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## Econometric Study of the Dynamics of Foreign Direct Investment in Russia

Эконометрическое исследование динамики прямых иностранных инвестиций в России

Investigación econométrica de la dinámica de las inversiones extranjeras directas en Rusia

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### Abstract

Foreign investment is of high importance for economic growth in Russia. The problem of enhancing investment flows makes it increasingly relevant to search for effective tools for stimulating investment activity. We attempt to identify the factors affecting the dynamics of foreign direct investment (FDI). The paper analyses the current state of foreign direct investment in the Russian economy. Using empirical data for 2001–2018, we construct an econometric model for Russia which considers such factors as inflation (the Consumer Price Index), the exchange rate and imports. The results of the model's testing do not confirm the initial assumptions that inflation exerts a more profound effect on FDI than the exchange rate and that there is a correlation between these indicators. For Russia, the dependence of FDI on the exchange rate remains insignificant; in addition, we find a direct relationship between the indicators. According to the model, the impact of inflation (direct relationship) and the volume of imports (inverse relationship) are of greater significance. It is noteworthy that the dynamics of foreign direct investment is partially due to its fluctuations with a time lag. The model forecasts that from 2019 to 2024 Russia is expected to experience a rise in FDI net outflows. The findings indicate that in order to attract foreign direct investment, it is necessary to implement economic transformations that will improve the business environment and lead to the development of healthy competition.

### Аннотация

Иностранные инвестиции для России имеют большое значение в обеспечении роста экономики. Проблема активизации инвестиционной деятельности актуализирует поиск эффективных инструментов ее стимулирования. Для этой цели нами предпринята попытка идентифицировать факторы, которые оказывают воздействие на динамику прямых иностранных инвестиций (ПИИ). Проведен анализ современного состояния прямых иностранных инвестиций в экономику России. По эмпирическим данным за 2001-2018 гг. для России построена эконометрическая модель, где учитывались фактор инфляции (индекс потребительских цен), обменного курса валют и фактор импорта. Первоначальные предположения о более значительном влиянии инфляции, чем обменного курса на прямые иностранные инвестиции и наличие обратной связи между данными показателями не подтвердилось по результатам апробации модели. Для России зависимость ПИИ от обменного курса остается незначительной, кроме того, между показателями также была обнаружена прямая взаимосвязь. Согласно модели, более значимо воздействие инфляции (связь прямая) и объема импорта (связь обратная). Стоит обратить внимание, что динамика прямых иностранных инвестиций частично объясняются их собственными колебаниями

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**Key Words:** foreign direct investment, inflation, exchange rate, import, regression analysis, investment climate, econometric modeling.

с временным лагом. По прогнозу согласно построенной модели, на периоде 2019-2024 гг. в России будет наблюдаться чистый отток ПИИ, который постепенно будет усиливаться. Полученные результаты указывают на то, что для привлечения прямых иностранных инвестиций необходимы экономические преобразования, которые улучшат деловую среду и приведут к развитию здоровой конкуренции.

**Ключевые слова:** прямые иностранные инвестиции, инфляция, обменный курс валют, импорта, регрессионный анализ, инвестиционный климат, эконометрическое моделирование.

## Resumen

Las inversiones extranjeras para Rusia tienen significado grande a fin del aseguramiento del desarrollo de la economía. El problema de la intensificación de la actividad de inversiones hace actualizar la búsqueda de los instrumentos eficaces para su estimulación. Para este objetivo, por nosotros ha sido emprendida la tentativa de identificar los factores, que ejercen influencia sobre la dinámica de las inversiones extranjeras directas (IED). Ha sido realizado el análisis del estado actual de las inversiones extranjeras directas en la economía de Rusia. Según los datos empíricos de los años 2001-2018, para Rusia ha sido construido el modelo econométrico, en donde han sido tomados en consideración el factor de la inflación (índice de precios de consumo), el tipo de cambio de divisas y el factor de importación. La hipótesis inicial de qué la influencia de la inflación tenga mayor influencia que el tipo de cambio sobre las inversiones extranjeras directas y de la existencia de la retrocomunicación entre los índices mencionados no ha sido confirmada según los resultados de la aprobación del modelo. Para Rusia la dependencia de las IED del tipo de cambio se queda insignificante, además, entre los índices ha sido descubierta también la intercomunicación directa. Conforme al modelo, es más significativa la influencia de la inflación (relación directa) y el volumen de la importación (relación inversa). Hay que prestar atención en qué la dinámica de las inversiones extranjeras directas se explica parcialmente por sus propias fluctuaciones con el curso temporal. Según el pronóstico, conforme al modelo construido sobre el período de los años 2019-2024, en Rusia se observará el reflujó puro de las IED, que se aumentará poco a poco. Los resultados recibidos indican, que para la atracción de las inversiones extranjeras directas son necesarias las transformaciones económicas, que mejorarán el ambiente de trabajo y llevarán al desarrollo de la competencia sana.

**Palabras clave:** inversiones extranjeras directas, inflación, tipo de cambio, importación, análisis regresivo, clima de inversiones, modelación econométrica.

## Introduction

The current period of Russia's development implies an increase in the country's investment attractiveness and stabilization of the economic situation. In recent years, the investment climate has been unfavorable, which resulted in the outflow of capital. Significant economic reorganization had a marked effect on the country's global investment position. The problem of stimulating investment activity is a challenge for the Russian economy and makes it increasingly urgent to search for effective tools to stimulate it, both in the short and long run.

