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IMPACT OF FDI ON THE ECONOMY OF ARMENIA

ВЛИЯНИЕ ПИИ НА ЭКОНОМИКУ АРМЕНИИ

Summary. *Nowadays each country is one of the elements of the global world, and is related to the other countries by export, import, FDI, transport and by the other relationship. FDI has an important role for each country. The objective of the article is to reveal the impact of FDI on economic growth, on export and import of RA. The results of this article show that the FDI plays an important role for the economic development of RA. Therefore there are some inconveniences in the investment promotion policy, which must be reviewed for achieving the best results.*

Key words: *foreign direct investments, economic growth, export, import, regression analysis, correlation.*

Аннотация. *В настоящее время каждая страна является одним из элементов глобального мира и связана с другими странами экономической деятельностью (экспорт, импорт, ПИИ, транспорт и др.). ПИИ играют важную роль для каждой страны. Целью данной статьи является выявить влияние ПИИ на экономический рост, на экспорт и импорт РА. Результаты этой статьи показывают, что ПИИ играют важную роль в экономическом развитии РА. Тем не менее, есть некоторые неудобства в политике поощрения инвестиций, которые необходимо пересмотреть для достижения наилучших результатов.*

Ключевые слова: *прямые иностранные инвестиции, экономический рост, экспорт, импорт, регрессионный анализ, корреляция.*

Statement of the problem. The World economy has formed since 19th century, when are developed trade relationship between countries. The Foreign Direct Investment (FDI) has gained an important role in 1945 after the Second World War, when the European countries need to the foreign aid to restore their economy. Nowadays attraction of investments is particularly essential in transition economies, as Armenia, where the limited quantity of own investments leads to various undesirable consequences. For more deeply analysis we must estimate the impact of FDI on the economic indicators of RA.

The best practices show that FDI plays an important role in the achievement of economic development and economic growth. The economy of RA is quite small, that is why the FDI in the economy of RA are inconsistent. The problem became even more acute in 2015, when in RA economy FDI reduced by more than 50% in comparison to last year. For the development of more effective policy for attraction of FDI, it is quite essential to assess the impact of FDI on economic growth in RA and show how it differs from the average global indicator.

Analysis of recent researches and publications. The conceptual framework of FDI was given by the International Monetary Fund from the viewpoint of the Balance of Payments. According to the fifth edition of the IMF's Balance of Payments Manual the FDI is the category of international investment that reflects the objective of a resident entity in one economy obtaining a lasting interest in an enterprise resident in another economy [5]. In the same edition of BOP a direct investor defined as the owner of 10% or more of a company's capital. The similar definition of FDI is given by OECD [8].

The concept of FDI was analyzed by the classical and the other economic schools. The first steps to explain the FDI was done by David Ricardo in the theory of comparative advantage. But neither Ricardo's theory of comparative advantage nor Ricardo's augmented theory can explain totally the concept of FDI, because of a perfect mobility of factors at local level [7]. Based on the Ricardian model Ely Hecksher and Bertil Ohlin suggested their theory in 1933 about the international movements of capital for international trade due to the variety of resource endowments between the counties [6].

The new approach to the concept of FDI is given by Stephen Herbert Hymer in 1960. According to Hymer s theory the foreign investors invest in the country A when the benefits of exploiting firm-specific advantages allow overcoming the additional costs of doing business overseas in the country A [4].

The internalization theory was suggested by Buckley and Casson in 1976. They argued that market imperfection the can lead to pressure for internalization by the MNC. They can internalize the know-how and as a result be a leader in the sector of their activity [2].

The FDI concept was explained also by Vernon based on the product life cycle theory in 1966. According to this theory Vernon demonstrated that anytime the firms, which product was in a decline phases in their home markets, undertake FDI to produce a product for consumption in foreign markets, where their product was in a growth or maturity phases [11].

Another interesting approach argued by John Dunning by OLI-paradigm in 1981. He demonstrated that ownership(O), location(L) and internalization of advantages(I) are the main reasons for investors to invest in any county [3].

The contemporary economists analyzed the FDI concept too. For example Silivo demonstrated that FDI are mostly done by MNC by the following principle: MNC invest in the countries, where their technology is superior and allows them to be more productive and profitable [23]. Yu et al. argued that FDI is the main mechanism for technological transfer, especially for developing economies [10].

Another group of economists think that FDI is not always useful for host country. Anytime FDI can have a negative impact to the recipient country by pushing out of the domestic market the less competitive firms [9].

By other hand the influence of FDI on a host country depends on the sector chosen for investment. Alfaro analyzed the time series of 47 countries during 1981–1999, and argued that FDI inflows have a negative impact on the growth of primary sector, and a positive impact on the growth of manufacturing sector [1].

Formulation purposes of article (problem). The objective of the article is to reveal the impact of FDI on economic growth, on export and import of RA.

The main material. To reveal the impact of FDI on the economy of RA we are used the quarterly data of RA FDI ant the other macroeconomic indicators.

Statistical data has been used based on electronic database of the NAS RA in the following form: RA FDI, export and import (by US dollar) quarterly data has been analyzed for 1995–2016 (number of observations was 84 after adjusting endpoints) and the RA economic growth (by percent) quarterly data has been reviewed for 2001–2016 (number of observations was 63 after adjusting endpoints). Regression and correlation analysis has been performed by EViews 4. For the correlation analysis has been used the common simple correlation coefficients, and the regression analysis has been based on ordinary least squares method.

