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LIST OF ABBREVIATIONS

CBRF – Central Bank of the Russian Federation
CPI – Consumer Price Index
EDB – Eurasian Development Bank
EDB IRC – Integration Research Centre of the Eurasian Development Bank
EEC – Eurasian Economic Commission
EPD – External Public Debt
EUR/USD – nominal U.S. dollar to euro exchange rate, USD per EUR
FDI – Foreign Direct Investment
GDP – Gross Domestic Product
GVA – Gross Value Added
IBL – Interbank Loans Market
IMF – International Monetary Fund
ISM – Integrated System of Models
ITC – International Trade Center
KR – Kyrgyz Republic
KR NB – National Bank of the Kyrgyz Republic
NBT – National Bank of the Republic of Tajikistan
pp – percentage point
RA – Republic of Armenia
RA CB – Central Bank of Armenia
RB – Republic of Belarus
RB NB – National Bank of the Republic of Belarus
RK – Republic of Kazakhstan
RK NB – National Bank of the Republic of Kazakhstan
RF – Russian Federation
RT – Republic of Tajikistan
UNCTAD – United Nations Conference on Trade and Development
U.S., USA – United States of America
WB – World Bank
% – per cent
% YoY – Year-on-Year growth rate
FOREWORD

The EDB operating region¹ is actively involved in international trade and the movement of financial assets. Its member States' export and import operations remain commodity dominated, so their economies stay exposed to fluctuations in the world commodity markets – mainly, energy markets. The openness of the region's economies and the degree of integration of its biggest countries (Russia and Kazakhstan) into the global financial market means that external demand shocks have a considerable impact on their economic development. This is illustrated, for example, by the fact that the business cycles in EDB member countries and the world's major economies show signs of being synchronous.

Due to the high significance of the world oil market and external demand trends for the region's economic development, this study aims to quantify the effect of the said shocks on the Bank's member economies. The scenario calculations used the integrated system of models² implemented by the EDB. The first risk scenario (decline of world demand) assumes an adverse effect of mounting trade tensions between the USA and China on global economic activity. As this scenario unfolds, the decline of world demand for and prices of energy commodities will lead to a slowdown of economic growth in the EDB operating region by 0.3 pp over a year's time. The second risk scenario assumes an exogenous oil depreciation shock resulting from a temporary increase in supply. According to our estimates, the EDB member countries' aggregated GDP growth will slow down by 0.14 pp during a year in response to a short-term 10% decrease in oil prices. The differences in the said external shocks’ impact on economic activity in the region's countries mainly result from their different transmission channels.

This report consists of two sections. The first one describes the main channels of the global economy's influence on EDB member countries. The second one assesses them and describes the shock transmission for each State.

¹ In this paper, the region is understood to mean the EDB member countries (Republic of Armenia, Republic of Belarus, Republic of Kazakhstan, Kyrgyz Republic, Russian Federation, and Republic of Tajikistan)
The EDB Operating Region’s Role in the Global Economy

International trade and financial flows are instrumental to the EDB member countries' economic development. On average in 2006–2018, the region's aggregate GDP accounted for 2.7% of the global total. Its foreign trade turnover accounted for 2.5%, and the accumulated volume of external assets and liabilities accounted for 1.0% (Figure 1.A). Foreign trade turnover reaches one-third of the regional economies' aggregate GDP, and they show even greater openness as regards their financial flows (with their external assets and liabilities amounting to some 70% of GDP). The external economic setting is thus a key factor that affects the economic situation of the EDB member countries, mainly through the trade and financial channels. The region’s key economy is the Russian Federation, that accounts for 87% of the GDP produced by the Bank’s member States, 70% of foreign trade turnover, and 89% and 81% of their external assets and liabilities, respectively. The RK is a visible contributor to the region’s real and financial economic performance, with 8% of GDP, 11% of foreign trade, and more than 10% of foreign assets and liabilities. The RB generates 8% of foreign trade turnover and 3% of regional GDP, but its share of external assets and liabilities is insignificant. Due to the trade links existing between the RF and other EDB member countries, the RA, RB, RK, KR and RT are exposed not only to direct effects of global business activity but also to secondary effects originating from the Russian economy.