From the macroeconomic perspective, foreign direct investment (FDI) is a special form of cross-border capital flows that has traditionally been one of the key drivers of economic growth. Foreign direct investment contributes to the formation of gross capital, boosts productivity growth, improves competitiveness and provides a number of other comparative advantages, such as transfer of technology, innovation and management skills, the improvement of the quality of human capital, etc. (Verbeke, Li & Goerzen, 2009; Clark et al., 2011; Acharya &

Keller, 2007; Welfens & Jasinski, 1994; Litau, 2019; Antanavičiene, 2014; Kucharcíková et al., 2015; Nikitina et al., 2018; Lambert, 2017; Šimelyte & Antanavičiene, 2013). The external effect of FDI usually depends on the nature of the incoming investment (Nosova, 2016). However, it is important to take into account that FDI has both positive and negative aspects (Alfaro & Rodriguez-Clare, 2004; Kasko, 2010).

A country's attractiveness for foreign capital is predetermined by numerous factors that, taken together, form the investment climate. There is a plethora of theoretical views on the concept of foreign direct investment. Despite the fact that all these theories have made a certain contribution to this area, there is still no consensus about FDI (Denisia, 2010). Moreover, empirical studies proving the contribution of FDI to economic development are controversial and do not provide sufficient grounds for a rigid definition of the FDI determinants (Asafu-Adjaye, 2005).

Thus, the purpose of the current research is to identify the factors that determine change in FDI inflow and to evaluate the degree of their influence. The methodological framework of the study is comparative analysis of changes in macroeconomic indicators and structural-dynamic analysis. The research objectives are to substantiate a list of parameters (indicators) that determine the volume and dynamics of investment flows; to develop an economic and mathematical model of FDI dynamics including a system of controlled parameters; and to calculate the forecast value of direct foreign investment in Russia.

## Literature Review

According to the experts from the IMF and OECD, foreign direct investment refers to international investment that reflects the objective of a resident in one economy to obtain a lasting interest in an enterprise resident in another economy (IMF, 2003; Blomstrom, Lipsey & Zegan, 1994). According to the general rule, a direct investment relationship is established when the direct investor has acquired 10% or more of the ordinary shares or voting power of an enterprise abroad. However, the threshold is dependent on the country and the existing conditions (Griffin & Pustay, 2006).

There is an array of factors that determine a country's attractiveness for foreign investors. The common components of the investment climate are the exchange rate, inflation, the level of corruption, relevant legal and tax legislation,

the availability of markets for products, labor costs, etc.

Empirical studies often focus on the effects of exchange rate volatility on FDI. Aliber (1970) was among the first researchers who examined the influence of exchange rate changes on FDI flows. He argues that countries with a weak exchange rate will try to attract foreign investors in order to increase purchasing power. According to Froot and Stein (1991), national currency depreciation offers a comparative advantage to foreign investment. Capital markets are imperfect and, therefore, national currency devaluation has a positive effect on FDI inflows, as foreigners automatically become richer. Cushman (1988) asks what corporations do to increase their future revenues with current currency ratios. He analyses the effect of exchange rate risk and the expectations for FDI income for various cases and concludes that FDI flows will depend on the country of origin and the country where the product is sold.

Blonigen (2005) concentrates on the segmentation of FDI according to the effect of the exchange rate: opportunities to buy a company abroad are equal for both national and foreign investors, but the ways to generate profits from the exchange rate are different. This is the reason why the exchange rate may affect the valuation of assets. Blonigen finds that devaluation of the recipient country's currency positively influences the volume of foreign direct investment.

Addressing the case of Australia's economy, Xiong (2005) empirically establishes that increased volatility of the exchange rate has a negative effect on foreign investment flows. Masten (2007) advocates the same view.

There are serious reasons behind the relationship between inflation and foreign direct investment. Low and stable inflation is indicative of domestic economic and price stability in the state. And vice versa, high inflation scares off foreign investors (Aijaz, Siddiqui & Aumeboonsuke, 2014). Khan and Mitra (2014) believe that high inflation rates distort economic activity, which causes foreign capital outflow. This is due to the fact that high price level in the country increases production costs. Production costs tend to grow with increasing prices for raw materials, higher wages and the cost of capital. Inflated prices for goods and services adversely affect both the domestic and foreign demand. Consequently, the aforementioned factors decrease companies' profits, which stimulates a reduction in foreign

direct investment in countries with high inflation. In addition, Klein and Rosengren (1992) argue that the effect of wealth is a determining factor in foreign investment. They state that labor costs for labor are of less importance when assessing the outflow of FDI from the country.

The list of significant factors characterizing the investment climate is not limited to exclusively the exchange rate and inflationary expectations. Froot and Stein (1991) hypothesize about the factors determining the inflow of FDI. Firstly, tax legislation has a significant impact on both the investment climate in the country and the decision of a particular investor. Svenson (1994) proves the presence of a tax effect using data on US investing countries and establishes that there is a significant correlation between changes in tax legislation and the relationship between the exchange rate and FDI. Brinca, Duarte and Oliveira (2019) share similar view on this issue. Secondly, Froot and Stein (1991) suppose that the deficit of international trade exerts a significant influence on the exchange rate, which results in the devaluation of the national currency. The balance of payments deficit can be caused by trade restrictions that, in turn, are among the factors affecting the investors' decision making. Thirdly, changes in the exchange rate do not always have an instant impact on asset prices, which creates a "window" for foreign buyers.

