

## Monetary policy of the National bank of Kazakhstan: chronological analysis and assessment

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### Abstract

The article aims to determine the role and place of monetary policy in the economic development of the country. When conducting a chronological analysis, attention is focused on the periods of sharp devaluation of the national currency. A dynamic assessment of changes in the exchange rate against the us dollar was made. The policy of the National Bank in the context of the crisis is consistently analyzed and evaluated. An econometric assessment of the investment function is made to justify the monetary policy instruments used. The model is based on quarterly statistics for the last ten years in Kazakhstan. The authors revealed the necessary conditions for the occurrence of speculative attacks on the currency market. Based on these patterns, three options for the Central Bank's actions to prevent speculative attacks are proposed. The resulting investment model of Kazakhstan allows concluding that the inflation targeting policy cannot ensure sustainable economic growth. The authors concluded that monetary policy plays an important role in macroeconomic regulation. At the same time, the raw material orientation of the economy imposes restrictions on the use of classical monetary policy instruments.

*Keywords:* economic growth, monetary policy, inflation targeting, investments, speculative attacks, exchange rate.

### Қазақстан ұлттық банкінің ақша-кредит саясаты: хронологиялық талдау және бағалау Түйін

Мақалада ақша-кредит саясатының елдің экономикалық дамуындағы рөлі мен орнын анықтау мақсаты қарастырылған. АҚШ долларына қатысты валюта бағамының өзгеруіне динамикалық бағалау жүргізілді. Ұлттық Банктің дағдарыс жағдайындағы саясаты дәйекті түрде талданып, бағаланады. Ақша-кредит саясатының қолданылатын құралдарын негіздеу үшін инвестициялық функцияны эконометриялық бағалау жүргізілді. Валюта нарығында алыпсатарлық шабуылдардың туындауының қажетті шарттары ашылады. Қазақстан үшін есептелген инвестициялық модель инфляциялық таргеттеу саясаты орнықты экономикалық өсуді қамтамасыз ете алмайды деген қорытынды жасауға мүмкіндік береді. Авторлар валюта нарығында алыпсатарлық шабуылдардың пайда болуының қажетті шарттарын ашты. Осы заңдылықтарға сүйене отырып, орталық банктің алыпсатарлық шабуылдардың алдын-алу бойынша үш нұсқасы ұсынылды. Эконометриялық есептеулер тікелей және портфельдік инвестициялардың динамикасы экономиканың жетекші салаларының рентабельділігі мен валюта бағамының өзгеруіне байланысты деген тұжырымдарды растады. Өзара байланыстың анықталған ерекшеліктері инфляциялық таргеттеу саясатын қолдану мүмкіндігіне айтарлықтай шектеулер қояды, ол қысқа мерзімді кезеңде инфляция деңгейін нысаналы көрсеткіштерге дейін төмендетсе де, ұзақ мерзімді перспективада экономикалық өсу мен бағаның тұрақтылығын қамтамасыз ете алмайды. Авторлар макроэкономикалық реттеуде ақша-кредит саясаты маңызды рөл атқарады, алайда экономиканың шикізатқа бағытталуы ақша-кредит саясатының классикалық құралдарын пайдалануға шектеу қояды деген қорытындыға келді.

*Түйін сөздер:* экономикалық өсу, ақша-несие саясаты, инфляциялық таргеттеу, инвестициялар, валюта бағамы.

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#### Аннотация

В статье преследуется цель определения роли и места денежно-кредитной политики в экономическом развитии страны. При проведении хронологического анализа внимание акцентируется на периодах резкой девальвации национальной валюты. Проведена динамическая оценка изменения валютного курса по отношению к доллару США. Последовательно анализируется и оценивается политика Национального банка в условиях кризиса. Проведена эконометрическая оценка инвестиционной функции для обоснования применяемых инструментов денежно-кредитной политики. Основой для построения модели послужили статистические данные в квартальном разрезе за последние десять лет в Казахстане. Авторами были раскрыты необходимые условия возникновения спекулятивных атак на валютном рынке. Основываясь на этих закономерностях, предложены три варианта действия Центрального Банка по предотвращению спекулятивных атак. Эконометрические расчеты также подтвердили выводы, что динамика прямых и портфельных инвестиций обусловлена рентабельностью лидирующих отраслей экономики и изменением валютного курса. Выявленные особенности взаимосвязи накладывают существенные ограничения на возможность использования политики инфляционного таргетирования, которая хотя и снижает уровень инфляции до целевых показателей в краткосрочном периоде, но в долгосрочной перспективе не может обеспечить экономический рост и стабильность цен. Авторы пришли к выводу, что в макроэкономическом регулировании денежно-кредитная политика занимает важную роль. Вместе с тем сырьевая ориентированность экономики накладывает ограничение на использование классических инструментов монетарной политики.

