11.8**	5.0	0.0	0.0	0.0	0.0	**5.0**	**-6.8**
November	13.5	0.0	5.1	**18.6**	10.0	7.6	0.0	0.0	0.0	**17.6**	**36.2**
December	9.4	0.0	19.3	**28.7**	-15.0	7.8	0.0	0.0	2.3	**-4.8**	**23.8**
Total 18.3 - 31.12.	**-154.0**	**0.0**	**24.3**	**-129.7**	**40.0**	**15.4**	**0.0**	**97.0**	**27.5**	**180.0**	**50.3**

* since 18 March

Source: NBS.

weekly basis. In this way, the NBS provided banks with additional liquidity in the amount of about RSD 40 bn in November and December.

All these activities ensuring additional liquidity in crisis conditions reflected also on the rise of money supply, which recorded higher growth rates since March 2020 (Table 7, Figure 14). Starting from March 2020 and concluding with November, the expansion of M1 (including currency in circulation and dinar transaction deposits of non-government sector) as an indicator of money demand, reached a two-digit rate of almost 30% (29.9%), while in the same period of 2019 money supply in the narrowest sense rose at much more moderate rate of 17.3% (according to operational data for December, M1 growth from March until December 2020 amounted to as much as 40.3%). Dinar money supply in a broader sense – M2 (which in addition to M1 includes dinar savings and term deposits) also recorded somewhat stronger growth in this period (25.0%), as opposed to 16.8% in the same period of 2019 (according to operational data for December, M2 growth from March to December 2020 equalled 34.1%). Money supply in the broadest sense – M3 (which apart from M2 also includes FX deposits) increased by 14.6%, compared to 6.3% in the same period of 2019 (according to operational data for December, M3 growth from March to December 2020 amounted to 18.7%).

Strong growth in dinar money supply in this period resulted largely from government activity, i.e., measures taken within the Programme of Economic Measures to Mitigate the Negative Effects Caused by the COVID-19

Table 7: Money supply growth rates (in %)

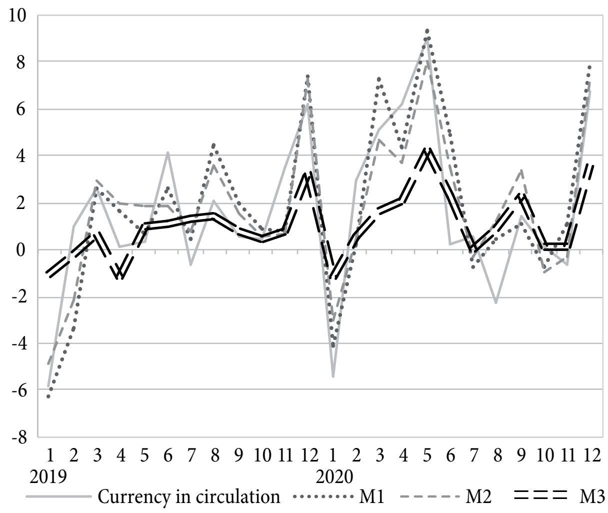
	Annual growth rates				Monthly growth rates				Y-o-Y growth rates			
	Currency in circulation	M1	M2	M3	Currency in circulation	M1	M2	M3	Currency in circulation	M1	M2	M3
2018												
Sep.	4.4	3.6	5.2	4.9	4.8	0.6	0.7	0.0	16.5	15.1	13.5	8.2
Oct.	0.6	5.6	6.0	6.5	-3.6	2.0	0.8	1.6	16.1	15.9	14.4	9.5
Nov.	2.1	7.3	7.5	6.8	1.5	1.5	1.5	0.2	16.2	15.9	14.3	8.4
Dec.	11.4	18.3	16.7	14.5	9.1	10.3	8.5	7.2	11.4	18.3	16.7	14.5
2019												
Jan.	-5.8	-6.3	-4.9	-1.1	-5.8	-6.3	-4.9	-1.1	19.9	16.2	16.0	14.9
Feb.	-4.9	-9.4	-6.9	-1.3	0.9	-3.4	-2.1	-0.2	19.4	15.7	15.3	15.0
Mar.	-2.4	-7.1	-4.2	-0.7	2.6	2.6	2.9	0.7	17.3	16.4	16.2	14.8
Apr.	-2.4	-5.5	-2.3	-1.9	0.1	1.7	2.0	-1.2	16.9	15.1	15.4	12.5
May	-2.1	-4.9	-0.6	-0.9	0.3	0.7	1.8	1.0	17.5	12.8	14.2	11.2
June	1.9	-2.4	1.3	0.1	4.1	2.6	1.9	1.1	17.0	15.5	15.4	11.2
July	1.3	-1.9	2.1	1.4	-0.6	0.5	0.8	1.3	15.8	15.2	15.9	12.2
Aug.	3.4	2.5	5.8	2.8	2.1	4.4	3.6	1.4	15.7	17.8	18.2	12.3
Sep.	4.0	4.5	7.4	3.6	0.5	2.0	1.5	0.8	11.0	19.3	19.2	13.1
Oct.	4.5	5.4	8.0	4.1	0.5	0.9	0.6	0.5	15.7	18.1	19.0	11.9
Nov.	8.1	6.2	8.7	4.9	3.5	0.7	0.6	0.8	18.0	17.2	18.0	12.5
Dec.	14.8	14.0	16.6	8.4	6.2	7.4	7.3	3.3	14.8	14.0	16.6	8.4
2020												
Jan.	-5.4	-4.1	-3.0	-1.2	-5.4	-4.1	-3.0	-1.2	15.3	16.7	18.9	8.2
Feb.	-2.6	-3.9	-2.6	-0.7	3.0	0.2	0.4	0.5	17.6	21.1	22.0	9.0
Mar.	2.4	3.2	2.0	1.0	5.1	7.3	4.7	1.7	20.4	26.6	24.1	10.1
Apr.	8.7	7.7	5.8	3.1	6.2	4.4	3.7	2.1	27.8	29.9	26.3	13.8
May	18.5	17.8	14.3	7.5	9.0	9.4	8.0	4.3	38.9	41.2	34.0	17.6
June	18.7	23.5	18.3	10.0	0.2	4.9	3.5	2.3	33.7	44.3	36.1	19.0
July	19.4	22.6	17.9	10.0	0.5	-0.7	-0.4	0.0	35.2	42.5	34.6	17.6
Aug.	16.7	23.1	19.3	11.0	-2.2	0.4	1.2	0.9	29.5	37.0	31.5	17.0
Sep.	18.3	24.5	23.3	13.6	1.4	1.1	3.4	2.3	30.6	35.9	33.9	18.8
Oct.	18.5	23.5	22.1	13.7	0.2	-0.8	-1.0	0.1	30.2	33.6	31.8	18.4
Nov.	17.8	24.9	21.7	13.9	-0.6	1.1	-0.3	0.2	25.0	34.1	30.6	17.6
Dec.	25.7	34.9	30.6	17.9	6.7	8.0	7.2	3.6	25.7	34.9	30.6	17.9

Source: NBS.

Pandemic and Support the Serbian Economy, as well as from credit activity which had been the major driver of money supply growth before the outbreak of the current crisis (and in September). In addition, the growth of foreign currency deposits was almost evenly driven by household deposits and corporate deposits.

In monthly terms, after a usual seasonal contraction in the first two months of 2020, only in the period from March to June, money supply M1 went up by 28.4% and M2 by 21.4%, with the strongest monthly growth recorded in May – 9.4% and 8.0%, respectively. In June, M1 growth was almost halved, at 4.9%, and M2 at 3.5%, while July even saw a contraction in M1 by 0.7% and in M2 by 0.4%. August witnessed a moderate growth in M1 of 0.4% and in M2 of 1.2%, with the slight acceleration in September – to 1.1% and 3.4%, respectively, mainly due to additional government payments in early September. However, in October there was a decline in M1 by 0.8% and M2 by 1.0%, to mitigate the downward trend in M2 (-0.3%) in November and reverse the downward trend in M1, when a slight increase of 1.1% was registered in the narrowest defined money supply. According to the operative data for December, the dinar money supply M1 and M2 recorded a higher growth of 8% and 7.2%, respectively, which is its usual movement at the end of the year, when the government realizes the largest part of its expenditures.

