The Effects of Foreign Direct Investments on Developing Countries*

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Abstract

The purpose of this paper is to examine whether foreign direct investments **(**FDIs) have a positive impact on economic growth depending upon absorptive capacities and the structures of the FDIs in the host countries, using panel data for the period between 1991 and 2009 in 49 developing countries. The results indicate that when the absorptive capacities in the host counties are considered, the FDI structure and the FDI inflows do not have a significant effect on growth for the whole sample. It means that in general subject countries lack the necessary level of absorptive capacities which would enable FDIs to have a positive impact on economic growth. The analyses for the sub-groups reveal that, absorptive capacities of the group of countries that receive below-average FDIs and of the countries in Asia have increasing contributions to the positive growth effects of FDIs. Moreover, FDIs have a negative impact on economic growth of the host countries in Africa.

Keywords: *foreign direct investment, economic growth, absorptive capacity.*

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Doğrudan Yabancı Yatırımların Gelişmekte Olan Ülkelerin Ekonomik Büyümelerine Etkileri: Panel Veri Analizi

Öz

Bu çalışmanın amacı, yabancı yatırım alan ülkelerde massetme kapasitelerine ve DYY'lerin yapılarına bağlı olarak, DYY'lerin ekonomik büyümeye olumlu etkilerinin olup olmadığını, 1991-2009 dönemi ve 49 gelişmekte olan ülke için panel veri kullanarak incelemektir. Sonuçlar göstermiştir ki, ev sahibi ülkelerdeki massetme kapasiteleri dikkate alındığında, DYY yapısının ve DYY'lerin tüm örneklem için ekonomik büyüme üzerine anlamlı bir etkileri yoktur. Bu durum, genel olarak örneklemdeki ülkelerin, DYY'lerin ekonomik büyüme üzerine olumlu etkilere sahip olmalarına olanak verecek yeterli massetme kapasitelerinden yoksun oldukları anlamına gelmektedir. Alt grup analizleri ise, ortalamanın altında DYY alanlar ile Asya kıtasındaki ülkelerde massetme kapasitelerinin, DYY'lerin ekonomik büyümeye olumlu etkilerini artırıcı bir katkısı olduğunu ortaya çıkarmaktadır. Ayrıca, Afrika ülkelerinde DYY'lerin yatırım alan ülkelerin ekonomik büyümelerine olumsuz etkilerinin olduğu tespit edilmiştir.

Anahtar kelimeler: *doğrudan yabancı yatırım, ekonomik büyüme, massetme kapasitesi.*

1. Introduction

Foreign Direct Investments (FDIs) that are distinct element of international finance in the globe since colonial period, attract attention. As a consequence of the globalization period experienced effectively after the beginning of 1980's, increasing free movements of FDIs have enabled their positive and negative effects to be felt dramatically.

FDIs can create various impacts. In consequence of FDIs, while host countries may be affected positively because of the technological progresses and capital inflows to the country; they may also experience negative effects that may make them dependent on foreign capital and put them under economical and political burdens. In this paper, the structure of FDIs are handled together with the absorptive capacities[3] of the host countries, and the effects of FDIs on economic growth are tried to be revealed.

The direct relationship between FDIs and the political interests of main investor countries, has enabled major debates to rise. The political interests have caused the major distinctions on the host countries in consequence of the casual link that the FDIs have. FDI effects on economic growth of host countries that have a sound and developed financial institutions are different from those that lack such institutions. Besides, structural differences of FDIs may also create varieties of effects on the host countries.

The discrepancies in the effects of FDIs have been a motivating reason for this paper. The question of under which circumstances FDIs contribute to economic growth in the host countries and under which others FDIs lack to cause such effects, comes into prominence. In other words; while may the existence of some set of circumstances promote the growth, the existence of some others may not promote it? The sets contain these circumstances are mainly formed by the structure of FDIs and by the absorptive capacities of the host countries. The first part of the set of circumstances has been formed by the market-oriented horizontal FDIs and

[3] In the most general sense, absorptive capacity is described as the ability of countries to absorb and utilize every kind of knowledge and innovation (Laura Alfaro, Areendam Chanda, Sebnem Kalemli-Ozcan and Selin Sayek, "FDI and Economic Growth: The Role of Local Financial Markets", *Journal of International Economics*, Vol. 64, No. 1, 2004, pp. 89-112; Laura Alfaro, Areendam Chanda, Sebnem Kalemli-Ozcan and Selin Sayek *How Does Foreign Direct Investment Promote Economic Growth? Exploring the Effects of Financial Markets on Linkages,* National Bureau of Economic Research, Working Paper, No. 12522, 2006; Wesley M. Cohen and Daniel A. Levinthal, "Innovation and Learning: The Two Faces of R&D", *Economic Journal*, Vol. 99, No. 397, 1989, pp. 569-596; Wesley M. Cohen and Daniel A. Levinthal, "Absorptive Capacity: A new perspective on learning and innovation", *Administrative Science Quarterly,* Vol. 35, No. 1, 1990, pp. 128-152.)

export-oriented vertical FDIs and as a matter of fact, it implies that the export-oriented FDIs may promote growth. The second part of the set of circumstances signify whether the host countries have some level of absorptive capacities or they basically lack such capacities. Thus, the main goal of this paper is to investigate the effects of FDIs on economic growth empirically by taking into account the structures of FDIs together with the absorptive capacities of the host countries.

On the relationship of FDI and economic growth, this paper presents a simultaneously comparative study based on both the structures of the FDIs and on characteristics of the countries in the sample. Even if different approaches in the literature have been reflected, the paper differs from others in that, it analyzes the effects of FDIs in different structures on countries that have different characteristics. This paper has tailored its analysis in accordance with the well accepted opinions about the effects of FDIs. Thus, with its unique model the paper enables us to analyze various effects of FDIs in several dimensions.

Following the introduction part in which the aim and importance of the paper is indicated, in the second part the existing literature on FDIs has been presented and in the next part structures of FDIs and FDI-absorptive capacity relationship have been analyzed. In the fourth part, the analyses applied to the whole sample and to the sub-groups have been included, and the findings of the analyses have been presented. Finally, the paper is concluded by policy recommendations.