The region is a net exporter of mineral products. These (mainly crude oil) accounted for more than half of all its exports on average in 2006–2018, which points to the EDB member economies' high dependence on the situation in the world energy market. Unlike exports, the import structure is more diversified and dominated by investment goods, that account for nearly 40% (Figure 1.B).

Foreign direct investment accounts for the greatest share of the regional countries' external liabilities. Their external assets mainly consist of lowest risk instruments and foreign direct investments, which limits the impact of shocks occurring in world financial markets on the economic development of the Bank’s member countries.³ (Figure 1.B).

³ In their external assets’ structure, reserve assets account for some 30% and usually consist of the least risky financial instruments. Foreign direct investment, that accounts for more than 30% of their assets and 50% of liabilities, belongs to the category of more stable financial flows, unlike volatile portfolio investments.
A shock in the world oil market will propagate unevenly into EDB member economies. The region includes some countries that are net exporters of goods and services and others that are net importers. Thus, on average in 2006–2018 Kazakhstan’s trade balance surplus was 11.4% of GDP, while Russia’s was 7.8%. As both countries’ foreign trade surplus is mainly generated by mineral products, the world energy market situation directly affects the countries’ export revenues and their State budgets’ incomes (to be examined in more detail below). Belarus is also dependent on the commodity market as regards both its export and fiscal revenues, as oil products mainly made from Russian oil account for much of its sales to foreign markets. Armenia, Kyrgyzstan and Tajikistan show a high degree of dependence on imports of goods and services, with a considerable share of oil products. In this case the transmission of external shocks to economic activity primarily manifests itself in import fluctuations. Another feature of the RA, KR and RT is partial financing of their trade balance deficits with revenues from migrants working mainly in the RF. So changes of oil prices also propagate into the said regional economies indirectly, via the remittance channel and influence on domestic consumer demand (Figure 1.C).

The influence of external financial shocks on the regional countries varies with the degree of their integration into the global financial system. All the EDB member States except the RF are net borrowers in the world financial markets. Their external liabilities mainly consist of debt to foreign direct investors or of bank loans and other borrowings. In the RA, KR and RT external borrowings are mainly raised by the public sector, particularly through relatively cheap long-term loans from international development institutions. Consequently, shocks in global financial markets have a limited impact on the said economies. RK and RF residents are more active in the global portfolio investment market as they place assets abroad, and the raising of bank loans and other borrowings is not so significant as in the RA, KR and RT. Due to deeper integration of the RF and RK into the global financial market, short-term capital flows have a direct impact on their stock and foreign exchange markets' performance (Figure 1.D).

The Synchronization of Economic Cycles

The economic cycles in the regional countries are showing signs of synchronization with the world’s major economies. The EDB member countries’ output gaps\(^4\) data, being similar to that in the USA and Eurozone, shows the significance of their trade and financial links. It should be noted that the region’s economies with the more developed financial sectors and open financial flows are more correlated with the business cycles in the world’s major developed countries (Figure 2).

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\(^4\) Gaps are deviations of economic variables from their equilibrium levels (trends). Trends in economic variables exert no additional inflationary or deflationary pressure. Thus, a positive output gap indicates an economic situation where actual GDP is above its potential (trend) level. This means utilization of production factors above its normal (most efficient) level, which makes marginal production costs overshoot marginal income and due to that generates inflationary pressure.
Figure 1. EDB Operating Region: Scale and Channels of External Factors’ Influence

(A) Share of Global Economy
(2006-2018 average)

(B) Structure of Foreign Trade and Finance
(2006-2018 average)

(C) Current Account
(2006-2018 average)

(D) Financial Account
(2006-2018 average)

Notes
B. Assets and liabilities: according to the international investment position compilation standard as of end 2017.
D. Net lending (+)/net borrowing (–) of the standard balance of payments presentation (BPM 6).