Grosse and Trevino (2013) scrutinize the role of institutions amid new markets emerging. The authors identify the general factors in attracting FDI, such as bilateral investment treaties, the degree of enterprise reform, the rules for capital repatriation, and the reduction of state corruption.

Sharifi-Renani and Mirfatah (2012) explore the integrated relationship between FDI, GDP, oil prices, the Openness Index and exchange rate volatility using vector autoregressive models. They empirically demonstrate a significant negative effect of exchange rate volatility, GDP and world oil prices on FDI flows. Using an autoregressive model and a distributed lag model, Lily et al. (2014) assess the relationship between FDI, the real exchange rate and inflation. Based on empirical data on Malaysia,

Singapore and the Philippines, a long-term equilibrium relationship between them is revealed.

Omankhanlen (2011) sticks to a more comprehensive approach, where, using a multivariate regression model, the author studies the effects of GDP, exchange rates, gross fixed capital formation, government spending and inflation on foreign direct investment. The researcher concludes that there is a significant correlation with the exchange rate only, but not with the other factors.

The literature review allows us to assert that numerous researchers attempt to assess the influence of foreign capital, but this topic remains highly debated. It is possible to confidently identify only a few determinants of FDI, on which there is a conventional consensus among scientists. Numerous research studies indicate that there is a correlation between FDI and the exchange rate and inflation in developed and developing countries. Against this background, we can conclude that it is expedient to include these parameters to the model being built, since they are the fundamental ones in most empirical studies.

## Materials and Methods

Our study was conducted using correlation and regression analysis. The information base included three time series for the period from 2001 to 2018: the Consumer Price Index (CPI), foreign direct investment in the real sector of economy and exchange rates in Russia. In the process of constructing the model, we add one more indicator, i.e. the volume of imports as an indicator of the current state of the economy in terms of consumption. The explanation for this is that an increase in income results in a rise in aggregate demand, and the latter stimulates imports under favorable conditions (for instance, adequate exchange rates and lack of trade barriers).

Initial data for analysis are presented in Table 1. The information sources are the Federal State Statistics Service of Russia (Rosstat) and the Central Bank of Russia.

**Table 1.** Initial data for analysis

Year	FDI, million dollars (Y)	CPI, % (X <sub>1</sub> )	Exchange rate RUB/USD (X <sub>2</sub> )	Imports, million dollars (X <sub>3</sub> )
2001	-306	118.58	29.17	51317
2002	59	115.06	31.35	58418
2003	1795	111.99	30.69	73214
2004	-1621	111.73	28.81	94244
2005	2372	109.00	28.28	163187
2006	-7602	109.00	27.19	163187
2007	-11072	111.87	25.577	223084
2008	-19120	113.28	24.8553	288673
2009	6697	108.80	30.3692	183924
2010	9448	108.78	30.3692	245680
2011	11767	106.10	29.3874	318555
2012	-1765	106.57	31.093	335771
2013	17288	106.47	31.848	341269
2014	35051	111.35	38.4217	307875
2015	15232	112.91	60.9579	193021
2016	-10225	105.39	67.0349	191494
2017	8200	102.51	58.3529	238125
2018	8816	104.26	62.7078	248620

Source: Rosstat (2019 a,b) , the Central Bank of Russia (2019).

We put forward and verify a number of initial assumptions. The basic hypothesis is that inflation has a more significant influence on changes in FDI volumes than the exchange rate; at that, the effect is characterized by the inverse relationship between inflation and investment.

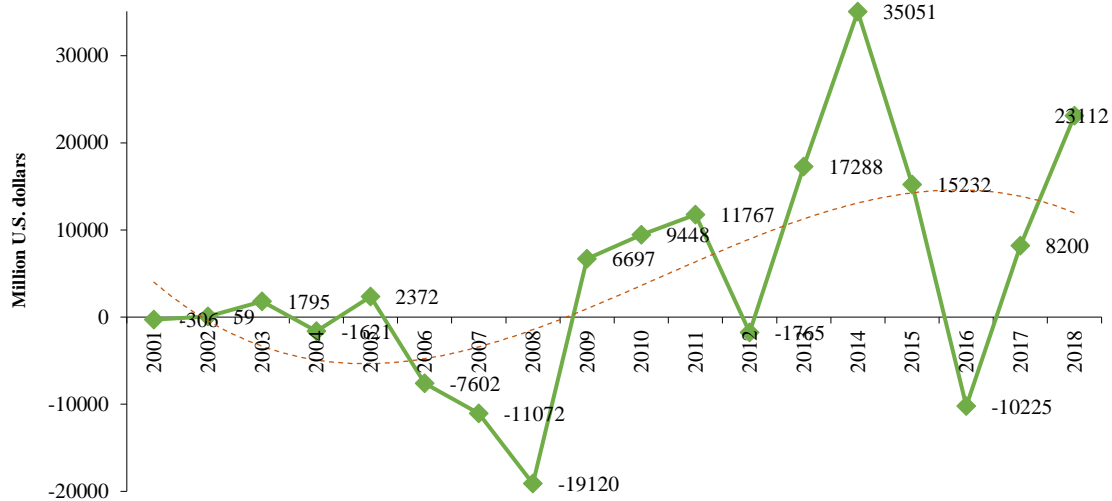
## Results

Foreign direct investment, as a factor involved in regulation and growth of economy, is of great importance for Russia (Valyaeva, Volkova & Melnikova, 2016). Since 2015, Russia has enjoyed a fairly good investment attractiveness for foreign investors in the world markets. From 1995 to 2000, the volume of FDI doubled; in 2005, the growth in FDI amounted to 295% in comparison with the year 2000.