2. Literature

Researchers have used different models to measure the various effects of FDIs.[4] While these models have specific strengths and weaknesses, they generally concentrate on the effects of FDIs on the economic growth of the host countries.[5]

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[4] e.g., Eckhardt Bode and Peter Nunnenkamp, "Does Foreign Direct Investment Promote Regional Development in Developed Countries? A Markov Chain Approach for US States", *Review of World Economics,* Vol. 147, No. 2, 2011, pp. 351-383; Laura Alfaro, Areendam Chanda, Sebnem Kalemli-Ozcan and Selin Sayek, *FDI Spillovers, Financial Markets, and Economic Development,* IMF Working Paper, No. 03/186, 2003.

[5] e.g., Maria Carkovic and Ross Levine, "Does Foreign Direct Investment Accelerate Economic Growth?", ed. Theodore H. Moran, Edward Montgomery Graham and Magnus Blomström, *Does Foreign Direct Investment Promote Development?,* Institute for International Economics, Center for Global Development, Automated Graphic System Inc., Washington DC, 2005, pp. 195-220; Prabirjit, Sarkar, *Does Foreign Direct Investment Promote Growth? Panel Data and Time Series Evidence from Less Developed Countries, 1970-2002*, MPRA Paper, No. 5176, 2007.

Due to the possibility of existence of a direct relationship between FDIs and the political interests of the main investor countries, some contradictory studies about the effects of FDIs on economic growth, are available.[6] Mostly, it has been put forward that for FDIs to be able to reveal positive effects in the host countries a particular set of conditions (e.g., the absorptive capacities above a certain threshold in the host countries) should necessarily be provided. In case of these conditions are not met, it has been indicated that FDIs may not have a positive impact, and that they may even have negative effects.

The view that justifies FDIs brings forward the increase in general productivity of the host countries following FDI flows through externalities in the form of the technological spillovers. Under some political regulations and in some specific environments, FDIs contribute more to economic growth. These describe the absorptive capacities that indicate to what extent the host countries can benefit from FDIs' externality effects.[7] Abrsorptive capacities may exhibit constraints in accordance with local conditions such as local financial markets or level of education in that country. For this reason, local conditions through absorptive capacities, gain importance to specify the effects of FDIs on economic growth.

On the absorptive capacity-economic growth relationship, Alfaro et al.[8] have put forward that while FDIs affect economic growth positively in the countries whose local financial markets perform well, they fell short of affecting economic growth positively in the countries whose financial markets have not improved enough. Alfaro et al.[9] have demonstrated that the role of FDIs alone in promoting economic growth is not clear, and in well-developed financial markets FDIs show a better performance. Nguyen et al.[10] have stated that developing countries may benefit from FDIs

[6] e.g., Marta Bengoa and Blanca Sanchez-Robles, "Foreign Direct Investment, Economic Freedom and Growth: New Evidence from Latin-America", *European Journal of Political Economy,* Vol. 19, No. 3, 2003, pp. 529-545; Maria, Carkovic and Ross Levine, "Does Foreign Direct Investment Accelerate Economic Growth?", *Ibid.*

[7] Laura Alfaro, Areendam Chanda, Sebnem Kalemli-Ozcan and Selin Sayek, "FDI and Economic Growth: The Role of Local Financial Markets", *Ibid.*

[8] Laura Alfaro, Areendam Chanda, Sebnem Kalemli-Ozcan and Selin Sayek, *FDI Spillovers, Financial Markets, and Economic Development, Ibid.*

[9] Laura Alfaro, Areendam Chanda, Sebnem Kalemli-Ozcan and Selin Sayek, "FDI and Economic Growth: The Role of Local Financial Markets", *Ibid.*

[10] Hoang Nguyen, Geert Duysters, James H. Patterson and Harald Sandler, "Foreign Direct Investment Absorptive Capacity Theory", *GLOBELICS 2009, 7th International Conference,* Dakar, Senegal, 6-8 October 2009.

only if they have sufficient level of absorptive capacities. Adams[11] who analyzed whether FDIs to African countries assist economic growth, has stated that effects of FDIs may change according to the differences in the host countries, thus the absorptive capacities gain importance, and that FDIs are necessary for economic growth but not sufficient.

Moreover, in some studies[12], instead of attributing the FDIs' contribution to economic growth directly to absorptive capacities, it has been chosen the way of associating them indirectly to a few elements. However, the idea of FDIs can be successful solely under some conditions, remains the same. For example, Borensztein et al.,[13] have specified that FDIs generally have positive effects but the extent depends on the human capital stock threshold in the host country. While Globerman and Shapiro[14] have focused on FDIs' determinants, they have also emphasized the role of governments in FDI process. Accordingly, the effects of FDIs on the host countries differ depending on the local administrative structure. Thus, as the administrative structure becomes stronger, the positive effects of FDIs increase. Busse and Groizard[15] have specified that for FDIs to be able to induce economic growth, the host countries need an institutional structure of high quality, and less bureaucratic and juridical organization. As for Değer and Emsen,[16] through information and technology support, FDIs have important positive effects on economic growth especially in the countries that have reached a certain political stability, can keep up with the system of the West more easily, and are close to developed countries both geographically and socio-culturally. Bengoa and Sanchez-Robles[17] stated

[11] Samuel Adams, "Can Foreign Direct Investment (FDI) Help to Promote Growth in Africa?", *African Journal of Business Management,* Vol. 3, No. 5, 2009, pp. 178-183.

[12] e.g., Eduardo Borensztein, Jose De Gregorio and Jong-Wha Lee, "How Does Foreign Direct Investment Affect Economic Growth?", *Journal of International Economics,* Vol. 45, No. 1, 1998, pp. 115-135; Steven, Globerman and Daniel Shapiro. "Assessing International Mergers and Acquisitions as a Mode of Foreign Direct Investment", *Governance, Multinationals and Growth: A Conference Honouring Edward A. Safarian*, Rotman School of Management, Toronto, 2004.

[13] Eduardo Borensztein, Jose De Gregorio and Jong-Wha Lee, "How Does Foreign Direct Investment Affect Economic Growth?", *Ibid.*

[14] Steven Globerman and Daniel Shapiro, "Assessing International Mergers and Acquisitions as a Mode of Foreign Direct Investment", *Ibid.*

[15] Matthias Busse and José Luis Groizard, "FDI, Regulations and Growth", *The World Economy,* Vol. 31, No. 7, 2008, pp. 861-886.

