

THE IMPACT OF EXCHANGE RATE ON FDI (FOREIGN DIRECT INVESTMENT)

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What is exchange rate?

International economics, one of the major parts of Economics, is mostly connected to the external activities of many countries and the international market in which countries participate to gain benefits from their products. In fact, there are many countries with their own products and with their own currencies participating in this market. Countries not only buy and sell for trading, but also with foreign currencies and to balance their domestic currencies. There is a rate between currencies that depicts the value of one currency in terms of another one; this is called the **exchange rate**. It is the main macroeconomic factor in the country's economy that can affect other currencies globally and other macroeconomic factors such as inflation rate, employment rate and so on.

Differences between the real and nominal exchange rates

There are two types of exchange rates that are used in the international market: nominal exchange rate and real exchange rate.

The nominal exchange rate is the value of one currency in terms of another, as is mentioned in the definition of exchange rate in the previous paragraph. However, the real exchange rate is defined in another way. It is based on values of products and services, not currencies. For example, the nominal exchange rate of the US dollar in Europe is shown as 1 dollar equal to 0.80 euro, as a currency-based exchange rate. However, the real exchange rate of USD in Europe should be based on some products or services such as oranges, potatoes, gold and so on. For instance, an orange in the US costs 1 dollar while in Europe it is 0.40 euro. So, there it is possible to buy 2 oranges for the same dollar. It leads to the conclusion that 1 US orange costs 2 EU oranges. To sum up, **the real exchange rate** is the value of products of one country in terms of those of others.

Description of FDI

Companies and entities in the international market link to each other not only for trading their products and services, but also for the purpose of investing money in other countries. There are different options for companies that want to invest money in other countries.

However, the most widely used and most empirical option is **Foreign Direct Investment (FDI)**. FDI is an investment made by a company located in one country into a company in another country. It differs from other kind of investments such as portfolio investments by being direct and referring to the net inflows (inflows – outflows). One of the features of FDI is that the investors have to get sustainable management interest of 10% or more. It has significant effects on both host and investor countries. It can bring new technology, studies on related fields, and new management forms to the host country which in turn stimulates economic growth, increases competition and decreases the unemployment rate by creating new work places and facilities. In addition, it increases the GDP of the investor country. An example of Foreign Direct Investment can be one local company in the US investing and creating branches of the company in India to enhance the company or buying a major part of another company in Germany.

The relationship between FDI and exchange rate

FDI and exchange rate of the country are closely related to each other mostly in terms of foreign investors who would like to invest capital in a host country who consider the relevant exchange rate between countries to determine whether it would be beneficial to invest. The relation between FDI and exchange rate is related to exchange rate changes such as depreciation or appreciation of the currencies. There are different approaches to these relations and impacts of these moves on FDI. Assuming most empirical approaches since early times, it is accepted that FDI has increased its value over the world mostly with the inflows received by businesses in the developing countries by having great influence from exchange rate movements. Thereby, government intervention to balance these relations by controlling exchange rate movements is greatly necessary. Balancing and having relevant exchange rates helps attract foreign investors to the host countries. Clarifying this relation makes it possible for the countries to improve their economies, to access the international market, to balance their deficits and so on.

Analyzing the impact of exchange rate on FDI (positive or negative)

Modern science has generally found the relevant effects of exchange rates on FDI that are caused by

exchange rate movements which are mentioned in the previous paragraph, such as depreciation and appreciation of current currencies. Exchange rates can affect both the amount and allocation of the value of FDI. Thereby, if depreciation occurs, meaning that the value of the currency diminishes, it will lead to a decrease in the wages and on production costs and thus will attract foreign investors, because they will be able to have more of an investment for the same cost that they had before the depreciation. This positive effect can occur with the condition that the exchange rate is unanticipated, because the anticipation of exchange rate movement can be reflected in high costs to finance the FDI. Besides of depreciation, there can be an increase in the value of currency, or appreciation. In this case, wages and production costs will become more expensive than they used to be. This, in turn, will distract foreign investors who are willing to invest in the host country because they would have less of an investment, which is not beneficial for them. Furthermore, exchange rate movements create competition in their markets as well. Let's assume there are 2 countries with different currencies and one investor who would like to use FDI for the company. Changes in the values of exchange rates strongly affect the decision of the foreign investor. Therefore, for the abovementioned reasons, the investor will select the country in which the company is able to have more investment and thus a greater benefit.

Market oriented or export oriented FDI depending on sign effect of exchange rate

Besides the general impact of exchange rates on FDI, specific types of FDI should be mentioned as well, because the effects on these particular types of FDI are different. FDI is divided into two parts, market-oriented (horizontal) and export-oriented (vertical) which are different from each other in particular fields such those driven by production costs or by trade and transport costs. **Market-oriented FDI**, known as **horizontal FDI**, includes investments that are made regarding trade and transport costs, and the main feature of this type is being near to the firm's largest consumer bases. There are many firms that can be an example of this type of FDI. For example, before 2009, Toyota produced all its cars and products only in Japan; however, its largest consumer bases were in North America and Europe. By considering large trade and transportation costs, after 2009, Toyota decided to accept horizontal FDI to produce most of its cars and trucks in North American and European countries where Toyota has large consumer bases and therefore created its affiliates in these regions.

