Varazdin Development and Entrepreneurship Agency
in cooperation with
Azerbaijan State University of Economics (UNEC)
University North
Faculty of Management University of Warsaw
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Economic and Social Development

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THE RESEARCH OF INVESTMENT FACTOR IN ECONOMIC GROWTH

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ABSTRACT

The major aim of economic policy of any country is to provide economic growth. One of the important factors is the investments in fixed assets. The role of investment factor in economic growth is researched and results are shown in the article. The econometric analyze of main macroeconomic indicators – GDP in Azerbaijan, investments in fixed assets is the predmet of the article. So the mutual relations GDP in Azerbaijan and investments in fixed assets is researched and the dependence between them is researched by absolute and relative indicators. The econometric models of investment multiplicator and accelerator which is reflected the quantity and quality regularity influence of investment to economic growth and the mutual of relations GDP and investment are established in the article. The run period and force of influence of current and previous invesments to the economic growth is estimated. In present conditions the importance of large scale investments are justified, the model of forecast investment is offered and the forecast fixed assets investments are estimated.

Keywords: *investment, economic growth, multiplier, accelerator, econometric model, forecast*

1. INTRODUCTION

One of the main problems in economics is the increase in the sources of economic growth of the national economy. So, in some countries, for many years, there is a high rate of economic growth, positive dynamics, and the low economic growth in other countries, which is one of the main reasons for economists to think. A number of assumptions have been made about reasons of decreasing rapid growth and economic growth by various economists. At that time various factors of successful development of the national economy are put forward. Discussed factors of economic growth often include investment. The impact of investment on economic growth is a matter of discussion. There are models expressing positive relations between investment and economic growth: the model of the Harrod and Domar (Domar, 1946), AK-model (Frankel, 1962). At the same time, there are models that express negative relations between investment and economic growth: fK-model (Matveenko, 1984, 2005). There are models outlining that there is no relation between long-term economic growth and investment: Solou-Svena (Solow, 1956). Empirical researches can't answer the question about the relations between investment volume and economic growth. Even data analysis allows you to say that the relations between investment volume and economic growth are not exact. For example, let's look at the economic development of some countries around the world. For example, some countries, for example, Singapore, Japan, Thailand, demonstrated high economic growth due to the high share of investment in GDP during the period 1950-2004. However, for example, countries such as Zambia and Iran have managed to reach the lowest economic growth rates,

despite the high investment volume. Nevertheless, for example, a country like Ecuador had a higher economic growth rate than low-volume investments. At the same time it should be noted that almost all countries, such as Rwanda, Uganda, "zero" economic growth or even some, such as low investment volumes (below 10% of GDP) , Madagascar, Senegal, and Niger have shown a negative trend in GDP per capita. Mutual relationships between investment norms and economic growth have been empirically investigated by many economist scientists (Attanasio et al., 2000; Li, 2002; Aghion et al., 2009; Jones, 1995; Madson, 2002).