[16] M. Kemal Değer and Ö. Selçuk Emsen, "Geçiş Ekonomilerinde Doğrudan Yabancı Sermaye Yatırımları ve Ekonomik Büyüme İlişkileri: Panel Veri Analizleri (1990-2002)", *Cumhuriyet Üniversitesi İktisadi ve İdari Bilimler Dergisi,* Vol. 7, No. 2, 2006, pp. 121-137.

[17] Marta Bengoa and Blanca Sanchez-Robles, "Foreign Direct Investment, Economic Freedom and Growth:

that FDIs positively correlate with economic growth. FDIs' contribution to economic growth may emerge in the form of technological spillovers and in the presence of a specific social capacity - human capital at a sufficient level, economic stability and liberalized markets. Moreover, Blomström and Kokko,[18] indicated that FDIs have a contribution to economic growth, production performance and export capacity of the host countries; yet, the exact effects of FDIs differ from industry to industry and from country to country depending on the characteristics of countries.

About the foreign trade openness in extracting positive effects from FDIs, Bhagwati[19] states - as known as the Bhagwati hypothesis in the literature - that the effects of FDIs on economic growth will be greater under an export-oriented rather than an import substitution trade regime. Accordingly, FDIs will have more contribution to economic growth of the host countries that are open to foreign trade. Balasubramanyam et al.[20] through testing the Bhagwati hypothesis, found indications that are supportive to the growth augmenting effects of FDIs in the countries that follow extraverted trade policies rather than introverted ones.

On the structure of FDIs, Barry and Bradley,[21] have found support to growth promotive effects of FDIs in Ireland. They stated that through export-oriented FDIs, the total production has increased. In addition, most of the FDIs are greenfield investments in the form of establishing a factory from scratch and the production process aims at increasing exports in the country. This is reflected on the positive Irish economic growth figures. They have also emphasized that market-oriented and brownfield FDIs will not have a similar effect on economic growth of the host countries.[22]

In another view that approaches FDIs cautiously, it has been stated that FDIs do not support economic growth, yet in some cases they may slow it down. Most of the researchers that support this opinion, have failed to find

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New Evidence from Latin-America", *Ibid.*

[18] Magnus Blomström and Ari Kokko, *The Impact of Foreign Investment on Host Countries: A Review of the Empirical Evidence,* World Bank Policy Research, Working Paper, No. 1745, 1997.

[19] Jagdish N. Bhagwati, *Anatomy and Consequences of Exchange Control Regimes.* National Bureau of Economic Research Studies in International Economic Relations, Ballinger Pubhshing Company, Cambridge-Massachusetts, 1978, pp. 205-218.

[20] Vudayagiri N.Balasubramanyam, Mohammed Salisu and David Sapsford, "Foreign Direct Investment and Growth in EP and IS Countries", *The Economic Journal,* Vol. 106, No. 434, 1996, pp. 92-105.4

[21] Frank Barry and John Bradley, "FDI and Trade: The Irish Host-Country Experience", *The Economic Journal,* Vol. 107, No. 445, 1997, pp. 1798-1811.

[22] *Ibid.*

beneficial externality effects arisen from the FDIs in the host countries.[23] These studies have shown that FDIs may have disadvantageous effects on the host countries.[24] For instance, while FDI disrupts the trade balance, it may unbalance the allocation of resources and may cause a decrease in the market shares of the local manufacturers in the same industry. Additionally, foreign investments may increase the local real prices more than the domestic investments do.[25] Moreover, Aitken and Harrison[26] could not prove the existence of any positive effects of FDIs on economic growth. They have put forward that the existence of foreign capital affects the productivity of local manufacturers negatively. As for Carkovic and Levine,[27] by using methods of firstly OLS regression and later dynamic panel data analysis in their studies, they investigated the relationship between FDI flows and economic growth, but they could not find any independent FDI effect on economic growth of the host countries and stated that such a result is indicating lack of FDIs' ability to affect economic growth positively and directly. In addition, Lyroudi, Papanastasiou and Vamvakidis,[28] reached the conclusion that FDIs do not have a significant effect on economic growth of the transition economies.

As an example of conditional studies[29] that attribute the success or failure of the FDIs to some particular conditions, Krogstrup and Matar[30] have investigated the growth effects of FDIs in the Arab world, by emphasizing the concept of absorptive capacity. According to this study, for FDIs

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[23] e.g., Brian J. Aitken and Ann E. Harrison, "Do Domestic Firms Benefit from Direct Foreign Investment? Evidence from Venezuela", *American Economic Review,* Vol. 89, No. 3, 1999, pp. 605-618; Prabirjit, Sarkar, *Does Foreign Direct Investment Promote Growth? Panel Data and Time Series Evidence from Less Developed Countries, 1970-2002*, *Ibid.*

[24] e.g., Maria, Carkovic and Ross Levine, "Does Foreign Direct Investment Accelerate Economic Growth?", *Ibid.*

[25] Peter Auer, Janine Berg and Christoph Ernst, *Meeting The Employment Challenge: Argentina, Brazil, and Mexico in The Global Economy,* Lynne Rienner Publishers, Boulder-Colorado, 2006.

[26] Brian J. Aitken and Ann E. Harrison, "Do Domestic Firms Benefit from Direct Foreign Investment? Evidence from Venezuela", *Ibid.*

[27] Maria Carkovic and Ross Levine, "Does Foreign Direct Investment Accelerate Economic Growth?", *Ibid.*

[28] Katerina Lyroudi, John Papanastasiou and Athanasios Vamvakidis, "Foreign Direct Investment and Economic Growth in Transition Economies", *South Eastern Europe Journal of Economics*, Vol. 2, No. 1, 2004, pp. 97-100.

