DYNAMIC INTERACTION OF INTERNATIONAL TRADE AND CAPITAL FLOWS – THEORETIC AND EMPIRICAL ANALYSIS

Vesna Petrović, PhD
Ivan Mirović, PhD

Abstract: International trade and foreign direct investments are considered to be important catalysts of economic growth in developing countries. In the literature dealing with the topic of the impact of international trade and capital flows on economic growth and development there is no unique conclusions, and consequently on the role of economic and institutional prerequisites for promoting international trade and investment. The analysis in this paper is based on the consideration of the mutual interaction of international trade and FDIs, and the question whether the function of the impact on economic growth is achieved together in a way that these two factors jointly enhance growth, i.e., are they complementary and what is their interdependence, or are they mutually exclusive and, therefore, represent substitutes.

Keywords: international trade, capital flows, economic growth, complements, substitutes

1. Introduction

International trade and foreign direct investments (FDIs) are considered to be important catalysts for economic growth in developing countries. International trade is considered as a tool for achieving economic growth, because it allows efficient production of goods and services by focusing production in countries that have a comparative advantage in a particular production and FDIs are considered to stimulate domestic investments, promote the improvement of human capital and institutions, and represent the most important form of technology transfer from developed to developing countries. In the literature the debate about the role of FDIs and international trade on economic growth continues, as well as, the inevitable role of other economic and institutional prerequisites to

* Faculty of Business Economics, Bijeljina, BiH, University of East Sarajevo, vesna.petrovic@fpe.unssa.rs.ba
* Faculty of Business Economics, Bijeljina, BiH, University of East Sarajevo, ivan.mirovic@fpe.unssa.rs.ba
UDC 339.5+339.727.22]:330.35
encourage FDI and international trade. There is no uniform conclusion about the role of FDI and international trade on economic growth; therefore, there are no limits for defining development policies to promote sustainable economic growth and development. Despite rapid increase of capital flows intended for global development needs in the areas of international trade, finance and technology, however, the poorest countries and developing countries had little access to finances necessary for development. FDI’s are generally highly concentrated, for example in China, and official flows of public grants in the field of economy are declining, while the potential use of remittances for development purposes is significant but under-utilised. However, the results of the use of foreign capital development will depend on the choice of appropriate economic policy measures for diversification of international trade, new technologies and the achievement of the overall objective of poverty reduction (Addison & Mavrotas, 2008:19).

2. Foreign trade and FDIs - substitutes or complements

The analysis in this paper starts with the consideration of the mutual interaction of foreign trade and FDI’s, and a question whether their influence on the economic growth is achieved together, in a way that these two growth factors are mutually supportive, therefore, complementary and what is their interdependence? Or are they mutually exclusive and thus represent substitutes? In this respect, numerous areas for analysis can be opened up, for example, whether and how foreign trade causes FDI’s, and on the other hand, how can FDI’s encourage exports and export competitiveness, what is the importance of FDI’s for intra-industry trade, as one of the most important phenomena of modern economy. The largest theoretical considerations based on empirical analysis of data mainly related to the Southeast Asia have focused on the relationship of FDI’s and international trade, and in terms of whether FDI’s promote or restrict international trade, and vice versa whether it trade encourages or reduces FDI’s flows. It is possible to address this analysis from different aspects as follows: from the perspective of theoretical models, investment strategies, strategies of economic development and economic reform policies in the field of international trade and investment (Bende-Nabende, 2003).

