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Elza Iusufova

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**Analysing Transition Process of Russia:
Foreign Direct Investment Distribution across
Regions**

Bachelor Thesis

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Author: Bc. Elza Iusfova

Supervisor: Nargiza Alimukhamedova, Ph.D.

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Abstract

The purpose of this thesis is to shed more light on the determinants for attracting foreign direct investment (FDI) into the regions in case of Russia. As a novel contribution to the general literature on FDI, a new variable of quality-of-life, which has not been used in previous works, is tested for its impact on FDI. Using a sample of 70 regions for the year 2013, we find that the two variables have the strongest effect on determining FDI inflows towards Russia: gross regional product and investment risk. While other variables as regional population, quality-of-life index, educated population, level of industrialization and transportation are found not to be significant. This implies that most regions in Russia have similar level of development, which makes them not different from their neighbours, and hence not attractive for foreign investors.

Keywords

Foreign Direct Investments, FDI distribution, regional development, investment climate, transition economy

Declaration of Authorship

1. The author hereby declares that he compiled this thesis independently, using only the listed resources and literature.
2. The author hereby declares that all the sources and literature used have been properly cited.
3. The author hereby declares that the thesis has not been used to obtain a different or the same degree.

Prague, May 11, 2016

Elza Iusufova

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Background Information and Motivation:

The role of inward Foreign Direct Investment (FDI) in the development of the country is very crucial. FDI has innumerable effects on the host country's economy. It influences income, production, prices, employment, economic growth, development and general welfare of the recipient country. FDI is the most significant channels for the dissemination of modern technology. Therefore, FDI plays a key role in the development of emerging economy because the very essence of economic development is the rapid and efficient transfer. In last two-three decades world has experienced a massive change in terms of geopolitics, economics and in organization and distribution of production. For several reasons, emerging economy of Russia have acquired important role in the world economy as the source of natural resources, technology, a large skilled workforce, and a huge consumer market.

Following the collapse of the Soviet Union in 1991, Russia opened its doors to FDI. During the 1990s the amount of FDI flowing into Russia remained fairly flat due to poorly orchestrated privatizations and the lack of secure property rights.

After 2005, FDI inflows grew exponentially, due to investments in newly liberalized sectors such as the power generative industries, the automotive and real estate sectors. Since the sharp drop in 2009 due to the financial crisis, FDI has recovered partially. Foreign investors remain motivated by the continued strong growth of the consumer market and affordable labor costs, coupled with productivity gains. They also continue to be attracted by high returns in energy and other natural-resource related projects. Nowadays Russia seems attractive for investors. There are several key advantages of investing in Russia, such as:

1. Large consumer market;

With a population of over 140 million people and constantly increasing income per capita, Russia provides a large and booming internal market offering attractive growth potential. Strong internal demand for all kinds of goods and services and insufficient supply from local sources create a gap that is largely covered by imports.

2. Highly skilled and well-educated human capital;

Russia has one of the most highly skilled workforces in the world. Excellent educational background, engineering practice allows Russian professionals to take up leading positions in high technology areas.

3. Vast natural resources;

Russia takes the first place in the world in per capita resources. It is well placed amongst the richest countries in terms of natural gas, oil, coal, minerals, metals and energy. With its forest resources being the largest in the world, Russia also has tremendous reserves of drinking and fresh water.

4. Unique geographic position;

Russia links Europe with Asia and also borders the North American continent. It offers worldwide sea and air transportation as well as the developed networks of rail and road transit routes. Russia's geography facilitates building effective international and domestic supply-production-market chains.

5. Fast growing and technologically advanced economy;

Russia's economy is one of the most dynamically developing and attractive in the world. Strong Russian scientific knowledge provides excellent opportunities for research and development partnerships with Russian research institutes and universities. Critical technological areas eligible for government co-financing on a competitive basis are Aerospace, Aviation, Shipbuilding, Automotive, Machinery, Metallurgy, Construction, Chemistry and pharmaceuticals, Nuclear physics and many more.

6. Attractive taxation system;

The Russian Tax system is becoming increasingly oriented toward the investor. Comprehensible tax rates and the policy of resolving contradictions and ambiguities in tax legislation in favor of the taxpayer testify in favor of this fact.

7. Extensive government support;

Investment in the Russian economy is strongly supported by federal and regional authorities. Such federal initiatives as the Investment Fund, Foreign Investment Advisory Council and Special Economic Zones as well as public-private partnership opportunities and large investment and development programs serve to accelerate the investment inflow and to further enhance the Russian investment climate.

8. Stable social and political system.

Russia is a member of G8, the United Nations, APEC, SCO, and the CIS. It has built a politically stable system with respectful and fair foreign relations policy. The Russian government aims to steadily improve the citizen's quality of life. Moreover, one of the most attractive reasons is low level of FDI, which makes weak competition.

Russia is the world's largest country in terms of territory, with a consumer market of over 140 million people, vast natural resources, a highly educated workforce,

and technologically advanced research and production capabilities. Russia has tremendous growth potential. Investment opportunities exist in every region and in every sector of Russia's economy, with a wide array of government institutions, instruments and investment programs, as well as strong support for investors at all levels — federal, regional and municipal.

Hypotheses:

1. FDI inflows to Russia have increased substantially in the past decade.
2. FDI remains concentrated in resource rich regions and in cities that provide access to the consumer market.
3. Russia's accession to the WTO has a positive impact on the investment climate. Also the business climate will improve by making it more competitive.

Methodology:

The study is based on a mixed research methods consisting of a combination of qualitative description of FDI pattern in Russia as well as quantitative part analyzing the determinants of FDI inflows into regions.

The first part will consist of a descriptive research. We will analyze the evolution of increasing FDI inflows to Russia. This period will start from the breakdown of Soviet block and cover the transition process in the country.

The second part will be focused on studying the final role of inward Foreign Direct Investment in the development of the country using secondary data.

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Acronyms

GDP	Gross Domestic Product
FDI	Foreign Direct Investment
FPI	Foreign Portfolio Investment
CIS	Commonwealth of Independent States
FEZ	Free Economic Zones
USSR	Union of Soviet Socialist Republics
MIC	Military-Industrial Complex
R&D	Research and Development
STP	Scientific and Technological Progress
FTA	Foreign Trade Activities
Rosstat	Russian Federal State Statistics
NRA	National Rating Agency
USD	United States Dollar
GRP	Gross Regional Product
WTO	World Trade Organization
HDI	Human Development Index
RIA	Russian News Agency
MNEs	Multinational enterprises
MLR	Multiple Linear Regression
RESET	Ramsey's Regression Specification Error Test

1. Introduction and Motivation

Foreign investment plays a significant role in the economic development of any country, in spite of its level of economic whether it is developed or developing country. Foreign direct investment (FDI) is one of the key macroeconomic indicators characterizing the development of the countries and regions (Potapova, 2013). FDI reflects the long-term economic interest of foreign investors in doing business in the country. Over last decade, Russia is among the leaders in FDI inflow (Potapova, 2013).

Foreign investors are mainly attracted by the presence of highly skilled and at the same time inexpensive labor, vast market of raw materials, and the lack of serious competition from the Russian entrepreneurs. In general, foreign investors are mostly interested in the industries such as fuel and energy complex, timber industry, processing, food industry, construction, and healthcare.

Russian legislation is trying to strengthen the position of foreign investors, acting in accordance with the same rules of international law regulation of investment processes as well as trying to provide guarantees to foreign investors according to Russian, and also the relevant international financial institutions.

After the default in August 1998, the volume of FDI in Russia has rapidly grown. During the period from 1992 to 1998, the volume of incoming FDI did not exceed 1.4 billion USD per year (Rosstat). Thanks to the economic recovery that began in 1999, foreign investment increased again, and in the mid-2000s Russia became one of the main destinations of FDI in the world. The crisis of 2008-2009 interrupted this trend. After the crisis, the growth gradually resumed, however the pre-crisis level has not been achieved. The volume of foreign investment in the Russian economy has increased steadily, starting from 2010. The share of direct investment in 2013 reached the maximum value of total foreign investment and made 15.35%.

Along with the growth of FDI in 2010-2013, Russia improved its position in one of the leading international research on FDI Confidence Index made by the firm A.T. Kearney in 2013. In 2010, Russia was on the G18th place. Then at the end of 2013, it almost reached the top ten leaders and took 11th place. Promotion of Russia in this ranking indicates the growing interest of international companies to invest in the Russian economy.

However, two negative features hide behind the impressive figures of FDI inflows into Russia: offshore origin of a substantial portion of FDI into Russia and the extremely uneven distribution of FDI among the regions of Russia.

A large proportion of incoming FDI in Russia is the result of so-called round-tripping. It is a phenomenon in which the investment coming into the country is the result of the return of capital, previously extracted in offshore jurisdictions. Almost all FDI coming from Cyprus or the British Virgin Islands have the Russian origin. This is confirmed by the fact that these offshore territories are among both the largest investors in the Russian economy and the largest recipients of Russian investments. Various representatives of the Russian authorities have repeatedly called offshore investments as one of the main problems of the Russian economy. In June 2013, Vladimir Putin developed a national plan to fight against the offshores, which, according to the President words, cause substantial harm to the Russian economy and hinder the attraction of foreign investment¹. The first specific step in this plan was the adoption of the Law №134-FZ, aimed to struggle with the withdrawal of capital to offshore zones.

The problem of uneven distribution of investment flows in the country was also emphasized by the Russian governance. The inefficient regional policy in the field of investments is the main reason of such uneven distribution. Most regions did not develop an investment strategy and appropriate competent state authority. Only in some regions, investment programs are implemented and measures are taken to improve the investment climate.

Attracting FDI is one of the most actual tasks of economic policy at both the federal and regional level. In December 2013, a national investment agency "Invest in Russia" was created under the auspices of the Ministry of Regional Development of the Russian Federation, whose main objectives are to attract foreign investors and to promote investment image of Russia². Also a special organization was established responsible for the work with foreign investors. However, not all regions managed to build an effective system to attract foreign investment. The

¹ Results of the press-conference following the meeting of Heads of State and Government of the "Group of Eight" (2013). Official site of the President of Russia.

² RIA "Invest in Russia" (2013): "Goals, objectives and functions of the Agency".

methodology, used in this analytical review, allows to select the most successful regions and to estimate the main reasons for their success.

2. Literature review

2.1. Role and importance of foreign direct investment

Today sustainable economic development of any country is impossible without the active participation in global economic relations. Along with international trade the international flows of investment capital has an increasing value in effective cooperation between the countries.

In recent years it became a topical issue of attracting external foreign capital in the Russian economy. Foreign investment is considered to be one of the most important conditions for the stabilization and growth of the national economy.

Attraction of foreign investments into the country gives a number of advantages³. Firstly, the country gets possibility of additional financing for large investment projects. Secondly, foreign investments give a new impulse to development and growth of internal investment. Thirdly, investor country brings the financial resources and in addition many years' experience. Forth, the inflow of foreign capital in innovative projects permits the recipient country to gain access to the latest technologies, equipment and the advanced methods of the organization of production. Finally, increase in foreign investment contributes to the country's integration into the world economy, which provides its sustainable economic development.

Under The Federal Law dated 09.07.1999 N 160-FZ "On Foreign Investments in the Russian Federation" (the Law No. 160-FZ) a foreign investor⁴ is required:

- a foreign legal entity or organization which is not a legal entity, entitled in accordance with the law of the country of its incorporation to make investments in Russia;

³ RIA News (2012): "Resource Transformation Of Russia".

⁴ GRATA Law Firm (2015): "Investments in the Russian federation: guaranties, incentives and restrictions"

- a foreign national entitled in accordance with the law of the country of his/her citizenship to make investments in Russia;
- a stateless individual permanently residing outside the territory of Russia entitled in accordance with the law of the country of his/her permanent residence to make investments in Russia;
- an international organization entitled in accordance with an international treaty of the Russian Federation to make investments in Russia;
- foreign states in accordance with the procedure established by Russian federal laws.

There are also other definitions of foreign investments. Foreign investment is a long-term investment of the enterprise capital in the industry, agriculture and other branches of the country by the country investor.