[29] e.g., Signe Krogstrup and Linda Matar, *Foreign Direct Investment, Absorptive Capacity and Growth in the Arab World*, HEI Working Paper, No. 02, 2005; Prabirjit Sarkar, *Does Foreign Direct Investment Promote Growth? Panel Data and Time Series Evidence from Less Developed Countries, 1970-2002*, *Ibid.*

[30] Signe Krogstrup and Linda Matar, *Foreign Direct Investment, Absorptive Capacity and Growth in the Arab World*, *Ibid.*

to contribute to economic growth, while the existence of an absorptive capacity level is needed, FDIs may create adverse effects on economic growth of the host countries in the absence of such an absorptive capacity level. They indicated that generally the countries in their sample lack an absorptive capacity to internalize the positive effects of FDIs; thus there is no reason for the host countries to wait for the positive externality effects. In addition, Sarkar[31] have reached some dubious results on the growth effects of FDIs. He has stated that it is very difficult to talk about the existence of a positive relationship between FDIs and economic growth in the countries that have not reached to sufficient levels of wealth and openness to foreign trade.[32]

According to the majority of the studies in the literature, FDIs may have a contribution to economic growth under some particular conditions.[33] FDIs may contribute to economic growth of the host countries through technology transfers, externality and spillover effects. However, to be able to reflect those effects positively on their growth figures, the host countries need to have such markets that are developed, regulated and stabilized at a particular level and they need to have an institutional quality to a certain extent. Therefore, the absorptive capacities of the host countries determine to what extent those countries may take advantage of the positive effects of FDIs.

Other studies[34] defend that FDIs don't have positive effects on economic growth and they may even negatively affect economic growth, have focused on the unfavorable effects of FDIs. The recent increase in FDI flows in conjunction with the negative effects of FDIs played an important role in approval of this view.

3. The Dual Approach

The dual approach employed in this study enables a more productive analysis of growth effects of FDIs in the host countries in two main groups:

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[31] Prabirjit Sarkar, *Does Foreign Direct Investment Promote Growth? Panel Data and Time Series Evidence from Less Developed Countries, 1970-2002*, *Ibid.*

[32] *Ibid.*

[33] e.g., Eduardo Borensztein, Jose De Gregorio and Jong-Wha Lee, "How Does Foreign Direct Investment Affect Economic Growth?", *Ibid.*; Laura, Alfaro, Areendam Chanda, Sebnem Kalemli-Ozcan and Selin Sayek. *FDI Spillovers, Financial Markets, and Economic Development, Ibid.*

[34] e.g., Brian J. Aitken and Ann E. Harrison, "Do Domestic Firms Benefit from Direct Foreign Investment? Evidence from Venezuela", *Ibid.*; Maria, Carkovic and Ross Levine, "Does Foreign Direct Investment Accelerate Economic Growth?", *Ibid.*

the purposive structure of FDIs and the structure of host countries in terms of absorptive capacities. Formation of the former group depends on the reasons that motivate FDIs as horizontal and vertical. Whereas, the latter focuses on the host country absorptive capacities, given that countries with well-developed institutional and administrative structures have a particular absorptive capacity which would enable them to reap growth enhancing effects of FDIs while those others lacking such capacities become unable to do so.

3.1. The Purposive Structure

The structure of FDIs may differ according to their purposes. The investment activities in the host countries may be limited with the production process of an intermediate good or may carry out a final good production. These activities may take place in design, manufacture, production, distribution or service sectors. The issue of where the product will be marketed, also comes into prominence.

Since horizontal FDIs aim to access the markets in the targeted countries, they can be regarded as market-oriented,[35] while due to the efficiency in production in the host countries, vertical FDIs can be considered as export-oriented.[36] In other respects, possibilities of low costs of production and high market profits encourage multinationals to make both vertical and horizontal FDIs by following complex integration strategies.[37] It appears to be that while the majority of the FDIs are classified as horizontal,[38] the most important motivation behind FDIs still remain to be mainly horizontal at the same time.[39]

When the structure of FDIs is analyzed, it is observed that even though horizontal FDIs may have higher growth effects,[40] vertical FDIs may still

[35] James R. Markusen, "Multinationals, Multi-plant Economies and the Gains from Trade", *Journal of International Economics,* Vol. 16, No. 1, 1984, pp. 205–226.

[36] Elhanan Helpman, "A Simple Theory of International Trade with Multinational Corporations", *The Journal of Political Economy,* Vol. 92, No. 3, 1984, pp. 451-471.

[37] Stephen Ross Yeaple, "The Complex Integration Strategies of Multinationals and Cross Country Dependencies in The Structure of Foreign Direct Investment", *Journal of International Economics,* Vol. 60, No. 2, 2003, pp. 293-314.

[38] Amy Jocelyn Glass, "Vertical versus Horizontal FDI", ed. Kenneth A. Reinert and Ramkishen S. Rajan, *Princeton Encyclopedia of the World Economy,* Princeton University Press, Princeton, 2008.

[39] Thierry Mayer, *Policy Coherence for Development: a Background Paper on Foreign Direct Investment*, OECD Development Centre Working Paper, No. 253, 2006.

[40] Sjoerd Beugelsdijk, Roger Smeets and Remco Zwinkels, "The Impact of Horizontal and Vertical FDI on Host's Country Economic Growth", *International Business Review,* Vol. 17, No. 4, 2008, pp. 452-472.

have positive effects on economic growth in the host countries.[41] The path to economic growth through export-oriented FDIs involve the utilization of host countries as production bases. The possibility of producing more effectively drives the foreign investors. This advantage may be derived from the low costs of production in the host country, as well as avoiding additional incremental costs such as health, security and environmental standards in production. Thus, foreign investors will be able to produce more effectively and efficiently in the host countries than in their own countries and will be able to export. So, if FDIs are vertically-structured, expecting an increase in the exports of host countries will be possible. Moreover, technology brought from the home countries have the chance of spreading into the economy through the externality effects of export-oriented FDI. Such FDIs mainly aim at exporting, thus they tend to neglect local markets and this gives local producers a chance to grow. It means, vertical FDIs may contribute to economic growth in the host countries by means of effective production, technology spillover effects and opportunity of local competition.

Conversely, the main goal for the market-oriented FDIs is to capture the market in the host countries. Generally, market-oriented FDIs are aimed at underdeveloped sectors in host countries and are designed to acquire the market advantages through having a superior technology. These circumstances enable FDIs to monopolize and consequently to have negative effects on economic growth of the host countries. FDIs may be motivated for the reasons that the depletion of the existed markets and completion of the production cycles in the home countries, or the possibility to overcome the barriers to foreign trade existed in the targeted country through FDIs instead of using exports as a costly alternative, or the political interests in accordance with the secret agendas of the main investor countries. As a result of possible monopolization, horizontal FDIs may fall short of contributing to economic growth in the host countries.