The interaction between international trade and foreign direct investments (FDI’s) is one of the main features of international economic relations and globalisation in general. The dynamic nature of this relationship and the lack of comprehensive data - macro, micro and sectoral, led to the existence of technically complex empirical material with unclear conclusions. The study of this relationship can not be accessed from the perspective of a completely theoretical analysis, but empirical studies can be sublimated. Most of these works to the mid-eighties show that international trade generates investment, but after that period causal relationship has been reversed, therefore, investments started to significantly affect trade flows. The analyses show that the investments stimulate the growth of exports of investors, and it turned out that the investments are complementary to trade. Thus, for example, in the analysis that included 14 OECD countries it has showed that every dollar of investment abroad generates about two dollars of additional value of exports (Fontagné, 1999: 5). On the other hand, in the host countries of FDI’s it has been proved that short-term FDI’s increase imports, while export increase is occurring after a longer period of time. However, the benefits of investments in the short term are reflected in the transfer of technology, increased employment, involvement of local subcontractors and the like. Also, it was shown that the nature and characteristics of international trade and investment
relations vary depending on the degree of development of the country, and even among the developed (USA and EU countries) there are different conclusions. In some cases, investments abroad have a clear and important complementary impact on exports and imports, as is the case for the USA, and to a lesser extent for EU countries, although it depends on which EU country is concerned. When it comes to investments that are coming to the USA, the impact of FDIs is not significant for the export of USA, which is explained by the size of the domestic market and efforts by foreign companies to gain US market. The situation is similar when we are looking at the impact of incoming investments on imports of the USA, so for every dollar of investments, import increases to sixty cents, while in France, for example, a dollar of investments generates growth in imports of 1.4 dollars (Fontagné, 1999: 22). All these are very complex relationships between investments, exports and imports, which are dependent on the specific conditions of individual country - level of development, market size, development strategies, institutional conditions, etc. We should not neglect the reliability of statistical data and analysis used in the observed time periods, as it has happened that for the same country in different periods of time different data on complementarities, substitution or links between international trade and investment have been reached. Furthermore, it is necessary to pay attention to the forms of FDIs - greenfield, brownfield, horizontal and vertical, mergers or acquisitions, as well as the growing importance of trade in services. It is possible to analyse this relationship from the standpoint of the level of economic integration with reliable statistics.

2.1. The theoretical framework

In the literature that deals with capital flows, in particular foreign direct investments, chronologically presented, a special contribution in this field has been made by Mandel, Vernon and Kojima (all in Ahmed, 2013:146). Mandel (1957) showed that in the framework of the Heckscher-Ohlin-Samuelson-HOS model investments and trade are perfect substitutes, i.e. trade reduces the need for investments and vice versa. By contrast, with the use of different assumptions related to the HOS model, Markusen (1984) came to the conclusion that investments and trade can be complementary. He proved that investments encourage trade when the trade is based on factors that are not part of the HOS model, for example, differences in technology between trading partners. A key feature of this relationship is related to the area where the FDIs are used, whether it is the industry with export orientation or it is an industry that is competitive with imported products. If it is the first case, then there is an expansion of trade, and in the second case there is a reduction in the volume of foreign trade. However, in the case that the countries are of similar size and factor availability, Markusen’s model shows that trade and FDIs are substitutes. Kojima (1973) distinguishes between trade and non-trade-oriented FDIs. The first type is occurring when the country of origin of FDIs has a comparative disadvantage in the industry in which it invests, so that capital goes to countries that have comparative advantages in relation to these activities. This leads to an increase in the volume of trade and globally to a more efficient use of resources. Investments that restrict trade occur in industries where the country of origin of capital flows has a comparative advantage, but despite that there is investment abroad due to possible protectionist or oligopolistic competition. This type of investment leads to the division of markets and reduction of trade (Petri and Plummer, 1998 in Ahmed, 2013:147).
For the relationship of FDI s and trade the process of internationalisation of the product or company is important and it is presented through dynamic Vernon's product life cycle (Vernon, 1966). The main hypothesis in the model of the product life cycle is that FDI s occur when the production process of a new product in the country the innovation itself becomes standardised and more profitable to be produced abroad, first in other developed countries, and then in developing countries. According to this model the flow of investments initially tends to reduce trade because it replace exports, but because production is entirely moved abroad it leads to repeated increase in the volume of trade. This establishes the order, from trade to FDIs, and then FDIs to trade.