The global financial crisis of 2008–2009 had an adverse effect on FDI growth: there was an

absolute decrease in volumes, and by 2010 FDI inflows almost reached the level of 2005. In this period, the structure of FDI changed considerably: the volume of loans doubled, and contributions to capital decreased (Ivanova et al., 2016). This indicates investor uncertainty. In the subsequent period, prior to sanctions, the situation improved and by 2014 the growth of investment was +103% compared to 2013. The second round of the crisis, coupled with economic sanctions, caused a significant outflow of foreign investment from Russia. In 2016, the outflow amounted to -10.2 billion U.S. dollars. A gradual recovery was accompanied by the inflow of FDI, although in 2018 their level fell by 0.5% of GDP against 1.8% of GDP a year earlier. In the previous five years, the average level was 1.8% of GDP.

The dynamics of FDI is given in Fig. 1.



**Fig. 1.** Dynamics of FDI in Russia in 2001–2018  
Source: The Central Bank of Russia (2019).

The increase in the FDI growth rates in Russia in 2018 compared to 2002 was 39.2 times, which can be evaluated as positive. However, the net balance of FDI (including FDI abroad) remains negative at 1.4% of GDP, which roughly corresponds to the average value of recent years. At the same time, the net balance reduced by at least half compared with the levels before 2013, which indicates that there is a tendency towards squeezing investments, including FDI from Russia.

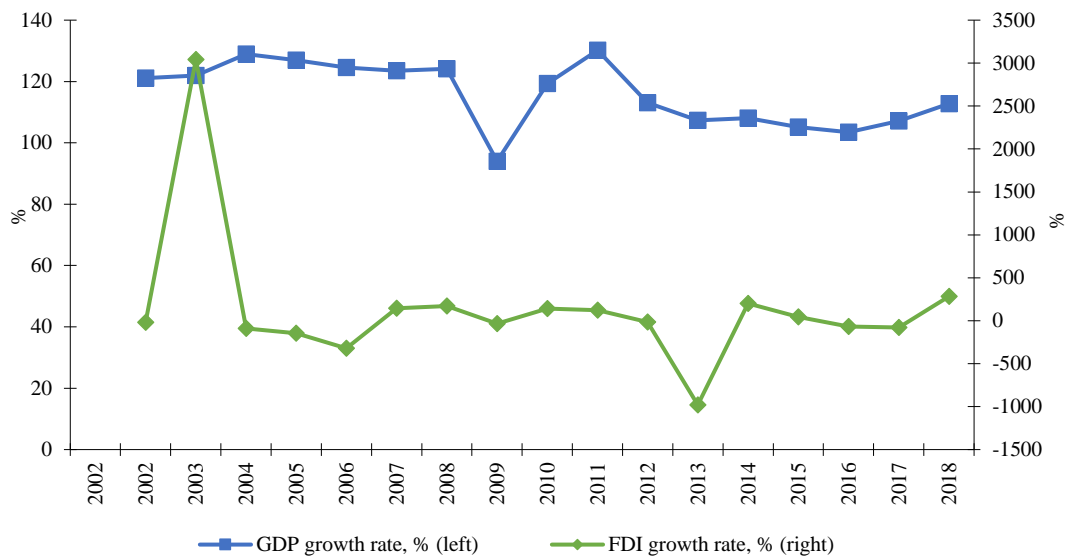
The downward trend in FDI inflows has been observed in a number of other countries. The relative level of FDI inflows in Russia in recent years has lagged slightly behind the average value of the similar indicator for a group of emerging markets (an average of 2% in 2015–2017).

As for the structure of FDI, there was a significant decline in the share of investments in debt instruments and of capital participation, whereas the share of reinvested income remained at the same level. It is worth noting that a

decrease in FDI in the form of investments in debt instruments and capital participation are a limiting factor to enhance the potential for economic growth. Earlier, with a relatively intensive capital outflow abroad, there was a comparable inflow of investments. Now we can observe a decline in FDI inflows to Russia with slightly decreasing outflows abroad. The same is indicated by changes in the territorial distribution of FDI among investing countries.

In terms of economic sectors, investments in mining and processing industry, which absorb the largest part of FDI, reduce at a slower rate (possibly due to reinvestment of income), while a significant decrease occurs in other areas. The latter is consistent with the structural transformation of the economy in the context of adaptation to relatively low oil prices and sanctions policy (The Bulletin, 2019).

The growth rates of GDP and FDI are presented in Fig. 2. The FDI chain growth rate exceeds the GDP growth rate, which can also be evaluated as positive.



**Fig. 2.** GDP and FDI growth rates in Russia in 2002–2018, %

The dynamics of FDI is partially explained by their own fluctuations with a time lag, since they are characterized by a cyclical chain effect (see Fig. 1). The parabolic trend in the dynamics has  $R^2 > 0.32$ , which indicates a significant correlation. Logically, first significant investments in the country's economy following a period of recession give positive impetus for the market – the arrival of foreign investors signals the stabilization of the economic situation

and initiates new investments. In this way, a chain reaction is provoked, which subsequently develops according to the cyclic principle (Raputsoane, 2019).