3.2. The Absorptive Capacity

The concept of absorptive capacity that Cohen and Levinthal have put forward in their studies firstly in 1989 and then in 1990,[42] initially

[41] Frank Barry and John Bradley, "FDI and Trade: The Irish Host-Country Experience", *Ibid.*

[42] Wesley M. Cohen and Daniel A. Levinthal, "Innovation and Learning: The Two Faces of R&D", *Ibid*; Wesley M. Cohen and Daniel A. Levinthal, "Absorptive Capacity: A new perspective on learning and innovation", *Administrative Science Quarterly*, Vol. 35, No. 1, 1990, pp. 128-152.

emerged as a learning-based system that appeared to be in microeconomic level, allows flow of information to make use of the innovations and can store those information. It has been put forward that the capacity not only enables the firms' research and development (r&d) activities to lead to innovations, but also allows firms to internalize all kinds of information from their environment and to reap the benefit of them. The acknowledgement of double sided role of the r&d activities presents important implications about adaptation and spreading of innovations at the same time. Additionally, the absorptive capacities can be expressed as a function of firms' previous knowledge related to the new information. The more the new information achieved is closely associated with the previous information, the more the absorptive capacity will be appeared as a by-product of the usual production activities of that firm. However, when a firm wants to have information about a field that is irrelevant with the activities it carried out, the absorptive capacity will not come up as a spin-off, instead, the firm will have to make an extra effort to create an absorptive capacity.

With globalization and FDI movements, the absorptive capacities have become an indicator for the countries that express their ability to benefit from innovations.[43] Alfaro, Chanda, Kalemli-Ozcan and Sayek,[44] asserted that FDIs have positive effects on economic growth in directly proportional to the quality of the financial markets in the host countries, and they gave an important mission to the absorptive capacities for the functioning of this mechanism.

The absorptive capacities have an important role in the process of information acquisition in production through technological spillover effects. They are composed of the appropriate regulations and the quality of administrative and economical structure in the country. Therefore, countries that have sound administrative structure and well-organized markets have high absorptive capacities and are able to benefit as much as possible from the FDIs. Countries that lack such solid administrative and financial structures are not able to extract such positive effects out of FDIs.[45] Accordingly, it is expected that developed countries should have higher levels

[43] e.g., Laura Alfaro, Areendam Chanda, Sebnem Kalemli-Ozcan and Selin Sayek, "FDI and Economic Growth: The Role of Local Financial Markets", *Ibid.*

[44] *Ibid,* Laura Alfaro, Areendam Chanda, Sebnem Kalemli-Ozcan and Selin Sayek, *How Does Foreign Direct Investment Promote Economic Growth? Exploring the Effects of Financial Markets on Linkages, Ibid.*

[45] *Ibid*.

of absorptive capacities.

4. Economic Growth Effects of FDIs

4.1. The Method

The sample is consisted of 49 developing countries.[46] The focus on developing countries is aimed at revealing the subsidiary role of country-specific diversification that developing countries may exhibit, while the effects of FDIs on economic growth of the host countries have been examined. Many studies in the literature[47] placed emphasis on the concept of country-specific absorptive capacities while analyzing the effects of FDIs. The directly proportional relationship of those capacities with the administrative, institutional and financial levels of development[48] plays a deterministic role. Thus, it should be expected that absorptive capacities in developed countries are already high. However, it is possible to encounter with variously diversified absorptive capacities in developing countries. Therefore, the sample has been selected from the group of developing countries.

Panel data analysis is employed in the study and the data covers the period of 1991-2009. Panel data analysis provides the opportunity of a two-dimensional data analysis by dealing with both the time-series and the cross-sectional dimensions of the data.

At the first stage of the analysis, the Hausman test[49] was applied in order to specify whether the fixed effects or the random effects model fits the analyses. As a result it has been found out that fixed effects model is the best fit for all models. This model allows constant coefficients to be different for every country, but allows slope coefficients to be the same both for time and section. The constants of each section are time invariant despite the fact that they may differ for every individual section.

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[46] Algeria, Argentina, Azerbaijan, Bangladesh, Bolivia, Botswana, Brazil, Bulgaria, Cameroon, China, Colombia, Congo Democratic Republic, Congo Republic, Costa Rica, Croatia, Egypt, Gabon, Ghana, Hungary, India, Indonesia, Iran, Ivory Coast, Jordan, Kenya, Latvia, Lithuania, Malawi, Malaysia, Mexico, Morocco, Pakistan, Peru, Philippines, Poland, Romania, Russia, Saudi Arabia, South Africa, Sri Lanka, Sudan, Syria, Thailand, Tunisia, Turkey, Ukraine, Uruguay, Venezuela and Zambia.

[47] e.g., *Ibid*.

[48] J. Benson Durham, "Absorptive Capacity and the Effects of Foreign Direct Investment and Equity Foreign Portfolio Investment of Economic Growth", *European Economic Review,* Vol. 48, No. 2, 2004, pp. 285-306.

[49] Jerry A. Hausman, "Specification Tests in Econometrics", *Econometrica,* Vol. 46, No. 6, 1978, pp. 1251-1271.

An estimation model that processes OLS and 2SLS regression methods in a gradual manner is employed. It determines the growth rates in the host countries with respect to GDP per capita of previous year, FDI inflows, formed absorptive capacities and the FDI structures in those countries. By using 2SLS regression method in analyzing the effects of FDIs on the host countries it is made possible to observe the effects of both FDI structures and the absorptive capacities at the same time.

The literature offers a vast resource[50] about the impact of absorptive capacities which are represented by a set of country-specific variables. Among these studies; Carkovic and Levine,[51] Busse and Groizard,[52] Alfaro et al.[53] and Alfaro et al.[54] indicated that the absorptive capacities have significant effects. In order to measure the absorptive capacities they included a series of control variables into their models. Such variables are not dealt within the OLS method in this study, instead they were included in the 2SLS model. Thus, the absence and the existence of absorptive capacities on the regression analyses enable us to single out their effects.