Foreign investment implements in the Russian Federation in the following ways: shareholding in the enterprises and organizations jointly with legal entities and citizens of the country; the creation of enterprises wholly owned by foreign investors; acquisition of property, including securities; the acquisition of rights to use land and other natural resources, as well as other property rights on their own or with the participation of legal entities or citizens of the country; conclusion of contracts with legal entities and citizens, providing other forms of foreign investment.

2.2 Classification of foreign direct investment

Primarily, foreign investments can be divided into foreign direct investment (FDI), foreign portfolio investment (FPI) and other investments.

Foreign direct investment (FDI) represents investments of foreign investors, giving them the right to control and actively participate in the management of the enterprise in the territory of another country. Foreign portfolio investment (FPI) is investments of foreign investors, mainly related to investment in securities in order to obtain or increase revenues in the form of interest, dividends and stock prices differences. It also includes investments of foreign investors in bonds, notes and other debt instruments, government and municipal securities. Other investments represent bank deposits, trade credits, loans to foreign governments, loans from international financial institutions, other loans, and others.

The main feature of the direct foreign investments is to gain a sustainable impact on the company. It distinguishes FDI from FPI (purchase of shares less than 10% in the authorized capital of the organization, and also bonds, promissory notes and other debt securities) and other investments (trade credits, etc.). In others words, if FDI provides control over production, the FPI only receives income - dividends. Direct investments have priority value because they have a significant impact on the national economy and international business as a whole.

A legal definition of FDI in Russia can be found in Article II of the Law on Foreign Investment in the Russian Federation as of July 9, 1999) which states that “FDI is defined as (1) a 10% or higher investment by a foreign investor in share capital, (2) fixed capital investment in an affiliate of a foreign company established in Russia, (3) a lease by a foreign investor of an article classified in the list of external transaction goods between the Commonwealth of Independent States (CIS), which exceeds 100 million roubles” (Bucclato & Santangelo, 2009).

Strategically, FDI can also be classified into two types (Gurzhiyeva, 2013):

1. Horizontal investments involve production abroad: almost the same products and services as in the home country. This type of investing is called horizontal because transnational company replicates the same activities in different countries.
2. Vertical investments refer to those international companies that share production process geographically. They are called vertical because transnational company shares productive chain vertically, controlling some stage of production abroad. The peculiarity of this separation is that the manufacturing process includes multiple stages of production, requiring various consumable materials. If the price of these components vary by country, it is advantage for the company to divide a production chain.

FDI implements in the form of the following operations: a) the establishment of the company in the territory of another country, fully owned by foreign investors; b) the purchase of existing companies abroad; c) attraction of the foreign capital on the basis of a concession or production sharing agreements; g) the establishment of free economic zones (FEZ) to involve foreign investors in certain regions of the country; d) the establishment of joint ventures with different foreign ownership (different share of foreign participation), including the sale of shares of Russian joint stock companies to foreign investors.

2.3 Impact assessment of FDI: methodology and empirical findings

Nowadays, as an actively developing country Russia is attractive for foreign investors. But there are some domestic issues that hinder investment process from improvement. This topic is very actual, therefore, it is important to review some relevant articles concerning the distribution of Foreign Direct Investments across Russian regions. We are going to summarize major findings of previous empirical studies on FDI distribution in Russia.

In the paper by Buccellato & Santangelo (2009), the authors explored the hypothesis of spatial effects in the allocation of FDI and analyzed the determinants of FDI towards Russian regions. The analysis shows that agglomeration effect (“the level of FDI in a given region depends positively on the level of FDI received by the regions in its neighborhood”) and remoteness effect (“the distance of each Russian regions from the most important outflows countries”) play a significant role in defining FDI inflows towards 68 Russian regions over the period 2000-2004. The authors concluded that only vertical specialization with agglomeration motivation can drive the Russian FDI.

As it was mention earlier, uneven distribution of investments across the country stays as one of the main problems. In the work of Broadman & Recanatini (2001) this question was explored over the period 1995-1999. 62% of the foreign investments focused in four regions: Moscow (44.2%), Moscow Oblast (9.8%), St. Petersburg (5.3%) and Leningrad Oblast (2.7%), which made only 13% of Russia’s population.

Over the past decade Russian government tried to improve foreign policy in order to attract investors to other part of the country. In the paper Bradshaw (2002) divided Russian regions into five groups according to their attractiveness for foreign investors: “the control centre for the national economy (the Moscow region); regions that are relevant as industrial and financial centres (as St. Petersburg and Samara region); regions that have major port or gateway function (as St. Petersburg); regions with substantial mineral wealth (as Sakhalin region); and regions, which benefited from substitutes for the previous imports due to dramatic depreciation of the rouble after the August 1998 financial crisis” (Bradshaw, 2002).

Another actual research was made by Ahrend (2000). Based on the 50 European companies questionnaire survey the author found, which main factors affected the allocation of FDI in Russian

regions. Based on empirical evidence author found that the following four determinants mainly influence investment decision: “the presence of a large market; the existence of previous investments made by other entrepreneurs; the presence of a partner company necessary for business development; the endowment of raw materials or other production factors in the target region” (Ahrend, 2000).

Iwasaki & Suganuma (2005) provided another evidence on FDI in the regions. The authors tested model using data for 69 regions during the period from 1996 to 2003 on eight variables (climate, natural resources, market size, industrial production, urban population, foreign investment law, free economic zone, product-sharing law). The authors supported with empirical evidence on the regional characteristics, as natural resources endowments, market size, socio-economic development, foreign investment law and free economic zones had a positive impact on FDI attractiveness.

The most recent empirical work examining determinants of FDI in Russia was done by Ledyeva (2007). First, the author estimated the regression using explanatory variables and dummy variables such as market size, infrastructures, level of industrialization, legislative risk, political risk, natural resources and Sakhalin region, respectively. Ledyeva (2007) summed up that the most valuable determinants of FDI inflows into Russian regions were level of industrialization, market size, natural resources and political risk.

Summarizing the main findings from the previous empirical studies we can say that the most significant determining factors of FDI distribution across Russian regions are market size, infrastructures, natural resources, socio-economic development and investment policy.

3. FDI in Russia

The collapse of the Union of Soviet Socialist Republics (USSR) occurred in 1991 and transition of the Russian Federation from a socialist to a market economy led to a long crisis tendency in all spheres of economy, including investment and foreign trade.

According to experts, Russia has natural resources in the amount of 10.2 trillion USD (Rosstat). Only about 1/4 of the Russia's potential is involved in the world economy. The problem of Russian integration into the world economy has a great importance.

According to many experts, Russia has a number of specific features and advantages, which allow successful integrating into the world economy. These include:

1. Raw wealth;
2. Qualified and relatively cheap labor force;
3. Large scale of accumulated fixed assets;
4. Powerful scientific and technical potential.

However, the process of Russia's integration into the world economy constrains the strategic weakness of the Russian economy. Basic weaknesses are:

1. Absence of a full system of financial, organizational, informational support to exporters;
2. Irrational structure of exports and imports;
3. Decline in production and unreasoned conversion of Military-industrial Complex (MIC), which leads to the loss of traditional markets;
4. Research and development (R&D) focuses on military research;
5. Obsolescence of fixed assets;
6. Instability in the economy and politics.

Consequently, it is important to make the following changes in order to bridge the gap that separates Russia from the world leaders. And in order to reduce time of transition to a market economy and integration into the global economic system, it is necessary:

1. establishment of a stable political regime;
2. development and improvement of the market mechanism management;
3. involvement and effective use of foreign investment by creating a favorable investment climate;
4. implementation of an active foreign policy that combines export oriented production with import substitution;

5. stimulation of economic development in the way of scientific and technological progress (STP);
6. accession to the international organizations, conventions and other sources of international law.

As a solution of the above problems, in 1991 economic reforms started, part of which is the reform on foreign trade activities (FTA). The foreign trade activities transformation included the abolition of the state monopoly in foreign trade; the gradual replacement of the administrative (non-tariff) methods of state regulation of foreign economic relations with the tariff; the formation of a new structure of crediting and export insurance; the convertibility of the national currency; the creation of favorable conditions for the inflow of foreign investments into the Russian economy. One of the main objectives of the reform on foreign trade activities is a gradual transition to an open economy

3.1. Russian economy: transition process (1991-1999) and current state (2000-2014)

Period 1991-1997: transfer to market economy

In October 1991 the Russian government made a decision to go for a radical economic reform. Its goal was to transfer the Russian economy into market economy.

Since January 1992 reformation had been started. First, almost 90% of consumer goods (excluding electricity, gas, coal and some food products - bread, milk, etc.) were sold at wholesale prices. The government kept control of retail prices in order to keep prices down. Unemployment rate started to increase. The national income of the country decreased by 25%, industrial production fell by 20%, agriculture – by 12%⁵.

By 1993, the debt of enterprises to each other increased to 4 trillion roubles, which led to the rupture of economic connections between the regions of Russia. All these changes in economics led to a drop in the rouble exchange rate. By 1993, it raised from 80 roubles to 740 roubles for 1 USD. A poverty rate and social inequality sharply increased in the country. Based on the estimates of the World Bank, only 1.5% of the Russian population lived in poverty in 1988.

⁵ Numerical information is provided from the web-site Studopedia and topic Economic Reforms in Russia 1991-1993

However in the middle of 1993 this amount dramatically increased to 40% of the population. The quality of health-care system also declined. Since 1993, country was experiencing a natural decline in population.

In the summer of 1993, a new currency reform was implemented to strengthen local currency, rouble. The purpose of it was to exchange old Soviet banknotes for new Russian one. As a result, there was a sharp inflation.

In October, 1992 mass privatization of the state enterprises in all branches began. Its goal was to deprive the state of monopoly in the sphere of production. During privatization each citizen of the country had to receive the share of state ownership. Privatization checks "vouchers" with a value of 10 000 roubles were issued. Also a special check investment funds was created which helped to sell the vouchers or invest it in any enterprise. By the end of 1993, voucher privatization was generally complete. About 75% of trade enterprises, more than 65% public catering establishments and nearly 75% of service enterprises were privatized. As a result in the country there was a layer of private owners (about several million citizens). Now responsibility passed on to citizens. Each of them could dispose of the property at their discretion, but without the aid of the state.

For the first years of reforms the number of private banks and the exchanges grew. However, the decline in industrial production continued and amounted to 16.2% and in agriculture amounted 4%. Also the activity of 14 thousand farms stopped because of the absence of the necessary support from the state side⁶.

In 1997, the government decided to reform natural monopoly, public pension and the government apparatus. An important task declared the fight against corruption, which is considered as one of the causes of decline in the authority of the Russian power. Also the government decided to abolish the unjustified taxes and customs privileges.

1998-1999: economic crisis

⁶ Numerical information is provided from the web-site Studopedia and topic Economic Reforms in Russia 1991-1993

The economic crisis of 1998 in Russia was one of the most serious economic crises in its history. The main reasons of the economic crisis were a huge public debt of Russia, liquidity crisis, low world prices for raw materials (the basis of Russia's exports), destruction of the financial pyramid of short term government bonds at a certain level of its development. External manifestation of the economic crisis became a technical default, which seriously influenced the development of the economy and the country as a whole.

During the first six months rouble dropped by 3 times against the dollar: from 6 roubles to 21 roubles per USD by January 1, 1999. Devaluation of rouble had an impact on economic development in both ways negative and positive. Negative results were a broken trust of population and foreign investors to Russian banks and the state as a whole, as well as to the national currency. A large number of small businesses and banks were closed. The banking system was in collapse, for the next six months as well. Moreover, population lost considerable share of their savings, therefore the living standard fell. However, this economic default had also a positive impact on the economic development of the country. First cost-effectiveness of exports increased. Second, enterprises, that produced output for the domestic market, increased their competitiveness due to the fact that foreign products had increased dramatically in prices. And third, there were many positive structural changes in the economy.