Figure 14: Monthly growth rates for currency in circulation, M1, M2, M3 (in %)



Source: NBS.

In structural terms, the major part of M1 growth, which was the most dynamic, in the period March–June originated from the rise in transaction deposits (81.5%), while a smaller part (18.5%) referred to currency in circulation. Due to the deferred payment of tax liabilities and moratorium on loan repayment, the funds remained in current accounts, while lower consumption due to uncertainty and greater caution of households resulted in somewhat higher growth of currency in circulation. That this is a temporary effect is confirmed also by the data on slower growth of currency in circulation already in June and its fall in August, which coincides with the evolution of the pandemic in our country. In September already, currency in circulation mildly increased, given the payment of 60% of the minimum wage. October saw stabilisation and there was a slight decline in November. Significant growth of cash in circulation in December is usual for the end of the year, both due to increased payments and due to the arrival of our citizens from abroad before the holidays, but due to the worsening epidemiological situation and consequent measures taken, there was no significant spending in 2020. After May and June, the effect of government activity was much softer, and lending took over the role that the government had played in money creation during the state of emergency and containment measures. A significant impetus to the accelerated growth of money supply in September came from the issuance of corporate bonds as a source of financing investment activities. The decline in money supply in October and November, and then its significant growth in December, was dominated by the government.

These and similar movements are typical for most economies that took comparable measures in order to contain the economic fallout from the pandemic (policy rate cuts, expanded asset purchase programme, introduction of new, extraordinary liquidity supply programmes, packages of measures to support corporate financing, additional repo auctions, etc.).

The increase in money supply always gives rise to concerns about inflation, especially when this increase is not accompanied with the same rates of production growth, given that according to the quantitative money theory, every monetary growth in the long run reflects on inflation. However, the latest experiences with quantitative facilities showed that money supply increased in this way did not reflect on inflation after all, because price growth was also under the impact of a series of other factors. On the other hand, monetisation of the fiscal deficit may generate inflation, especially in less developed economies where stronger money supply growth, after a certain period, may trigger a rise in consumption and prices. In that case, the

Table 8: Money supply M1 by country (monthly growth rates, in %)

	USA	EU	UK	Serbia	Canada	Australia	Czech Republic	Poland	Romania	Bulgaria	North Macedonia	Croatia	BIH
February	-1.0	1.0	1.1	0.2	0.7	-0.2	1.4	2.2	0.6	0.2	1.6	0.9	0.9
March	8.8	3.0	6.8	7.3	3.1	8.7	3.2	6.3	4.7	1.4	4.0	5.2	1.2
April	13.1	1.8	1.3	4.4	5.4	3.7	1.5	4.1	1.7	1.5	1.3	0.3	0.9
May	3.4	1.3	2.5	9.4	3.9	0.7	2.4	4.9	2.0	1.5	1.9	2.3	0.4
June	4.0	0.8	1.3	4.9	3.7	2.6	1.5	4.3	0.5	0.6	2.7	1.9	1.0
July	2.2	1.1	0.7	-0.7	2.1	2.4	1.2	1.0	0.8	1.6	1.2	1.5	2.1
August	0.8	0.4	0.6	0.4	2.3	1.1	1.1	1.4	1.9	1.5	0.1	1.9	1.9
September	1.6	0.7	0.9	1.1	2.0	2.0	1.9	1.7	2.7	1.9	1.4	-0.2	0.3
October	2.0	1.0	1.7	-0.8	1.5	1.2	0.8	1.9	1.8	1.1	-0.9	0.4	1.3
November	8.6	1.4	1.3	1.1	1.3	1.2	0.6	1.5	2.4	1.3	1.0	2.0	0.8
Period February-November	52.1	13.3	19.5	30.2	29.1	25.7	16.6	33.2	20.8	12.1	15.2	17.6	11.3

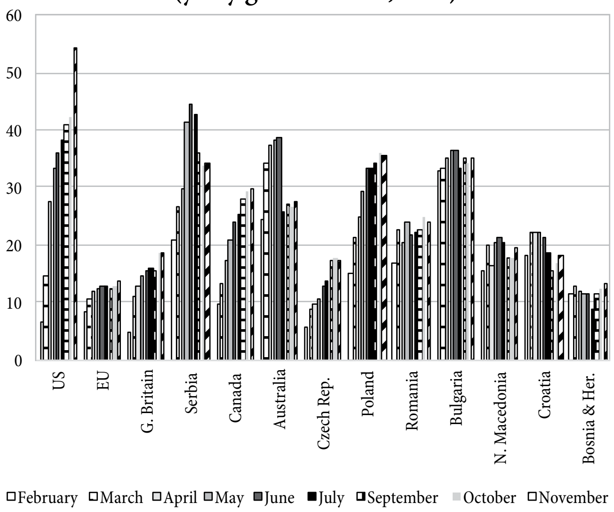
Source: Websites of selected central banks.

Table 9: Money supply M1 by country (y-o-y growth rates, in %)

	USA	EU	UK	Serbia	Canada	Australia	Czech Republic	Poland	Romania	Bulgaria	North Macedonia	Croatia	BIH
February	6.6	8.2	5.0	21.1	9.9	24.5	5.6	15.0	16.9	33.0	15.5	18.1	11.4
March	14.4	10.4	11.0	26.6	13.2	34.0	9.0	21.2	22.6	33.3	19.9	22.1	13.0
April	27.5	12.0	12.7	29.9	17.3	37.4	9.8	25.0	20.6	34.9	16.6	22.2	12.1
May	33.2	12.6	14.7	41.2	20.7	38.1	10.9	29.2	24.2	36.7	20.2	22.4	11.6
June	36.2	12.8	15.5	44.3	24.0	38.7	13.0	33.4	21.9	36.4	21.3	21.3	11.7
July	38.1	13.0	16.1	42.5	25.4	25.9	14.0	33.4	22.2	33.2	20.3	18.6	8.7
August	39.6	12.4	15.5	37.0	27.1	26.4	14.7	34.2	22.6	33.7	18.2	16.8	10.8
September	40.9	12.6	15.7	35.9	28.0	27.0	17.2	34.3	22.7	35.0	17.8	15.4	11.5
October	42.1	12.9	18.5	33.6	29.3	26.8	17.7	35.9	24.8	34.1	18.0	17.0	12.4
November	54.2	13.8	18.7	34.1	29.9	27.5	17.3	35.5	23.8	35.3	19.6	18.2	13.3

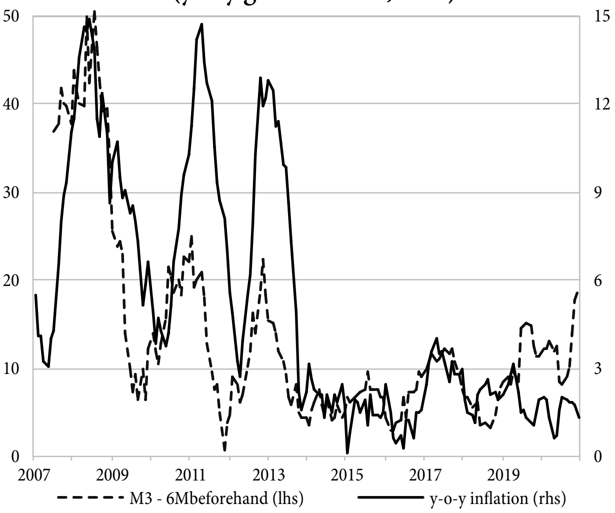
Source: Websites of selected central banks.

Figure 15: Money supply M1 by country (y-o-y growth rates, in %)



Source: Websites of selected central banks.