Empirical data show that the experience gained in the process of investing abroad reduces the costs of production abroad, to the extent that even for relatively new products production is established abroad where there is an optimum availability of production factors (Petri and Plummer, 1998 in Ahmed, 2013:147). This eventually leads to a concentration of production and the increased volume of international trade, even during the initial stages of investment. Therefore, this model shows that to some extent for certain types of products there are grounds to claim that FDIs and trade are substitutes, or mutually exclusive. However, in the current framework of global economy, when the movement of goods, services, capital, labour, and even the production in the context of transnational companies is maximally facilitated as a result of overcoming the technological and general economic policies in the field of trade and capital flows, companies have more choices on how to meet the demands of the market and exploit foreign resources. Internationalisation enables the company to combined FDIs and trade in a manner considered most appropriate for the business of TNC, which means that the model of product life cycle may not be considered appropriate for the interpretation of the situation in the global economy (Bende-Nebende, 2003).

In this context, it is important to mention Dunning OLI (ownership-location-internalisation) paradigm (Dunning, 2008), which assumes that the company has certain resources in the form of production technology, management resources and techniques of marketing, which seeks to place on foreign markets and thus generate income. In this case, they can choose one of three options: to produce goods and export to foreign markets, second, they can license the patent to foreign producers and make the rent, and the third they can access foreign markets through the establishment of production abroad and thus directly supply foreign markets. In these settings, FDIs and trade are seen as alternatives. If there is no appropriate licensing procedures, companies choose between exports and FDIs, which directly leads to choice between investments or trade. In addition, if there are trade tariffs or non-trade barriers, or high transport costs, all this leads to a decision for company to choose FDIs before export variant. The early work on the relationship between trade and FDIs, led to the conclusion that they have been mostly exclusive, i.e. companies choose one or the other, but as the research broaden on this topic over time and by creating a modern economic environment, it became obvious that the investments and trade are complementary and mutually aided processes (Sauvant, 2002: 38).

Furthermore, the issue of the relationship between FDIs and trade, as well as considerations of their complementary or substitutive relationship can be viewed from at least three perspectives: investment strategies, economic development strategies and general economic policy reforms in the areas of trade and investment. When it comes to investment strategies, this area is inevitably tied to vertical or horizontal type of FDIs.
Therefore, in the theory of international economics, if the two countries have similar resources, similar size and revenue, then the most common form of FDIs is horizontal in order to expand the market and by doing that a classic trade is usually replaced. On the other hand, if it comes to FDIs based on cheaper production costs, then it usually comes to vertical FDIs, followed by exports from the country of origin of investments. The best example of this investment is related to the cheaper labour costs, especially in the textile industry, where the vertical investment leads to increase in trade on both the domestic and foreign countries, because the raw materials and/or semi-finished products are imported from the countries of origin of FDIs, and final products are exported. A similar sequence of things occurs in FDIs based on the search for resources, i.e. investment comes after an increase in trade for both countries, and only in this case the country of origin of FDIs usually exports machinery and technology, and imports raw materials and/or finished products.