Source: IMF, ITC, UNCTAD, national government departments, and calculations by the authors.
Notes
A. Output gap data estimated using the ISM.
B. The correlation coefficients were calculated for regional countries’ output gap figures and output gaps in the USA and Eurozone, respectively, from data of quarterly periodicity from 1Q2008 to 1Q2019.
C. 2012–2016 average Chinn-Ito\(^5\) index.
D. 2012–2017 average Financial Development Index.\(^6\)

Source: IMF, Chinn, Ito (2006), national government departments, and calculations by the authors.

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\(^6\) See Svirydzenka (2016).
The Role of the Commodity Sector in EDB Member Economies

The production and processing of energy commodities play an important role in the economic development of the Bank’s member countries. As noted above, the EDB operating region can be divided into groups of countries that are net exporters (RF and RK) and net importers (RA, RB, KR and RT) of hydrocarbons. In the States that supply energy commodities (RF and RK), the oil production and processing sector is a major contributor to their macroeconomic performance. Thus, in the region’s two largest economies oil and oil products account for more than half of their exports, which makes them vulnerable to external fluctuations of commodity prices. Moreover, oil and gas revenues provide more than 40% of the income of the RF federal budget and some 25% of the RK consolidated budget. Consequently, oil production and processing account for more than 15% of GVA and 50% of industrial output in the RK, as well as some 10% and 30%, respectively, in the RF (Figure 3.A).

The direct influence of oil on economic trends in countries that are net importers of the commodity is limited. The main channel for the influence of oil price fluctuations on the economies of the RA, RB, KR and RT is a change in the terms of trade, which results from the significance of those countries’ energy imports. In the RB, the fuel and energy commodities purchased are used to produce and then export oil products, with their export duties making up more than 5% of its consolidated budget. Yet, despite the relative high share (more than 15%) of oil refining in Belarusian industry, this sector is a minimal GVA contributor with less than 1%. It should also be noted that the completion of the tax maneuver in the RF in 2019–2024 may result in lower margins for Belarus’ oil refining industry and reduce its budget’s duty revenues. That results from the appreciation of the oil that the RB imports from the RF, with the rates of the customs duty levied on the oil products exported being reduced accordingly (to turn zero in 2024).

The Armenian, Kyrgyz and Tajik economies are exposed to fluctuations in the prices of and demand for commodities. In the RA, the mining and production of metals, primarily copper (that accounts for more than 20% of the country’s exports) constitute nearly 30% of industrial output. The gold industry is instrumental to the economic development of the KR (Figure 3.C). The production of this precious metal is its biggest industry, and gold sold abroad accounts for some 40% of the country’s exports. According to the KR Statistical Committee, the aggregate share of the Kumtor deposit mining enterprises in GDP was 8.6% in 2018. Ore mining and metal production account for some 30% of RT industrial output, even though much of its metallurgy, namely the aluminum industry, is based on imported raw material. The major role of commodities in the RA, KR and RT economies may enable external shocks (including oil prices) to affect those republics’ macro indicators indirectly, through their influence on the prices of basic and precious metals.

The importance of the commodity sector in the EDB member economies is reflected in their national currency to U.S. dollar exchange rates being correlated to oil prices. Yet it should be noted that the degree of the said indicators’ correlation has become visibly lower in most of the regional States in recent years (Figure 3.B). In the RF, RK and RB this may be explained by the use of their budget rules that limit those economies’ exposure to external shocks. On the other hand, the marked decrease of the degree of correlation of the Russian ruble and tenge to U.S. dollar exchange rates between 2017 and the first half of 2019 may partially be attributable to the oil prices’ general recovery in that
period after they fell in 2014–2016. In periods of sharp decreases of oil prices, the Russian and Kazakh currencies still come under downward pressure but on a much lesser scale than in 2005 to 2016. Thus, by January 2019 the price of Brent oil had fallen by more than 26% from its level of October 2018, while the Russian ruble and tenge had weakened by some 2% and 3%, respectively, against the U.S. dollar. The possible existence of asymmetry in the dram and Belarusian ruble exchange rates' response to upward and downward movements of oil prices might be one of the causes of a positive correlation between the indicators that has emerged in recent years.