2000-2013: global financial crisis and recovery

After the default of 1998, the Prime Minister Yevgeny Primakov faced problems of devaluation of rouble and rise in price of import. At the same time under Primakov the Russian production began to grow again. But the restructuring of production did not happen. When Putin came to the power, there was a rapid increase in world oil prices, which made it possible to have high incomes without restructuring of production. Raise in an oil price (from 11-12 USD to 150 USD per barrel in the mid-2000s⁷) made it pointless to invest money into other industries. According to the liberal concept, money was invested in the area with the most profitable output: in raw branches (oil and gas production, construction of tube, etc.). The Russian power believed that they could influence pricing process and play a key role in the world economy, as a controller of the energy market via a huge profit from a high demand. High income allowed to raise pensions

⁷ From the database of Gazprom

and public sector wages and also pay off external debts, which remained after Boris Yeltsin and collapse of the USSR (150-180 billion USD)⁸. As a result, welfare of population increased. But the problem of birth rate was still actual. A special fund “maternity capital” was established in 2007, which supplied money for the second child and the next as well. Also a “safety stock” was formed in case of crisis.

Since the second half of 2008 the global crisis hit Russia, which caused a sharp fall in oil prices, decline in production, and growth in unemployment. At this moment government started to take measure, such as allocation of money from the state reserves to banks and the enterprises. In fact, this money was used inefficiently. Nevertheless, in 2009 oil prices began to rise and later economics stabilized in the country. The government made the first attempt to change the direction of Russian economy. They started talking about necessary modernization. A new Skolkovo scientific center was established. The power began to sponsor the development of innovation and the development of electronic technology.

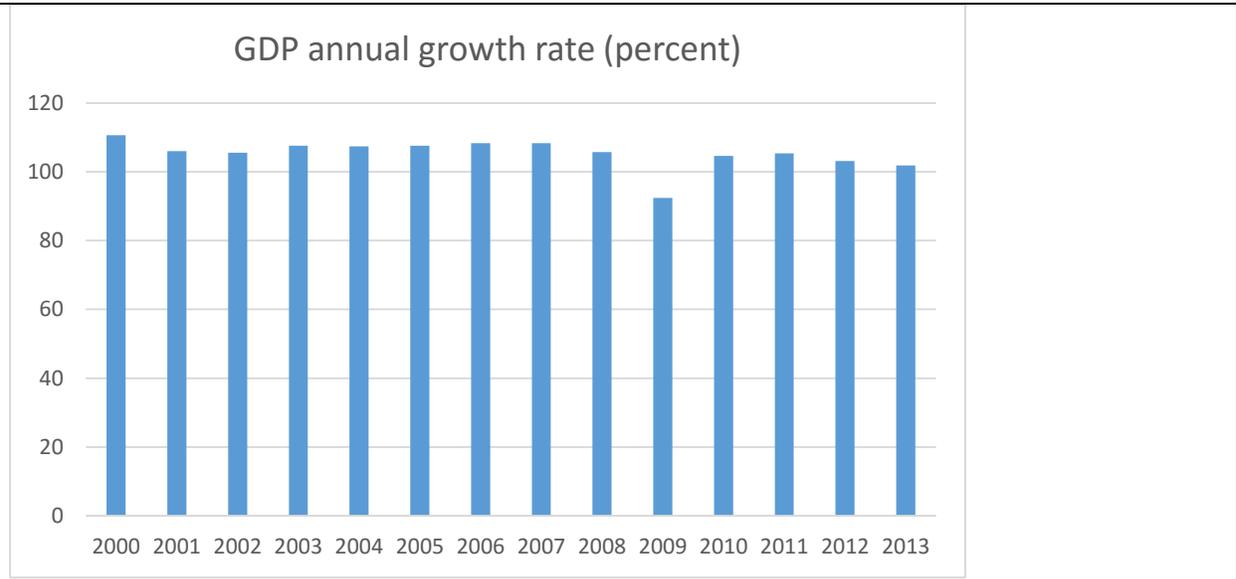
The conflict in South Ossetia in 2008, showed a weak army's fighting capacity. Thus the government provided funding for military needs and development to increase its efficiency.

To sum up the past 14 years under the government of Vladimir Putin and Dmitry Medvedev, it is obvious that the economy has improved significantly if we compare 2000 and 2013. The following indexes had the main changes in economics of Russia during this time period.

1. A GDP annual growth rate of Russia in 2000 exceeded 10%. In the next years the increase in GDP gradually slowed down. However despite this fact, the growth rate of the economy was one of the highest among developing countries. Economy of Russia during this period grew not only due to a sharp increase in profit received from the sale of raw materials, but also largely due to the implementation of key economic reforms (tax, banking, labor and land), tight fiscal policy, as well as competent work of the Russian Central Bank. Meanwhile, it is important to mention that at the moment the current economic model of growth exhausted its potentiality. In 2013, Russia's GDP increased by only 1.3%, and in 2014 - 0.6% (Rosstat).

⁸ From the database of Russian Federal State Statistics (Rosstat)

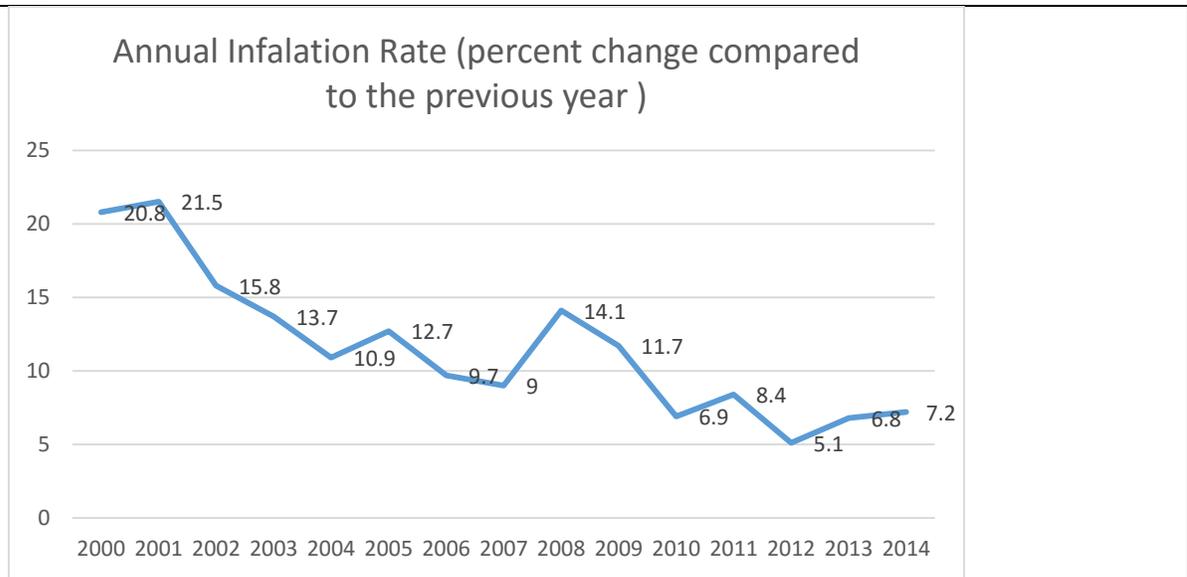
Figure 1. Russian GDP annual growth rate 2000-2013



Source: Russian Federal State Statistics (Rosstat)

2. Since Putin became a president of the country, inflation rate significantly decreased in Russia. In 2000 consumer prices rose by 20.2% and at the end of 2013 this indicator was only 6.5%. Inflation gradually slowed down over the years, except to 2008. However, inflation remains too high, taking into account the current rate of growth of the national economy. Nevertheless, in the future it is expected to slow to 4.5-5.5% (Rosstat).

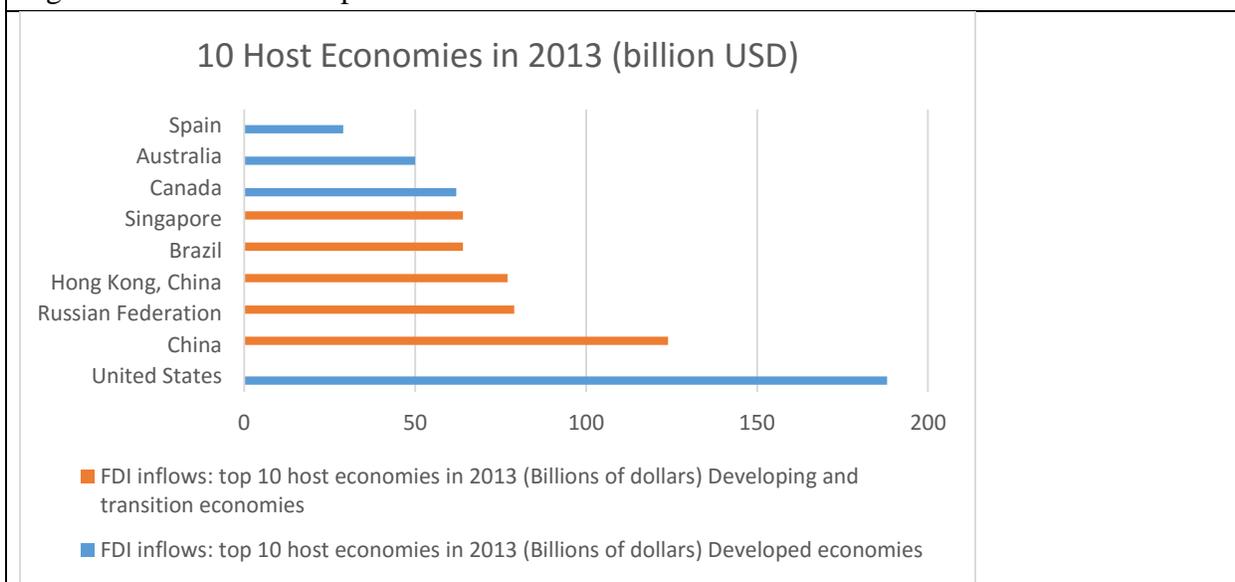
Figure 2. Annual inflation rate in Russia 2000-2014



Source: The World Bank

3. A change in the Russian demographic situation was one of the key priorities of social policy for the last two decades. Since 1992 the death rate exceeded the birth rate in the country, however it finally changed in 2013. According to the Federal State Statistics Service at the end of 2013 1.9 million people were born, and 1.88 million died in the country. Moreover, over the last two years an increase in the birth rate significantly accelerated. This effect was achieved by improving the socio-economic conditions, and using incentive programs, such as the payment of «maternity capital». In the years 2007-2013 about 5 million families received certificates for “maternity capital”.
4. Improvement of an economic situation and its rapid expansion caused growth in foreign investment. Large world investors wanted to earn due to a rapid growth of the Russian economy. If at the beginning of 2000, Russia did not get in the top ten countries in terms of attracting investment, but following the results of 2013 it was included in the top five (UNCTAD, 2014).

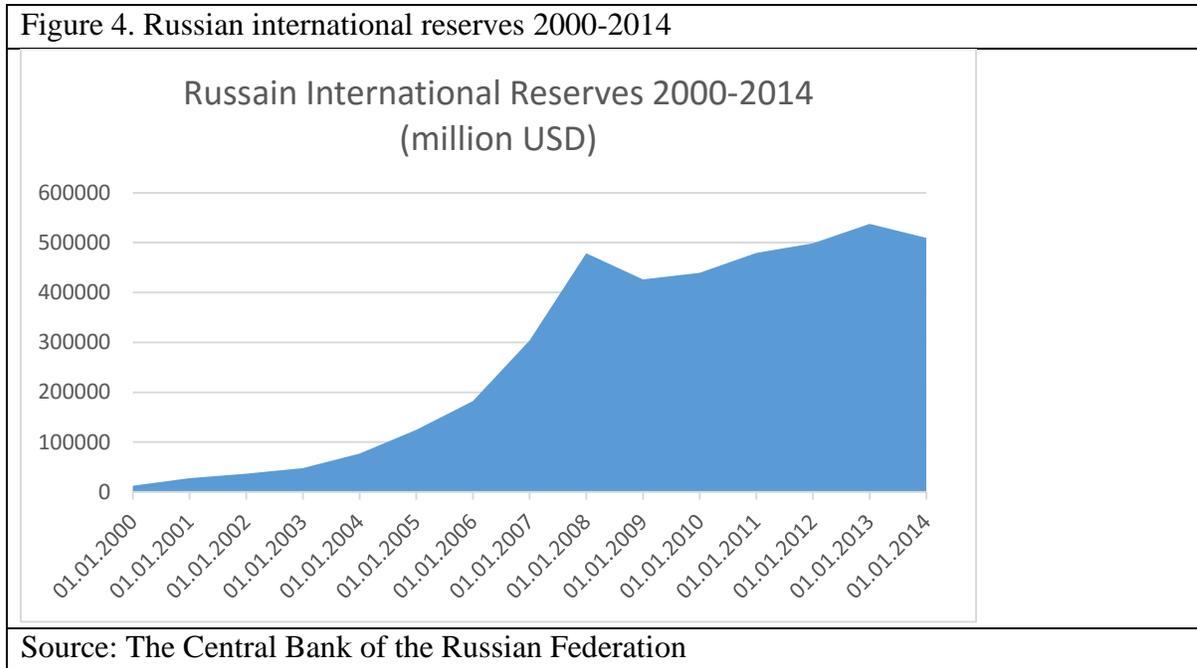
Figure 3. FDI Inflows: top 10 host economies in 2013