*Ключевые слова:* экономический рост, денежно-кредитная политика, инфляционное таргетирование, инвестиции, спекулятивные атаки, валютный курс.

## Introduction

The main goal of any state's macroeconomic policy is to stimulate sustainable economic growth. The key condition for achieving this goal is an effective monetary policy. The implementation of this policy should be based on a serious analysis that has an impact on economic growth. A significant slowdown in economic growth in Kazakhstan, and instability of the major macroeconomic indicators, such as the exchange rate, determine the need for this analysis.

The main objective of the National Bank's activities is to promote economic development by stabilizing the level of inflation. For many years, the policy of the National Bank has been limited only to ensuring price stability, but the persistent crisis in both Kazakhstan and abroad has shown that low inflation is a necessary but not sufficient condition for sustainable economic growth. The Government of Kazakhstan is aware of the complexity of the current money market situation, in particular Kassym-Jomart Tokayev, the President of the Republic of Kazakhstan, pointed the need

for changes in the monetary policy of the National Bank.

To assess the current situation, it is necessary to analyze monetary policy in retrospect. Over the years of independence, Kazakhstan has built an open economy integrated into the world economy system. The main negative factor of such a system is the high sensitivity of the national economy to the world crisis processes. The country's money and foreign exchange market is one of the first to respond to external shocks. Therefore, monetary and financial relations are one of the most complex areas as they reflect the problems of the national and global economy.

## Methodology

In this paper, we use the method of econometric estimation of a system of simultaneous equations based on quarterly data from 2005 to 2019 for Kazakhstan. All calculations were carried out in the statistical package Gretl. For building of the model we used the indicators given for the base year and not the nominal ones.

## Alternant (Variables) referred to in this article

Designation in model equations	The name of the indicator
Y_real	GDP, calculated by the method of final use in Kazakhstan in 2005 prices, billion tenge
I_real	Gross accumulation in Kazakhstan in 2005 prices, billion tenge
Ex_real	Exports of goods and services in Kazakhstan in 2005 prices
Im_real	Imports of goods services in Kazakhstan in 2005 prices, billion tenge,
NX_real	Net exports in Kazakhstan in 2005 prices, billion tenge
r_real	The real interest rate of banks on loans issued in the Republic of Kazakhstan

## Results and discussion

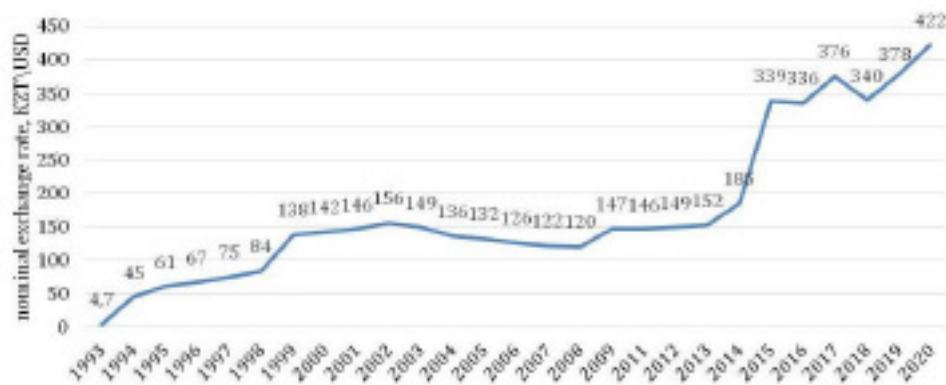
In Kazakhstan, the national currency "tenge" was put into circulation on November 15, 1993. At the time of the issuance by the National Bank of the Republic of Kazakhstan (NB RK), the exchange rate was set at 1 USD - 4.7 KZT, subsequent changes in the exchange rate are given below, which show that the national currency has depreciated by 92 times for 27 years. (Figure 1).