The high degree of the regional countries’ trade and economic integration with Russia explains why their economies are strongly dependent on developments in the RF. The main channels include trade, remittances and financial flows. The RF market is one of the principal ones for the RB (with exports to the RF accounting for some 38% on average in 2005–2018), RA (nearly 20%) and KR (some 14%). Remittances from the RF make up more than 60% of all revenues from labor migrants in the RA, 70% in the RT and nearly 80% in the KR (Figure 3.D). Further, studies on the KR have shown remittances to the Republic to be procyclically dependent on Russia’s real GDP – a dependence which has grown stronger with time. In addition to being a major market for EDB member countries, the RF is also a key foreign direct investor in the region’s countries. Liabilities owed to the RF account for more than 50% of external public debt of the RB. On the other hand, it should be noted that Kazakhstan’s relationships with Russia are looser than with other regional countries as regards both trade and financial flows.

Figure 3. Role of the Commodity Sector in EDB Member Economies and Their Links with the RF

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See Berdigulova, Imaralieva (2017).
Notes


B. The correlation coefficients were calculated for the growth figures of regional countries’ national currency exchange rates vs. the U.S. dollar and Brent oil prices from January 2005 to July 2019 using monthly data. AMD, BYN, KZT, KGS, RUB and TJS represent the exchange rates of the Armenian dram, Belarusian ruble, Kazakh tenge, Kyrgyz som, Russian ruble and Tajik somoni, respectively, versus the U.S. dollar.


Source: ICT, WB, national government departments, and calculations by the authors.

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8 See RBC: Belarus, Ukraine and Venezuela Turn out to be Russia’s Greatest Debtors – Accessible online: https://www.rbc.ru/economics/19/08/2019/5d48bb559a7947e2278c1fa5 – Retrieved on 21.08.2019.
AN ESTIMATE OF THE IMPACT OF EXTERNAL SHOCKS ON EDB MEMBER ECONOMIES

Estimation Methodology

The impact of external shocks on EDB member economies was estimated using an integrated system of models implemented at the Bank. The ISM pursues EDB and EEC objectives in the analysis and projection of the macroeconomic situation in the region and adds to their ability to analyze monetary policy responses to shocks and risks associated with the global and national economic systems and with changes in commodity prices. The ISM is based on semi-structural models with monetary and fiscal sectors. The model system used by the EDB covers all the six member States of the Bank. Its important advantage is the ability to analyze and forecast each EDB member country’s economic development, as well as that of the whole region, taking into account the relationships existing between the economies and the wider world.

This study examines the impact of two relevant external shocks, namely a decline in global demand or a fall of oil prices, on EDB member economies. The former risk scenario (decline in global demand) assumes a negative effect of mounting trade tensions between the USA and China on global economic activity. A global output decline will lead to a decrease in demand for energy resources and other commodities, which will manifest itself in their price depreciation. The effect of the trade conflict on the global economic cycle is assumed to be temporary, so it will not alter the long-term trends in other macroeconomic indicators. To simulate this scenario, structural shock figures of output gaps in the USA, Eurozone, China and the rest of the world were programmed into the ISM. Additionally incorporated were structural shock figures of commodity prices, for those variables in real terms are independent in the ISM and non-responsive to changes in the macroeconomic setting. The latter risk scenario (fall of oil prices) assumes an exogenous shock of oil prices falling due to a temporary increase of supply (e.g. a shale oil boom in the USA). Structural shocks of oil and other commodity prices were programmed into the ISM to simulate this scenario.

The response of macroeconomic variables to shocks was calculated as the difference between their movements under the risk and base scenarios. The base scenario is an ISM-based projection without any additional assumptions programmed. As this paper examines temporary shocks, the variables’ response is estimated on a one-year time span.