The nature of the linear dependence of the selected factors is assessed by paired correlation coefficients; the correlation matrix is presented in Table 2.

**Table 2.** Matrix of the model parameters' correlation coefficients

	Y	X <sub>1</sub>	X <sub>2</sub>	X <sub>3</sub>
Y	1			
X <sub>1</sub>	-0.175	1		
X <sub>2</sub>	0.216	-0.460	1	
X <sub>3</sub>	0.314	-0.589	0.0938	1

As can be seen from the matrix, there is an inverse weak relationship between FDI and the CPI; the relationship between FDI and the ruble exchange rate and between FDI and the volume of imports is direct and moderate.

Thus, we obtain the multiple regression equation:

$$Y = -74454,8325 + 537,4757X_1 + 226,6215X_2 - 0,2037X_3.$$

The regression can be interpreted as follows: an increase in the CPI by 1% leads to an increase in

FDI by an average of 537.48 million dollars; an increase in the exchange rate by 1 ruble (in relation to the U.S. dollar) increases FDI by an average of 226.62 million dollars; a rise in imports by 1 million dollars causes a decline in FDI by an average of 0.20 million dollars. Based on the maximum coefficient  $\beta_3$  ( $Y/X_3$ ), we conclude that factor X<sub>3</sub> (imports) has the greatest influence on the result of Y.

The parameters X<sub>2</sub> and X<sub>3</sub> determined on the basis of correlation and regression analysis have a completely convincing economic rationale. The

factor of inflation ( $X_1$  is the CPI) proved it to be statistically significant. However, the hypothesis about the effect of inflation on FDI with a negative sign is refuted. This is possibly due to the fact that active economic growth in developing countries is accompanied by high inflation. In a sense, inflation can be a factor in economic growth (Bazhenov & Zasukhina, 2017).

The statistical significance of the multiple regression equation is verified using the coefficient of determination and the F-test. The regression statistics for the obtained equation indicate that, according to the Chaddock scale, there is a moderate correlation (multiple R is 0.3862) between the indicators.

**Discussion**

In today’s economy, transnational capital flows play a key part in the distribution of factors of production. Under such conditions, an unpredictable overflow of international investments is one of the fundamental reasons behind the emergence of financial and economic crises. To develop measures for protecting the national economy from the effects of external shocks, it is important to anticipate investment trends.

According to Morgan Stanley’s experts, in the event of a crisis, the business climate in the world will deteriorate (Kroshny, 2018). This will lower

the level of international investments and enhance competition between countries for them. We can ascertain that international FDI flows have been lately subject to unusually strong fluctuations. Such volatility is not characteristic of other macroeconomic indicators, such as GDP growth, investment in fixed assets, and the volume of foreign trade. Moreover, the decline in international FDI in 2017–2018 occurred amid a substantial increase in the economic indicators mentioned above (Kvashnina, 2019).

Against this background, it is becoming increasingly complicated to assess changes in investment inflows in Russia. Based on the model presented, we can produce a preliminary short-term forecast of FDI inflows in Russia (Table 3):

1. Factor  $X_1$  (the Consumer Price Index). According to the Concept of Socio-Economic Development for the Period until 2024 (The Forecast...), the CPI will range between 103.8 and 104.0%.
2. Factor  $X_2$  (RUB exchange rate). According to the baseline scenario, the average annual USD exchange rate will experience a moderate increase from 63.8–63.9 rubles per dollar to 68.0 rubles per dollar by the end of 2024.
3. Factor  $X_3$  (the volume of exports). From 2019 to 2024, imports of goods are expected to grow to 365 billion U.S. dollars (an increase of 34%).

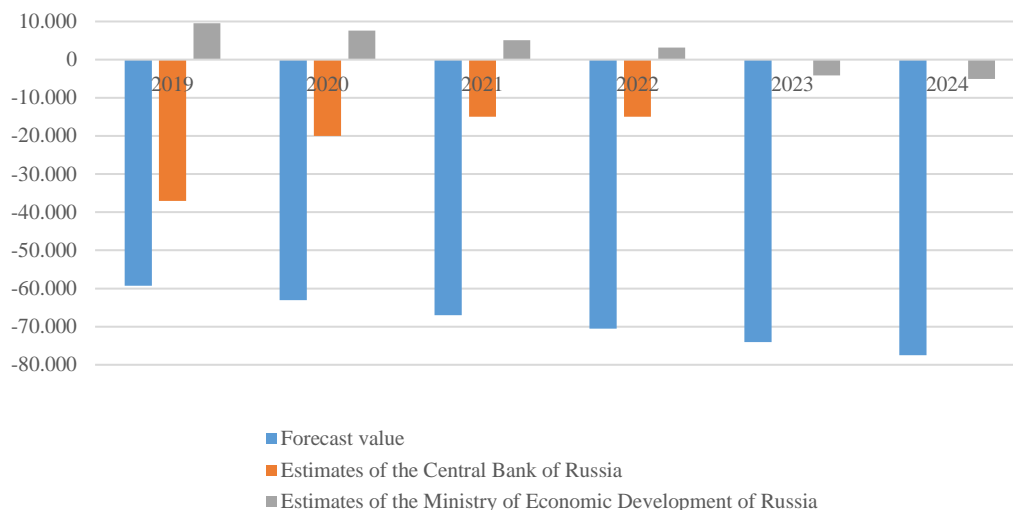
**Table 3.** Baseline scenario of the model