After analyzing the crisis periods of the money and foreign exchange market of Kazakhstan, it becomes clear that the Asian crisis of 1998 and the Russian default were the first external shocks to the national currency. The impact of the external crises was reflected in the collapse of tenge devaluation, as a result the value of 1 USD fell from 80 KZT to 120 KZT in April 1999, and continued to weaken slightly, passing the mark of 138 KZT by the end of 1999. In 2000-2002, the Kazakh national currency continued to weaken, and by the beginning of 2003,

1 USD was already worth more than 155 KZT. Subsequently, the exchange rate was sustained by increased incomes of exporters (primarily from oil that had risen in price) and tenge revaluation began, with the dollar depreciating by more than 35 KZT and being pushed back to 120 KZT.

The high level of world prices for energy, primary commodities, and the dynamics of external borrowing by the banking sector have become determining factors for the balance of payments of Kazakhstan. In 2005, the current account had a deficit of 450 million USD, whereas in 2006, the current account had a deficit of 1,194.04 billion USD, representing 2.3% of the GDP. Exports of goods, which are one of the main sources of foreign exchange earnings to the country, amounted to 48.3 billion USD in 2007, thereby, representing an increase of 9.6 billion USD compared to 2006. Export growth was provided both by increasing prices for goods exported by Kazakhstan and by increasing physical supplies.

Dynamics of the exchange rate of tenge to the US dollar



\*Source: Official Internet Resource of the National Bank of Kazakhstan [1]

Figure 1 - Change in the value of the national currency against the US dollar since 1993 by 2020

In early 2007, the world economy showed growth trends. Financial markets grew, banks recorded good profits, corporations strengthened through mergers and acquisitions, and financial innovation increased, opening up new opportunities for profit. During this period, the development of the economy in Kazakhstan was mainly determined by the positive trends of previous years, such as the continuing rise in prices of domestic exports and internal macroeconomic stability. Additionally, industry, real estate market, construction, trade, banking market developed rapidly in 2007. In the first seven months of 2007, the efforts of the National Bank were directed towards choosing monetary policy instruments that would reduce inflation as much as possible. Exports of goods in 2008 amounted to 72 billion USD and increased by 49% compared to 2007. However, the mortgage crisis that started in the United States turned into a crisis in the world stock markets and in the banking sector. Thus, Kazakhstan faced the first wave of the financial crisis in the fall of 2007. One of the significant factors contributing to the global economic crisis was the dramatic change in the price of oil in the world market in the second half of 2008. The price of oil in the summer of 2008, which reached 145.7 USD per barrel, fell to 37.9 USD in the last weeks of 2008, showing a decrease of 110 USD over the summer price. The determining factors that affected the balance of payments in 2009 were the situation in world prices for the export goods of Kazakhstan, the adjustment of the exchange rate of the national currency, loan operations of the non-banking corporate sector, and servicing of external debt of banks. At the end of February 2009, after the decision of the National Bank, the weighted average tenge rate against the US dollar at the Kazakhstan Stock Exchange auctions fell to 143.98 KZT per 1 USD against 122.32 KZT per 1 USD on February 3, 2009.

Under these conditions, the economic development of the Republic of Kazakhstan in 2008 was characterized by a slowdown in growth rates. In 2008, the real GDP grew by only 3.3%. On average, the world price of Brent oil for 2009 was 61.9 USD per barrel, which is 1.6 times lower than it was in 2008, which was 97.6 USD per barrel. A significant improvement in the current account balance in 2010 compared to 2009 was provided by an increase in the value of commodity exports associated with a favorable environment for the world energy prices. The average global oil price in 2010 was 79.64 USD per barrel, which is 28.7% higher compared to the average price in 2009, which was 61.86 USD per barrel. As a result, exports of goods increased by 38.5% compared to 2009 and amounted to 60.8 billion USD. Therefore, from the second quarter of 2009 to the end of 2010, the exchange rate ceased changing, fluctuating between 147 KZT and 150 KZT per 1 USD, due to currency intervention by the National Bank of Kazakhstan. [2]

Because of the simultaneous devaluation in 2009, Kazakh exporters had improved the competitiveness of their products, and domestic producers working on the internal market had experienced a reduction in pressure from Customs Union countries. However, the social impact of this devaluation was very negative.