From the perspective of economic development strategies FDIs and trade connection can be observed depending on the chosen development strategy of a particular country, or whether the chosen strategy is the one of closed market or very limited imports, or is it an open and development strategy oriented to cooperation with foreign countries. If, a country applies import substitution regimes this leads to a very restrictive trade regimes restricting imports to only absolutely necessary products. In this mode, the policy related to FDIs may also be extremely radical, and all foreign investments may be prohibited, in order to facilitate achieving the goals of import substitution. In such cases, FDIs are considered extremely detrimental to the effective functioning of the economy, and therefore prohibits foreign investments. However, rare are the countries in which this strategy is applied over the long term, a more common choice is to permit FDIs in sectors where the country has comparative disadvantages in order to limit the possibility of exports. However, at the beginning foreign firms use a specific concessions, such as monopolistic position or other benefit in the short term, but over time they realise that slow growth and isolation from international movements negatively affect their business, so they lobby for change in trade regimes and strategies of closed markets. Therewith, radically limited trade regimes affect the FDIs policy, which in turn cause changes in trade regimes. On the whole, dynamic models of relations of trade and investments show that changes in FDIs policies after a while cause changes in trade policies. If, however, we speak about a development strategy that is open to foreign countries, FDIs can be an effective tool in structural adjustment for improved efficiency in the use of comparative advantages of certain countries, and on the other hand, free trade regimes can enhance liberal investment policies. The development strategy based on an open economy tends to reduce the transaction costs of economic cooperation with foreign countries. The aim is to reduce restrictions on trade and investments, in order to reduce the cost of doing business, which undoubtedly stimulates both international trade and investment.

The paradigm that is inevitably to be mentioned in this chapter which analyses the relationship between international trade and FDIs is the paradigm of global value chains (GVC). It is evident that in the last few decades, the production of most goods and services has been vertically fragmented in different countries and that this is the main feature of today's international production sharing. Literature dealing with this global phenomenon is large, especially on the major factors affecting the spread of GVC, as well as the main indicators that characterise and measure this phenomenon. GVC are directly related to the growth of international trade, as well as the growth of flows of foreign capital through the
inevitable role of multinational companies (MNCs) in all of this. The paper that represents a detailed review of the empirical literature on the GVC (Amador & Cabral, 2014) primarily emphasises that the main factors of development GVC are technological progress, reducing transport and communication costs, as well as the removal of political and economic barriers. For all these factors, we can say that are both drivers of international trade and FDI flows, as well as being an integral part of GVC and operations of MNCs. The authors of the study of the European Central Bank primarily highlight the factors that have caused such a significant change in recent decades in global production and international trade flows. Among the most important they include strong economic and trade liberalisation, as well as the already mentioned acceleration of technological progress, especially in information and communication and transport fields. Progress in these areas has enabled the international fragmentation of production and separation of production parts and components, with at the same time perfect compatibility and coordination of geographical diversified production activities.

The main methodological approaches used in this field are: international trade statistics of parts and components, the customs statistics of this form of trade and data about international trade combined with input-output tables. Apart from the papers that use these data sources, it can be said that empirical studies of GVC with firm-level data are rather rare. In conclusion, the study points out that the GVC can not be understood only through the classical interpretation of the concept of comparative advantage applied to countries and economic sectors. GVC relate to a combination of added value from different sources with multiple dimensions, including the benefits of trade flows, productivity and trends in the labor markets.

2.2. Empirical studies on the relationship between international trade and FDI

Until recently, it was challenging to find a basis for an empirical analysis in the theoretical concepts, because there was no an agreed theoretical framework that would encompass various types of FDI. Theories have been either horizontal multinational (Markusen, 1984), where companies manufacture the same products in different countries or vertical (Helpman, 1984), where companies have geographically fragmented production in phases. The key is the fact that the relationship between international trade and FDI, their compatibility or substitutability depend on whether FDI are vertical or horizontal. Therefore, the theories about horizontal FDI anticipate a negative relationship, while the theories about vertical FDI anticipate a positive relation. In recent years, a number of empirical studies in the economic literature, which confirmed that trade and investments are complementary, and that their relevance and place in the global economy is undeniable. Most of these works are based on a particular theoretical framework mentioned above, and then they test the premises based on statistical data for a specific country or more of them. Markusen, Venables, Konan and Zhang (1996) receive verification of their theoretical assumptions in the work on complementarity and substitutability of trade and FDI (Amiti, Greenaway & Wakelin, 2000: 3). The aforementioned model establishes a theory of how the specific characteristics of the country determine whether FDI would be vertical or horizontal, while empirical work extends the features of the country on the relationship between FDI and trade by testing bilateral data for the USA and its 25 business partners during 12 years, from 1983 to 1994. In this paper there are two hypotheses: the first, if the
Dynamic interaction of trade and capital flows – Theoretic and empirical analysis