Source: United Nations Conference on Trade and Development (UNCTAD), 2014

5. Since the beginning of 2000 the volume of gold and exchange currency reserves had been continually increasing, except for the period of the global financial crisis in 2008-2009. The Bank of Russia was forced to restrain the fall of the rouble, resulting in reduced volume of gold and exchange currency reserves from 596 billion USD to 383

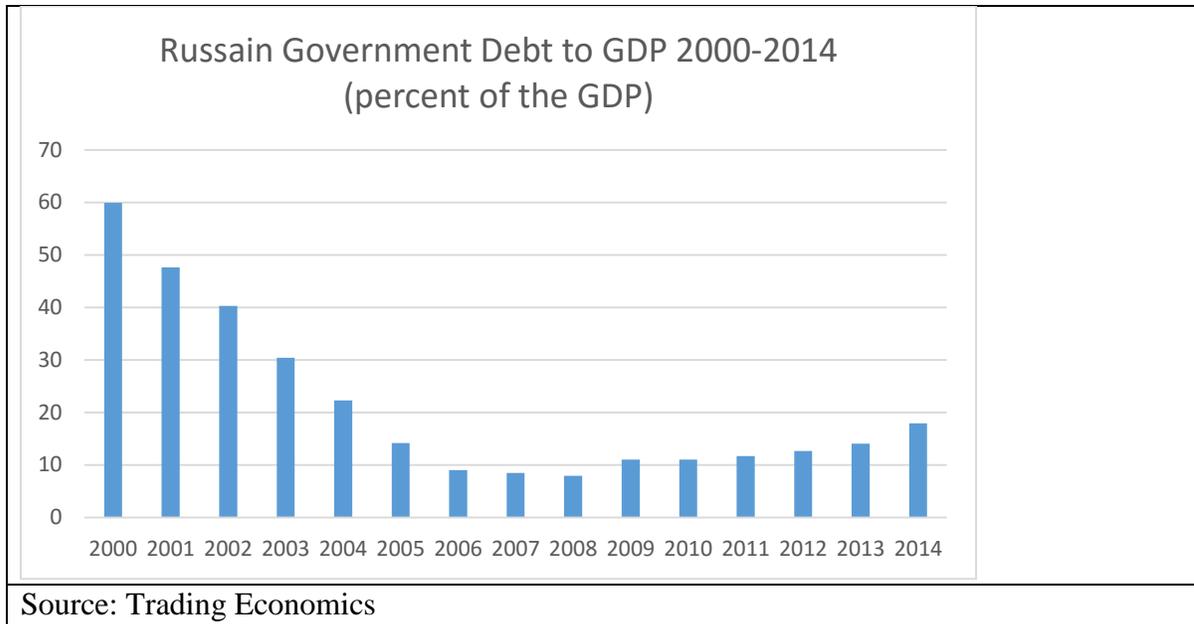
billion USD in April 2009. Nowadays, Russia is one of the largest holders of the international reserves. The volume of Russia's international reserves is 418.9 billion USD in the end of 2013. The historical minimum was recorded on April 2, 1999, when gold and exchange stocks of Russia were reduced to 10.7 billion USD. The Russia's international reserves accumulated due to the sale of raw materials, which price rapidly increased from 2000 to 2008⁹.



6. One of the key points of Putin's economic policy was the maximum decrease in national debt. In 1999 the external public debt of Russia made 138 billion USD, or 78% of GDP. According to data of the Ministry of Finance of Russia, this indicator made 54,881 billion USD or 13% of GDP in April 2014. The most rapid decline in national debt occurred in 2004-2008. The country managed to increase revenue due to improvement of tax legislation and rising global commodity prices. The maximum of Russian national debt was in 1998, 146.4% of GDP.

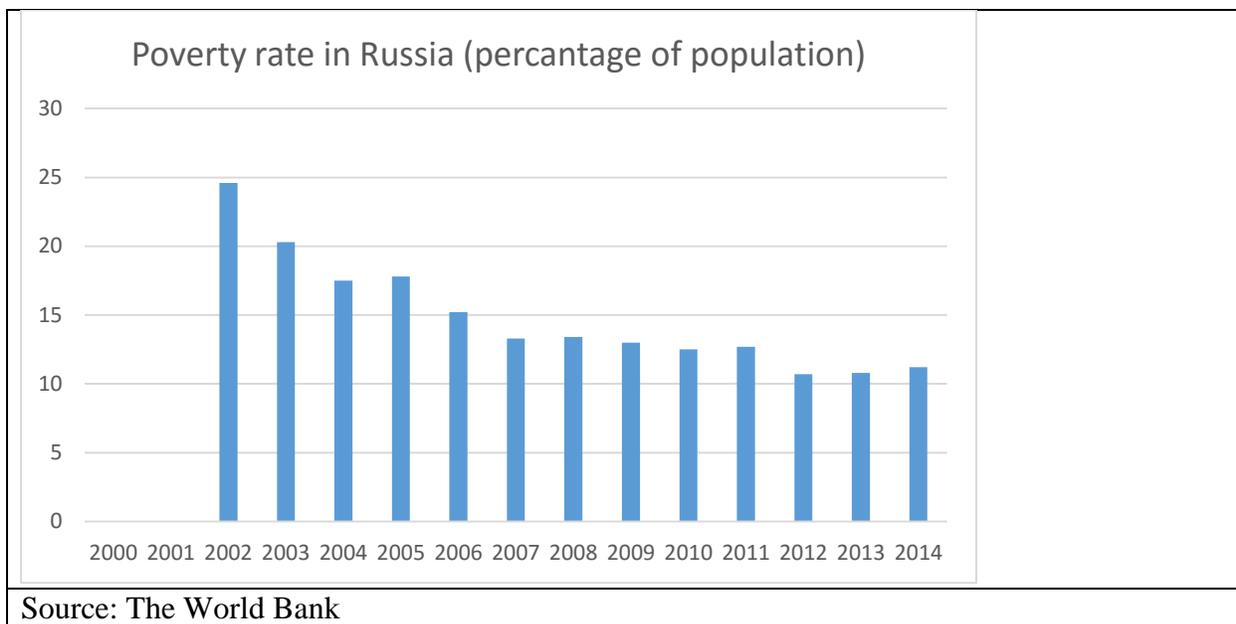
Figure 5. Russian government debt to GDP 2004-2014

⁹From the news portal NONNEWS (2013) "Gold and currency reserves of the world"



7. Since the beginning of 2000 income of the population started to go up. Thanks to a sharp improvement in the economy and a high profit from the sale of raw materials, wages began to increase. In 2000 the average cash income per capita was only 2 281 roubles, however in December 2013 it reached number of 38 340 roubles (Rosstat). But as a negative result, this development led to stratification of income by industries and regions of the country. There were industries with high and low wages, as well as prosperous and disadvantaged.
8. At the end of 1999 about 29.9% of the population were below the poverty line. Since 2000 the rate had been consistently declining. In 2004, the poverty rate fell to 17.6% (25.2 million people), in 2007 - to 13.3%, in 2010 - to 12.5%. The index reached the minimum value in 2012 – 10.9%. The growth of real incomes of the population and improvement of the socio-economic situation in the country contributed to this development. However, from 2011 the index began to increase again, and in 2013 rose to 11.1%. By the end of the 2000th there was a broad middle class in Russia. This share made from 25% to 27% of the total population.

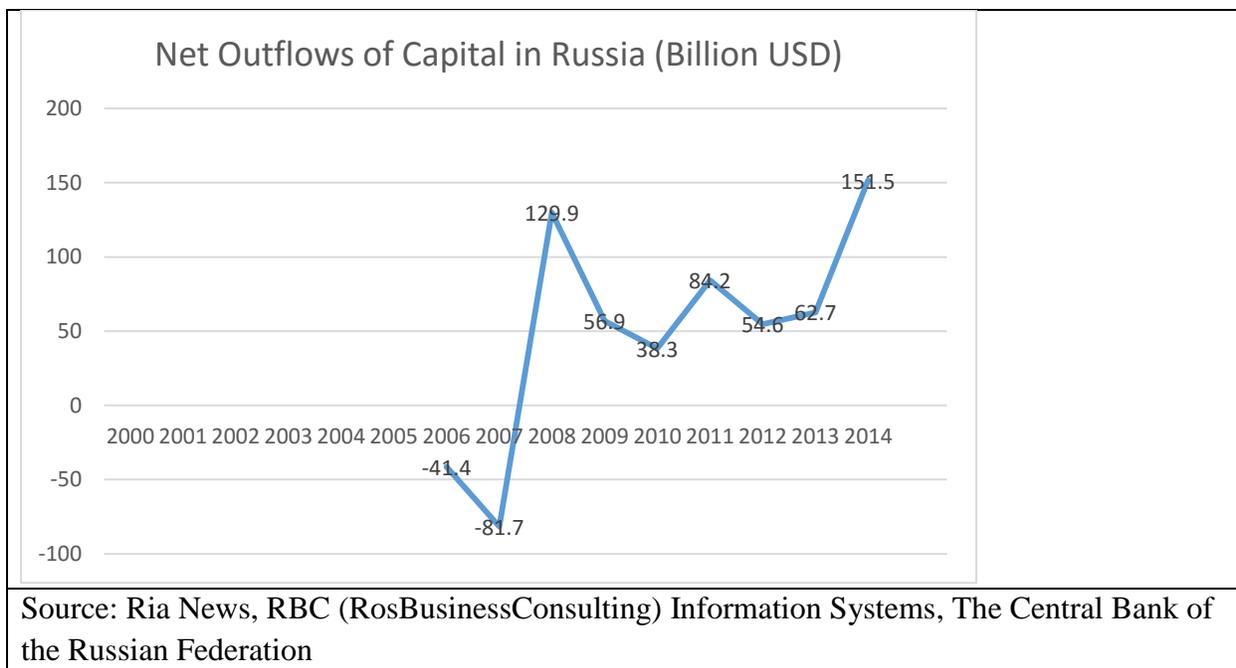
Figure 6. Poverty rate in Russia 2010-2014



9. The human development index (HDI) in Russia increased from 0.691 in 2000 to 0.788 in 2013. At the same time Russia rose in the ranking from 62th place to 55th. The index is used to compare countries on such indicators as life expectancy, literacy, education and longevity. Thus, according to HDI, Russia is on the list with highly developed countries. An average life expectancy is 69.1 years. An average duration of education is 11.7 years. And gross national income per capita is 14.461 thousand USD per year¹⁰.
10. Since the beginning of 2000 the outflow of capital from Russia started to decrease. And the year 2005 was a turning point, because for the first time country could achieve a zero balance between exported and imported capital. In the next 3 years the volume of capital inflows began to exceed the outflow of capital. The maximum level was achieved in 2007, when net inflows were 81.7 billion USD. However, with the start of the global financial crisis in 2008, a negative trend resumed. And even after stabilization of the global and Russian economy, capital outflow didn't stop.

Figure 7. Net outflows of capital in Russia 2005-2014

¹⁰ Numerical information is from Human Development Report (2013) made by United Nations Development Programme



It is important to mention that 2014 is a new breakpoint in economy of Russia. The theoretical and empirical researches cover the development of Russian economy only till 2014. From 2014 international political conflicts have issued economic difficulties. Basically, it is obvious from all figures how economic indicators have turned for the worse after 2013.