2. LITERATURE

The role of investment in economic growth and the cause-and-effect relationship between economic growth and investment has been the main subjects of macroeconomic literature (Abdelha fihh, 2013; Baharumshah & Thanoon,2006; Chakraborty & Nunnenkamp, 2008; Lee & Chang, 2009; Li & Liu, 2005; Madsen, 2002; Mah, 2010; Qin, Cagas, Quising, & He, 2006; Zou, 2006). The main hypothesis on the impact of investment on the overall economic growth is that investment expansion has a positive impact on economic growth, and investment has many economic benefits. Many scientists have found that there is a positive relationship between investment and economic growth across countries (Borensztein, Gragario, & Lee, 1998; Hermes & Lensink, 2003; Li & Liu, 2005; Odedokun, 1997; Zou, 2006). It has been generally accepted that investment is the most important factor of economic growth both in developed and emerging economies (Shiau, Kilpatrick, & Matthews, 2002 , Yu, 1998). Similarly, Anwar and Nguyen (2010) and Madsen (2002) reported the two-way cause-and-effect relationship between investments and economic growth based on the nature of the investment. The outcome was mainly that economic growth was conditioned by investments in machinery and equipment At the same time, investment in non-residential construction and infrastructure is based on economic growth. Investment is the most important channel that affects the economic growth through the financial market (Li, 2006). Economic development is linked to institutions, social capital, labor force, real estate, income, wealth (Fagerberg et.al., 2014). But economic development is not just an economic growth Sen (1999). According to Schumpeter (1961), economic development involves the transition to a new, innovative method of increasing the productivity of capitalized designs. Economists have come to the conclusion that the development of high quality institutions is the main factor of economic growth (Rodrik et.al., 2004). Lipset (1959) confirm that the efficiency of socio-economic institutions determines economic development. Institutions are rules of play, existence mechanism, accepted standard, logic of economic development and behavior in society (Ostrom, 1986). Economic development can be viewed as both the floor and the result of economic growth. If economic growth is invested in economic development, it provides vulnerable resources that provide the basis for future economic growth (Amsden, 1997). Unfortunately, the growth of all and any growth is often an easy task to succeed, thanks to long-term goals and targets (Rubin, 1988). Indeed, many conceptual instruments of economist scholars, perhaps, can not solve many economic development issues (North, 1984). It affirms that the neo-classical economy is short-term and the optimal distribution of resources does not fit into a dynamic, long-term disposition that defines the process of economic development. It is assumed that eight years for the academic invention applied to the industry or 18 years for scholarship preparation (Mansfield, 1991).

3. INVESTMENT POLICY IN AZERBAIJAN

As a result of the country's natural resources acquired by Azerbaijan, the expansion of financial opportunities of our country and the measures taken to improve the investment condition led to a steady increase in investment. As it is known, the economy can be used better by using the production funds or replacing old funds with more productive ones and increasing their quantities.

There is no long-term development in the expense of existing obsolete fixed assets. Because their active part - machinery and equipment will wear out quickly, lose their competitiveness and therefore should be updated on average every 7-8 years. Thus, economic development depends on the degree of investment in fixed assets, which is an essential condition for renewal and expansion of production. As the Republic of Azerbaijan possesses strong natural-economic potential, it is attractive in terms of investment. At the same time, the attractive political, socio-economic environment and relatively cheap human resources created for entrepreneurship further enhance this attractiveness. The favorable investment climate created in Azerbaijan is not only a yearly increase in domestic and foreign investment, but also bring the new technologies, production and management methods used in the world economy, and so on. to our country. The main factors promoting investment in our country since 1994 are as follows:

- Ensuring political and economic stability
- Creating a favorable economic environment;
- Increase of the international reputation of the country (increase of credit rating, effective cooperation with international financial institutions);
- successes of the initial stage of privatization (qualitative improvement of economic indicators of privatized enterprises), etc.

The investment policy implemented in the country plays an important role in the economy, including the regions. This policy seeks to create the most favorable legal and institutional environment for attracting foreign and domestic investment. Banks and credit institutions also play an important role in lending entrepreneurial activity and creating favorable investment climate. The basis of Azerbaijan's banking system development strategy is the mobilization of free-of-charge financial resources, transforming them into the real sector in the form of investment and more effective distribution. For this purpose, the qualitative new development of the banking system, the application of modern banking technologies, the formation of a sound and stable legislative framework, and most importantly, their reliability and risk reduction, significant measures have been taken in the warmth. Investment opportunities and investments in the country are rapidly increasing. Rapid growth of investments in the economy of Azerbaijan is a logical result for a favorable environment for both domestic and foreign investment in our country. An exemplary legislative framework for foreign investment has been established guided by tasks and reccommendations given in the field of attracting foreign investments to our country. From the documents adopted in this field, the laws "On Investment Activity" of January 13, 1995, "Investment Competition" of May 16, 1997, "Investment Funds", November 30, 1999, etc. it can be noted. Some of the steps taken to attract and protect foreign investment in our country are related to the approval of agreements on the promotion and mutual protection of investments between Azerbaijan and various countries. Such agreements were signed between Government of the Republic of Azerbaijan and Pakistan, Georgia, Germany, Kazakhstan, Ukraine, Kyrgyzstan, Poland, Austria, France, Iran, Austria and others. developed and developed countries. Significant changes have taken place in the structure of investments. In addition to the oil sector, investments in the non-oil sector across the country are a major stimulus for the development of the economy. Investments in the economy have increased dramatically over the decade than in the early 1990s. The most invested area is industrial field. Investments in this area constitute 70-80% of the total investment volume.