In contrast to the horizontal FDI, **export-oriented FDI**, known as **vertical FDI**, includes the investments that are driven by differences in production costs between countries which exchange rates can affect more. Cheaper production costs, including wages and

raw material costs, lead to more vertical FDIs. Therefore, in contrast to **market-oriented FDI**, firms that use vertical FDI tend to invest their capital in developing countries where low-paid skilled labor exists. For example, companies such as Apple have their production-based affiliates in China, because of low-wage workers, though their largest consumer bases are not near these affiliates. Because they are so different from each other, the effects of exchange rate movements on market-oriented and export-oriented FDIs are different as well. Thus, appreciation and depreciation of the host country currency has opposite impacts on these two types of FDI. In fact, appreciation of the host country currency increases the wealth of market-oriented FDI investors while it raises the production costs for export-oriented FDI investors. This happens because appreciation makes host country products expensive, therefore market-oriented investors gain more benefits by selling their products in host countries for expensive prices. As is mentioned above, host countries for market-oriented investors are also the largest consumer base countries. Unlike horizontal FDI, appreciation of host country currency raises the production costs for export-oriented FDI investors and therefore reduces their wealth, because it increases wages, and raw materials become more expensive for foreign investors. The opposite effects of exchange rate movements on two types of FDIs are mostly because of the differences in host countries. If the host country is the same country where the largest consumer base is located like in market-oriented FDIs, then the wealth of the foreign investor will be directly proportional to the host country currency. However, if the largest consumer base country is a third country and different from the host country as in export-oriented FDIs, then the wealth of the foreign investor will be inversely proportional to the value of the host country currency.

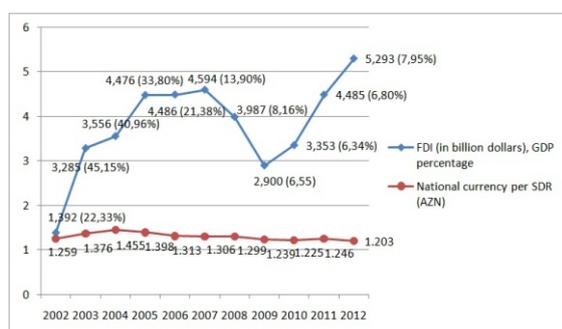
Exchange rate and FDI – Azerbaijani case

As the general impact of exchange rate on FDI has been explained so far, it can be applied to the case in Azerbaijan as well. Analyzing these effects in Azerbaijan, it is clear that most of the foreign investors are attracted by the oil sector of the country, which Azerbaijan is famous for. In fact, export-oriented FDI is more appropriate for foreign investors in Azerbaijan because of the opportunities for gains in oil lubricated decision making. For foreign investors who invest in the oil sector, Azerbaijan is not a third country that they can sell their products to, thus their investment is the type of export-oriented FDI, as the features are explained in the above paragraphs. Therefore, the impact of the exchange rate on FDI in Azerbaijan will be relevant to the effects on export-oriented FDI in general. So, appreciation of the currency will increase the production costs and wages to produce the product, and accordingly will decrease the wealth of foreign investors whose

investments are oil-based. Conversely, the depreciation of the currency will decrease the relevant costs for foreign investors and raise their profits in this sector. Assuming all of these implications, it is obvious that these foreign investors are more likely to face undervalued currency for various reasons such as political decisions of their countries, creating other spillovers.

In reality, it is easy to see all these explanations simply in the diagram below:

The Impact of Exchange Rate on FDI in Azerbaijan



Years	FDI (in billion dollars)	National currency per SDR	GDP (in billion dollars)	FDI, as a percentage of GDP
2002	1,259	1,392435	6,236	22,33%
2003	3,284998	1,376	7,276	45,15%
2004	3,556099	1,455	8,682	40,96%
2005	4,476396	1,398	13,245	33,80%
2006	4,485966	1,313	20,982	21,38%
2007	4,594234	1,306	33,049	13,90%
2008	3,986807	1,299	48,853	8,16%
2009	2,90003	1,239	44,291	6,55%
2010	3,352997	1,225	52,905	6,34%
2011	4,48512	1,246	65,953	6,80%
2012	5,29325	1,203	66,605	7,95%

Scientific evidence of prepared data:

The correlation regression function with time trend is $FDI = \beta_0 + \beta_1 \text{ex.rate} + \beta_2 \text{years} + e_t$; $t = [2002; 2012]$ where β_1 and β_2 are 10,38 and 0,36 respectively. These are found by using relevant formulas in Microsoft Excel. The coefficient of exchange rate shows that the relation between FDI and exchange rate is positive and real because by finding the value of t_{stat} it is possible to test the relation between them at a confidence level of 95%. The value of t_{stat} of the exchange rate is 2,58 which is out of the $[-1,96; 1,96]$ interval of t_{crit} and it shows that the exchange rate variable is statistically significant.

Note*: This data is made by combining two or more different data together. Information about National currency per SDR in Azerbaijan is taken from the website of Central Bank of Azerbaijan (<http://www.nba.az/other/azn-rates>) while the data

about FDI and nominal GDP are taken from online database of World Bank (<http://data.worldbank.org/indicator/BX.KLT.DINV.CD.WD>, <http://data.worldbank.org/indicator/NY.GDP.MKTP.CD>).

In abovementioned data, in fact, it seems that there has been a sudden increase in the value of FDI since 2009. This is related to the increasing level of non-oil based investments and economic increase in recent years. Thus the balance of the investments will gradually favor non-oil based investments and cause some investments to be market-oriented because the economy is getting stronger, leading Azerbaijan to become a consumer based country for more international companies.

Conclusion

To sum up, exchange rate movements, including depreciation (undervaluing the currency) and appreciation (overvaluing the currency) as a macroeconomic factor have relatively direct effects on FDI, depending on its types which can be market-oriented (horizontal) or export-oriented (vertical). The difference in effect on the two types is seen clearly in the case of exchange rate movements. Although there are some disadvantages in various cases, the impact of these movements on FDI is very important for both the host country and for foreign investors because of the benefits that each party will have.

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