Figure 16: Money supply M3 and inflation (y-o-y growth rates, in %)



Source: NBS.

response of competent authorities may be a combination of interest rate rise and quantitative tightening, as well as cutting down government spending and raising taxes, which would lead to lower purchasing power. Since we are currently facing the risk of a cash crisis, some analyses of alternative fiscal policies [2], such as deferral of taxes and bridging loans, which governments could apply in order to reduce the risk of cash crisis, suggest that bridging loans are more economical in averting a large-scale cash crisis within six months after the shock.

In the case of Serbia, money supply aggregates M1 and M2 are not significant predictors of inflation, but this cannot be said of M3, which, in graphic terms, can predict inflation movements for several months ahead. By moving the money supply dynamic six months (two quarters) ahead, we get a significant dynamic overlap. There is a moderate positive correlation, with the correlation coefficient of 0.66, which is below 0.8, the value considered statistically significant. The results of these movements indicate that observing the money supply movement alone, the coming period (December) could see inflation accelerate – if the rise in money supply significantly boosts the demand and consumption of households and corporates.

Still, money demand cannot be reliably predicted over a longer term and no central bank can determine with certainty a money supply growth rate compatible with price stability. What a central bank can do is to daily monitor the movement of monetary aggregates and in case of any threats in terms of inflation acceleration, to take adequate measures in cooperation with the government, so as to respond preventatively and to ensure stability. We expect that, with the resumed repayment of credit and tax liabilities, the liquidity provided to households and corporates will gradually return to pre-crisis flows, as in fact indicated by trends in the last several months, although money supply growth is also spurred by the approval of Guarantee Scheme loans. The factors dragging down economic growth have a controlling impact on inflation not only in Serbia, but Europe-wide. It is therefore reasonable to assume that somewhat higher growth of money supply in 2020 is not alarming and requires no special measures for the time being.

NBS monetary policy and open market operations after the outbreak of the crisis

"There are decades where nothing happens; and there are weeks where decades happen" (Vladimir Ilyich Lenin). In a very short time, global financial market sentiment collapsed in response to the coronavirus pandemic. And whereas in mid-February, Wall Street stock exchange indices climbed to new record highs, the ensuing accelerated spread of the coronavirus led to increased sales of riskier assets and a slump in US and European benchmark stock exchange indices by over 30% in only four weeks (until 20 March). At the same time, the oil shock added to the fall in investor sentiment in early March, after failed negotiations of OPEC+ countries on oil output reduction triggered a sharp decline in the Brent oil price (which fell by as much as 31%[2] on 9 March alone).

Monetary policy makers worldwide were the first to respond to the effects of the crisis by taking accommodative measures. In the first three weeks of March alone, as many as 49 central banks worldwide trimmed their policy rates. There were some cases of "panic" reaction which involved large-scale packages of accommodative measures over a very short time period and a range of unconventional measures (many of which were introduced for the first time).

In deciding upon and implementing its measures, the NBS was not guided by the so-called bazooka approach, i.e., the principle of "aggressive" relaxation over a short time period. It implemented monetary policy measures in a gradual and measured manner, sending a clear soothing signal to the market that it intends to do everything to preserve smooth functioning of the financial system because there is no alternative to stability. Stability in the domestic money, FX and government bonds markets was maintained both at the peak of the crisis and in the remainder of the year.

The NBS responded to the crisis momentarily, already at the extraordinary meeting of the Executive Board on 11 March where the key policy rate was lowered by 50 basis points (the largest reduction in a single meeting since 2015). After the March cut, the NBS further trimmed its key policy rate at April, June and December meetings

2 The largest daily decrease in the Brent oil price since 1991.

by 25 basis points each, to 1.0% (its lowest level in the inflation targeting regime).

Though after the outbreak of the crisis the domestic system functioned in an environment of excess liquidity, the NBS took proactive and pre-emptive measures and, by end-March, provided additional dinar liquidity to the banking system at very low interest rates. The NBS conducted three repo purchases of dinar government securities (with 1W and 3M maturity), and an additional FX swap purchase auction. In repo purchase transactions, dinars were provided at an interest rate equal to the rate on deposit facilities as the lowest rate in the NBS interest rates corridor, while the interest rate on dinars in the additional swap transaction was equal to the rate on deposit facilities plus 10 bp (taking as the interest rate on foreign exchange – euro 0%).

Although these transactions were not necessary from the aspect of banking system liquidity, they helped avoid any disruptions in dinar liquidity in the domestic market. At the very start of the crisis, amid prevailing uncertainty, they were a source of security for market participants and a confirmation that the NBS will respond using all available instruments in order to preserve stability and provide support to the financial and economic system.

Additionally, the NBS downsized the stock in its repo sales of securities, purposefully leaving excess liquidity in the market. Namely, at the time when the shock of the crisis was at its peak globally (March – June), the NBS accepted only slightly less than a half of the banks' bids in regular repo sale auctions, leaving banks with additional funds for trading in the money market (Figure 17).

As the health situation deteriorated, the NBS decided to offer regular dinar liquidity lines to banks from mid-November – additional FX swap purchase auctions and auctions of repo purchase of dinar government and corporate bonds. In this way, banks were enabled to obtain dinar liquidity in case of need, for a period of three months, on the same favourable terms as at the start of the pandemic, using FX or securities as collateral. This measure too was pre-emptive in character – its aim was to maintain a sufficiently high level of liquidity to enable still more favourable terms of financing for households and businesses and spur the country's recovery from the pandemic-induced crisis.

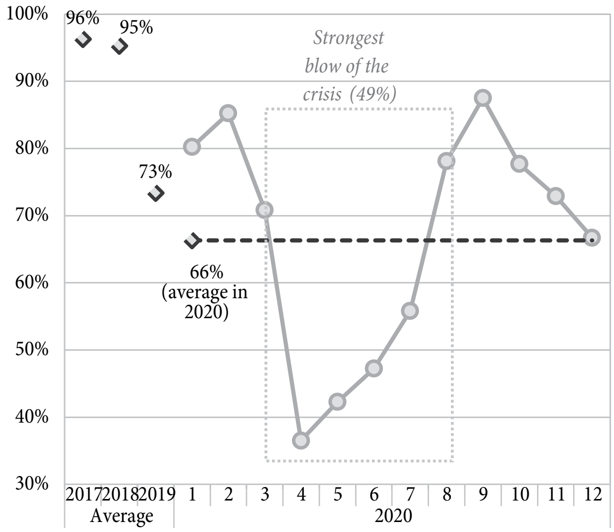
Since the key policy rate is the NBS's main monetary policy instrument[3] and key policy rate changes reflected directly on movement in short-term rates in the interbank market, the transmission of the NBS's decisions on the money market was efficient (Figures 18 and 19). Additionally, due to excess dinar liquidity in the system, interest rates in 2020 mostly hovered around the lower bound of the corridor of main interest rates of the NBS (close to the rate on deposit facilities).

Benchmark interest rates in the short-term segment of the dinar yield curve subsided notably after the crisis broke out, making financing conditions for businesses, households and government even more favourable. A comparison of average interest rates in December with their average in the pre-crisis period (January) reveals that interest rates decreased most notably in the most liquid segment of the interbank market (Figure 19). Mirroring the reduction in the weighted average repo rate in NBS auctions (by about 90 bp), BEONIA[4] and the rate on one-week loans dipped by 80 bp and 76 bp, respectively (Figure

3 The key policy rate is applied in the conduct of main open market operations (currently, one-week reverse repo transactions).

4 BEONIA (Belgrade Overnight Index Average) is the weighted average interest rate on overnight loans in the Serbian interbank money market.

Figure 17: Percentage of bids accepted in repo sale auctions



Source: NBS.

18). Also, a notable decline was recorded for BELIBOR[5] rates of all maturities – in the interval of 65 bp and 76 bp.