For correlation and regression analysis the used time series must be stationary. So first of all we are checked the stationary of RA FDI, export, import and economic growth. Time series of economic growth were stationary, thus could be used for regression analysis, but the time series of FDI, export and import were not, therefore, for the analysis would be used the time series of FDI growth, export growth and import growth, which were stationary. The table 1 presents common simple correlation analysis of these time series. The most significant correlation was

Table 1

Common simple correlation coefficients of RA FDI, export, import and economic growth data

	DEXPORT	DFDI	GROWTH	DIMPORT
DEXPORT	1	0.28	0.16	0.77
DFDI	0.28	1	0.06	0.53
GROWTH	0.16	0.06	1	0.02
DIMPORT	0.77	0.53	0.02	1

Table 2

The estimation models of the impact of RA FDI growth on the macroeconomic data growth of Armenia

Dependent Variable	Model	Number of obs.
Growth=	5.07+0.03*DFDI+0.049*DFDI(–1)+0.05*DFDI(–2)+0.039*DFDI(–3)+0.02*DFDI(–4)	63
DEXPORT=	4.56+0.03*DFDI-0.22*DFDI(–1)-0.21*DFDI(–2)	84
DIMPORT=	6.57–0.74* DFDI(–1)-0.92* DFDI(–2)-0.44* DFDI(–3)	84

between FDI growth and import growth. And between both FDI and export growth and FDI and economic growth exist weak positive correlation.

Using the ordinary least squares method we have estimated $Y(t)= c_0+c_1*DFDI(t)+e$ model, where Y(t) is some macroeconomic data of RA, particularly the economic growth, export and import. Many times the time series of FDI was used by some lag for more deeply analysis.

The results are shown bellow (Table 2):

The 2nd row of the table 2 shows the impact of FDI growth on economic growth of RA. Therefore both correlation and regression analysis show that the relationship between FDI and economic growth was weak during each quarterly. From this model is clearly that the FDI in each quarter impact not only on the economic growth of the same quarter, but also on the economic growth of the next 4 quarter: growth of FDI by 1 USD in each quarter causes 0.03% increase of economic growth in the same quarter, 0.049% increase in the next quarter, 0.05% increase in the next 2nd quarter, 0.039% increase in the next 3nd quarter and 0.02% increase in the next 4 quarter.

The 3rd row of the table 2 shows the impact of FDI growth on export growth of RA. The relationship between FDI and economic growth was weak during each quarterly too. But there are some interesting facts: the increase of growth of FDI by 1 USD causes decrease of growth of export in the next two quarters, in the next quarter the export growth declines by 0.22 USD, and in the next 2nd quarter the export growth decline by 0.21 USD. This fact may be caused by many objective and subjective factors:

1. the FDI inflow increased in the non tradable sectors,
2. the FDI inflow increased in the tradable sectors, which export growth has a decrease trend,
3. the other factors.

And finally the 4th row in the table 2 shows the impact of FDI growth on import growth. As we can see in the case of import and FDI relationship too, the increase of FDI growth cause decrease of import growth in the next 3 quarters. So this may be the result of the fact, that in the related period FDI inflow increased in the sectors, which produce goods and services based on imported resources or technologies, but not in the sectors, which trade by importing goods.

The proposed hypothesis both in the case of export and import must be analyzed more deeply. So we must check if the FDI growth cause export growth in RA, and only the export growth trend was decreasing, and also if the FDI growth causes import growth by decreasing trend. We checked this relationship by regression analysis within logarithmic time series of FDI and export and FDI and import. The results are shown in table 3.

The 2nd row of the table 3 shows that the 1% increase of FDI causes the increase of export in the same quarter and in the next quarters: in the same quarter the export increases by 0.41%, and in the next quarter the export increases by 0.16%. This means that the FDI growth caused the export growth in RA in the reviewed period, and the inflow of FDI was in the non tradable sectors and in the sectors with decreasing export growth trend.

What about import, the 3rd row of the table 3 shows that the 1% increase of FDI causes the increase of import in the same quarter and in the next 2 quarters: increase of FDI by 1% causes increase of import by 0.183% in the same quarter, by 0.180% in the next quarter and by 0.136% by next 2nd quarter.

So the proposed hypothesis was confirmed and we can say that the FDI has an important role for the economic growth, for the import and export of RA.

Table 3

The estimation models of the impact of RA FDI on the foreign trade of Armenia

Dependent Variable	Model	Number of obs.
LNEXPORT=	3.60+0.41*LNFDI+0.16*LNFDI(–1)	87
LNIMPORT=	4.13+0.183*LNFDI+0.180*LNFDI(–1)+0.136*LNFDI(–2)	87

Insights from this study and perspectives for further research in this direction: As a result of this study we reveal the following facts: 1. the FDI inflow in RA causes the permanent economic growth in the next 3 quarters, 2.the FDI inflow in RA is in the sectors which produce goods and services by importing materials, 3. the FDI inflow in RA is not in the sectors, which trade by importing goods, 4. the FDI inflow in RA causes the increase of export in the same and in the next quarter, 5. the FDI inflow in RA is in the non tradable sectors as well as in the tradable sectors, which export growth trend is decreasing.

These 5 facts must be reviewed by the Government of RA in the process of creation and implementation of new investment promotion policy. As a result in the new policy must be aimed the inflow of FDI in the tradable sectors and in the sectors with increasing export growth trend by creation more favorable investment climate in RA economy.

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