3.2. Structure of FDI in economy of Russia: advantages and disadvantages

In general, the main attractive factors of the Russian market to foreign investors are:

1. Value of a commodity market (according to the data of 2005-2006, approximately 80-90% of foreign companies focused on the Russian market as a consumer market).
2. Availability of skilled labor and relatively low labor costs compared to leading economically developed countries.
3. Huge reserves of natural resources. About 20% of the world reserves of mineral resources are on the territory of Russia (including a significant portion of the world's hydrocarbon reserves, coal, iron, nickel, tin, lead, gold, diamonds, etc.).
4. An even rate of economic growth in 2000-2007 and first half of 2008.

A significant event in the history of the world economy became accession of Russia to the World Trade Organization (WTO) in August 2012. According to Russian experts, it has both

negative and positive sides. Negative side contains strengthening of the competitive position of foreign companies in the domestic market, especially in sectors such as engineering, agricultural processing, and business insurance. The positive influence is simplification of the entry of Russian companies to the markets of member countries of the WTO.

Another important factor for direct investors is that the subsidiaries of large western transnational corporations develop very fast in Russia. Also nowadays corporate management is improved in Russia. Initially, a poor corporate management was a barrier for foreign investors.

All advantages and disadvantages of Russia's investment are summarized in Table 1.

Table 1. Advantages and disadvantages of Russia's investment climate

Strengths	Weaknesses
<ul style="list-style-type: none"> • geographical location (proximity to the European and Asian market) • qualified work force • presence of a significant amount of natural resources • relatively low cost of production factors • adoption of the land, customs and tax codes • growing purchasing power of the domestic market 	<ul style="list-style-type: none"> • corruption • administrative barriers • high uncertainty • significant regulatory barriers for business • opacity of the political decision-making • inefficiency of the judicial system • "development" of bureaucracy • weak competition • organized crime
Opportunities	Threats
<ul style="list-style-type: none"> • high level of economic growth • macroeconomic stability • political stability • structural reforms 	<ul style="list-style-type: none"> • high dependence of political and economic stability of the situation on the world oil markets • absence of a coherent and targeted policies to attract FDI • weak investment legislation
<p>Source: Kuzovleva, I. and Blagoder, T. (2008): "Assessment of the institutional component of the activity of subjects of the regional investment and construction complex"</p>	

In the Russian Federation, the investment can be actualized by:

- the establishment of enterprises with participation of foreign capital (joint ventures);
- the creation of enterprises wholly owned by foreign investors, their branches representative offices;
- acquisition in the ownership of enterprises, property, buildings, structures, shares in companies, shares, bonds and other securities by a foreign investor;
- acquisition of rights to use land and other natural resources, as well as other property rights and etc.;
- granting loans, credits, property and property rights, etc.

3.3. Main foreign investors: countries

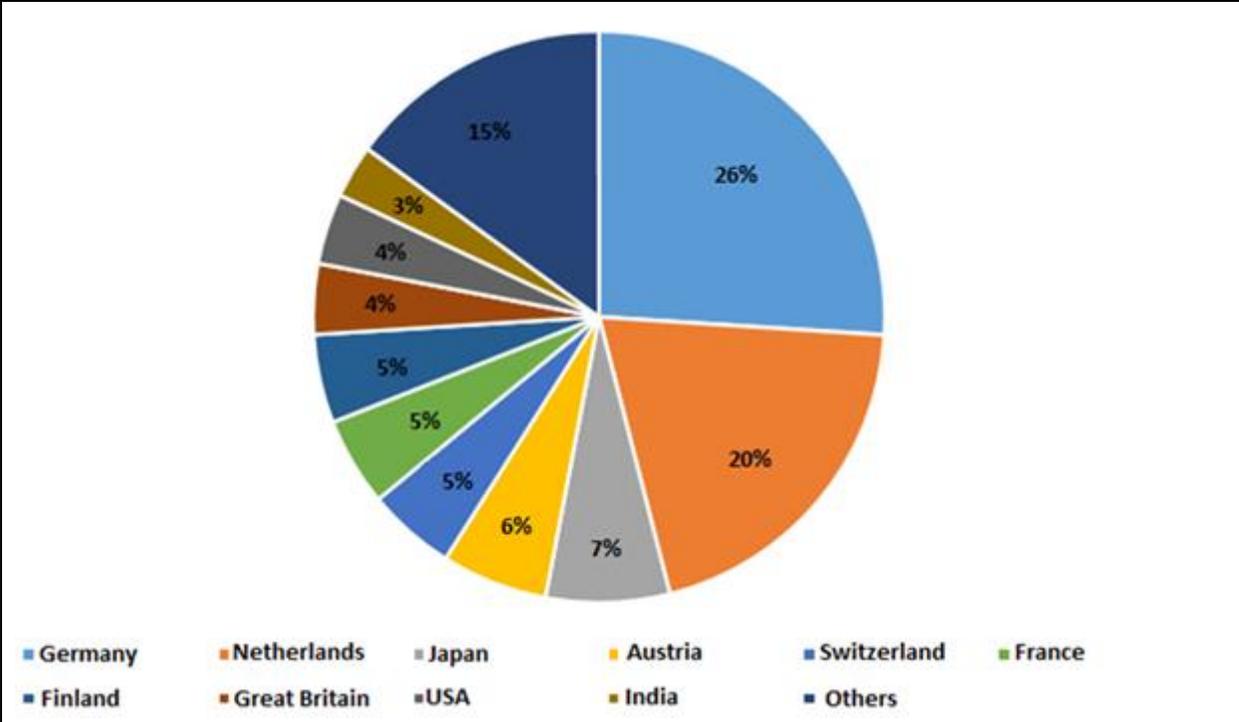
In 2013 Russia`s economy received 193.685 billion USD from foreign direct investment which is 39.9% more than in the previous year, 2012 (161,132 billion USD). Investments with an offshore origin made about 41.35% from the total investment in 2013. In 2012 this share was slightly less 40.59%. As in 2012 also in 2013 the most popular offshore country was Cyprus, which accounted for 89% of the total offshore investment. Also the British Virgin Islands, the United Arab Emirates, the Bahamas, Jersey and the Seychelles were making investment in Russia as the offshores¹¹.

In Dagestan, Kalmykia, Tuva and Chukotka regions 100% of FDI inflows were created by investors registered in offshore zones. While in other eight subjects of the country in 2013 the contribution of offshore zones was nil (the Kirov region, Chuvashia, Buryatia, the Kamchatka region and others). FDI in these regions can be considered as the result of actual activity of foreign investors. (See Appendix 1)

Total FDI inflows into Russia without offshore investments in 2013 amounted to 15.262 billion USD (in 2012, 11.090 billion USD). The contribution of ten major investor countries in FDI inflows to Russia without offshore companies is shown in the following diagram.

Figure 8. Contribution of ten major investor countries in the overall FDI inflows to Russia without offshore companies 2013

¹¹ Numerical information from the National Rating Agency (2013) and Russian Federal State Statistics



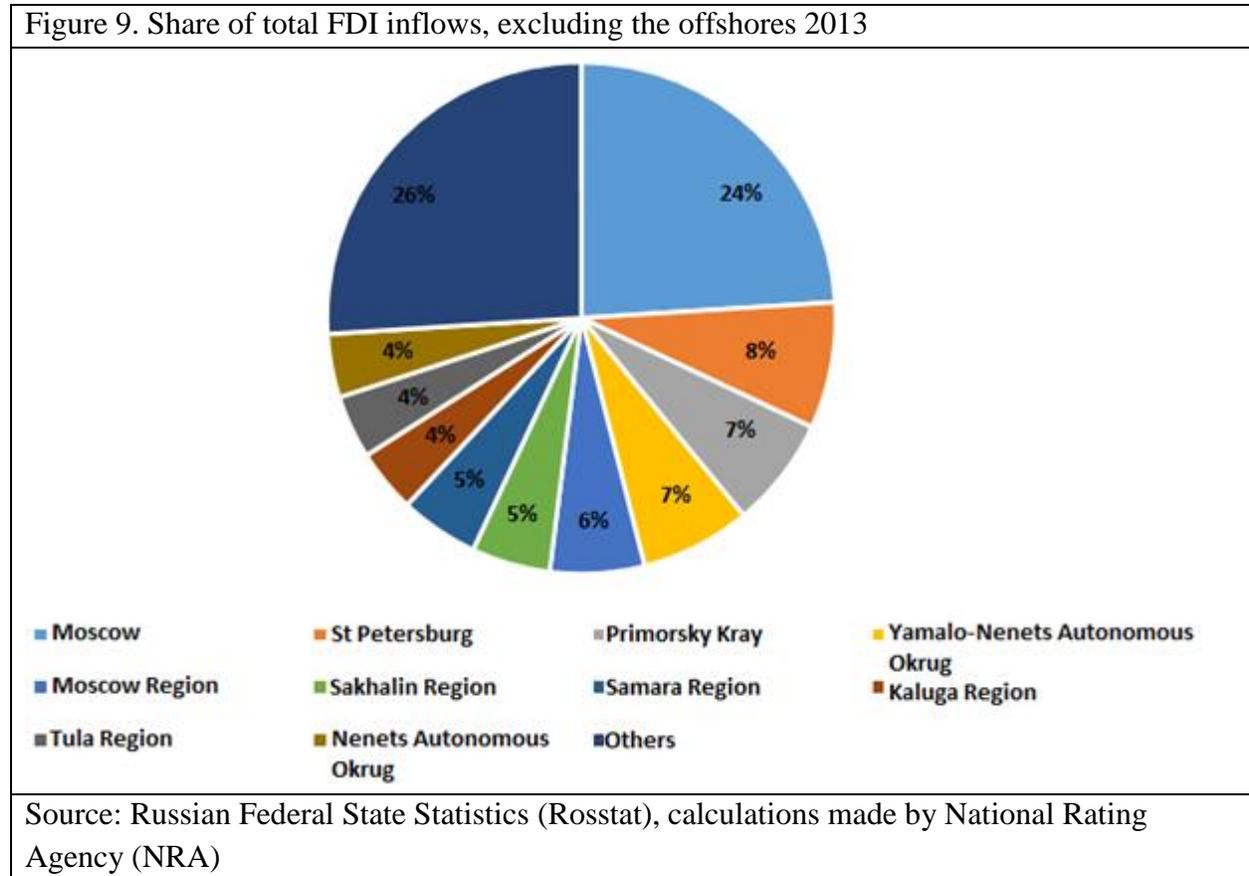
Source: Russian Federal State Statistics (Rosstat), calculations made by National Rating Agency (NRA)

Following the results of 2013 companies from Germany strengthened its role as the leading foreign investor in Russia. The share of Germany in the total inflow of foreign direct investment reached 26% (in 2012 this proportion was 16%). Second place in the list of the largest foreign direct investors is the Netherlands, 20%. Japan became one more country which increased investment activity in 2013 and took the third place in the list of the investors (7% share in the total FDI inflows). In total the share of ten leading countries accounted for 85% of the total FDI inflows, excluding offshore countries.

3.4. Regional data on FDI in Russia

FDI distribution is uneven across the regions in Russia. Over the past five years, according to the report of Russian Central Bank, over 70% of FDI is concentrated in Moscow, more than 10% is in Saint Petersburg, more than 8% is in the Tyumen Region and almost 5% were received by Moscow region. Such a feature of FDI distribution might cause a future gap in the levels of economic development between regions. Therefore, at the moment authorities issue territorial regulation of FDI to solve this problem.

As it has already been mentioned earlier, the difference of regions in term of FDI inflows is highly significant. The following chart shows the share of total FDI inflows, excluding the offshores.



Moscow, St. Petersburg, and regions located in the oil and gas fields (the Sakhalin region, Yamalo-Nenets and Nenets Autonomous Areas) were a key center of foreign direct investment. Also Primorsky Krai and some regions of the European part of Russia attracted significant amount of FDI. In total, these subjects made about 74% of the FDI inflows in 2013.

4. Methodology

4.1. Conceptual Framework

As it was already mentioned before, the main problem of Russian FDI inflows is unevenly distributed investment across the regions which cause serious economic issues. We are going to

consider this problem in the empirical research and based on the econometric correlation analysis find out how economic indicators influence an attractiveness of each region in Russia.