Preservation of stability in the market of local currency government bonds

Turbulences in the international market were the strongest in March, to which government bond markets of emerging economies were particularly sensitive. The VIX[6] index, also known as the "fear index" since it is used to quantify "fear" in financial markets, shot past 80 on 16 March 2020 (Figure 20), which is several times higher than its average in the prior decade (16.8). International investors adjusted their portfolios and shifted their focus to the safest assets, which affected local currency government bond markets of emerging economies particularly hard. In countries of the region, including Serbia, the activity in the secondary market of government bonds subsided promptly as the crisis broke out. Amid heightened external uncertainties, weaker liquidity in the secondary market and stepped up exit of investors from these markets, the yield on local currency government bonds rose sharply in the majority of emerging economies. At the same time, in addition to regular demands for financing of due liabilities, governments faced rising fiscal needs stemming from lockdown and the implementation of large-scale fiscal expansion packages. It was difficult to procure the necessary funds, as terms of financing became less favourable amid sudden tightening of financial conditions in the global financial market. In particular, this affected the countries which did not adequately manage their public finances and ran greater fiscal imbalances before the crisis.

In order to preserve the stability of the government bonds market and ease the terms of financing for the government, in accordance with applicable regulations the NBS conducted bilateral purchases of dinar government bonds in the secondary market from banks, in the total amount of RSD 97 bn. By contrast to some countries of the region which resorted to bulk auction purchases of government bonds, therefore facing substantial exit of foreign investors from these securities and increased depreciation pressures on the domestic currency, the NBS conducted these transactions bilaterally, in direct contact with domestic banks. In this way, no room was left for speculative activities in the secondary market which was, therefore, not "closed" but continued to function normally.

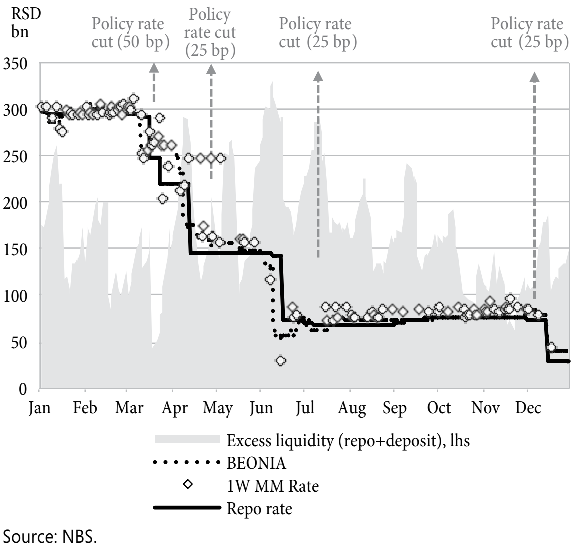
Figure 21 shows movement in average yield rates recorded in trade in the most liquid[7] dinar securities in

5 BELIBOR rates (Belgrade Interbank Offered Rate) are the benchmark interest rates on dinars in the money market, offered by domestic banks, members of the BELIBOR panel. BELIBOR rates are computed entirely on the basis of quotes.

6 The VIX index measures the volatility of the benchmark S&P500 stock exchange index based on the expectation of share prices in a 30-day period.

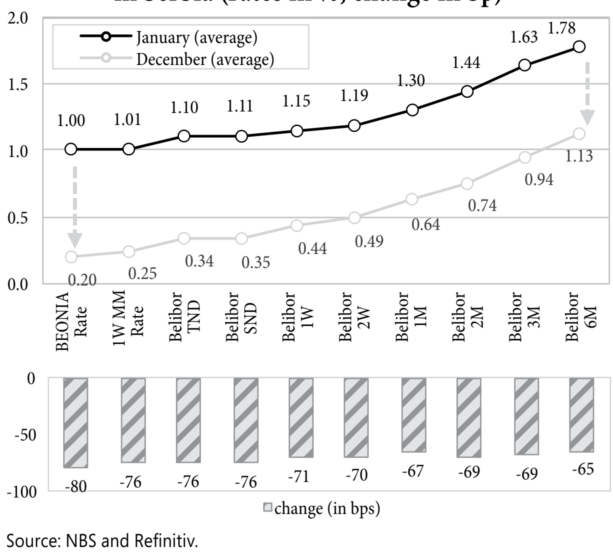
7 Seven-year dinar bonds which in 2020 made up 82% of secondary trade in dinar bonds.

Figure 18: Money market interest rates in Serbia in 2020



Source: NBS.

Figure 19: Impact of NBS measures on money market in Serbia (rates in %, change in bp)



Source: NBS and Refinitiv.

the secondary market in three sub-periods: I) Pre-crisis period (100 days before the crisis escalated), II) Peak of the crisis (starting from 16 March when the VIX reached its maximum), III) Period from the start of July (crisis still present).

The escalation of the crisis and the sharp rise in the VIX index too close to its historical high triggered a robust increase in yields on local currency government bonds of emerging economies. However, though the yield on dinar bonds also increased at the peak of the crisis (sub-period II in Figure 21), it was notably more moderate and averaged only around 0.2 pp. As expected, this sub-period also saw a widening of the range of yield to maturity rates at which investors traded in these bonds in the secondary market.

The third sub-period is represented in the Figure below (period after July). The VIX index remained high, persisting above its decade-long average (and often measuring two times that level), which signals sustained market uncertainty. The activity in the domestic government debt market was normalised relatively quickly, however, despite persisting volatility in global financial markets. As evident from the Figure below, the range of yield rates at which the most liquid dinar securities were traded in the secondary market narrowed significantly, though uncertainty in the markets continues. Also, the average yield to maturity at which most securities were traded fell to below its pre-crisis levels.

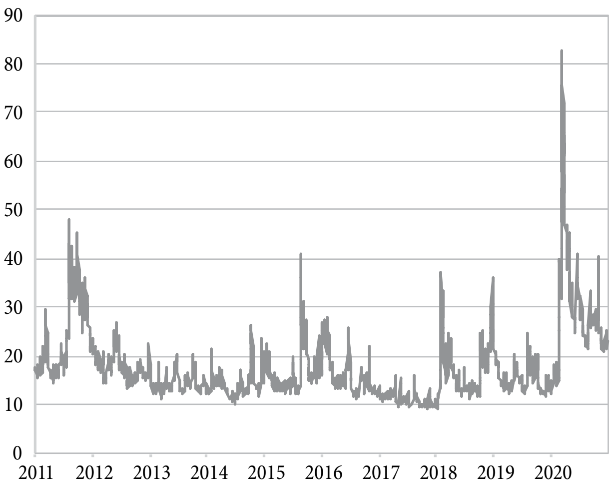
In addition to bilateral purchases of government bonds, which had a key part in stabilising movements in this market, a significant role was also played by the coordinated action of fiscal and monetary authorities in defining economic policies aimed at the recovery of the domestic economy and by the consistent stance of the NBS that there was no alternative to preserving the relative stability of the dinar exchange rate against the euro.

Providing an impulse to the development of the corporate bonds market

The current global pandemic and economic crisis opened the door for new monetary policy instruments and created new avenues for monetary authorities' action to support the domestic real sector. Immediately after the crisis broke out, already at the May meeting, the NBS decided to extend the list of securities eligible for monetary operations, by including dinar securities issued by domestic companies which have the appropriate solvency scoring. The acceptance of corporate bonds in monetary operations[8] gave an important impulse for banks to participate in the development of this market segment.

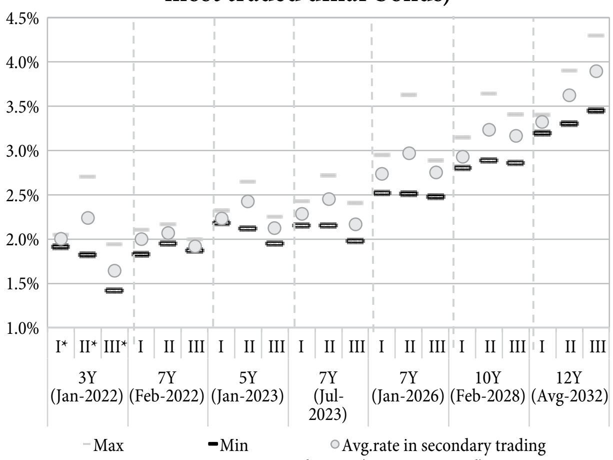
8 Eligibility in monetary operations as the subject of purchase by the NBS in the secondary market and/or as collateral for lending facilities, liquidity loans or provision of liquidity through repo operations.