The structures of FDIs are represented by a dummy variable in the model. FDIs in the host countries can be export-oriented and structurally vertical under certain circumstances and market-oriented and structurally horizontal under others. Accordingly, in cases where the structure is vertical, the dummy variable takes the value of 1, while the structure is horizontal, it takes the value of 0. According to the simplifying assumption, if FDIs have vertical structures in the host countries, increasing FDI flows would raise the exports of those countries, while decreasing FDI flows would reduce exports. There exists a collinear relationship between vertical FDI flows and exports. It is also possible to say the exact opposite under the same assumption. In other words, if FDIs have horizontal structures in the host countries, then increasing FDI flows would reduce the exports of

[50] e.g., Laura Alfaro, Areendam Chanda, Sebnem Kalemli-Ozcan and Selin Sayek, "FDI and Economic Growth: The Role of Local Financial Markets", *Ibid.;* Laura, Alfaro, Areendam Chanda, Sebnem Kalemli-Ozcan and Selin Sayek. *How Does Foreign Direct Investment Promote Economic Growth? Exploring the Effects of Financial Markets on Linkages, Ibid.*

[51] Maria Carkovic and Ross Levine, "Does Foreign Direct Investment Accelerate Economic Growth?", *Ibid.*

[52] Matthias Busse and José Luis Groizard, "FDI, Regulations and Growth", *Ibid.*

[53] Laura Alfaro, Areendam Chanda, Sebnem Kalemli-Ozcan and Selin Sayek, *FDI Spillovers, Financial Markets, and Economic Development, Ibid.*

[54] Laura Alfaro, Areendam Chanda, Sebnem Kalemli-Ozcan and Selin Sayek, "FDI and Economic Growth: The Role of Local Financial Markets", *Ibid.*

those countries, while decreasing FDI flows would raise the exports. In this way, there is an opposite relationship between horizontal FDI flows and exports. While constituting the dummy variable, increases and decreases for each country for the research period was calculated primarily in terms of export values and subsequently for FDI values. Later, the data of the two variables were compared. In cases where the exports exhibit movements in conjunction with the FDIs, the dummy variable takes the value of 1, and when the opposite movements occur the dummy variable takes the value of 0. Therefore, in accordance with the simplifying assumption, when FDI structure is vertical, FDIs may contribute to economic growth and the dummy variable here is given the value of 1. In cases where FDI structure is horizontal, the dummy variable is 0, given that horizontal FDIs may not induce economic growth of the host countries through exports.

Whether FDIs may contribute to economic growth of host countries with respect to the absorptive capacities and the FDI structures are investigated primarily for the whole sample and subsequently for the sub-groups. The sub-groups are consisted of continental groups and average FDI inflow groups. This method allows us to comprehend the depth of the sample better and to handle the effects of FDIs on different dimensions. To analyze the effects of geographical specifications and differentiations of countries in the sample, the first grouping is the continental one. By this way, it is aimed at reveal to what extent the FDI effects may differ according to their geographical locations. Therefore, the sample is separated into African, Asian, European Transition, and American Countries sub-groups. The average FDI inflow groups are formed by separating the sample into two with respect to the average amount of FDI inflows to the whole sample. So, the countries were classified by looking whether the amount of FDI they receive is above or below that average. It is intended to examine how the quantity of FDI flows to a host country may create different effects. The subject threshold value is calculated as 3,9 billion US dollars annually.[55] In this way, it is made possible to determine the level of FDI flows to host countries by presenting either the level is above or below the threshold.

4.2. The Model

The model employed in the panel data analysis is as follows:

[55] United Nations, Conference on Trade and Development (UNCTAD), "UNCTADstat 2010", http://unctadstat.unctad.org/TableViewer/tableView.aspx?ReportId=88, access: 15. 02. 2011.

$$Y_{it} - Y_{it-1} = \alpha + \theta Y_{it-1} + \beta FDI_{it} + \gamma[\text{Control Variables}]_{it} + \psi[\text{FDI Structure (D)}]_{it} + \varepsilon_i$$

$Y_{it} - Y_{it-1}$ is specified as the dependent variable, where Y_{it} is the value of GDP per capita.[56] Taking the difference in per capita GDP numbers between consecutive years yields the growth in per capita GDP.

Y_{it-1} indicates the value of per capita GDP of the previous year,[57] FDI_{it} represents annual FDI inflows,[58] $[\text{FDI Structure (D)}]_{it}$ shows the structures of the FDIs - either vertical or horizontal - as the dummy variable,[59] $[\text{Control Variables}]_{it}$ specifies absorptive capacities containing country-specific differences as the control variables, and finally ε_i expresses the error term. Among these, the control variables for the host countries are as follows: Inflation values,[60] Gross Fixed Capital Formation (GFCF) within the GDP,[61] government expenditures within the GDP,[62] population growth rate,[63] civil freedom,[64] political rights,[65] openness to foreign trade[66] and the length of railroad.[67]

The primarily employed OLS regression uses below basic model:

$$Y_{it} - Y_{it-1} = \alpha + \theta Y_{it-1} + \beta FDI_{it} + \psi[\text{FDI Structure (D)}]_{it} + \varepsilon_i \qquad \text{(Model 1)}$$

Per capita economic growth is the dependent variable, whereas per capita GDP of the previous year, FDI inflows and $[\text{FDI Structure (D)}]_{it}$ dummy variables are independent variables in the model.

After OLS regression, the general model below is used in accordance with the 2SLS regression method and the regression analysis is executed:

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[56] World Bank, "World Development Indicators", http://data.worldbank.org/ indicator, access: 20.05.2011.

[57] *Ibid.*

[58] United Nations, Conference on Trade and Development (UNCTAD), "UNCTADstat 2010", *Ibid.*

[59] World Bank, "World Development Indicators", *Ibid.*

[60] *Ibid.*

[61] *Ibid.*

[62] International Monetary Fund (IMF), *World Economic Outlook 2011 Tensions from the Two-Speed Recovery Unemployment, Commodities, and Capital Flows,* http://www.imf.org/external/pubs/ft/weo/2011/01/ weodata/download.aspx, access: 20.05.2011.

[63] World Bank, "World Development Indicators", *Ibid.*

[64] Freedom House, "Freedom in the World Country Ratings", http://www.freedomhouse.org/ template.cfm?page=439, access: 20.05.2011.