- divide the forming sources of internal investments into two groups:
- State sector (on the account of budget fund);

Private sector: At the expense of the population's own funds and funds of enterprises and organizations;

When nly 20-25% of investments are realized through own funds (amortization and profit) in developed countries, like in other transition economies, 70% of capital investments in Azerbaijan are financed by firms. At the same time, the state-funded capital expenditures in our country are increasing with figures and relative numbers, as shown in the following figures. Over the past 10 years, the physical volume of state capital investments has increased 35 times, and now is the basis of dynamic development in the near future. In 2005-2017, investments in the country's economy have grown mainly due to domestic sources. Investment expenditures were mainly focused on the non-oil sector development goals. In addition to the budgetary funds, other funds have also played an important role in the growth of domestic investment. The volume of domestic investments financed by budget funds increased 1.3 times, and extra-budgetary funds increased by 55%. 35% of domestic investment in fixed capital was spent on budget funds. For comparison, in the corresponding period of 2005, the share of budget funds in the total amount of domestic investments was 35%. Decrease in investment in the oil sector has had a significant impact on the growth of foreign investment. This is primarily due to the fact that investments are mainly directed to the non-oil sector. The share of investment both in size and in total investment. The post-2005 period is characterized by an increase in investment in the non-oil sector. This is the final stage of investment in the oil sector, in other words, the pipeline's operation. The broad using of investments for the development of industry and all areas throughout the country is seen as a step in the country's economy not only for the oil industry but also for the development of the non-oil sector and the further improvement of the country's economy.

4. DATA

During research period 2000-2017, GDP increased 14,87 time and reached from 4718,1 million manats to 70135,1 million manats. This result has increased 5,60 times in comparison with 2005, 1,65 times in 2010, 1,19 times in 2014, 1,29 times in 2015, 1,16 times in 2016. In 2000-2017 GDP in industry has increased 16,53 times and reached from 1999,6 million manats to 28087,3 million manats. This result has increased 4,53 times in comparison with 2005, 1,28 times in 2010, 1,16 times in 2014, 1,57 times in 2015, 1,25 times in 2016. In 2000-2017 GDP of agriculture has increased 5,20 times and reached from 758,9 million manats to 3949,3 million manats. Current indicator has increased 3,47 times in comparison with 2005, 1,68 times in 2010, 1,26 times in 2014, 1,18 times in 2015, 1,17 times in 2016. During 2000-2017 GDP in construction area has increased 21,71 times and reached from 308 million manats to 6687,2 million manats. This result has increased 5,93 times in comparison with 2005, 1,94 times in 2010 and decreased 10% in comparison with 2014m, but again increased as 3% in 2015 and 5% in 2016. . In 2000-2017 GDP in transport and communication field has increased 10,36 times and reached from 567,1 million manats to 5875,5 million manats. This indicator has increased 6,41 times in comparison with 2005, 1,86 times in 2010, 1,58 times in 2014, 1,36 times in 2015, 1,14 times in 2016. During 2000-2017 in other fields GDP increased 18,66 times and reached from 1093,9 million manats to 20413,9 million manats. And this result has increased 9,31 times in comparison with 2005, 2,35 times in 2010, 1,27 times in 2014, 1,17 times in 2015, 1,12 times in 2016. Net taxes in 2000-2017 increased 17,59 times and reached from 291,2 million manats to 5121,9 million manats. This result has decreased 5,41 times in comparison with 2005, 1,78 times in 2010, 16% in 2014, but increased 5% in comparison with 2015, 3 % in 2016. The above mentioned processes occurred as investments. Thus, during 2000-2017 research time total investment has increased 18,01 times and reached from 967,8 million to 17430,3 million manats. This result increased 3,02 times in comparison with 2005, 1,76 times in 2010, but decreased 1% in comparison with 2014, and again increased 9% in 2015, 5% in 2016. Industrial investment has increased 15,83 times and reached from 670,1 million to 10610,1 million during 2000-2017.