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Estimated Impact of a Temporary Global Demand Shock on EDB Member Economies

A decline of demand in the USA will slow down global economic growth and depreciate commodity prices (Figure 4). According to our estimates, a temporary (one-year) shock from the deceleration of U.S. GDP by 1 pp will cause the GDPs of the Eurozone, China and the rest of the world to decrease by 0.7, 0.7 and 0.5 pp, respectively, compared to the base scenario. A global output decline will cause the prices of commodities, including oil and metals, to fall as consumption of these as factors of production decreases. Declining aggregate demand will cause a considerable slowdown of inflation in the regions under review, which will entail monetary easing. Mounting global uncertainty and lower risk appetite will be reflected in higher investment in defensive assets, primarily gold and the U.S. dollar, which will support their value.

Figure 4. Impact of a 1 pp Slowdown in U.S. GDP on the World Economy and Commodity Prices

Notes
A, B: the figures show economic indicators’ response to a 1 pp change in U.S. GDP over a year. The results represent the difference between the variable’s values in the risk and base scenarios. Their averages over a year’s period after a demand shock in the USA are used as the variables’ values. In the following figures, the results are presented in a similar fashion. The effect of a U.S. demand shock on economic growth in the rest of the world and on commodity prices was calibrated using studies by WB experts (Kose et al., 2017) and IMF experts (Arezki et al., 2017).

Source: calculations by the authors.

A decrease in world energy prices and diminution of developing markets’ investment appeal will generate pressure on EDB member countries’ exchange rates versus the U.S. dollar. The scale of such additional devaluation will differ, mainly on account of the exchange rate regimes existing in the regional States (Figure 5). The greatest weakening against the U.S. dollar is projected for the Kazakh tenge and Russian ruble as capital outflow increases. The decrease of the Belarusian ruble’s exchange rate versus the American currency will probably be held back by its strengthening against
the Russian ruble\textsuperscript{10}. No significant fluctuations of national currencies vs. the U.S. dollar are expected in the RA, KR and RT.

Figure 5. Impact of a Temporary Global Demand Shock on Exchange Rates and Economic Growth in EDB Member Countries

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure5.png}
\caption{(A) National Currency to U.S. Dollar Exchange Rates (year’s average) \hspace{1\textwidth} (B) Real GDP (year’s average)}
\end{figure}

Source: calculations by the authors.

\textbf{The decline in global demand and prices for commodities will lead to a 0.3 pp deceleration of EDB member countries' economic growth over a year.} Its adverse effect on output will be observed in all the region’s countries, and most of the countries’ GDP responds on a similar scale (a strong decline of the RA’s GDP is attributable to the influence of copper prices). On the other hand, the channels of external shock transmission to economic activity in the Bank’s member countries differ, which results from their economies’ structural features and their monetary and exchange rate policies (Figure 6).

\textbf{The decline in global demand will have a direct negative effect on GDP in the RF and RK via the foreign trade channel.} The fall of oil prices and global consumption of hydrocarbons in response to the slowdown of global demand is an additional factor behind the decrease of economic activity in the RF and RK under the risk scenario compared to the base scenario. On the other hand, the implementation of those countries’ fiscal policies that follow budget rules limits the adverse impact of

\textsuperscript{10} Thus, in 2018 the Russian ruble devalued by 11.9\% versus the U.S. dollar (December 2018 vs. December 2017) amid tightened sanctions against the RF. On the other hand, the Belarusian ruble weakened by 5.8\% versus the American currency while strengthening by 7.6\% versus the Russian currency.
the fall of commodity prices on GDP. Mounting global uncertainty is expected to spur capital outflow from developing markets, which, in the cases of the RF and RK, may be aggravated by the fall of mineral product prices. As a result, the slowdown of investment activity comes in as a conduit for the effect of the external demand decline shock’s effect on the top two regional economies. Under the risk scenario, the traded sector of the RF and RK will be supported by their national currencies’ weakening exchange rates. The floating exchange rates in the said countries perform the function of ‘absorbing’ external shocks to mitigate their effect on the main macroeconomic indicators.