[65] *Ibid.*

[66] World Bank, "World Development Indicators", *Ibid.*

[67] *Ibid.*

$$Y_{it} - Y_{it-1} = \alpha + \theta Y_{it-1} + \beta FDI_{it} + \gamma[\text{Control Variables}]_{it} + \psi[\text{FDI Structure (D)}]_{it} + \varepsilon_i \quad \text{(Model 2)}$$

By means of the 2SLS method, it is made possible to analyze the growth effects of FDIs with respect to both absorptive capacities - through the control variables - and the FDI structures - through the dummy variable - at the same time.

4.3. Limitations of the Analysis

There are some limitations of this study which are arisen within the framework of availability of the data and are related with some simplifying assumptions.

It can be said that economic growth variable does not solely depend on the per capita GDP of the previous year, FDI inflows, FDI structures and the other control variables. There must be many other factors that may affect economic growth. However, these other factors are out of the scope of this study.

Another limitation may address to the FDI structure variable. In cases where FDI structure is vertical, it is expected to have a collinear relationship between FDI flows and exports. However, the variations in the exports of a country obviously cannot be attributed entirely to the FDI structure in that country.

One more difficulty is the occasional unstable data. Experienced transition processes to free market economy of former Soviet bloc countries (e.g., Lithuania, Ukraine) and experienced political turmoil in some African countries (e.g., Congo Democratic Republic, Congo Republic) can reduce the quality of panel data.

4.4. Results and Evaluation

Results of the analyses are summarized in Tables 1-7 at the Appendix-1.

In the analysis applied to the whole sample it has been found out that when the absorptive capacities were taken into consideration, FDI flows to host countries, or the structures of FDIs have no significant effects on economic growth. It is also evident that per capita GDP of previous year has a significantly positive effect on economic growth. Moreover, when OLS and 2SLS models (Model 1 and Model 2 respectively) are compared, the

inclusion of absorptive capacities results significance loss for FDIs. This shows that without absorptive capacities in the picture, FDIs can generate positive growth effects, but once we take absorptive capacities into consideration, the analysis reveals that FDIs lack growth enhancing effects.

In the African counties analysis it has been unveiled that once absorptive capacities are considered, the FDI structure along with the FDI inflows have negative effects on economic growth. Moreover, per capita GDP of previous year turns as positive. The fact that previously observed positive effects of FDIs in Model 1 turning into negative in Model 2 presents evidence for the lack of necessary absorptive capacities in African countries in the sample which makes almost impossible to reap any benefits from FDIs and even slows the growth down.

Asian countries analysis reveals that the structure of FDIs and per capita GDP of previous year in the host countries have negative effects on economic growth. It is also observed that the FDI flows to those countries have a significant and positive contribution to economic growth. Importantly, the increase in growth effects of FDIs in Model 2 exposes the existence of absorptive capacities to utilize FDIs in Asian countries.

According to the analysis for European transition countries, values of per capita GDP of previous year, the FDI structures and the FDI inflows have all turned out to be ambiguous and inconclusive when the absorptive capacities were taken into consideration in Model 2, due to the incapability of the results to make meaningful interpretation. This is a direct result for common inaccurate data problem associated with ex-eastern bloc countries during the first half of 1990s and makes it almost impossible to obtain meaningful results.

In the American countries analysis it has been observed that FDI inflows and per capita GDP of previous year have no significant effect on economic growth of the host countries, however, the FDI structures have significant and negative effects on economic growth when considered with absorptive capacities. Moreover, the loss in significance of FDI inflows in Model 2 indicates absence of necessary absorptive capacities in American countries in the sample.

Below-average FDI inflow countries analysis unfolds the growth enhancing effects of FDIs and positive growth effects of per capita GDP of previous year in Model 2. However, the FDI structure negatively affects economic growth. Interestingly, significance gain in FDIs in Model

2 points out the contribution of absorptive capacities in yielding positive growth effects out of FDIs in the host countries. It means FDI inflows contribute to economic growth in those countries through an apparent absorptive capacity.

According to the results for above-average FDI inflow countries it comes forward that FDI inflows and the FDI structures in the host countries have no significant effects on economic growth. It has been observed that the values of per capita GDP of previous year have positive contribution to economic growth. When the absorptive capacities are considered in Model 2, the significance loss for FDIs asserts the absence of necessary absorptive capacities to exploit growth enhancing effects of FDIs in the host countries.

The FDI structure variable has either no significant effect or a negative effect on economic growth. In the cases where the FDI structure variable is significant, the variable has negative effect on economic growth, even though the FDI structure in the model is export-oriented.

When the absorptive capacities are dealt with, it is evident that in majority of the groups the absorptive capacities are below a certain level that would reveal the positive growth effects of FDIs, except for Asian and below-average FDI inflow countries. Absorptive capacities below a certain level remarks less efficient FDIs. When absorptive capacities included in the model, the increased positive growth effects of the FDIs indicates that the absorptive capacities in the host countries are above a certain level and they are able to contribute to the growth effects of FDIs.

The variable of FDI inflows could only provide positive economic growth effects to Asian and below-average FDI inflow countries and negative effects to African countries.

5. Conclusion

As a result of the increasing FDI flows and the accelerating globalization process particularly in the last few decades, FDIs have found a certain place in the development strategies and consequently host countries became exposed to both the positive and the negative effects of FDIs. The expectation that positive effects of FDIs outweighing the negative ones is the driving reason to follow FDI attracting policies.

Increasing FDI flows bring along many debates that are generally con-

centrated on the ownership rights acquired by the foreigners on the local resources. FDIs do not only represent the multinational corporations, but also the main investor countries as well. So, the ownership rights would not be lost to a multinational corporation, but would be lost to an entirely different country.

According to this study, in general, FDIs are far away from contributing to economic growth of the host countries in which there exist some level of inadequate absorptive capacity and the structure of FDIs are export-oriented, except for Asian and below-average FDI inflow countries. Results show that below-average countries can achieve to extract positive effects from FDIs through having the inflows under a certain benchmark level. Moreover, countries in the Asian group having the absorptive capacities above a certain level enables them to increase the efficiency of foreign investments and gives them the opportunity of exploiting the benefits from FDIs. With low levels of absorptive capacities, FDIs are far away from making a contribution to economic growth. Thus, the absorptive capacities at certain levels may induce the positive growth effects of FDIs and limited level of FDIs can create positive growth effects revealed through the absorptive capacities in the host countries. Additionally, for the African countries it has been exposed that FDIs have negative effects on economic growth, negatively accrued by the insufficient absorptive capacities in those countries.