Figure 20: VIX movements



Source: Bloomberg.

Figure 21: Yield rates in the secondary market of government securities in three sub-periods* (the most traded dinar bonds)



* I: Dec. 2019 - 13 March 2020 (pre-crisis period);
II: 16 March - 30 June 2020 (peak of the crisis); III: from early July

Source: NBS, author's calculations.

In providing the initial impulse to the development of this market segment, the NBS was guided by a twofold objective – to step up corporate sector's recovery from the crisis by supporting the development of an additional financing channel and to upgrade the domestic capital market. Financing through the issue of corporate bonds gives companies substantial flexibility in the area of cash flow management, which is particularly important during times of crisis, as indicated by empirical data. Namely, the benefits of this type of financing coupled with central banks' support in this market segment encouraged companies to step up their activity in the world's corporate debt markets after the crisis broke out. A look at the moving 12-month sum of corporate bond issuance shows that the issuance of these instruments in the US alone by investment-grade companies soared by as much as 70% y-o-y (until and including August 2020) to a record high of USD 1.5 bn [11].

To make sure stability of the domestic monetary and financial system is not threatened at any point, the NBS also defined a set of restrictions to this programme. Qualitative criteria limit eligibility of corporate bonds in monetary operations to companies with solvency scoring of at least "acceptable solvency" and introduce a time limit (securities issued until end-2020). Several quantitative criteria were also defined: 1) the maximum nominal amount of corporate bonds eligible for monetary operations is set at RSD 55 bn; 2) the maximum total nominal amount of an individual issue or a tranche of corporate bonds eligible for monetary operations is set at 70% of the total nominal value of an issue of a single issuer; 3) the maximum total nominal amount of corporate bonds of a single issuer eligible for monetary operations is set at RSD 11 bn. By defining clear restrictions to the programme, the NBS displayed a high level of responsibility, sending a signal to the market that it is ready to support the development of this market segment, but that the preservation of stability of the domestic system has no alternative.

A number of companies quickly recognised the benefits of this type of financing. Already in September, there were four issues of corporate bonds with maturities of 5 and 7 years, in the total amount of RSD 47.0 bn. Corporate bonds were issued on very favourable terms, which was supported by the successful transmission of monetary policy easing on local financial conditions after the crisis broke out, but also by the fact that the NBS backed the project with its own credibility.

Other measures

After the Republic of Serbia issued the Decree Establishing a Guarantee Scheme as a Measure of Support to the Economy to Mitigate the Consequences of the COVID-19 Disease Caused by the SARS-CoV-2 Virus (RS Official Gazette, No. 57/20), the NBS adopted a measure to further encourage dinar lending under this Decree. Specifically, to banks approving dinar loans under the Guarantee Scheme at interest rates at least 50 bp lower than the maximum rate prescribed by the above Decree (1M BELIBOR+2.5 pp), the NBS pays a remuneration rate on dinar required reserves for the amount of these loans at a rate 50 bp higher than the standard remuneration rate. In this way also, the NBS supported the Government of the Republic of Serbia in its effort to ensure even more favourable terms of lending to corporates, in order to buttress continued growth in lending even during the pandemic and minimise the consequences of the crisis on the domestic economy. As in all of its measures and activities, this time too the NBS took due care of the dinarisation of the domestic financial system. As a result of this support, the interest rate on dinar loans came close to the rates on euro loans granted under the Guarantee Scheme, leading to higher dinarisation and reflecting positively on monetary policy efficiency and financial stability. From May to December, EUR 1.48 bn of necessary liquidity and working capital loans were approved under the Guarantee Scheme to micro, small and medium-sized enterprises and entrepreneurs, and the duration of the Scheme was subsequently extended, which will be combined with other options of corporate financing as well. Considering that 60% of the loans approved under the Guarantee Scheme were dinar loans and that interest rates on dinar loans and euro loans are for the first time equal in Serbia (the difference between them was 9 percentage points in May 2013, when the cycle of relaxation began), it can be concluded that this measure has achieved its objective.

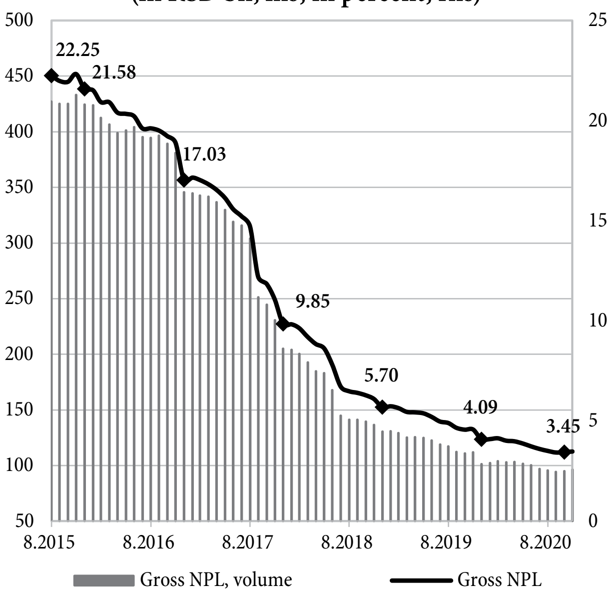
Debt repayment facilities and support to housing loans – Moratoria 1 and 2 and other measures

By contrast to the previous crisis, at the start of the crisis caused by the COVID-19 pandemic, Serbia's banking sector was financially stable and resilient to shocks from the external environment, with high capital buffers, reinforced liquidity and a relatively low share of NPLs, which decreased from very high levels. Namely, after the global financial crisis of 2008-2009, the banking sector faced a high volume and share of NPLs. The NPL ratio continued to rise, which was also due to a yearslong depreciation of the dinar at the time. Exceeding 22%, the high NPL ratio became a source of systemic risk and a factor containing the development of the banking and financial market. This called for an appropriate, decisive and coordinated response of the NBS and other relevant institutions, defined through the NPL Resolution Strategy [16]. Since the adoption of the Strategy in August 2015, the NPL ratio decreased from 22.25% in 2015, to 4.09% at end-2019. It was the result of the implemented measures and the macroeconomic stabilisation of the country. The substantial reduction in NPLs enabled a further strengthening of the banks' capital position, contributed to financial system stability and allowed for favourable terms of financing of the real economy (businesses and households), creating a feedback loop between the financial and the real sector. As a result, at end-Q1 2020, the banking sector capital adequacy was 22.66%, well above the regulatory minimum of 8%, liquidity indicators were two times higher than the regulatory minimums, and the NPL ratio was 4.02%.

The NBS responded to the pandemic already on 18 March 2020, three days after the emergency state was introduced, by adopting temporary prudential measures to preserve financial system stability and prevent negative short-term effects of COVID-19 on businesses and households, through provision of liquidity and cash flow facilities for each individual borrower and for the system at large during the crisis. For instance, the European Banking Authority (EBA) issued the first Guidelines on legislative and non-legislative moratoria on loan repayments applied in the light of the COVID-19 crisis on 2 April 2020, which were to be applied until 30 June 2020. Amendments of 25 June 2020 extended the application of these Guidelines until 30 September 2020, while the latest amendments of 2 December 2020 extended their application until 31 March 2021 [3].