In January 2014, the exchange rate of tenge to the US dollar varied in the range of 154.47-155.54 KZT per 1 USD. However, in February, the National Bank conducted a sharp devaluation of tenge, which fell by almost 20 percent. The value of 1 USD rose to 185 KZT, although the cost of oil was very high and provided a large reserve of currency strength. The devaluation of tenge on 11 February 2014 was recorded as “devaluation without a reason”.

However, since August 2014, the oil prices

had sharply started to fall, amounting 103.69 USD per barrel, 98.89 USD per barrel, 88.34 USD per barrel, 80.21 USD per barrel, and 63.43 USD per barrel in August, September, October, and November, respectively. On Monday, December 15, ruble collapsed by more than 80%, the exchange rates at the close of trading were 64.45 RUB per 1 USD and 78.87 RUB per 1 EUR. The ruble's exchange rate to tenge was 3.17 tenge, and this decline was the most significant since January 1999. Despite the fall in world oil prices, the depreciation of the Russian ruble, the increase in the United States Federal Reserve's basic interest rate, the Government and the National Bank of Kazakhstan continued to fix the exchange rate at the same level by spending gold and foreign exchange reserves and recourses of the National Fund since tenge had been unreasonably devalued a few months earlier. All these factors contributed to the creation of conditions for speculative attacks in the currency market.

The economic theory of speculative attacks is based on the so-called first- and second-generation models. First generation models are revealed in the works of P. Krugman, R. P. Flood and Garber P. M., Agenor P. R. These models combine elements of the monetary balance of payments model with monetary models with flexible prices. In these models, the main reason for the currency crisis is the accelerated growth of domestic credit, i.e., an increase in the supply of money, with constant demand for money and a fixed rate, which leads investors to buy foreign currency from the Central Bank. As domestic credit grows, gold and foreign exchange reserves decrease since agents use the extra money that the Central Bank releases into circulation through the expansion of domestic credit to purchase foreign assets, and, consequently, empty the Central Bank's gold and foreign exchange reserves. Moreover, it is clear that the rate of decline in foreign exchange reserves increases with the growth of domestic credit. [3,4]

As gold and foreign exchange reserves fall, the Central Bank's ability to protect the fixed exchange rate also decreases. The depletion of gold and foreign exchange reserves is followed by a speculative attack leading to the devaluation of the national currency and the floating exchange rate. These models help determine when a speculative attack will occur. For this, it is important to know the current amount of gold and foreign exchange reserves, the dynamics of domestic credit (shadow money), and the relation between the demand for money and the interest rate. The bottom line can be concluded in the following:

- the more gold and foreign exchange reserves the Central Bank currently holds, the later the fixed exchange rate collapses;
- the faster domestic credit grows, i.e., more reserves are sold, the faster speculative attacks occur;

- the weaker the demand for money reacts to the interest rate, the later the attack occurs.

R.P. Flood and Marion concluded in their works that second-generation models are distinguished by the fact that the Central Bank policy itself can provoke an attack. In other words, the first-generation models state that the uncoordinated policy of the Central Bank leads to an attack; meanwhile the second-generation models state that even if the Central Bank policy is coordinated, the measures taken by the Central Bank during an attack may lead the economy to a currency crisis. [5,6]

The first measure that can trigger an attack is sterilization of the money supply during a speculative attack. During the sterilization of a speculative attack, the shadow money supply will be equal to the current value of the money supply, since the Central Bank compensates the loss of gold and foreign exchange reserves during the attack by increasing the domestic credit by the same amount. It is known from practice that with the loss of reserves at the time of a speculative attack, some countries tried to smooth out the negative consequences of a decrease in the money supply for the economy by sterilization. This means that in the event of a collapse in gold and foreign exchange reserves, the Central Bank will sharply increase domestic credit during the attack in such a way that the total money supply remains unchanged. Sterilization itself has a positive goal, but under a fixed exchange rate system, these measures can aggravate the attack as soon as speculators find out about them. Therefore, in order for the sterilization of the exchange rate to bring the proper effect, speculators should not be aware of the taken measures.

Additionally, if market participants are not sure that the attack will be successful, if there is no leader who will take the first step, and if there is no collusion between second-tier banks, then the economy can long be in the segment of domestic credit without attack.