We started our model research with a look at earlier studies based on regional FDI flows and distribution across Russian regions. In order to provide a strong background to our empirical analysis, we explored relevant literature concerning FDI in the Russian Federation: Ahrend (2000), Iwasaki & Suganuma (2005), Ledyaeva & Linden (2006), Ledyaeva (2007), Buccellato & Santangelo (2009). They covered a similar problem in their work. Therefore, our main research question coincides, namely an empirical analysis on determinants and dominant strategies of FDI inflows and its distribution across Russian regions. Based on their methodology, we choose the most common determinants, which will show us the development of FDI inflows into regions.

Basically, I follow Ledyaeva & Linden (2006) and Buccellato & Santangelo (2009) works that covered the main determinants of FDI inflows in Russia.

4.2 Hypotheses

Hypothesis#1. Region with a better life quality, hence a higher quality-of-life index, attracts more FDI inflow.

This is a new parameter in the regression model on FDI in Russia, because none of the previous paper-works has this variable as part of their regression model that might significantly effect FDI attractiveness into regions.

Null hypothesis: $H_0: \beta_5 = 0$

Two-sided alternative hypothesis: $H_1: \beta_5 \neq 0$

The aim of the hypothesis is to understand if foreign investors take into account the quality of life factory when they want to invest into the region. A quality-of-life index is an important social indicator. Immigration rate into region with high quality-of-life score is higher than with a lower one, hence there are more educated people and labor force, in general.

To make a quality-of-life rating 61 indicators were selected and later united into 10 following index-groups, which show the main aspects of living conditions in the region:

- The level of household income

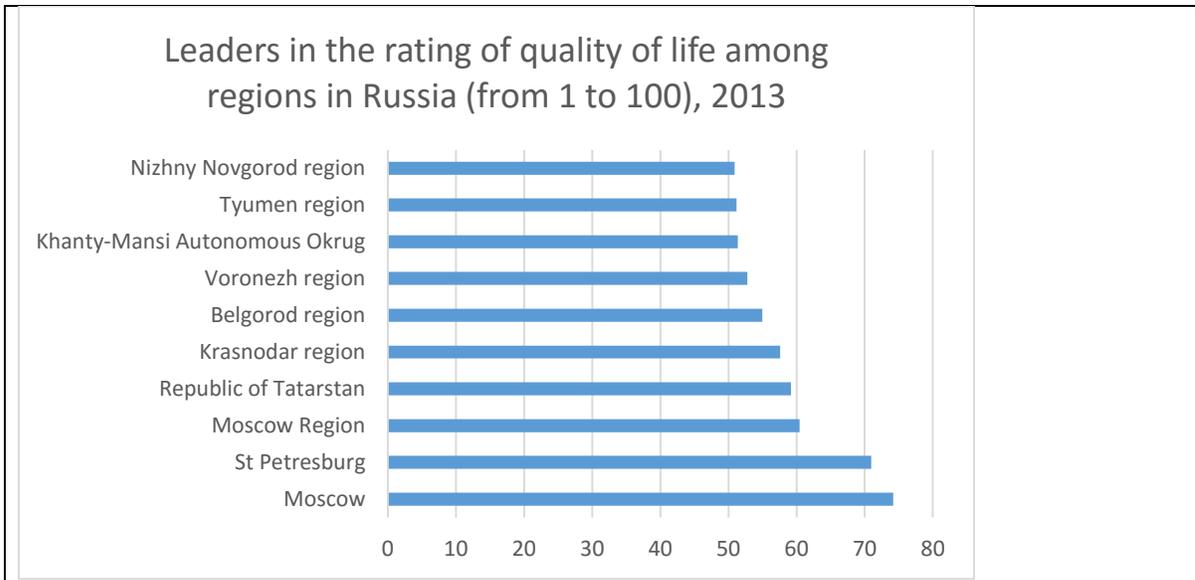
- Housing conditions
- Provision of social infrastructure
- Environmental and climatic conditions
- Secure accommodation
- Demographic situation
- Health and level of education
- Development of the territory and the development of transport infrastructure
- Level of economic development
- Small Business Development

Each index-group was determined via a rating score (from 1 to 100) on a normalized scale of values defined by the range of index. The rating scores were summed up with the indicator, defining the contribution rate of the resulting criterion of quality of life.

The positions of the Russian Federation subjects in the ranking of quality of life were determined as a result of aggregate rating points in all regions of the analyzed index-groups. Final rating score was defined as the geometric mean of these groups rating points.

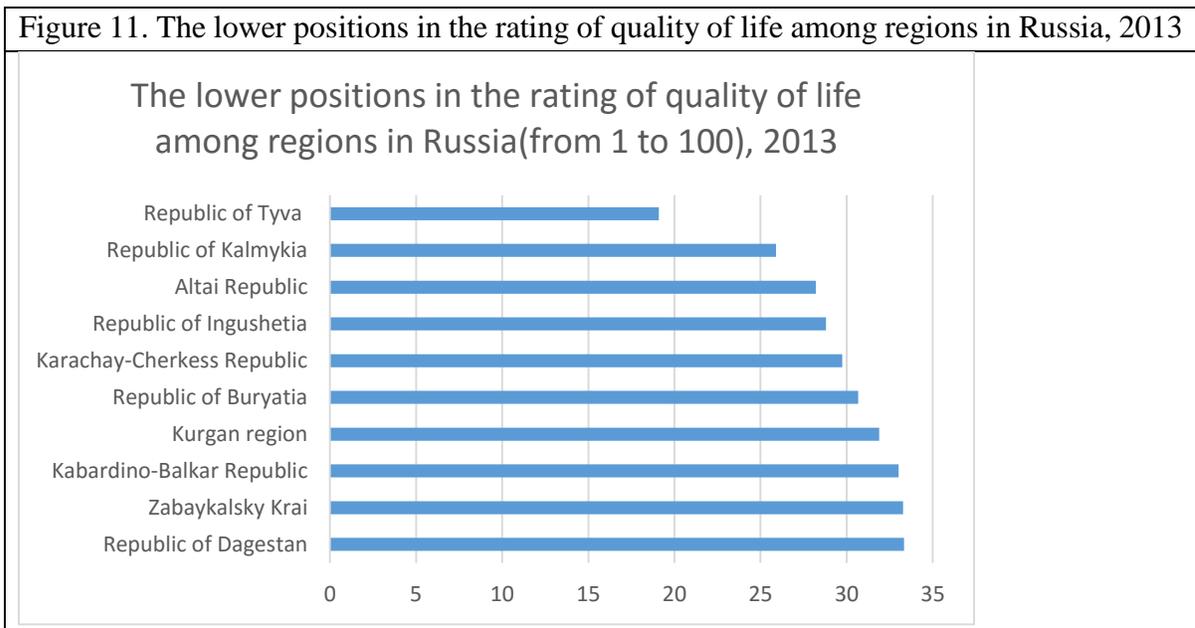
According to results, the first two positions in the quality-of life rating are taken by Moscow and St. Petersburg, which are leaders in Russia in many ways. The top ten also includes such economically developed regions as Moscow Region, Republic of Tatarstan, Krasnodar region, Belgorod region, Voronezh region, Khanty-Mansi Autonomous Okrug, Tyumen region, Nizhny Novgorod region (RIA Rating, 2013).

Figure 10. Leaders in the rating of quality of life among regions in Russia, 2013



Source: Russian News Agency (RIA) Rating, 2013

Conversely, Republic of Dagestan, Zabaykalsky Krai, Kabardino-Balkar Republic, Kurgan region, Republic of Buryatia, Karachay-Cherkess Republic, Republic of Ingushetia, Altai Republic, Republic of Kalmykia, Republic of Tyva were regions with the lowest quality-of-life score (RIA Rating, 2013).



Source: Russian News Agency (RIA) Rating, 2013

These regions do not still have a settled economic foundation for successful development, as a mineral resources, therefore do not have a sufficient level of own revenues. Another important issue is a high dependence of the regional budget on the Federal Center,

Hypothesis#2. Higher level of industrialization, measured by the existence of cities with population over 1 million in the region, increases the opportunity to attract more foreign investors, hence there is a positive impact on a FDI expansion.

Null hypothesis: $H_0: \delta_1 = 0$

Two-sided alternative hypothesis: $H_1: \delta_1 \neq 0$

In our context the synonym of level of industrialization is urbanization. As we know people mostly concentrated in cities, as well as the majority of production and wealth is created in urban centers. Cities are increasingly trying to attract multinationals and FDI in order to create wealth for its citizen. Poelhekke & Van Der Ploeg (2008) in their paper analyzed correlation between urbanization and FDI inflow and also their impact on the economic growth. As a result, empirical review “suggests that the urban landscape of a country has important implications for how much FDI it is able to attract” (Poelhekke & Van Der Ploeg, 2008). They also suggest that urban cities are a much more robust determinant of FDI than the presence of natural resources, and institutions.

Hypothesis#3. Foreign investors will invest in regions with more stable economy, hence less investment risk.

Null hypothesis: $H_0: \beta_2 = 0$

Two-sided alternative hypothesis: $H_1: \beta_2 \neq 0$

Investment climate is very likely to effect FDI inflows, particularly in transition economy. This determinant shows the investment attractiveness of Russian regions for foreign entrepreneurs. Higher value of the investment risk indicate worse investment environment. When it comes to decision where to invest in developing country, multinational corporations pay attention on the institutional indicators, as it was already proven in the work of Bussea & Hefekerb (2007). In our research investment risk is composed by seven different risks: legislative, political, economic, financial, social, criminal and ecological. All these indicators are taken into account when it comes to decision making. For instance, Hayakawa et al (2011) focused on the case of country risk. A

general effect of both political and financial risks on FDI inflows were tested. The authors showed that “foreign firms might be very sensitive to financial risk of the host country” (Hayakawa et al, 2011) because countries with high financial risk more likely to face a sudden financial difficulties. As a result of increasing foreign debt, exchange rate instability and high inflation rate might appear. “Political risk can also adversely affect business in many ways” (Bussea & Hefekerb, 2007). Political risk is a determinant of institutional quality and political stability. Multinational corporations take into account the factors as corruption, government stability, external/internal conflicts, bureaucracy, socio-economic conditions, quality of law, religion tension, and investment profile.

Especially, in Russian economy all these problems exist. As we can see it earlier in the Table 1 where all advantages and disadvantages of Russia's investment climate were listed.

4.3 Model specification

Our multiple linear regression model looks in the following way:

$$y_{i,t} = \beta_0 + \beta_1 x_{i,1,t} + \beta_2 x_{i,2,t} + \dots + \beta_k x_{i,k,t} + u_{i,t},$$

$$\text{where } i = 1, 2, \dots, n \text{ and } t = 1, 2, \dots, n$$

We will use an **OLS Model** and a **cross-sectional set** of data. Ordinary Least Squares (OLS) is a method for estimating the unknown parameters in a linear regression model with a goal of minimizing the sum of squared residuals (Wooldridge (2009), Chapter 4, pp 73-74). A cross-sectional data set consists of a sample of variables (region) taken at a given point in time (2013).

$$\begin{aligned} \log(FDI)_i &= \beta_0 + \beta_1 \log(GRP)_i + \beta_2 \text{Invstm_Risk}_i + \beta_3 \log(\text{Transprt})_i \\ &+ \delta_1 \text{Industry_Level}_i + \beta_4 \text{Educ_Ppln}_i + \beta_5 \text{Qlty_Life}_i + \beta_6 \log(\text{Reg_Ppln})_i \\ &+ u_i \end{aligned}$$

The i subscript refers to the observation number. The second index k is a method of distinguishing between different independent variables.

Dependent variable:

$\text{Log}(FDI)$ = logarithm of foreign direct investment in million USD.