countries are of similar size and resources, trading costs are moderate to high, and FDIs and trade are substitutes; and the second, if the countries are different in size and resources, trading costs are low, and, therefore, FDIs and trade are complementary. The overall conclusion is that the relationship between FDIs and trade is not easy to analyze, and by using the initial frame of Markusen’s et al theory (1996) empirical analysis leads to the confirmation of hypotheses. The results indicate that horizontal FDIs are prevailing when the countries are similar in size and available resources, and that the costs of trade are moderate to high, so that FDIs and trade are substitutes. Otherwise, if they are different in size and resources, vertical FDIs will dominate with low trading costs, which will make FDIs and trade complementary. This study also shows that if previously there had been conflicting results, they were the result of using different periods of time and level of development of countries. In other words, the observed positive or negative relationship of FDIs and trade depends on the characteristics of the countries and the time period for which data were taken for the analysis.

The next study, which uses data for the countries of the European Union starting 1995 to 2006 (Martinez, Bengoa-Calvo & Sanchez-Robles, 2012: 2) tests whether the gradual reduction of international trade barriers would increase both trade and FDIs flows between EU countries. The results showed that trade integration and FDIs have been mutually beneficial, i.e. in the case of Europe that are much more complementary than substitutive in character. This effect was pronounced for FDIs within the EU, but also for investments that come from countries outside the EU. The conclusion is that trading costs are not as important as conquering market share, which indicates that for the EU the pattern relevant for horizontal FDIs could be followed rather than the one related to vertical model. As it can be seen, this study is inconsistent with the conclusions of the previously presented empirical analysis. To clarify the controversy it may be noticed that the diversity of characteristics of 28 EU countries contributes to it, although most of these are in the group of developed countries, and prevalence of horizontal FDIs is based on conquering the market of these countries, but not mutual exclusion, but complementarity of trade and FDIs. As previously stated, in theory horizontal FDIs replace trade, or rather trading, the company establishes a complete subunit in a foreign country on the basis of calculations between the costs of trading in the form of customs barriers and non-tariff barriers and production costs (Horstmann & Markusen, 1992). By doing that horizontal FDIs skip customs restrictions and are directly related to the international trade costs. On the other hand, vertical FDIs segment production process across different countries, which encourage exchange of trade, i.e. trading of intermediate goods, parts, etc., in order to form the final product. In that manner vertical FDIs are complementing trade, and these are encouraged by the low trading costs (Helpman, 1984). However, these two simple theoretical models are generally inconsistent with the empirical findings, which at least show the complexity of this relationship and the impossibility of drawing unilateral conclusions.

Therefore, in the theory the company chooses between two ways to enter foreign markets: to export domestic production to foreign markets, or alternatively to invest and carry out production activities abroad. Confirmation of significant disagreements in theory of international trade, including the theory of FDIs, and the result of the related empirical research are also presented by numerous other authors. Carter and Yilmaz (1999: 1-10) based on the data of the food industry in Turkey for the period 1980-1999 are coming to a conclusion on complementarity of FDIs and international trade. In this sector, sales over companies abroad rose more than exports, and FDIs have become the dominant form of
international trade in the food industry (Bredahl, Abbott & Reed, 1995 quoted in Carter & Yilmaz, 1999: 2). They also cite other authors with similar conclusions: Blonigen (1997 quoted in Carter & Yilmaz, 1999: 1) in order to overcome the problem of aggregated data that can often mask the effect of substitutability and exaggerate the effect complementarity, he analysed the data of the Japanese vehicles parts industry for US market. By focusing on one product he avoided neutralisation of substitution and came to the evidence about substitution and complementarity of FDIs and international trade.