And this result has increased 2,54 times in comparison with 2005, 2,48 times in 2010, 1,39 times in 2014, 1,25 times in 2015, 7% in 2016. During 2000-2017 investment in agricultural field has increased 95,05 times and reached from 6,5 million manats to 617,8 million manats. This result has increased 15,18 times in comparison with 2005, 1,43 times in 2010, 1,70 times in 2014, 1,74 times in 2015, 1,90 times in 2016. During same years the investment in construction field has increased as 807,65 times and reached from 3,4 million manats to 2746 million. This indicator has increased 59,57 times in comparison with 2005, 24,13 times in 2010, 1,24 times in 2014, 1,29 times in 2015, 1,22 times in 2016. For 2000-2017 investment in transport and communication field increased 21,81 times and reached from 89,4 million manats to 1949,6 million. This indicator has decreased 2,89 times in comparison with 2005, 27%, in 2010, 25%, in 2014, 23% in 2015 but increased 22% in 2016. During 2000-2017 GDP has increased as 7,59 times and reached from 198,4 million manats to 1506,8 million. This result decreased 1,81 times in comparison with 2005, 38% in 2010, 69% in 2014, 38% in 2015 but increased 40% in 2016.

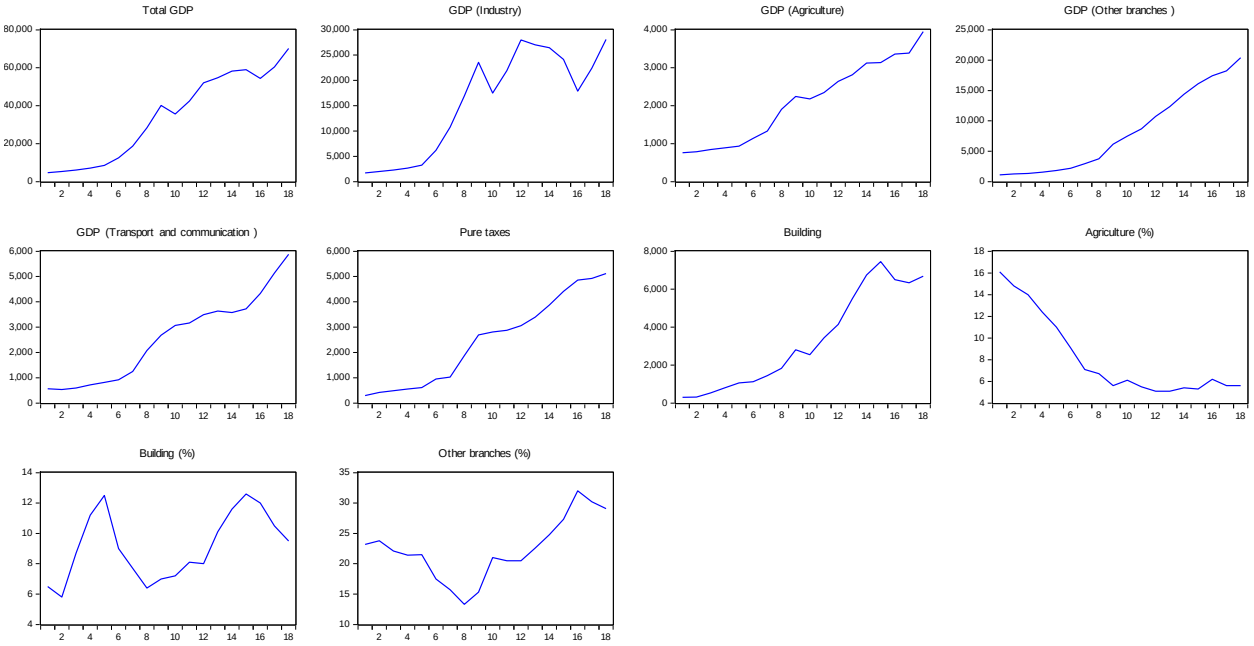


Figure 1: Dynamics of GDP of Azerbaijan

Figure following on the next page

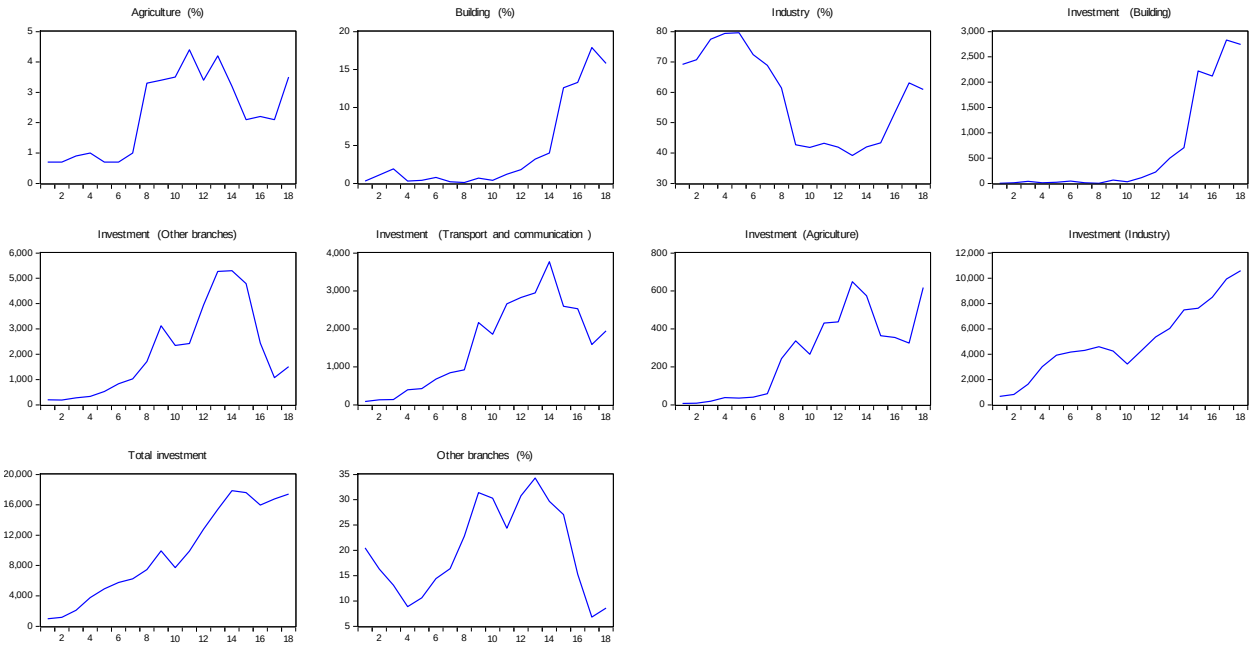
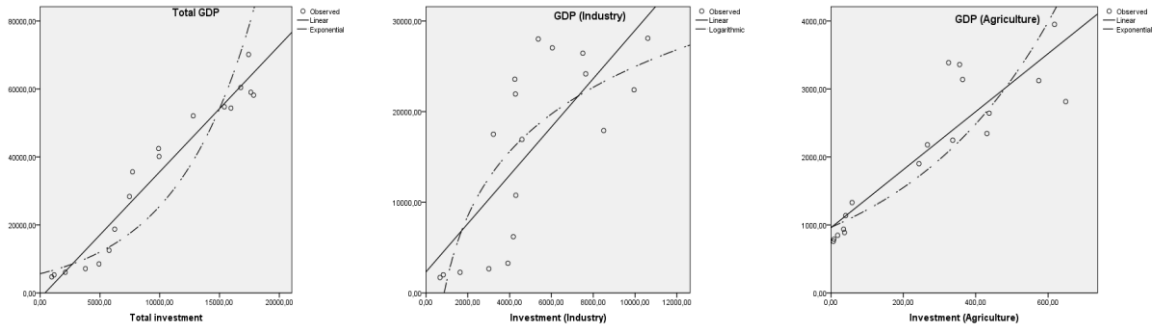