Figure 6. Channels for the Impact of a Temporary Global Demand Shock on EDB Member Countries' GDP Growth Rates

Notes
a. The monetary conditions are the weighted average value of the interest rate and real effective exchange rate gaps.
b. The oil price factor in countries that are net exporters of energy resources (RF and RK) approximates their terms of foreign trade and is taken into account separately from the external demand factor, intended to account for the influence of global demand on the physical exports of the RF and RK.
c. The investment demand factor reflects probable deceleration of investment activity caused by capital outflow, which is more relevant for the RF and RK. This channel is taken into account separately from the interest rate channel implemented in the ISM, whose change also affects economic agents’ investment decisions.

Source: calculations by the authors.

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11 It seems difficult to assess the scale of capital outflow under this scenario, for economic agents’ conduct in crisis times is hard to predict. Still, data on net capital imports by the private sector in the RF and RK as oil prices fell in 2014–2015, and in the RF after the sanctions were tightened in 2018, points to the probability of its considerable fluctuations. In 2014–2015, capital outflow from the RF was 5.8% of GDP a year on average after 2.5% p.a. in 2012–2013; the RK recorded an outflow of 1.8% of GDP after a 3% inflow. In 2018, the net export of capital from the RF by the private sector increased to USD 63 billion (3.8% of GDP) from USD 24.3 billion (1.5% of GDP) in 2017.

12 The effect of capital outflow on investment is not accounted for directly by the ISM. In this connection, the effect of an external demand shock on investment activity in the RF and RK was calibrated using the results of studies by WB specialists (Kose et al., 2017), who found a 1 pp deceleration of U.S. GDP growth induces a decrease in investment in developing countries by some 1.5 pp over a year.
The high significance of remittances from Russia exacerbates the effect of a negative external demand shock on the Armenian, Kyrgyz and Tajik economies. The decrease of labor migrants' transfers from the region's biggest economy under the risk scenario, resulting from the deceleration of RF GDP growth, acts as an additional channel for the transmission of a world economic activity decline shock to the RA, KR and RT output data.

Commodity prices are an important part of the mechanism of external shock propagation into the Armenian and Kyrgyz economies. In the case of the RA, the negative effect of the decline in external demand will be seriously exacerbated by the depreciation of metals, including copper, whose production and exports are highly significant for the Armenian economy. On the other hand, the KR may additionally benefit from the increase of global demand for gold, for the production of that precious metal provides nearly 10% of the Republic's GDP. Notably, the low volatility of the Kyrgyz som's exchange rate vs. the U.S. dollar amid global strengthening of the American currency may constrain the Kyrgyz Republic's net exports and GDP. The relatively weak influence of external demand fluctuations on the Tajik economy is attributable to its exports to GDP ratio, that is lower than in other EDB member countries.

Foreign trade is the main channel for the transmission of an external demand shock to economic activity in Belarus. The Belarusian economy's openness makes the trade channel prevalent in the mechanism that transmits this shock to the country's GDP. The impact of declining demand for Belarusian goods and services under the risk scenario is exacerbated by the tightening of monetary conditions, mainly due to the strengthening of the Belarusian ruble against the Russian one.

The regional countries' inflation and monetary policy responses to external demand shocks will differ (Figure 7). This is largely due to non-uniform reaction by EDB member countries' GDP and exchange rates. The weakening of the RF and RK national currencies leads to stronger inflationary pressure. On the other hand, amid the deceleration of economic growth, and with the exchange rate pass-through effects on inflation diminishing in those countries in recent years, the acceleration of consumer prices under the risk scenario above the base scenario is estimated to be within 0.3–0.4 pp over a year. Consequently, no significant change to the CBRF or RK NB policy rates is expected. Nor is any substantial impact from the external shock on inflation and the refinancing rate expected in the RB. The pressure on price growth increasing in the RB, caused by mounting inflationary expectations and growing inflation in the RF, will be offset by the deceleration of economic activity in the country. A significant CPI growth slowdown under the risk scenario is expected in the KR, RA and RT. This is due to deflationary pressure from domestic demand deceleration in those countries, where it is not offset by exchange rate movements, unlike in other countries of the region. Consequently, the prevention of any significant deviation of inflation from its targets means making policy rate reductions by the RA CB, KR NB and NBT.