Furthermore, the study, which analyzed data from seven industry sectors in Austria during 13 years, has come to a conclusion about a significant and stable complementary relationship between FDIs and exports with mutual cause-and-effect relationship. Moreover, according to this analysis, there is no evidence on the effect of substitution between exports and FDIs (Pfaffermayr, 1996 quoted in Carter & Yilmaz, 1999: 4). The same author in a similar analysis, but in the case of monopoly, horizontally integrated multinational company finds a basis for substitution between the production of foreign companies and export. Analysis of authors Belderbos & Sleuwaegen (1998) in the same study enabled the testing of the hypothesis that the investments of Japanese companies in Europe in the field of electronics "skipped" tariffs and replaced export which confirms the hypothesis. The optimal model of meeting the needs of foreign markets, according to some authors, depends primarily on the difference in host countries (Oberhofer & Pfaffermaye, 2008:2). In an analysis based on data from several different countries, it has been concluded that companies use both approaches – they export and invest abroad. Specifically, in the case of large and distant markets they use FDIs, while the smaller and closer markets are served by classical export. Therefore, in the case of this model multinational companies that are horizontally integrated make a decision between using FDIs or export based on the size of markets and distances.

3. Conclusion

The main of the paper was to review relevant literature in relation to the theoretical and empirical analysis of the trade-investments nexus, and their mutual contribution to the economic prosperity. From the above presented it can be concluded that the dilemma about whether international trade and investments are supplements or complements, or whether they are mutually exclusive or mutually complementary, it is not easy to conclude. Based on the classic theoretical papers it was possible to see that international trade and investment are mutually exclusive, i.e. substitutes. Over time, TNC with their activities attract the attention of analysts, and on the basis of existing theoretical models it could be concluded that the FDIs practically suppress trade in a manner in which domestic branches of foreign companies would fully serve the markets and thereby it would made foreign trade redundant. It was considered that the TNC would replicate production in the global perspective, i.e. they would produce and sell in the local markets instead of exporting from their own areas. However, the practice has shown that this did not happen, and that although TNC have established their production capacities around the world, but for their own purposes there is a high percentage of international trade in components, parts or semi-finished products. Investments lead to establishment of a large production, sales and services companies for the purposes of which there is a huge import of semi-finished or finished products. Instead of the trend that investments would replace trade, there has been conclusion that investments have been complementing trade, and that trade is tightly linked
Dynamic interaction of trade and capital flows – Theoretic and empirical analysis

with investments, which is the best explained through the concept of Global Value Chains. Therefore, there is no doubt that both international trade and investments influence economic growth and development, but the mutual interaction of trade and investments has been a complex one, depending on the numerous factors linked to the country specific determinants, but also wider economic, policy related, institutional and global environment.

References

7. Dunning, J. (2008), Multinational enterprises and the global economy, Edward Elgar Publishing
Apstrakt: Međunarodna trgovina i strane direktnе investicije se smatraju važnim katalizatorima ekonomskog rasta u zemljama u razvoju. U literaturi koja se bavi temom uticaja međunarodne trgovine i tokova kapitala na ekonomski rast i razvoj ne postoje jedinstveni zaključci o tome, pa stoga ni o ulozi ekonomskih i institucionalnih preduvjeta za promociju međunarodne trgovine i investicija. Analiza u ovom radu je zasnovana na razmatranjima o međusobnoj interakciji međunarodne trgovine i stranih direktnih investicija, na pitanje da li se funkcija uticaja na ekonomski rast postiže zajednički na način da ova dva faktora istovremeno podstiču rast, t. j. da li su oni komplementarni i kakva je njihova međuzavisnost, ili su oni međusobno isključivi, pa stoga, predstavljaju substitute.

Ključne riječi: međunarodna trgovina, tokovi kapitala, ekonomski rast, komplementarnost, substituti