In conclusion, the results of the analysis reveals that in general the absorptive capacities are not at levels that would enable host countries to utilize FDIs. It also comes forward that while following policies intended to attract excessive FDIs would not create an additional contribution, keeping FDIs at certain levels, along with the sufficient level of absorptive capacities, would contribute to economic growth. FDIs to have positive effects on economic growth, the host countries need to have some level of absorptive capacities. Finally, the importance of the strategic use of FDIs should be well understood and without studying the true effects of them, governments should avoid jumping into the adventure of relying the leverage from foreign investors in order to finance budget deficits. Contrary to popular belief, FDIs may not increase economic growth depending on country specific conditions, therefore policies should be reconsidered when it comes down to attract FDIs in

countries with such conditions.

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p e n d i x

Table 1. The Results for the Whole Sample (49 Countries)

	Model 1 (OLS)	**Model 2 (2SLS)**
Constant	**279,0343**	**-559,7307**
	5,9340	**-1,7323**
	(0,000*)	**(0,084***)**
GDP (-1)	**-0,0587**	**0,1915**
	-3,8577	**2,0778**
	(0,000*)	**(0,038**)**
FDI Structure	23,8463	385,7289
(Dummy)	0,6594	0,7253
	(0,510)	(0,469)
FDI	**0,0105**	0,0015
	3,5149	0,0976
	(0,000*)	(0,922)
R^2	0,380	0,103
Adj. R^2	0,330	0,031
F	7,648	7,346
P	0,000*	0,000*

Note: The values in the first row indicate the coefficient values, whereas the second row indicate t statistics values and the last row of each segment indicate p-values. While the bold values state statistical significance, for p-values indicated in the parenthesis at the last row, *, **, *** represent respectively 1%, 5% and 10% levels of statistical significance.

Table 2. The Results for African Countries (16 Countries)

	Model 1 (OLS)	Model 2 (2SLS)
Constant	**172,2486**	**-257,5151**
	7,6514	**-2,4586**
	(0,000*)	**(0,0145**)**
GDP (-1)	**-0,0821**	**0,2873**
	-5,5855	**3,9914**
	(0,000*)	**(0,000*)**
FDI Structure	**-18,3768**	**-157,3332**
(Dummy)	**-8,0089**	**-5,6935**
	(0,000*)	**(0,000*)**
FDI	**0,0397**	**-0,0767**
	16,7868	**-4,4553**
	(0,000*)	**(0,000*)**
R^2	0,601	0,562
Adj. R^2	0,576	0,534
F	23,864	3,964
P	0,000*	0,000*

Note: The values in the first row indicate the coefficient values, whereas the second row indicate t statistics values and the last row of each segment indicate p-values. While the bold values state statistical significance, for p-values indicated in the parenthesis at the last row, *, **, *** represent respectively 1%, 5% and 10% levels of statistical significance.

Table 3. The Results for Asian Countries (16 Countries)

	Model 1 (OLS)	**Model 2 (2SLS)**
Constant	**180,3151**	**638,6420**
	7,4198	**13,2501**
	(0,000*)	**(0,000*)**
GDP (-1)	**-0,0474**	**-0,0594**
	-3,9905	**-3,0843**
	(0,000*)	**(0,002*)**
FDI Structure	**-13,2318**	**-822,5450**
(Dummy)	**-7,6514**	**-20,1683**
	(0,000*)	**(0,000*)**
FDI	**0,0155**	**0,0160**
	25,3953	**9,5379**
	(0,000*)	**(0,000*)**
R^2	0,927	0,854
Adj. R^2	0,923	0,845
F	202,959	10,855
P	0,000*	0,000*

Note: The values in the first row indicate the coefficient values, whereas the second row indicate t statistics values and the last row of each segment indicate p-values. While the bold values state statistical significance, for p-values indicated in the parenthesis at the last row, *, **, *** represent respectively 1%, 5% and 10% levels of statistical significance.

Table 4. The Results for European Transition Countries (8 Countries)

	Model 1 (OLS)	**Model 2 (2SLS)**
Constant	**861,9254**	296,6688
	5,0091	0,6421
	(0,000*)	(0,522)
GDP (-1)	**-0,1236**	-0,0219
	-3,4727	-0,1944
	(0,000*)	(0,846)
FDI Structure	**-67,9329**	-69,8245
(Dummy)	**-1,3846**	-0,4863
	(0,000*)	(0,628)
FDI	**0,0399**	0,0621
	6,4914	1,9144
	(0,000*)	(0,058)
R^2	0,306	0,226
Adj. R^2	0,257	0,171
F	6,212	1,310
P	0,000*	0,230

Note: The values in the first row indicate the coefficient values, whereas the second row indicate t statistics values and the last row of each segment indicate p-values. While the bold values state statistical significance, for p-values indicated in the parenthesis at the last row, *, **, *** represent respectively 1%, 5% and 10% levels of statistical significance.

Table 5. The Results for American Countries (9 Countries)

	Model 1 (OLS)	**Model 2 (2SLS)**
Constant	**550,0814**	**1061,0530**
	4,1420	**3,1042**
	(0,000*)	**(0,002*)**
GDP (-1)	**-0,1060**	-0,1265
	-3,2658	-1,5568
	(0,001*)	(0,122)
FDI Structure	**49,4865**	**-823,8193**
(Dummy)	**3,9375**	**-2,7910**
	(0,000*)	**(0,006*)**
FDI	**0,0173**	0,0194
	3,0938	1,8008
	(0,002*)	(0,074***)
R^2	0,250	0,171
Adj. R^2	0,198	0,114
F	4,823	3,144
P	0,000*	0,000*

Note: The values in the first row indicate the coefficient values, whereas the second row indicate t statistics values and the last row of each segment indicate p-values. While the bold values state statistical significance, for p-values indicated in the parenthesis at the last row, *, **, *** represent respectively 1%, 5% and 10% levels of statistical significance.