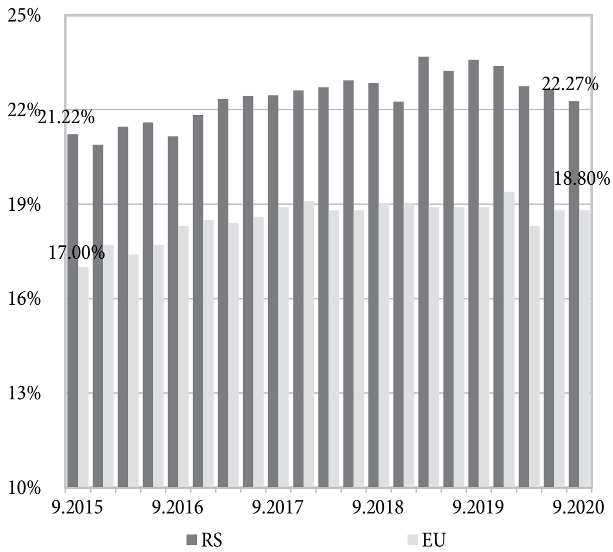
The NBS was among the first central banks and regulators in the region and Europe to introduce mandatory moratorium on debt repayment as one of the most efficient measures for overcoming temporary liquidity issues of businesses and households, and the promptness and

Figure 22: NPL indicators (in RSD bn, lhs; in percent, rhs)



Source: NBS.

Figure 23: Capital adequacy indicators



Source: NBS.

timeliness of its response was one of the key factors in avoiding long-term negative effects of the crisis on the real sector and on financial system stability (overview of prudential measures of the NBS is given in Table 10).

Through two moratoria on repayment of liabilities under loans and related products, the NBS helped households and businesses weather the crisis more easily – suspension of debt repayment was used by over 90% of borrowers during the first and over 80% of borrowers during the second moratorium (for a total of five to six months, depending on the time of use). As the crisis affected the entire economy, the two moratoria enabled equal treatment for all borrowers, offering the opt-out model as well, which meant that all borrowers were automatically included in the moratorium unless they chose not to participate in the scheme.

Very soon, with the onset of emergency circumstances, a measure was adopted reducing mandatory down payment for first-time home buyers from 20% to 10%.

Three sets of temporary measures were adopted in August to enable households' easier access to financing, particularly to housing loans. By facilitating access to new housing loans, support was also given to the economy, particularly the construction industry, through a faster turnover of assets and supporting activity in this branch of the economy. The measure was calibrated in such way that, in addition to fully completed apartments, housing loans and the newly introduced preferential treatment would also be approved for:

- residential buildings in construction regardless of the degree of completion, in case of project financing by a bank; residential buildings with the Building Directorate of Serbia as the holder of the construction permit; if they are part of the measures of government support to specific categories of natural persons;
- residential buildings in construction, with minimum 60% degree of completion, in case of project financing by another bank or project of a legal entity investor.

Before that, banks could approve housing loans for the purchase of minimum 80% completed buildings. The above measure encouraged banks to approve housing loans without having to wait for the residential building to be completed in full or for its major part. At the same time, there are clearly defined criteria that the financing, i.e., investor and building in construction, must meet in order for this treatment to be applied. To ensure funding for this type of lending, banks were allowed to use a part of assets in the form of capital, i.e., certain capital buffers they normally set aside. The August decision provided further support to previous first-time home buying programmes, by enabling preferential treatment also for newly approved loans in this category.

The second measure aims to ease terms of repayment of housing loans for citizens, particularly those that may potentially see reduced or uncertain income in the period ahead, as well as those wishing to extend the initially planned repayment deadline. During 2020 and 2021, banks were therefore allowed to offer facilities to borrowers which took out a loan before the decision entered into force by extending the repayment deadline for housing loans by five years at most, without any change in status regarding the assessment of the regularity of the borrower's loan repayment.

Also, a regulatory solution was introduced allowing a bank to grant a loan of up to RSD 90,000 dinars to a natural person who does not receive his/her wage or pension via an account with that bank, with the maturity of up to two years and subject to fewer administrative procedures.

As the epidemiological situation worsened in November, and particularly in early December, which led to renewal of some containment measures, a new set of measures was carefully calibrated and adopted in December to provide certainty and facilitate loan repayment for borrowers facing difficulties in repaying their liabilities due to the COVID-19 pandemic. The aim of the measures was also to support responsible credit risk management by banks and prevent NPLs.

The decisions adopted in December 2020 prescribe the measures and activities to be applied by banks and financial lessors in order to timely identify borrowers faced with potential difficulties and take appropriate steps. It was prescribed that banks and financial lessors were required to approve a facility for the repayment of liabilities under loans and similar products to borrowers (both citizens and businesses) affected by the pandemic or likely to suffer the financial consequences of the pandemic, at their request. The facility involves a six-month grace period, during which the borrower is not required to settle its liabilities in respect of the principal. The borrower may decide whether it will settle liabilities in respect of the contractual interest during such grace period or after its expiry.

The measures were calibrated in such manner that households and businesses were provided certainty with regard to the amount of monthly liabilities they are to settle after the grace period. They were designed so as to avoid additional burdening of the borrower after the grace period which could negatively affect its ability to service liabilities. In both cases, it was envisaged that the loan repayment period (relative to the remaining maturity before the facility is applied) be extended so that monthly liabilities of the borrower are not higher than before the facility was applied.

The criteria for determining potential difficulties in settling loan liabilities in the conditions of the pandemic were measured and defined carefully. Focus was placed on approving the facilities to:

- unemployed persons,
- borrowers whose average net monthly income in the three months before submitting the application is lower than the average wage in the Republic of Serbia,
- borrowers with average income lower than 120,000 dinars whose debt-to-income ratio exceeds 50%, while their net monthly income decreased by at least 10% relative to the period before the pandemic.

When it comes to farmers, entrepreneurs and companies, it was assessed that facilities for the repayment of liabilities were particularly relevant for borrowers who in 2020 recorded a decrease in income and/or turnover by at least 15% relative to 2019 or whose operations were suspended for at least 30 successive days due to the COVID-19 pandemic.

The right to access the facilities was also reserved for borrowers who, as at the day of entry into force of the regulations (15 December 2020), were more than 30 days past due on any obligation to which regulations apply.

Banks and financial lessors were allowed flexibility in implementing these decisions, through the possibility to approve the facilities to other borrowers as well if they have assessed that the COVID-19 pandemic has led to a worsening in a borrower's financial position and its ability to regularly settle its liabilities to the bank. Households and corporates may apply for the facilities by 30 April 2021, which means that this measure is open as a form of support to all persons assessed as needing it most in the uncertain conditions of living and doing business.

As a result of all measures taken by the NBS, the banking system stability was preserved even in the crisis year of 2020. The NPL ratio continued to decline for the fifth year in a row, falling to 3.48% in November 2020.

Effects of the pandemic on the domestic economy and the contribution of adopted measures to a faster recovery

In late 2019 and early 2020, the NBS projected Serbia's real GDP growth rate for 2020 at 4% (February Inflation Report). At the same time, many indicators of economic activity and the sources of its financing in the first two months of 2020 were even better than the NBS had projected. The continuation of positive trends from 2019 was suggested also by construction indicators, with the number of issued construction permits rising by almost 30% y-o-y and the envisaged value of works to be performed under those permits displaying similar dynamics. Retail trade turnover increased by 14% y-o-y, while tourism indicators also recorded high growth rates. That the favourable sources of financing the economic activity were sustained was further suggested by the FDI inflow, double-digit credit growth, which gained additional momentum, and doubled the growth in government capital expenditure compared to the same period a year earlier (2019). Serbia's foreign trade was on the rise, with the growth in exports of goods and services outpacing that in imports (12.2% vs. 11.8% y-o-y), despite slackening external demand. All of this led to GDP growth of 5.2% y-o-y in Q1, which would have most probably reached 6% – and at the year level shot past the projected 4% – had it not been for the outbreak of the pandemic.