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13 See the EDB Special Report 'Exchange Rate Pass-Through Effects on Inflation in EDB Member Countries' (2019).
Figure 7. Effect of a Temporary Global Demand Shock on Inflation and Interest Rates in EDB Member Countries

(A) Consumer Price Index Growth Rates (year’s average)

(B) IBL Interest Rates (year’s average)

Source: calculations by the authors

Estimated Impact of a Temporary Oil Price Decrease Shock on EDB Member Economies

A temporary oil price decrease will lead to a global inflation slowdown (Figure 8). A key assumption of this risk scenario is a short-term 10% average fall of oil prices over a year caused by a temporary oil production boom. The decrease in energy prices will slow down inflation in the world’s major economies, which will have a weak positive effect on the U.S. and Eurozone’s GDP growth rates. Economic activity in the rest of the world will decelerate somewhat. Due to the shock’s temporary nature and decrease of inflation, mainly on account of the highly volatile component of energy goods prices, no significant change of interest rates is expected of major central banks. On the other hand, the fall in oil prices will have a short-term negative effect on the price of metals, including copper, but a positive effect on defensive assets, including gold.
The weakening of the EDB member countries’ national currencies in response to a temporary oil price fall is projected to be moderate (Figure 9). A 10% oil price decrease over a year will lead to additional devaluation of the Russian ruble and Kazakh tenge by 1.2% and 1.5%, respectively. These estimates are considerably lower than those obtained in simulating the external demand shock. This is due to lesser capital outflow from the RF and RK expected under this scenario, for an oil price decrease is a short-term occurrence not compounded by mounting global uncertainty. The calculated estimates of the Russian ruble and tenge exchange rates’ response to a 10% fall in oil prices are lower than those contained in a previous EDB special report (2017)\[14\]. The exchange rates of the two biggest regional economies’ (RF and RK’s) national currencies have become more resilient to commodity price fluctuations in recent years, owing to their balanced domestic economic policies, including the introduction of budget rules. Other regional countries’ currencies also respond with a small weakening to the decrease of oil prices.

\[14\] The EDB Special Report entitled ‘An Assessment of the Sensitivity of EDB Countries’ Macro Indicators’ (2017) estimates the strengthening of the Russian ruble and tenge versus the U.S. dollar over four quarters in response to 10% long-term growth of oil prices at 5.6% and 3.2%, respectively.
The growth of EDB member countries’ aggregated GDP in response to a temporary 10% oil price decrease will slow down by 0.14 pp over a year. Like in the case of a global demand shock, a decrease in economic activity compared to the base scenario is projected in all the regional countries (Figure 9). On the other hand, the GDP of the Bank’s member States will respond to the negative oil price shock on a smaller scale. This is due to the fact that this shock’s impact passing through the trade channel will be low, for a temporary depreciation of mineral resources will cause no significant decline in external demand for the goods and services exported by the region’s countries. Moreover, this scenario projects no significant capital flight from developing markets.

The significance of the commodity sector in the Russian and Kazakh economies, that remains high, will cause their GDP growth to decelerate by 0.13 and 0.30 pp, respectively, over a year in response to a temporary 10% decrease of oil prices (Figure 10). Like in the case of an external demand shock, economic activity in the region’s bigger countries will be supported by monetary easing as their national currencies weaken. Notably, like in the case of exchange rate movements, the estimates obtained for the response of Russian and Kazakh GDP to an oil price shock are considerably lower than the results presented in the earlier EDB special report (2017)\textsuperscript{15}, in particular, due to their budget rules now in place.