Independent variables:

$\text{Log}(GRP)$ = logarithm of gross regional product in million USD stands for β_1

Invstm_Risk = investment risk index stands for β_2

$\text{Log}(Transprtn)$ = logarithm of kilometers of ways out of 10,000 square kilometers of territory stands for β_3

Industry_Level = dummy variable of city with population over 1 million stands for δ_1

Educ_Ppln = percentage level of educated population with bachelor degree in the total population aged 15 and over (from 1 to 100) stands for β_4

Qlty_Life = quality-of-life rating score (from 1 to 100) stands for β_5

$\text{Log}(Reg_Ppln)$ = logarithm of population in region stands for β_6

Since we have an OLS regression, our variables have to be normally distributed¹². In order to have an absolute normal distribution we are taking a log-log model. In general, models where dependent variable used as a log, i.e. $\log(\text{FDI})$ and $\text{FDI} > 0$, satisfy the CLM assumptions better than the models with the level of dependent variable (Wooldridge, 2009, Chapter 4, pp 192-193). Also sometimes it is more useful to use log for independent variables. First of all, logarithmically transforming variables help to avoid a non-linear relationship between the independent and dependent variables in a regression model. Secondly, logarithmic transformations alter a highly skewed variable into approximately normal one. Another benefit of using log is that taking a log of a variable makes its range narrower. This is very helpful when variable has large numerical values (FDI, GRP, Transprtn, Reg_Ppln) with outlying observations. Finally, when “both the dependent variable and independent variable(s) are log-transformed variables, the interpretation is given as an expected percentage change in Y when X increases by some percentage” (Benoit, 2011), which makes interpretation very simple. Such relationship, where both Y and X are log-

¹² From Cross Validated (is a question-answer site in statistics, data analysis, data mining, etc.)

transformed, represents the elasticity of Y, dependent variable, with respect to X, independent variable (the coefficient of log X is referred to Y as an elasticity).

We are testing null hypothesis $H_0: \beta_j = 0$ against two-sided alternative hypothesis: $H_1: \beta_j \neq 0$ to verify its statistical significance. Independent variable “ x_j has a ceteris paribus effect on dependent variable y without specifying whether the effect is positive or negative” (Wooldridge, 2009, Chapter 4, p 128). “The rejection rule for $H_0: \beta_j = 0$ against $H_1: \beta_j \neq 0$ is $|t_{\hat{\beta}_j}| > c$, where $|t_{\hat{\beta}_j}|$ denotes absolute value and c is an appropriately chosen critical value.” (Wooldridge, 2009, Chapter 4, p 129).

If null hypothesis $H_0: \beta_j = 0$ is rejected in favor of alternative hypothesis: $H_1: \beta_j \neq 0$ at the 5% level, we say “ x_j is statistically significant, or statistically different from zero, at the 5% level.” If H_0 is not rejected, we say that “ x_j is statistically insignificant at the 5% level” (Wooldridge, 2009, Chapter 4, p 130).

4.4 Data and variables description

Mainly the data is collected from Russian Federal State Statistics Service (Rosstat), Central Bank of the Russian Federation (CBR), The World Bank, and United Nations Conference on Trade and Development (UNCTAD).

We will be testing FDI attractiveness for each region in 2013 year. In both theoretical and empirical researches development of Russia was covered till year 2013. This decision was made because of the gone economic stability in Russia from 2014 against a background of the political conflict between Russia and Ukraine, and Crimean crisis. At this moment Russian economy tends to change regularly. In fact, all economic indicators show dramatic decline and economic improvement stopped in 2013 and took a turn for the worse, including FDI index. Moreover from the 18th March the Republic of Crimea and a federal city Sevastopol were included in the territory of Russian Federation. At the moment there are 85 subjects: 22 republics, 9 krais, 46 regions, 9 federal cities, 1 autonomous region, and 4 autonomous okrugs according to the Constitution of Russian Federation¹³. However, our research will not cover FDI inflow in the Republic of Crimea and a federal city Sevastopol. Moreover, because of the missing data on some variables, we will

¹³ From Russian Federal State Statistics (Rosstat) (2013) and “Geography of Russia” site

exclude 13 regions. FDI data is not available for 6 regions: Altai Republic, Republic of Ingushetia, Karachay-Cherkess Republic, Republic of North Ossetia – Alania, Jewish Autonomous Oblast, and Republic of Chechen. Information for transportation determinate is missing in Republic of Tyva, Kamchatka Kray, Magadan region, Nenets Autonomous Okrug, Chukotka Autonomous Okrug. Also there are missing data on educated population in Republic of Karelia and on investment risk in Kurgan region. Therefore, we will study only 70 subjects in the multiple regression model.

Based on the study of Buccellato & Santangelo (2009) **market size**, **transportation variable**, **skilled labor**, and **investment risk** were included in our research, where market size is represented using GRP, transportation is represented using density of railways, and skilled labor is represented using a level of educated population. From the work of Ledyeva (2007) we also decided to consider a variable of **level of industrialization**. In addition, variables for **population of region** and **quality-of-life index** were also included in the econometric analysis. In the work regarding the relationship between foreign direct investment and country population Aziz (2012) has proved that MNEs (multinational enterprises) would make larger investments in countries with larger populations. We found these indicators appropriate and relevant to the main issue, because they provide rate for each region and, basically, influence the regional economic development, hence FDI attractiveness as well.

Market size is represented using **GRP** data by Russian Federal State Statistics (Rosstat, 2013). We use a logarithm of the regional GRP expressed in million USD to capture the market size effect.

GRP is an important economic indicator that includes the size of the market, the prices of production factors and the quality of production factors. These characteristics essentially vary between Russian regions. Foreign investors, seeking to sell and produce in the target market, are interested mainly in the economic potential of the region. GRP of the region accurately shows this potential. To be exact, the higher is the level of GRP, then the greater is the potential domestic demand, and hence the region is more attractive to potential investors.

Transport is represented using **Density of Railways** (at the end of the year; kilometers of ways out of 10,000 square kilometers of territory) as provided by Russian Federal State Statistics (Rosstat, 2013).

Well-developed infrastructure, and particularly excellent transportation options, can enhance the productivity of multinational enterprise’s operations in the host region and decrease distribution costs. Developed transportation facilitates the delivery of the necessary resources and promotes more effective and fast distribution of the made production between consumers. This is an essential contributory to FDI inflows into the region.

As **Investment risk** we use the index provided by the Rating Agency RAEX (Expert RA). “Ekspert RA” is a well-known number-one Russian rating agency working on a global scale.

Investment risk was composed by six different risks: social, economic, financial, criminal, ecological, administrative¹⁴. It shows the investment attractiveness of Russian regions for foreign entrepreneurs. Investment risk is an important determinant of FDI activity, particularly for transition economies. Higher values of the index indicate worse investment environment.



Skilled labor is represented using the percentage level of educated population with bachelor degree in the total population aged 15 and over, which data collected from RIA (Russian News Agency) Rating.

¹⁴ Rating Agency RAEX (2013). Investment risk in Russian regions.

Skilled labor shows the quality of labor force, which is an important determinant of foreign investors' strategies. Especially, if they want to establish activities that requires high level of human capital. The cost and quality of the labor force can play a decisive role in making a decision. In particular, Russian skilled labor is characterized as a well-educated and relatively cheap labor force.

Level of industrialization is a dummy variable for regions that include at least one of Russia's 15 cities with populations exceeding 1 million: Moscow, St. Petersburg, Novosibirsk, Ekaterinburg, Nizhny-Novgorod, Kazan, Samara, Chelyabinsk, Omsk, Rostov-na-Donu, Ufa, Krasnoyarsk, Perm, Volgograd, and Voronezh¹⁵. (See Appendix 3)

Quality of life is a complex characteristic (evaluated from score 1 to 100), which includes a set of indicators: from the level of economic development and average household income to provision of public services and climatic conditions in the region.

Quality of life is one of the most important (recognized by United Nations) indicator characterizing a level of development of countries and nations. For Russia, possessing the huge territory and occupied by the numerous people, the question of evaluating the quality of life gets particular relevance.

In our analysis we are using results of experts of Rating Agency "RIA Rating" in 2014. They conducted research and made regional ranking in order to determine the quality of life in each region based on information from sources: Russian Federal State Statistics (Rosstat), Ministry of Health of the Russian Federation, Ministry of Regional Development of the Russian Federation, Ministry of Finance of the Russian Federation, Ministry of Natural Resources and Environmental Protection of the Russian Federation, Central Bank of Russia.

Population of region shows the amount of people that live in the region based on the data from Russian Federal State Statistics (Rosstat).

As we know from the previous works, a large population is a strong advantage to attract FDI. "Large population provides a large market for products and services, and have a large labor

¹⁵ From web-site about countries, cities, population statistics. Data is from Russian Federal State Statistics (Rosstat) (2014).

force and a vast skill base” (Aziz, 2012). A large population tends to bring a high number of graduates, which increases competition among them and leads to highly educated and skilled labor force. Another factor that attracts foreign investors is a considerable middle class that is a basic consumer of products and services.

4.5. Empirical Results

The result of the regression analysis is presented in Table 3.

Table 3. Regression Results for economic factor

	Log(FDI)
Log(GRP)	1.47***
	(0.441)
Investment Risk	-7.35*
	(4.6)
Log(Transportation)	-0.096
	(0.24)
Level of Industrialization	-0.036
	(0.543)
Educated population	0.062
	(0.07)
Quality of Life	-0.023
	(0.064)
Regional population	-0.217
	(0.408)
Constant	-3.197
	(4.244)
Observations	70
Adjusted-R²	0.525
R-squared	0.573
F statistic	11.89
Diagnostic Tests	
Breusch-Pagan test	
Chi2(1) =	0.05
Prob > chi2	0.822
RESET test	
F =	0.42
Prob > F	0.738
Shapiro & Wilk test	

W =	0.979
Prob > W	0.282
Notes: the table reports the results of OLS regression; dependent variable is Log(FDI); * denotes the significance at 10% level; ** denotes the significance at 5% level; *** denotes the significance at 1% level	

Testing for heteroscedasticity

According to the Assumption MLR. 5¹⁶, we want to test our multiple regression model using Breusch-Pagan test to check for heteroscedasticity in the estimation. The null hypothesis is that the estimation is homoscedastic, $H_0: Var(u | x_1, \dots, x_k) = \sigma^2$, and alternative hypothesis is that the estimation is heteroskedastic, $H_1: H_0 \text{ is not true}$.

The result of the test shows that the null hypothesis is failed to reject with p-value = 0.8223. Hence, the Assumption MLR. 5 is satisfied. Also now we can say that the OLS estimators have the smallest variance among all linear and unbiased estimators.

RESET test

We test a Ramsey's (1969) regression specification error test (RESET) to detect general functional form misspecification. Under RESET we will check if the original model satisfies MLR. 4¹⁷. And a null hypothesis is that model has no omitted variables. Otherwise the alternative hypothesis is that the multiple regression model suffers from functional form misspecification.

The result of the test shows the RESET statistics is 0.42 and p-value = 0,7379. Thus we do not reject the null hypothesis. Consequently, there is no functional form misspecification in the model.

Testing Normality

To confirm normality of the residuals we use the Shapiro & Wilk (1965) test. The null hypothesis of this test is that the residuals are normally distributed.

¹⁶ Assumption MLR. 5: The error u has the same variance given any values of the explanatory variables, i.e. $Var(u | x_1, \dots, x_k) = \sigma^2$

¹⁷ Assumption MLR. 4: The error u has an expected value of zero given any values of explanatory variables. i.e. $E(u | x_1, \dots, x_k) = 0$

A value of W test is above the significance level with p-value = 0.22761, which fails to reject the null hypothesis of normality. Hence our residuals are normally distributed and Assumption MLR.6¹⁸ holds.

In addition to all tests, we checked correlation of explanatory variables. Results are demonstrated in Appendix 6.

As illustrated in table 4, the most significant variables that have strong impact on the amount of FDI inflows into Russian regions are GRP and Investment risk capita, while other variables (transportation, industry level, educated population, quality of life, regional population) were found statistically insignificant.

R-squared is 0.5957, which is a good ratio. Hence our model explains almost 60% of the variation in foreign direct investment inflow across Russian regions.

The determinate of GRP is the most significant variable with a strong positive impact on FDI, as it was expected. Higher GRP attracts more foreign investors. This parameter stands for regional market size, which was also recognized as very significant of FDI in previous studies of Iwasaki & Suganuma (2005), Ledyeva & Linden (2006), Ledyeva (2007), Yukhanaev et al(2014).

Based on findings of previous works of Buccellato & Santangelo (2009), Bussea & Hefekerb (2007), Hayakawa et al (2011), investment risk was found as the determinant of FDI. Our results shows that investment risk is significant at 90% confidence level and have a negative impact on FDI inflows.