The Serbian economy started contracting in mid-March, after a large number of countries, Serbia included,

Table 10: Overview of prudential measures of the NBS in response to COVID-19

March 2020	• The NBS was among the first central banks in Europe **to adopt regulations enabling the first moratorium on debt repayment** for banks and financial leasing borrowers **in the duration of 90 days**; • The first moratorium was used by around 90% of clients.
Maj-July 2020	• Regulatory preconditions were created for reducing the downpayment required for first home buyers (the specific change actually means that mandatory downpayment can be reduced to 10% of the requested loan amount); • Impetus was given to banks to offer to borrowers the refinancing or change of due date of the final instalment of cash, consumer and other loans (other than housing loans and current account overdrafts) approved by 18 March 2020, by further two years relative to the current repayment period regime of these loans.
July 2020	• **A second moratorium was prescribed on repayment of liabilities to banks/financial lessors** falling due between 1 August 2020 and 30 September 2020, as well as suspension of repayment of outstanding liabilities which fell due in July 2020; • The second moratorium was used by around 80% of clients.

August 2020	• A decision was also adopted defining measures to ease access to financing for natural persons - **Decision on Temporary Measures for Banks to Facilitate Access to Financing for Natural Persons**.
	• **This Decision prescribes three sets of measures which:**
	  • **facilitate access to housing loans for households,** thereby also supporting the economy, in particular the construction industry, through faster turnover of assets (banks are encouraged to approve housing loans without having to wait for the residential building to be completed in full or for its major part),
	  • **enable the extension of the repayment period for housing loans by five years at most,**
	  • **temporarily ease procedures for households' access to short-term dinar loans** up to RSD 90,000.

December 2020	• **Obligation** is prescribed **for banks and financial lessors to offer repayment facilities to borrowers who are unable to settle their liabilities to a bank/financial lessor due to circumstances caused by the COVID-19 pandemic and/or who may have difficulties in settling these liabilities, at their request**; • These are additional measures aiming to facilitate settlement of liabilities for borrowers facing difficulties due to the COVID-19 pandemic and support responsible credit risk management by banks and financial lessors in current circumstances; • The facilities involve rescheduling and refinancing of loans, approval of a six-month grace period and an appropriate extension of the repayment period, so that the borrower's monthly liabilities are not higher than those set out in the repayment schedule before the facilities were approved.

introduced within a very short period of time numerous health protection measures that led to unprecedented lockdowns, disruption of supply chains and finally, economic downturn. The crisis affected nearly all service and production sectors, the most badly hit being transport, tourism and catering (contributing together around 6% to gross value added). Industrial production also declined, as many factories suspended their production for several weeks or scaled down the volume of their operations, due, among other things, to the sharp fall in external demand. Still, many companies organised work from home, which partly mitigated the effect of containment measures on economic activity and, at the same time, opened the prospect of more flexible work regimes in the future. The construction industry was less affected by the pandemic, because the work on infrastructure projects in the sectors of transport and energy was only slowed down and not halted after the state of emergency was declared. The drop in retail trade turnover of consumer goods was in part offset by the considerable rise in the turnover of food and other essential products. Through the slack in external demand, halts or disruptions to global supply chains and border shutdowns, the new crisis also took its toll on exports, which declined, and imports, which slowed down significantly in March.

Large in size and comprehensive in their objectives, the adopted packages of measures were instrumental in avoiding a slow recovery and a long-lasting effect on our economy. This assessment is supported by the movement in key economic indicators which have been recovering since

May. Industrial production has been rallying continuously since May, propped up mainly by the rise in manufacturing. In October, overall industrial production was higher by 2.3% sa relative to the pre-crisis level, i.e., average level in Q1, while manufacturing was higher by 1.4% sa. With the worsening of the epidemiological situation globally, and particularly in Europe, November saw a 2.0% sa fall in industrial production, led by the 2.2% sa contraction in manufacturing. Retail trade reached its pre-crisis level already in June, and in November it was by 1.1% higher compared to average level in Q1. This was the result of the lifting of containment measures already in early May and the rise in domestic demand spurred by fiscal and monetary stimuli. The number of arrivals and overnight stays of domestic tourists also perked up, growing in Q3 by 11.3% and 13% y-o-y, respectively, which partly offset fewer arrivals of foreign tourists, while in October and November, with the worsening of the epidemiological situation, these indicators recorded a fall, though much softer than in the first wave of pandemic. Catering turnover also picked up from May onwards, but its recovery slackened as of July reflecting a new surge in the number of coronavirus cases. Among indicators of construction activity, the implementation of infrastructure projects stands out in particular, as signalled by the performance of budget capital expenditure which gained 14.4% y-o-y in the eleven months of 2020.

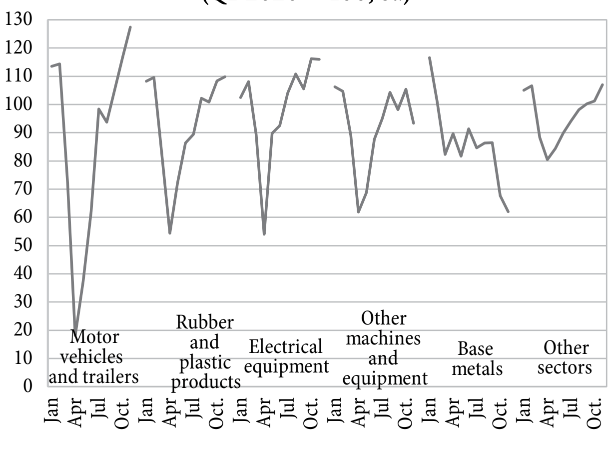
Manufacturing exports in November were higher by 5.8% sa relative to their pre-crisis level (average level in Q1) in y-o-y terms. After falling by close to 31% in April and 28% in May, they saw a much softer decline in the subsequent months (around 5% y-o-y in July and August), while rising by 2.2% y-o-y in September and edging slightly down in October and November amid renewed weakening of external demand. Observed by sector and in y-o-y terms, as expected, the recovery was not evenly distributed – exports of base metals and metal products were the slowest to recover, while, on the other hand, some branches of manufacturing, such as food, beverages and tobacco and the pharmaceutical industry, were almost unaffected by lower external demand.

For more information about the NBS's GDP growth projections, how they were changed over the year under the impact of the pandemic, and then revised up for 2020 reflecting the materialisation of upside risks from the domestic environment, take a look at the November Inflation Report, Text box 5 [13, pp. 70-73]: NBS's projection of domestic GDP growth, its revision during the year and comparison with projections of international financial institutions. GDP outcome in 2020 shows that the NBS projections released during the year were more accurate, despite significant uncertainties, than those of some international financial institutions.

Concluding remarks

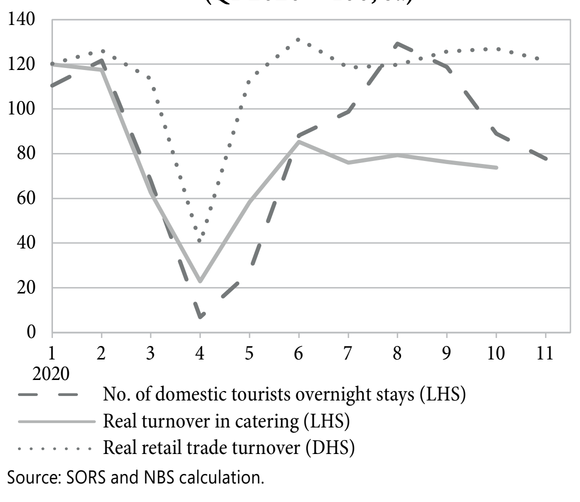
Most economies experienced extremely powerful effects of the COVID-19 pandemic in Q2 2020 in the form of halts/

Figure 24: Manufacturing exports in 2020 (Q1 2020 = 100, sa)



Source: SORS and NBS calculation.