Indicator	2019	2020	2021	2022	2023	2024
CPI, %	104.3	103.8	104.0	104.0	104.0	104.0
Average annual USD exchange rate, rubles per dollar	63.9	63.8	64.0	64.7	66.3	68.0
Imports of goods, billion dollars	272	289	309	327	346	365

Fig. 3 provides a forecast of foreign direct investment in Russia in 2019–2024 according to the developed model. It presents data on FDI dynamics forecast by the Central Bank of Russia and the Ministry of Economic Development of Russia by capital outflows. The baseline scenario of the Concept of Socio-Economic Development for the Period until 2024 predicts that foreign

direct investment will be steadily decreasing. The Central Bank of Russia adjusted its forecast for capital outflow from Russia for 2019 to 37 billion dollars; at that, the regulator raised expectations for capital outflow for 2020 to 20 billion dollars, and for 2021–2022 to 15 billion dollars (Rambler, 2019).





**Fig. 3.** Forecast of FDI in Russia in 2019–2024

The projected outflow of investments can be attributed to low confidence of foreign investors in the sustainability of the Russian economy in the context of sanctions, as well as the inability to effectively diversify the structure of budget revenues. Many industries of the Russian economy are monopolized. For example, most banks operating in Russia's financial system are state-owned (Chunikhin, Kuzmin & Pushkareva, 2019); the same is true for the electricity and energy markets (Kuzmin, Volkova & Fomina, 2019). The lack of coherent antitrust policy has a destructive effect on the level of competition, which, in turn, undermines the dynamics of foreign investment.

The central problems hindering the attraction of foreign investment are a shortage of skilled employees, high administrative barriers and other system-related factors (Expert, 2018; Litau, 2018; Smirnov, 2017; Ponomarev & Petrov, 2019). In the coming years, the government of the Russian Federation plans to introduce a number of measures for improving the investment climate. Table 4 presents the investment attraction program. Actions in this direction are of special importance given the foreign economic challenges limiting the investment activity in recent years.

**Table 4.** The program for attracting investments in the Russian economy (The plan of actions, 2018)

Action	Description
Transformation of business climate	Organization of expert groups (representatives of public authorities and business) Gathering proposals from business communities Preparing proposals for regulatory norms revision Introduction of a risk-oriented model of control and supervision to ensure the planned character of inspections and reduce their number
Improvement of control and supervision activities	Introduction of performance evaluation of controlling and supervising authorities to reduce business costs Informing the business about changes in mandatory requirements Introduction of methods of distant control
Development of corporate law	Identification of excessive, duplicate and unused norms in the legislation that impede the movement of capital and investments Harmonization of federal laws and the Civil Code Easing demands for information disclosure Reducing state participation in the industries with developed infrastructure (including the ban on acquisition by the state of shares in companies operating in a competitive environment)
Competition development	Reducing the number of violations of the antitrust law by state bodies Increasing the share of procurements within the state and municipal contracts from small enterprises

## Conclusion

Foreign direct investment is a large source of economic growth for any country. The investment climate is formed and dependable on a number of factors of a systemic and non-systemic nature. The current research explored the relationship of the volume of FDI with the national currency exchange rate, imports and inflation. The testing of the econometric model did not confirm the initial assumptions that inflation exerted a more significant effect on FDI than the exchange rate, and that there was an inverse relationship between these indicators. For Russia, the dependence of foreign direct investment on the exchange rate remains insignificant; moreover, we found a direct relationship between the indicators. At that, the exchange rate stays an important indicator in domestic economic stability. The model demonstrates that inflation (direct relationship) and the volume of imports (inverse relationship) have a more significant impact. It is worth noting that the dynamics of foreign direct investment is partially due to their fluctuations with a time lag, since a cyclical chain effect is inherent in FDI. The model also forecasts that from 2019 to 2024 Russia is expected to experience a rise in FDI net outflows that can reach -77.5 billion dollars. Weakening investment flows in the Russian economy are consistent with the dynamics of FDI in other emerging markets. However, in recent years, the inflow of FDI in Russia, expressed as a percentage of GDP, has remained slightly below the average level of this group of countries. The obtained results reveal that in order to attract foreign direct investment, it is necessary to transform the country's economy in a way improving the business environment and leading to the development of fair competition.