Figure 2: Dynamics of investments of Azerbaijan



Exponential $Y=5666{,}185e^{0{,}00015x}$

Logarithmic $Y=-69271{,}167+10231{,}512\ln x$

Exponential $Y=746{,}88e^{0{,}000177x}$

Exponential $Y = 694{,}276e^{0{,}00424x}$

Cubic $Y=1273{,}584+7{,}344x-0{,}005x^2+1{,}15E\text{-}06\,x^3$

Power $Y=17{,}227x^{0{,}799}$

Figure 3: Models and graphs of GDP versus investment

Drafted models are mainly chosen in accordance with high level of R^2 and statistical importance of t-statistic coefficient. In this case for total dependence on investments of GDP in industry logarithmic, in agriculture and construction exposene, in transport and communication cube function, and in other fields force function have been chosen.

5. CONCLUSION

In the frame of state investment policy all forces should be directed to movement of new investments which assists maximum use of existing resources. Investment renewal acts as optimal strategy directed to obtaining low inflated economic development that observing development of new work places and increasing of purchasing power of population in the state. Although that, investment policy in modern world bases on self-financing of most part of capital investment, development of mechanisms and infrastructures of material-technical resources market, principles of agreement and returning system between participants of investment process, some kinds of complete programs needs support of government. For this purpose, investment policy should be built productively by straight support of government and realized in more sufficient from in future.

LITERATURE:

1. Abdelhafidh, Samir, (2013). Potential financing sources of investment and economic growth in North African countries: A causality analysis. *Journal of Policy Modeling*, 35(1), 150-169.
2. Aghion P., Comin D., Howitt P., Tecu I. (2009). When Does Domestic Saving Matter for Economic Growth? Working paper, Harvard Business School.
3. Ahmad Zubaidi Baharumshah, Marwan Abdul-Malik Thanoon, (2006). Foreign capital flows and economic growth in East Asian countries. China Economic Review, 17(1), 70-83.
4. Allen Shiau, James Kilpatrick, Miriam Matthews (2002). Seven percent growth for Mexico? - A quantitative assessment of Mexico's investment requirements. Journal of Policy Modeling, 24 (7), 781 – 798.
5. Anwar, Sajid & Phi Nguyen, Lan. (2010). Foreign direct investment and economic growth in Vietnam. Asia Pacific Business Review. 16. 183-202.
6. Amsden A H, (1997). Editorial: bringing production back in—understanding government's economic role in late industrialization. *World Development* 25(4) 469–480.
7. Attanasio O.P., Picci L., Scorcu A.E. (2000). Saving, Growth, and Investment: A Macroeconomic Analysis Using a Panel of Countries. The Review of Economics and Statistics, MIT Press. 82(2), 182-211.
8. Borensztein, E., J. De Gregorio and J. W. Lee. (1998). How Does Foreign Direct Investment Affect Economic Growth?," Journal of International Economics, 45(1), 115-135.
9. Chakraborty, C., Nunnenkamp, P. (2008). Economic Reforms, FDI, and Economic Growth in India: A Sector Level Analysis. *World Development*, 35 **(**7**)**, 1192-1212.
10. Domar E. (1946). Capital Expansion, Rate of Growth, and Employment. Econometrica.. 14(2), 137-147.
11. Duo Qin, Marie Anne Cagas, Pilipinas Quising, Xin-Hua He, (2006). How much does investment drive economic growth in China? Journal of Policy Modeling, 28 (7), 751-774.
12. Fagerberg J, Feldman, M P, Srholec M, (2014). Technological dynamics and social capability: US states and European nations. *Journal of Economic Geography*, 14(2), 313–337.
13. Frankel M. (1962). The Production Function in Allocation and Growth: a Synthesis. American Economic Review, 52(5), 995-1022.
14. Hermes, N., Lensink, R. (2003). Foreign direct investment, financial development and economic growth. Journal of Development Studies. 40 (1), 142 - 163.
15. Jones C. (1995). Time Series Tests of Endogenous Growth Models. Quarterly Journal of Economics. 110, 495-525.
16. Lee, C.C, Chang, C.P (2009). FDI, financial development, and economic growth: international evidence. Journal of applied economics 12 (2), 249-271.