The regression analysis exhibits that the level of transportation development has no significant influence on regional distribution of FDI and also have a negative coefficient. By contrast, transportation is recognized strongly significant with a positive effect on FDI distribution in other studies by Broadman & Recanatini (2001), Buccellato & Santangelo (2009). The reason of such a low significance of transportation development in our research is probably because there

¹⁸ Assumption MLR. 6: The error u is independent of the explanatory variables x_1, \dots, x_k and is normally distributed with zero mean and variance σ^2 : $u \sim \text{Normal}(0, \sigma^2)$

are regions with a huge territory and low density of public among successful regions such as Sakhalin Oblast, Omsk Oblast, Tomsk Oblast and Komi Republic.

Surprisingly, industry level was found to have insignificant and negative impact on foreign direct investments. This is an opposite result comparing to the similar study made by Ledyeva (2007).

The third insignificant but positive factor of FDI distribution is level of educated population in the region. This result is in line with the findings of Buccellato & Santangelo (2009), Yukhanaev et al (2014) and Castiglione et al. (2012) who appointed that skilled labor is not substantial because of almost equally high educational levels of population across Russian regions. However, Ledyeva and Linden (2006) asserted that foreign investors found essential the presence of skilled labor in the region.

Another surprising outcome is that the indicator of life quality was not found as a significant variable with a positive sign. Hence it has no effect on the regional distribution of FDI.

At last, independent variable of regional population is identified as insignificant with a negative coefficient in the analysis. It demonstrates that amount of people in the region does not have any effect on the decision making process of foreign investors.

Quality of life (Hypothesis#1)

Estimate of quality of life was found statistically insignificant. Also it has a negative effect on foreign direct investment, which is an opposite result to my first hypothesis. This outcome was found surprising, which means that better quality of life makes the regions less attractive for foreign investors. Hence, we reject this hypothesis. Probably, this determinant is too wide, as it contains average score of various indicators that represents conditions of housing, environment, education, business development. And foreign investors prefer to consider more precise indicators for decision making.

Level of Industrialization (Hypothesis#2)

Industrialization also was found statistically insignificant with a surprising negative effect on the dependent variable. Consequently, second hypothesis is not confirmed. As far as it has a negative coefficient it shows that existence of big cities over 1 million population does not attract

foreign investors. This is opposite to the findings of Ledyeva (2007). According to author's results, one of the important determinant of FDI inflows into Russian regions was the presence of big cities

Investment Risk (Hypothesis#3)

At last, it was found out that investment risk plays a significant role in determining foreign direct investment inflow into different regions. As it was assumed higher investment risk makes regions less attractive to foreign investors. This finding is in line with my hypothesis. A similar point was made by Buccellato & Santangelo (2009). According to their report, investment risk plays a significantly negative role in reducing the attractiveness of Russian regions. A similar finding was made by other authors but regarding only the political and financial risk, which are, as we know, components of investment risk. Bussea & Hefekerb (2007) in the paper explored in detail the role of political risk and institutions in host countries as determinants of foreign direct investment. Based on the results from 83 developing countries, these political risk and institutional indicators matter the most when multinational corporations confront decisions about where to invest in developing countries. In addition, Hayakawa et al (2011) on the sample of 93 countries examined the role of country risk in inward FDI. A general effect of both political and financial risks on FDI inflows were tested. Results showed that political risk of the host country was found highly significant with a negative coefficient, while financial risk – statistically insignificant.

Conclusion

The role of inward Foreign Direct Investment (FDI) in the development of the country is very crucial. FDI has innumerable effects on the host country's economy. It is very beneficial to attract investors, since it develops local production, increases job opportunities and also enlarges a national budget by paying taxes. FDI is the most significant channel for the dissemination of modern technology. Therefore, FDI plays a key role in development of transition economy.

In this paper, we examined the most attractive regional determinants of FDI for foreign investors in the regions towards the Russian Federation. The most successful regions in 2013 were with high gross regional product and low investment risk.

The primary and significant findings of the study are as follows. First, GRP is the most significant determinant for foreign investors when it comes to FDI distribution across regions. The positive effect of this indicator was also found in all previous studies. From Russian Federal State Statistics (Rosstat) database, we observe a positive correlation between FDI and GRP in 2012 and 2013. During these two years FDI inflow increased in Russia, from 161132.4 to 193684.7 million of USD respectively. Similar increasing tendency of FDI was almost in every region between these two years. At the same time GRP index increased overall in the country and in the most of regions. Second, social-demographic parameters have no significant influence on regional distribution of FDI. Consequently, regions with higher level of educated people, better quality of life, bigger population in region, and finally with presence of cities over 1 million population (level of industrialization) are not attractive for foreign investors. At last, third finding is that the development of regions does not occur at the same time, which mainly causes such uneven distribution of FDI across regions. 62% of FDI is concentrated in the following seven subjects Moscow, St. Petersburg, Primorsky Kray, Yamalo-Nenets Autonomous Okrug, Moscow region, Sakhalin region, while there are 83 subjects in Russia. Moreover, as it was already mentioned, because of the similar level of development other subjects don not differ from each other. They have identical social-economic indicators, climatic condition, educational level, and life conditions. As a result, some regions attract foreign investor and successfully develop, while their neighbours stand still.

In the end we would like to conclude that one particular model was not able to draw the entire-geographical picture of foreign investment in Russia. Each region is unique and has its peculiarity. Therefore, as a police recommendation it might be valid to suggest that regional authorities should have its own strategy for attracting FDI inflows and develop competitive benefits of their regions built on the available opportunities.

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List of Appendices

Appendix 1

Share of investments from offshore zones in the total FDI inflows to the regions of Russia in 2013.

Regions	The share of offshore companies in total FDI inflows to the region in 2013
Republic of Kalmykia	100%
Republic of Dagestan	100%
Republic of Tyva	100%
Chukotka Autonomous Okrug	100%
Orenburg region	97,80%
Magadan region	97,19%
Republic of Sakha (Yakutia)	96,21%
Krasnoyarsk Kray	92,42%
Udmurt Republic	91,77%
Kemerovo region	77.74%
Astrakhan region	75.80%
Tomsk region	71.59%
Amur region	70,94%
Omsk Region	67.91%
Moscow	65.40%
Khabarovsk region	64.27%
Vologda region	63.98%
Smolensk region	56.37%
Ivanovo Oblast	53.00%
Saratov region	51.77%
Leningrad region	47.84%
Moscow region	44.61%
Penza region	43.41%
Bryansk region	41.80%
Republic of Bashkortostan	41.64%
Novosibirsk region	39,92%
Krasnodar region	39.62%
Voronezh region	39.54%
Altai Kray	35.66%
Perm Kray	32.63%
Ryazan region	29.44%
Rostov region	29.08%
Republic of North Ossetia - Alania	27.87%
Lipetsk region	26.40%
Yaroslavl region	23.58%
Yamalo-Nenets Autonomous Okrug	22.75%

Sakhalin region	18.04%
Arkhangelsk region	17.56%
Komi Republic	14.07%
Murmansk region	9.39%
Volgograd region	8.89%
St. Petersburg	8.28%
Tver region	6.31%
Belgorod region	6.29%
Nizhny Novgorod region	5.73%
Republic of Mordovia	5.47%
Kurgan region	4.22%
Vladimir region	4.18%
Kaliningrad region	3.97%
Republic of Tatarstan	3.90%
Stavropol Kray	3.32%
Tula region	2.83%
Adygea Republic	2.32%
Primorsky Kray	2.30%
Nenets Autonomous Okrug	2.21%
Kaluga region	1.73%
Orel region	1.28%
Tambov region	1.20%
Tyumen region	0.81%
Samara region	0.60%
Kursk region	0.41%
Republic of Karelia	0.31%
Kostroma region	0.05%
Novgorod region	0.01%
Pskov region	0.00%
Mariy El Republic	0.00%
Republic of Chuvashia	0.00%
Kirov region	0.00%
Ulyanovsk Region	0.00%
Altai Republic	0.00%
Kamchatka Kray	0.00%
Jewish Autonomous Region	0.00%

Source: Russian Federal State Statistics (Rosstat), calculations made by National Rating Agency (NRA), 2014.

Note: regions of the Russian Federation which aren't included in this table have zero level of FDI inflows, even taking into account the investments of the offshore companies: Karachay-Cherkess Republic, Republic of Crimea, Sevastopol, Khanty-Mansi Autonomous Okrug, Republic of

Buryatia, Republic of Ingushetia, Kabardino-Balkar Republic, Kabardino-Balkar Republic, Republic of Khakassia, Irkutsk Oblast, Zabaykalsky Kray, Chelyabinsk region, Sverdlovsk region, Republic of Chechen.

Appendix 2

Fifteen Russia's cities where population exceeds 1 million.

City(region)	Population as of 01.01.2014
1. Moscow	12 108 257
2. St. Petersburg	5 131 942
3. Novosibirsk (Novosibirsk Region)	1 547 910
4. Ekaterinburg (Sverdlovsk Region)	1 412 346
5. Nizhny-Novgorod (Nizhni-Novgorod Region)	1 263 873
6. Kazan (Republic of Tatarstan)	1 190 850
7. Samara (Samara Region)	1 190 850
8. Chelyabinsk (Cheliabinsk Region)	1 169 432
9. Omsk (Omsk Region)	1 166 092
10. Rostov-na-Donu (Rostov Region)	1 109 835
11. Ufa (Republic of Bashkortostan)	1 096 702
12. Krasnoyarsk (Krasnoyarsk Krai)	1 035 528
13. Perm (Perm Krai)	1 026 477
14. Volgograd (Volgograd Region)	1 017 985
15. Voronezh (Voronezh Region)	1 014 610

Source: Russian Federal State Statistics (Rosstat), 2014

Appendix 3

Description of main variables.

	Variable name	Definition	Data Source	Time span
Economy structure	GRP	Gross Regional Product	Russian Federal State Statistics (Rosstat)	2013
	Invstm_Risk	Investment Risk	Rating Agency RAEX (Expert RA)	
Infrastructure	Transprt	Transportation - kilometers of ways out of 10,000 square kilometers of territory	Russian Federal State Statistics (Rosstat)	2013
	Indstry_Level	Level of industrialization - dummy variable of 13 biggest cities in Russia	Russian Federal State Statistics (Rosstat)	
Social-demographic	Qlty_Life	Quality of Life percentage from 1 to 100	Russian News Agency (RIA) Rating, 2013	2013
	Reg_Ppln	Population of region	Russian Federal State Statistics (Rosstat)	
	Educ_Ppln	Educated population percentage from 1 to 100	Russian News Agency (RIA) Rating, 2013	

Appendix 4

Summary statistics of main variables.

	Variable name	Definition	Number of observations	Mean	Standard Deviation	Min	Max
Dependent variable							
	FDI	Foreign Direct Investment in million USD	70	2612.58	12855.32	4	108107
Independent variable							
Economy structure	GRP	Gross Regional Product in million USD	70	23078.95	44378.84	1285.53	363515.83
	Invstm_Risk	Investment Risk	70	0.265	0.06	0.16	0.48
Infrastructure	Transprt	Transportation - kilometers of ways out of 10,000 square kilometers of territory	70	167.14	123.490.39	2	577
	Indstry_Level	Level of industrialization - dummy variable of 13 biggest cities in Russia with population over 1 million	70	0.18	0.39	0	1
Social-demographic	Educ_Ppln	Educated population percentage from 1 to 100	70	1.93	3.99	0.28	11.98
	Qlty_Life	Quality of Life percentage from 1 to 100	70	20.76	8.15	15	41
	Reg_Ppln	Population of region	70	43.79	1.77	25.89	74.17

Appendix 5

Correlation of explanatory variables.

	L(FDI)	L(GRP)	Invstm Risk	L(Transprt)	Industry Level	Educ Ppln	Qlty Life	L(Reg Ppln)
L(FDI)	1							
L(GRP)	0.732	1						
Invstm Rate	-0.498	-0.519	1					
L(Transprt)	-0.027	-0.008	-0.357	1				
Industry Level	0.354	0.525	-0.263	0.1	1			
Educ Ppln	0.499	0.59	-0.363	0.099	0.336	1		
Qlty Life	0.58	0.734	-0.74	0.45	0.486	0.71	1	
L(Reg Ppln)	0.499	0.771	-0.37	0.233	0.557	0.384	0.608	1