\textsuperscript{15} The EDB Special Report entitled ‘An Assessment of the Sensitivity of EDB Countries’ Macro Indicators’ (2017) estimates the increase of Russian and Kazakh GDP over four quarters in response to 10% long-term growth of oil prices at 0.41 pp and 0.8 pp, respectively.
In Armenia, a copper price decrease is the main channel for the transmission of a negative oil shock (Figure 10). The Republic’s GDP responds to an oil price shock on a markedly smaller scale than to an external demand shock. This is due to a lesser adverse effect transmitted through the remittance and foreign trade channels amid a smaller decrease of economic activity in the RF and Armenia’s other main trade partner countries.

The reaction of Belarusian and Kyrgyz GDP to an oil price decrease is projected to be minimal (Figure 10). In the RB, the use of revenues from the customs duties levied on its oil product exports for financing public debt, along with the reserves accumulated in recent years as the State budget was in surplus, makes the economy less susceptible to temporary fluctuations in hydrocarbon prices. The main impact of an oil price decrease on Belarusian GDP results from declining Russian demand for the goods produced in the country and from Belarus manufacturers becoming less competitive in her main trade partner’s markets as the Belarusian ruble strengthens versus the Russian one. In the KR, the adverse effect of decreasing remittances on economic activity is offset by the positive effect of gold price growth. Meanwhile, the decrease in labor migrants’ remittances acts as the key factor behind the deceleration of Tajik GDP in response to a fall in oil prices.

Inflation in EDB member countries will respond unevenly to a decline in world oil prices (Figure 11). A small acceleration of inflation is possible in the RK as its national currency weakens. In other countries of the region, deflationary pressure is expected as energy price growth slows down, external demand declines and inflation decreases in the Eurozone. The most significant slowdown of consumer price index growth is projected in the RA, which results from a slowdown of economic activity in that Republic in response to the oil price shock. A strong decrease in inflation is expected in the RT, which is partially due to its volatile domestic petrol prices that will have an additional disinflationary effect, should second round effects materialize. The prevention of a significant deviation of inflation

**Figure 10. Channels of the Effect of a Temporary Oil Price Shock in EDB Member Countries’ GDP Growth Rates**

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**Notes**

a. Monetary conditions are weighted average interest rate gaps and real effective exchange rate gaps.
b. The oil price factor in countries that are net oil exporters (RF and RK) approximates their terms of foreign trade and is accounted for separately from the external demand factor meant to take into account the influence of external demand on the physical exports of the RF and RK.

**Source:** calculations by the authors.
from its targets under this scenario means policy rate reductions by the EDB member countries’ central/national banks.

**Figure 11. Effect of a Temporary Oil Price Shock on Inflation and Interest Rates in EDB Member Countries**

(A) Consumer Price Index Growth Rates (year’s average)

(B) IBL Interest Rates (year’s average)

*Source:* calculations by the authors
CONCLUSION

The high significance of cross-border trade and financial flows makes the EDB member countries susceptible to external shocks. The structure of the regional economies’ export and import operations, still dominated by commodities, exposes them to fluctuations in the world markets of goods – mainly, energy commodities. An exogenous shock of an oil price fall by 10% over a year may cost the EDB member countries some 0.14 pp of their aggregated GDP. It will have the greatest negative effect on the RK, whose economy is strongly dependent on the oil sector, and on the RA, where the price of copper, a key Armenian export commodity, will be the primary shock transmission channel.

The regional economies’ openness and the degree of integration of the largest EDB member countries (RF and RK) into the global financial market mean that external demand shocks will have a considerable effect on those countries’ economic development. A decline of U.S. GDP growth by 1 pp over a year, compounded by mounting global uncertainty and investors’ falling interest in developing markets’ assets, may lead to a decrease of the EDB member countries’ aggregated GDP by 0.3 pp in a year, primarily via the channels of foreign trade and financial flows. The adverse effect of a global demand shock on the RF, RK and RB will be mitigated by their national currencies’ flexible exchange rates, whose weakening in response to mounting global risks will serve as a shock absorption mechanism. In the RA, KR and RT the effect of a global output decrease on domestic economic activity will be aggravated by the high significance of remittances from the RF.
LIST OF SOURCES USED


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Your comments and suggestions concerning this review are welcome at: pressa@eabr.org

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