17. Li, X., & Liu, X. (2005). Foreign direct investment and economic growth: an increasingly endogenous relationship. World development, 33 (3), 393-407.
18. Li, M (2006). Inflation and Economic Growth: Threshold Effects and Transmission Mechanisms. University of Alberta, Working papers.
19. Lipset S M, (1959), Democracy and working-class authoritarianism. *American Sociological Review*, 24(4) 482–501.
20. Li D. (2002). Is the AK Model Still Alive? The Long-Run Relation between Growth and Investment Re- Examined. The Canadian Journal of Economics. 35(1). 92-114.
21. Madson J.B. (2002). The Causality Between Investment and Economic Growth. Economics Letters.. 74, 157-163.
22. Madsen, J.B. (2002). The causality between investment and economic growt. Economics Letters, 74(2), 157-163.
23. Mah, Jai. (2010). Foreign direct investment inflows and economic growth of China. Journal of Policy Modeling. 32 (1), 155-158.
24. Mansfield E, (1991). Academic research and industrial innovation. *Research Policy*, 20(1) 1–12.
25. North D C, (1984). Government and the cost of exchange in history. *Journal of Economic History*, 44(2) 255–264.
26. Odedokun, M.O. (1997). Relative effects of public versus private investment spending on economic efficiency and growth in developing countries. Applied Economics. Taylor & Francis Journals, 29(10), 1325-1336.
27. Ostrom E, (1986). An agenda for the study of institutions. *Public Choice* 48(1) 3–25.
28. Prasad E.S., Rajan R.G., Subramanian A. (2006). Foreign Capital and Economic Growth. Brookings Papers on Economic Activity. 1(1), 153-230.
29. Rubin H J, (1988). Shoot anything that flies; claim anything that falls: Conversations with economic development practitioners. *Economic Development Quarterly*, 2(3) 236–251.
30. Rodrik D, Subramanian A, Trebbi F, (2004) Institutions rule: The primacy of institutions over geography and integration in economic development. *Journal of Economic Growth*, 9(2) 131–165
31. Sen A, (1999), *Commodities and Capabilities* (Oxford University Press, Oxford)
32. Schumpeter J A, (1961). The Theory of Economic Development: An Inquiry Into Profits, Capital, Credit, Interest, and the Business Cycle (Vol.55) (Transaction Books, New Brunswick, NJ)
33. Solow R.A. (1956.). Contribution to the Theory of Economic Growth. Quarterly Journal of Economics. 70, 65-94.
34. Yang Zou (2006). Empirical studies on the relationship between public and private investment and GDP growth. Applied Economics. Taylor & Francis Journals, 38(11), 1259-1270.
35. Yu, Qiao. (1998). Capital Investment, International Trade and Economic Growth in China: Evidence in the 1980-90s. China Economic Review, 9 (1), 73 - 84 .
36. Матвеенко В.Д. (2005).Инвестиции, институты и экономический рост: исследование на основе fK модели. // В кн. Конкурентоспособность и модернизация экономики, п/р Е. Ясина. М., ГУ-ВШЭ, Кн. 1. С. 226-238,