## Bibliographic references

- Acharya, P., & Keller, W. (2007). Technology transfer through imports. NBER working paper series. *Working paper 13086*. Retrieved from: <https://www.nber.org/papers/w13086.pdf>, <https://doi.org/10.3386/w13086>
- Aijaz, H., Siddiqui, A., & Aumeboonsuke, V. (2014). Role of interest rate in attracting the FDI: Study on ASEAN 5 economy. *International Journal of Technical Research*, 2(3), 59-70.
- Alfaro, L., & Rodriguez-Clare, A. (2004). Multinationals and Linkages: Evidence from Latin America. *Economia*, 4, 113-170. <https://doi.org/10.1353/eco.2004.0012>
- Aliber, A. (1970). Theory of direct foreign investment. The International Corporation, Assymposium Combrite MA. MIT. Press.
- Antanavičiene, J. (2014). Foreign direct investment: Driving factors and outcomes for secure and sustainable development. *Journal of Security and Sustainability Issues*, 3(3), 55-67. [https://doi.org/10.9770/jssi.2014.3.3\(5\)](https://doi.org/10.9770/jssi.2014.3.3(5))
- Asafu-Adjaye, J. (2005). What has been impact of foreign direct investment in Ghana? *IEA Policy Analysis*, 1(9).
- Bazhenov, O. V., & Zasukhina, E. A. (2017). An econometric analysis of factors attracting foreign direct investment to developing countries. *Economic Analysis: Theory and Practice*, 16(1), 188-200. <https://doi.org/10.24891/ea.16.1.188>
- Blomstrom, M., Lipsey, R., & Zegan, M. (1994). What explains developing country growth? *NBER Working Paper No. 4132*. Massachusetts: National Bureau for Economic Research.
- Blonigen, B. (2005). A review of empirical literature on FDI determinants. *Atlantic Economic Journal*, 33, 383-403. <https://doi.org/10.1007/s11293-005-2868-9>
- Brinca, P., Duarte, J. B., & Oliveira, J. G. (2019). Investment-specific technological change, taxation and inequality in the U.S. *Journal of Eurasian Economic Dialogue*, 4(2), 29-48.
- Chunikhin, S. A., Kuzmin, E. A., & Pushkareva, L. V. (2019). Studying the banking industry's stability through market concentration indices. *Entrepreneurship and Sustainability Issues*, 6(4), 1663-1679. [https://doi.org/10.9770/jesi.2019.6.4\(8\)](https://doi.org/10.9770/jesi.2019.6.4(8))
- Clark, D. P., Highfill, J., de Oliveira Campino, J., & Rehman, S. S. (2011). FDI, technology spillovers, growth, and income inequality: A selective survey. *Global Economy Journal*, 11(2), 1-42. <https://doi.org/10.2202/1524-5861.1773>
- Cushman, D. (1988). Exchange-rate uncertainty and foreign direct investment in the United States. *Weltwirtschaftliches Archiv*, Bd. 124, H. 2. Pp. 322-336. <https://doi.org/10.1007/BF02706782>
- Denisia, V. (2010). Foreign direct investment theories: Overview of main FDI theories. *European Journal of Interdisciplinary Studies*, 3, 53-59.
- Expert (2018). Foreign investors named the main problems when doing business in Russia. Retrieved from: <http://expert.ru/2018/02/5/inostrannyij-biznes-po-prezhnemu-pugaet-korruptsiya-v-rossii/>
- Froot, K., & Stein, J. (1991). Exchange rates and FDI: An imperfect capital markets approach. *Quarterly Journal of Economics*, 106, 1191-1127. <https://doi.org/10.2307/2937961>

- Griffin, R., & Pustay, M. (2006). *International business*. Saint Petersburg: Piter Publ. (Russ. ed.).
- Grosse, R., & Trevino, L. J. (2003). *New institutional economics and FDI location in Central and Eastern (Mimeo)*. Phoenix, AZ: American Graduate School of International Management.
- IMF (2003). International Monetary Fund. Foreign direct investment trends and statistics. Retrieved from: <http://www.imf.org/external/np/sta/fdi/eng/2003/102803.pdf>, <https://doi.org/10.5089/9781498328975.007>
- Ivanova, T. A., Valyaeva, G. G., Trofimova, V. Sh., Reent, N. A. (2016). *Economic and statistical analysis of the human potential of Russia and its regions*. Magnitogorsk: Nosov Magnitogorsk State Technical University.
- Kasko, S. V. (2010). Forecasting the transnational private equity movement. *Management Issues (Minsk)*, 3(36), 112-119.
- Khan, G. & Mitra, P. (2014). A causal linkage between FDI inflows with select macroeconomic variables in India. An econometric analysis. *IOSR Journal of Economics and Finance*, 5(5), 2321-5933. <https://doi.org/10.9790/5933-055124133>
- Klein, M., & Rosengren, E. (1992). Foreign direct investment outflow from the United States: An empirical assessment. In: Klein, M. W., & Welfens, P. J. (Eds.). *Multinationals in the New Europe and global trade*. Berlin: Springer-Verlag. P. 102. [https://doi.org/10.1007/978-3-642-76991-7\\_6](https://doi.org/10.1007/978-3-642-76991-7_6)
- Kroshny, I. (2018). Will investments come to Russia in 2019. Retrieved from: <http://betafinance.ru/blogs/pridut-li-investicii-v-rossiyu-v-2019-godu.html>.
- Kucharcíková, A., Tokarcíková, E., Klucka, J., & Konešková, J. (2015). Foreign direct investment: Impact on sustainable development in regions of Slovak Republic. *Journal of Security and Sustainability Issues*, 5(1), 59-71. [https://doi.org/10.9770/jssi.2015.5.1\(5\)](https://doi.org/10.9770/jssi.2015.5.1(5))
- Kuzmin, E. A., Volkova, E. E., & Fomina, A. V. (2019). Research on the concentration of companies in the electric power market of Russia. *International Journal of Energy Economics and Policy*, 9(1), 130-136. <https://doi.org/10.32479/ijeeep.7169>
- Kvashnina, I. A. (2019). New trends in the global flows of direct investment. *The Bulletin of the Institute of Economics of the Russian Academy of Sciences*, 4, 125-133.
- Lambert, T. E. (2017). Monopoly capital and entrepreneurship: Whither small business? *Journal of Eurasian Economic Dialogue*, 2(3), 1-12.
- Lily J., Kogid M., Mulok D., Sang, L. T., & Asid, R. (2014). Exchange rate movement and foreign direct investment in Asean economies. *Economics Research International*. Article ID 320949. <https://doi.org/10.1155/2014/320949>
- Litau, E. (2018). The information problem on the way to becoming a “Gazelle.” In: *Proceedings of the European Conference on Innovation and Entrepreneurship, ECIE* (Vol. 2018-September, pp. 394–401).
- Litau, E. Y. (2019). Concept of entrepreneurship anti-ideology. *Entrepreneurship and Sustainability Issues*, 7(2), 1308-1318. [http://doi.org/10.9770/jesi.2019.7.2\(35\)](http://doi.org/10.9770/jesi.2019.7.2(35))
- Masten, C. (2007). *The impact of exchange rate volatility on U.S foreign direct investment in Latin America*. Dissertation in University of Delaware.
- Nikitina, M. G., Pobirchenko, V. V., Shutaieva, E. A., & Karlova, A. I. (2018). The investment component in a nation’s economic security: The case of the Russian Federation. *Entrepreneurship and Sustainability Issues*, 6(2), 958-967. [http://doi.org/10.9770/jesi.2018.6.2\(32\)](http://doi.org/10.9770/jesi.2018.6.2(32))
- Nosova, O. V. (2016). A new level of interaction between foreign direct investment and economic growth. *Fotin’s Reading*, 2(5), 156-169.
- Omankhanlen, A. (2011). The effect of exchange rate and inflation on foreign direct investment and its relationship with economic growth in Nigeria. *Economics and Applied Informatics*, 1, 5-16.
- Ponomarev, V. A., & Petrov, M. V. (2019). Territorial interaction is the basis for the development of a small innovative enterprise and other territorial enterprises. *Radio Industry (Russia)*, 29(1), 61-66. <https://doi.org/10.21778/2413-9599-2019-29-1-61-66>
- Rambler (2019). The CBR of the RF lowered its forecast for net outflow of capital from the Russian Federation for 2019-2022. Retrieved from: <https://finance.rambler.ru/realty/43047631-tsb-rf-ponizil-prognoz-po-chistomu-ottoku-kapitala-iz-rf-na-2019-2022-gody/>
- Raputsoane, L. (2019). Temporal homogeneity between financial stress and the economic cycle. *Journal of Eurasian Economic Dialogue*, 4(2), 18–28.
- Rosstat (2019a). Official website of the Federal State Statistics Service in Russia. Retrieved from: [http://www.gks.ru/free\\_doc/new\\_site/prices/potr/tab-potr1.htm](http://www.gks.ru/free_doc/new_site/prices/potr/tab-potr1.htm).
- Rosstat (2019b). Official website of the Federal State Statistics Service in Russia. Retrieved from:

[http://www.gks.ru/wps/wcm/connect/rosstat\\_main/rosstat/ru/statistics/ftrade/#](http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/ftrade/#).

Sharifi-Renani, H. & Mirfatah, M. (2012). The impact of exchange rate volatility on foreign direct investment in Iran. *Procedia Economics and Finance*, 1, 365-373. [https://doi.org/10.1016/S2212-5671\(12\)00042-1](https://doi.org/10.1016/S2212-5671(12)00042-1)

Šimelyte, A., & Antanavičiene, J. G. (2013). Foreign direct investment policy as an instrument for sustainable economic growth: A case of Ireland. *Journal of Security and Sustainability Issues*, 2(4), 25-34. [https://doi.org/10.9770/jssi.2013.2.4\(3\)](https://doi.org/10.9770/jssi.2013.2.4(3))

Smirnov, R. O. (2017). Issues of commercialization of innovative technologies in the Russian Federation in the field of entrepreneurial activities. *Radio Industry (Russia)*, 3, 110-112. <https://doi.org/10.21778/2413-9599-2017-3-110-112>

Svenson, D. L. (1994). The impact of U.S. tax reform on foreign direct investment in the United States. *Journal of Public Economics*, 54(2), 243-266. [https://doi.org/10.1016/0047-2727\(94\)90062-0](https://doi.org/10.1016/0047-2727(94)90062-0)

The Bulletin of the Department for Research and Forecast of the Central Bank of Russia. What trends signify. (2019). *Macroeconomics and Markets*, 3(31), 62-64.

The Central Bank of Russia (2019). Official website of the Bank of Russia. Retrieved from: <https://www.cbr.ru/statistics/?prtid=svs>.

The Forecast of the Socio-Economic Development of the Russian Federation for the Period until 2024. Retrieved from: <http://economy.gov.ru/minec/activity/sections/macro/201801101>.

The plan of actions to accelerate the growth rate of investment in fixed assets and increase their share in gross domestic product to 25%. (2018). Retrieved from:

<http://government.ru/news/35925/>  
Valyaeva, G. G., Volkova, E. A., Melnikova, A. V. (2016). Foreign direct investment in the Russian Federation. *Corporate Economics*, 4(8), 43-49.

Verbeke, A., Li, L. & Goerzen, A. (2009). Toward more effective research on the multinationality-performance relationship. *Management International Review*, 49(2), 149-161. <https://doi.org/10.1007/s11575-008-0133-6>

Welfens, P. J. J., & Jasinski P. (1994). *Privatization and foreign direct investment in transforming economies*. Dartmouth Publishing Company Limited. [https://doi.org/10.1007/978-3-642-78615-0\\_6](https://doi.org/10.1007/978-3-642-78615-0_6)

Xiong, R. (2005). *Impact of exchange rate uncertainty on foreign direct investment*. Dissertation in University of Wisconsin-Milwaukee.