Thus, the possibility of a speculative attack depends on the composition of the participants, and if the number of speculators includes a major player such as George Soros, then the economy is more likely to encounter a speculative attack. If market participants are disunited and small in volume, then the economy can be in equilibrium for a long period without a speculative attack.

Another more extensive Dornbusch model explains the reasons for the fall in gold and foreign exchange reserves in terms of a model with regression expectations and incomplete capital mobility. Incomplete capital mobility is used because most developing countries that had been speculatively attacked had restrictions on the movement of capital from and to the country. Moreover, the Dornbusch model takes into account the fact that developing countries are usually less

attractive to investors because of a possible external default. Additionally, the Dornbusch model has other limitations and properties under the fixed exchange rate system than under the free-floating exchange rate system.[7,8]

According to the models mentioned above for a speculative attack by market entities, the Central Bank must simultaneously adhere to a policy which supports a fixed exchange rate, allows free export of capital from the country, and pursues a stimulating monetary policy. However, if the Central Bank does not use at least one of these tools, then a speculative attack will not occur.

Based on these patterns, three options are proposed for the Central Bank to prevent speculative attack:

*Transition to a floating exchange rate system.* An independent transition to a floating exchange rate will save monetary authorities from the possibility of a speculative attack. If the free floating exchange rate system is not acceptable for the country due to the high volatility of the exchange rate, the country can choose either managed exchange rate system or softer regimes of the currency corridor, which require less gold and foreign exchange reserves to maintain rather than rigid fixed exchange rate system. This option will have a very high alternative implementation cost if the Central Bank's strategy to fight high inflation was built on a fixed-rate system. For example, such a situation was in 1991 in Argentina. This option of protection against a possible speculative attack is impossible in such countries, and one of the other two options has to be chosen.

*The de-liberalization (control) of the capital market.* At the time of the threat of a speculative attack, the movement of capital from and to the country can be limited. This path was taken in Malaysia in 1997, restricting short-term (speculative) capital flows. Chile introduced a tax on short-term transactions for the purchase of Chilean assets by foreigners to reduce the possible volume of speculative portfolios in the market. The capital flows should be restricted if a country can do without foreign borrowing. This requires matching savings and investment flows in the country, which is not always feasible.

*Rejection of an independent monetary policy.* Rejection of an independent stimulating monetary policy can prevent a country from losing foreign exchange reserves and reduce the likelihood of a speculative attack. The consequence of this will inevitably be an increase in the interest rate in the economy and the containment of aggregate demand through a fall in investment. In addition, authorities are losing an additional way of financing the budget deficit. Therefore, this option to solve the problem of speculative attack is often not acceptable for developing countries, for which inflation tax makes up a significant part of tax revenues.

Projecting all the theoretical conclusions on the situation in Kazakhstan, the following conclusions can be drawn. First, the Government and the National Bank of Kazakhstan overexposed the fixed exchange rate of tenge in 2015, although the reasons for the depreciation were obvious. Having missed time, significantly reducing its gold and currency reserves on August 20, 2015, the National Bank announced the implementation of a new monetary policy based on the inflation-targeting regime, the abolition of the currency corridor, and the transition to a freely floating exchange rate. The base rate was used as a tool for implementing the inflation-targeting regime.

It should be noted that since the 2000s, the monetary policy of the National Bank of Kazakhstan consisted in the application of the monetary targeting regime. Despite the great effectiveness of the monetary policy under this regime, there was no direct relationship between changes in the monetary base and inflation. The transition of the National Bank of Kazakhstan to the inflation-targeting regime was at the same time a necessary measure, but not sufficiently effective in terms of its impact on long-term economic growth. [9, pp. 1-12] In particular, the use of the one-day REPO rate as an instrument did not bring the expected results in restraining the exchange rate. The adopted base rate remained within the range of 17% from September 2 to November 6, 2015, and was canceled until early next year. A corridor was set relative to the base rate. Along the lower border of the corridor, the National Bank paid banks for deposits placed with it, and along the upper border of the base rate, it gave money to banks in the amount of collateral in the form of securities. In other words, if a bank had securities suitable for collateral, a bank could always borrow money from the National Bank at the upper limit of the base rate. There was a favorable situation for speculation in the foreign exchange market, and on September 16, 2015, such operations of foreign exchange market participants caused an increase in the exchange rate up to 350 KZT per 1 USD. This led to the fact that a month after the introduction of the free exchange rate, the National Bank was forced to intervene in the course of trading and conduct currency interventions in order to stabilize the situation on the domestic currency market. The volume of foreign exchange interventions amounted to 144 million US dollars. High deflationary expectations of the population allowed speculators to receive large dividends.