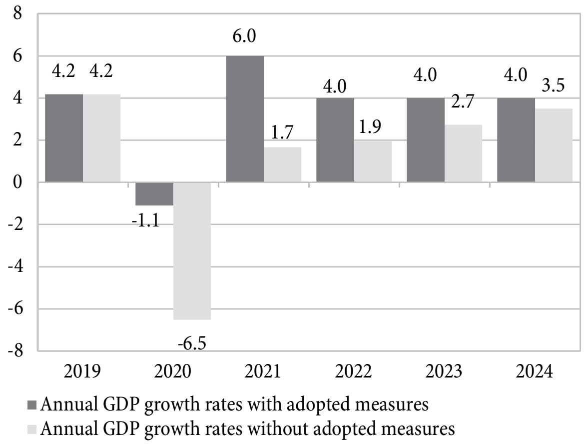
Figure 25: Indicators of service sectors (Q1 2020 = 100, sa)



Source: SORS and NBS calculation.

disruptions to global supply chains, turmoil in the majority of commodity markets, and especially the oil market. If we compare Q2 2020 with the last quarter of 2019, GDP was by 10% lower in the US and by 15% in Europe. A sharp fall in economic activity was accompanied with the negative labour market trends and a general rise in risk aversion. Still, after the powerful effect in Q2, already in Q3 the production began to recover under the significant impact of domestic demand. The new wave of the pandemic in late 2020 and the enforcement of containment measures affected developments in the real sector in Q4, which was also marked by economic policy measures. All studies indicate that the fall in global economic activity would have been much sharper had the majority of countries not responded with robust economic measures (monetary, fiscal and financial). Central banks responded by monetary policy relaxation, using conventional and nonconventional measures, and governments by large fiscal packages, with a view to supporting businesses and citizens during the crisis and contributing to a faster recovery. Central banks acted as lenders of first resort, applying a mix of accommodative monetary policy and appropriate macroprudential policy, which propped up economic activity and investor and consumer confidence and, thus, eased the fallout from the pandemic. Central banks were the pillars of stability during the pandemic as they ensured efficient functioning of the money market and supported the liquidity of all sectors and lending to the real economy. Of course, the volume of the permanently lost economic activity will

Figure 26: GDP growth in 2019-2024 with and without measures (in %)



Source: SORS and NBS projection.

depend on the ability of individual countries to safeguard labour force and production capacities, though there are other challenges as well. The question that arises is the available scope for additional accommodative measures worldwide in the case of new lockdowns, depending on the future course of the pandemic. On the table is also the pace of post-pandemic structural reforms, the likelihood and scope of future fiscal consolidation processes after the pandemic and the strength of the relationship between the financial and the real sector. Business needs certainty and trust in stability. According to the latest EU-wide EIB's survey, over 80% of respondent enterprises cited uncertainty as the key obstacle to business [5]. According to the ECB's Survey on the Access to Finance, enterprises are also concerned about potential tightening of financial conditions in the coming period [4]. One thing is certain – only coordinated activities at global level, as well as policy makers' commitment at national level, can minimise the effects of the pandemic.

It was proved again this time that the role of the regulatory authority in the crisis conditions is critical in maintaining stability of the domestic financial system and preventing the deepening of the crisis, i.e., its spill-over from the financial to the real sector (and the other way round). The credibility of economic policy makers is essential, as it contributes to a more efficient implementation of different measures aimed at mitigating the negative impact of the crisis. A strong, clear and timely signal of stability equally important as a proactive approach and adequate measures which take into account both the intensity and the duration of the negative trends that need to be responded to (or prevented) – is more important in times of crisis than otherwise. If central monetary institutions do recognise this, they will be several steps ahead of the challenge.

The credibility built by the NBS over the previous years played a significant role in keeping investor trust unscathed – trust in the stability of prices, stability of the financial system and relative stability of the exchange rate. Timely measures taken immediately upon the outbreak of the COVID-19 crisis, transparency and credibility prevented a negative spiral that could have been caused by psychological and panic reactions of market players, involving a sudden capital outflow and consequently significant depreciation of the local currency. The importance of the regulator's prudential action should not be disregarded either, as it entails a degree of countercyclical activity in financial markets – for global crises that occur every five to ten years. This shortens the amplitudes and distributes oscillations over a longer time period, which together eases the negative impact on the domestic financial market and economy. The NBS too acted prudently, and the high and adequate level of FX reserves is attributable, inter alia, to such an approach. In times of prevailing appreciation pressures (from April 2017 through 2019), which in recent years reflect the strengthening of Serbia's macroeconomic fundamentals, the NBS was buying foreign exchange (over EUR 5.3 bn net), thereby increasing the country's FX reserves and creating buffers for potential future shocks, which indeed materialised in March 2020.

The analysis of factors affecting movements in the Serbian FX market shows that the COVID-19 crisis was transmitted to the exchange rate primarily through its impact on economic activity and citizens' behaviour (which was expected given the declared state of emergency), and not through a capital outflow potentially triggered by the withdrawal of foreign investors. The analysis also shows that the impact of the COVID-19 crisis on non-residents' behaviour and portfolio investment was significantly smaller than in other comparable emerging markets, which only attests to the increased resilience of the Serbian economy to external shocks and the volatility of global capital flows.

In structural terms, most of the growth in M1, which was the most dynamic, in the period March–June relates to transaction deposits (81.5%), while a smaller part (18.5%) is attributable to currency in circulation. That this is a temporary effect is confirmed by data on the slower growth of currency in circulation already in June and its fall in August, which coincided with the evolution of the pandemic in our country. As early as in September currency in circulation rose slightly, reflecting the payment of 60% of the minimum wage. The situation stabilised during October and there was a slight decline in November. Significant growth of cash in circulation in December is usual for the end of the year, both due to increased payments and due to the arrival of our citizens from abroad before the holidays, but owing to the worsening epidemiological situation and consequent measures taken, there was no significant spending in 2020. After May and June, the effect of government activity was much softer, and lending took over the role that the government had played in money creation during the state of emergency and containment measures. A significant impetus to the accelerated growth of money supply in September came from the issuance of corporate bonds as a source of financing investment activities. The decline in money supply in October and November, and then its significant growth in December, was dominated by the government. These and similar movements are typical for most economies that took comparable measures in order to contain the economic fallout from the pandemic (policy rate cuts, expanded asset purchase programme, introduction of new, extraordinary liquidity supply programmes, packages of measures to support corporate financing, additional repo auctions, etc.).

One of the important contributions of the NBS's policy of acting as a lender of first and not last resort is that it has helped raise the "critical amount" of funds needed for the first package of fiscal assistance to businesses and citizens. By maintaining stability in the domestic bond market, the NBS enabled the government to proceed, despite the crisis, with financing in the local currency and at favourable conditions, which is vital for the continuity in the implementation of the strategy of public debt dinarisation.

The impetus given to the corporate debt market in Serbia could have a positive effect on the diversification of corporate financing, given that this is an alternative and a complement to bank loans, which could step up the competitive game and lower the costs of financing for our businesses. This could also help domestic companies to additionally reduce their exposure to the currency risk. Apart from numerous benefits for the corporate sector, the development of this market segment is important also for the further dinarisation of the domestic system, having in mind that only dinar securities are eligible for monetary operations. Finally, this will also increase the efficiency of monetary policy, by opening a new manoeuvring space for the central bank in the future, as a specific instrument in contemporary central banking.

Having analysed the conditions in which Serbia entered the crisis caused by the COVID-19 pandemic, we can say that all indicators of the pre-pandemic health of the domestic economy point to systematic efforts and work on strengthening the economy over the previous years. A responsible and adequate economic policy conducted over the past eight years, with fully coordinated fiscal and monetary policy measures, implementation of fiscal and structural reforms, as well as systemic diversification of projects, investors and markets for our goods and services, have laid the foundations for Serbia's sustainable growth. For all these reasons, Serbia entered the ongoing crisis in a much better macroeconomic and fiscal position compared to the state of our economy, public finances and financial sector a decade ago. Like in other countries, the effect of the pandemic on our economy was powerful in Q2, but with the implementation of monetary and fiscal policy measures, already in Q3 we saw a recovery and return to pre-crisis levels of activity in many production and service sectors, which was maintained during October and November. Our estimate is that without the adopted measures the fall in Serbia's economic activity in 2020 would have exceeded 6%, while growth in 2021 would be modest, failing to reach the pre-pandemic growth dynamics even in the medium term.

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