During this period, the rate of decline in exports of goods outpaced the rate of decline in commodity imports, as a result, net exports of goods in 2015 decreased by almost 3 times in comparison with 2014 (by 24 billion USD). The openness indicator of the economy, calculated as the ratio of trade to GDP, decreased by 14.5% to 41% with a decrease in the share of exports in GDP

by 11.8% and imports by 2.7%. Over the following years, the National Bank of Kazakhstan adhered to the inflation-targeting regime, which helped reduce the country's inflation rate from 17% in 2015 to 5% by the beginning of 2019. At the same time, the base rate as the main tool of this policy did not have a significant impact on the economic growth. It is generally assumed that a reduction in the interest rate leads to an increase in investment spending, which in turn has a positive effect on the country's GDP. However, the authors did not find such a connection. Based on statistical data the authors have obtained the following investment function for Kazakhstan:

$$I_{real} = 994,657 - 1085,84r$$
$$R^2 = 0,020039$$

The resulting low coefficient of risk determination (2%) characterizes the absence of a functional relationship between the investment and the interest rate [10, pp. 27-40]

In Kazakhstan, investments in fixed assets in the direction of use and by sources of financing do not depend on the interest rate. The main factor affecting the level of investment is the indicator of profitability of production. The lack of correlation between the interest rate and the amount of investment is also explained by comparing the structure of investments by sources of financing: the share of borrowed funds has remained unchanged over the past 5 years and does not exceed 5% for Kazakhstan. The main source of investment in Kazakhstan is own funds (60%). It follows that the base rate as a transmission channel of monetary policy in Kazakhstan is not effective.[11]

The current crisis associated with the COVID-19 coronavirus pandemic is much more severe than all previous crises. In Kazakhstan, a sharp drop in the oil prices aggravated the situation on the foreign exchange market. The supply of currency in the market was reduced because of the decline in foreign exchange earnings of oil companies, and the demand was constantly increased fueled by speculative expectations. At the same time, oil exporters are large taxpayers, as a result, the revenue part of the state budget is reduced, and the expenditure part is growing related to the quarantine. As a result, the budget deficit continues to increase.

In connection with the difficult economic situation prevailing in all countries of the Eurasian Economic Union a meeting was held, where the Minister for Integration and Macroeconomics Sergey Glazyev made a report and proposed specific measures to protect the financial market and neutralize speculative attacks. He expressed the need to fix the currency positions of commercial banks by introducing a time lag between the purchase request and the delivery of a currency. It was also proposed to introduce a tax on currency

speculation at a rate of 0.01% of the volume of exchange trading in a foreign currency. [12]

It was against this background that the National Bank of Kazakhstan adopted a number of resolutions on March 19, 2020, allowing to stabilize the exchange rate.

In particular, the Rules for monitoring sources of supply and demand in the domestic currency market of the Republic of Kazakhstan state that "when making an application for the purchase of non-cash foreign currency for the national currency in an amount exceeding fifty thousand U.S. dollars in equivalent, a resident legal entity (with the exception of an authorized bank) specifies the purpose of the purchase, and attaches a copy of the currency agreement and an invoice or other payment document for which the foreign currency is purchased. Additionally, a statement on the purchase of non-cash foreign currency for the national currency by a resident legal entity (with the exception of an authorized bank) should be accompanied by instructions to the authorized bank, if it is not used within ten business days, to sell this currency for the national currency within three days, except for foreign currency purchased for the purpose of paying net income or part of it distributed by this resident legal entity among its shareholders, founders, participants. It is not allowed to exceed the total amount of purchases of non-cash foreign currency for the national currency under one currency agreement, calculated on the basis of applications of a resident legal entity, over the amount of the currency agreement". [13]. Thus, the monetary authorities resorted to measures of de-liberalizing the capital market. By limiting the purchase of currency and the free movement of capital, the threat of speculative attacks on the financial market was reduced.

## Conclusion

Summarizing the above, it can be stated that in Kazakhstan since the 2000s, a model of economic growth has been formed, focused on the transformation of oil and gas windfall revenues into domestic demand, which is primarily reflected in the foreign exchange market. This model ensured rapid production growth, provided an increase in income and social transfers, and maintained macroeconomic stability. However, this model has a weak side - a high dependence on the world oil market. During periods of sharp decline in oil prices, speculative attacks on the exchange rate occur. Under these conditions, the currency channel is the only effective transmission mechanism of the monetary policy, while the interest and credit channels do not have a significant effect. At the same time, the monetary policy of the National Bank aimed at controlling inflation allows only to stabilize the price level, but does not have a positive impact on investment and, therefore, on economic

growth. In this regard, there is an urgent need to change the monetary policy, since the current policy of the National Bank solves short-term problems at the expense of long-term stability.

### References

1. Official Internet Resource of the National Bank of Kazakhstan <https://nationalbank.kz/?docid=3321&switch=english>
2. Flood R. and Marion N.P. Perspectives on the Recent Currency Crises Literature, IMF mimeo, 1997.
3. Blanco H. and Garber P.M. Recurrent Devaluation and Speculative Attacks on the Mexican Peso, *Journal of Political Economy*, 94(1), 1986.
4. Agenor P.-R., Bhandari J.S. and Flood R.P. Speculative Attacks and Models of Balance of Payments Crises, *IMF Staff Papers*, 39(2), 1992.
5. Dornbusch R. R. *Ojidaniya i Dinamika Obmennogo Kursa* [Expectations and Exchange Rate Dynamics]. *Etot izmenchivyi kurs* — This changeable exchange rate, 2001, pp. 207–229 (in Russ.).
6. Dornbusch R. *Keys to Prosperity: Free Markets Sound Money and a Bit of Luck*, MIT Press, 2000.
7. Alexis Cruz-Rodríguez. Exchange Arrangements and Speculative Attacks: Is there a link? *Pontificia Universidad Católica Madre y Maestra* 30 June 2016 Online at <https://mpira.ub.uni-muenchen.de/72359/> MPRA Paper No. 72359, posted 5 July 2016 07:33 UTC
8. Яруллин Р.Р., Рахматуллина И.Т. Формы защиты финансовой системы от спекулятивных атак и банковских паник // *Экономика и бизнес: теория и практика*. – 2018. – № 3. – С. 158-161. [valfaktoy-vliyayuschie-na-ego-formirova](https://doi.org/10.26907/2542-0410.2018.3.158-161).
9. Glazyev S.O. *Targetirovaniy Infl'yacii* [Targeting Inflation]. *Voprosy Ekonomiki* — Economic Issue, 2015, no. 9, pp. 1-12 (in Russ.).
10. Bayeva Yu.V., Kunasheva D.B., Sidorenko V.N. *Ocenka Modeli Obshchego Makroekonomicheskogo Ravnovesiya Eksportnoorientirovannyy Ekonomik: Na Primere Kazahstana i Rossii* [Assessment Of The General Macroeconomic Equilibrium Model Of Export Oriented Economies: The Case of Kazakhstan and Russia]. *Ekonomika: strategiya i praktika* — Economy: strategy and practice, 2019, no. 1 (14), pp. 27-40 (in Russ.).
11. Shalkar Baikulakov, Islam Yerzhan Assessment of credit impact on inflation processes in Kazakhstan <https://nationalbank.kz/cont/NBRK-WP-2019-4->
12. Glazyev S. *O Prognozah Dinamiki Ekonomiki v Usloviyah Pandemii COVID-19 i Vozmojnykh Stabilizacionnykh Merah v Ramkah EAES* [Forecasts of Economic Dynamics in the Context of the COVID-19 Pandemic and Possible Stabilization Measures within the EEU]. URL: <https://www.rbc.ru/economics/15/04/2020/5e969b679a79471281afe927> (in Russ.).
13. *Postanovlenie Pravleniya Nacional'noga Banka RK ot 19.3.2020 №24* [Resolution of the Board of the National Bank of the Republic of Kazakhstan dated 19.03.2020 №24]. URL: <https://nationalbank.kz/?docid=43&switch=russian> (in Russ.).

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