Research article

Apuntes del CENES
ISSN 0120-3053
Volume 34 - Nº. 59
January - June de 2015
Pages 63-92

Effects of foreign direct investment on economic growth in Colombia: empirical evidence 2000-2010

Efectos de la inversión extranjera directa sobre el crecimiento económico en Colombia: evidencia empírica 2000-2010

Efeitos da FDI sobre o crescimento econômicona Colômbia: Evidências Empíricas2000-2010

*María Luz Moyano Buitrago**
*José Mauricio Gil León***

DOI: http://dx.doi.org/10.19053/22565779.3536

Date of reception: 10 February 20114
Concept of evaluation: 11 July 2014
Date of approval: 28 November 2014

* Economist, Professional at the IDU (Instituto de Desarrollo Urbano). Postal address: Calle 20 No.9-20. Bogotá, Colombia. Email address: marialuz_moyano@hotmail.com.

** Economist, specialist in Finanace and Master`s in Economics. Professor of Economic Theory of the School of Economics, UPTC Tunja. Postal address: Calle 39A 6ª-00 Tunja, Colombia. Email address: mauricio8827@hotmail.com

Resumen

En este artículo se analiza el efecto de la inversión extranjera directa sobre el crecimiento económico en Colombia, y se muestra que estos flujos causaron efectos, tanto directos como indirectos, en la economía nacional entre el periodo 2000-2010. Así, con el ejercicio econométrico fue posible deducir que los flujos de IED afectaron positiva y moderadamente el crecimiento de la economía Colombiana, y esto permitió concluir que dadas las condiciones de la economía nacional y del clima económico mundial en este periodo, la IED contribuyó al incremento porcentual del PIB y, de la misma manera, a profundizar las coyunturas económicas agregadas y sectoriales que esta trae consigo.

Palabras clave: inversión extranjera directa, crecimiento económico, formación bruta de capital, *spillover*, economía colombiana.

Clasificación JEL: B22, F21, C22, C67

Abstract

In this article the effect of foreign direct investment (FDI) on economic growth in Colombia is analyzed, and it is shown that these flows caused effects, both direct and indirect, in the national economy between 2000 and 2010. Thus, with an econometric exercise it was possible to deduce that FDI flows moderately and positively affected the growth of the Colombian economy, and this led to the conclusion that, given the conditions of the national economy and the global economic climate in this period, FDI contributed to a percentage increase in GDP, and in the same way, to further the aggregate and sectoral economic circumstances that this brings.

Keywords: Foreign direct investment, economic growth, gross capital formation, spillover, Colombian economy.

Resumo

Neste trabalho, o efeito do IDE sobre o crescimento econômico na Colômbia é analisado e demonstrado que esses fluxos causou efeitos, diretos e indiretos, na economia nacional entre 2000-2010. Assim, o exercício econométrico foi possível deduzir que os fluxos de IDE crescimento afetado e moderadamente

positivo da economia colombiana, e isso levou à conclusão de que, nas condições da economia nacional e do clima econômico global neste período, o IED contribuiu para aumento percentual do PIB e, da mesma forma, para aprofundar tempos econômicos globais e sectoriais que isso implica.

Palavras-chave: investimento estrangeiro direto, o crescimento econômico, a formação bruta de capital, de repercussão, a economia colombiana.

INTRODUCTION

The flows of foreign direct investment (FDI) in Colombia are, without doubt, one of the main topics within the discussions and agendas of the current national economy. Its growing dynamism, with records of a rebound since 2004 (particularly thanks to a favorable international situation), has turned FDI into one of the main financing sources in the Colombian economy, as well as an important determinant of its capital account, exchange market, and, consequently, its economic growth (Garavito, Iregui & Ramírez, 2012). This has been reinforced by economic policy measures adopted throughout the last twenty years to stimulate FDI and, in turn, allowed it to have an increasing impact on the economy, especially after the consolidation of economic openness in the 90s, and the following strategy of "investor confidence" as from 2002.

In this context, Colombia has been a country with singular characteristics[1] that have improved its potential to attract this kind of investment[2], along with, its benefits and risks. The country has been reinforcing its strategies for economic growth based on foreign trade with an economic model of openness since 1991, with the conviction that the

[1] Colombia is part of a region (Andean and Latin America) with great comparative advantages –seen from the theory of localization– with respect to the countries where FDI comes from. It is a country that possesses local advantages, such as, specific raw materials, labor costs that are lower than in the investing countries, etc., (Guerra, 2001), as well as the management of incentives like duty-free zones, legal stability contracts, and tax incentives (Coleman, 2012).

[2] Colombia has implemented many regulations to be able to attract greater foreign investment. The balance of FDI that Colombia has gained (33.1% of the GDP in 2006) is slightly above that of Latin America (30% of the GDP) and that of developing economies (26.7% of the GDP) (Fedesarrollo, 2007).

presence of this type of investment will bring foreign capital to the country as well as important positive repercussions as regards employment, technology transfer, capital formation, qualification of the workforce, productivity of the sectors, exports, competitiveness, and, in general, the long-term wellbeing of the economy. As is mentioned in the Economic Commission for Latin America and the Caribbean in 2004 (ECLAC), this takes place under the paradigmatic concept that maintains that the opening of local markets to foreign countries, the limitation of the public sector, the reduction of government intervention in productive activity, gross capital formation, distribution, and financing are requirements for the efficient allocation of resources and achieving economic development.

However, the fate of every country with respect to the externalities generated by FDI in their economies is not the same. In Colombia, most of the FDI inflows are the result of transferring domestic assets to foreign and not of fixed gross capital formation and the creation of productive enterprises (*Banco de la República de Colombia*, Bank of the Republic of Coombia, 2010); the repatriation of earnings over the current account limits its effects, since more than 70% of the earnings of foreign companies are repatriated[3] and no more than 30% are reinvested in Colombia (*Banco de la República de Colombia*, 2010). In addition, FDI resources are mostly destined to finance the balance of payments deficit, and industrial development has not increased as expected.

Thus, much of the evidence of the participation of FDI in the economic growth of the country has led to ambiguities arising as regards the causality and magnitude of this relationship. With the aim of contributing to the analysis of the implications brought about by the flow of foreign capital, the objective of this study is to determine the main effects of FDI on economic growth in Colombia between the years 2000 and 2010, taking into account the associated variables on the short term, such as gross capital formation, economic openness, public expenditure, financial portfolio, and, of course, FDI. Additionally, and given that the externalities of FDI are presented through different channels, in this analysis there is also a particular revision of the sectoral linkages that it may bring about.

The study is divided into four sections, apart from this introduction, which will seek to approach all the dimensions of the topic in order to respond to the initial premise and narrow down the research. In the first section there will be a descriptive analysis based on a collection of some of the most relevant

[3] In the case of the oil sector, not less than 99.0% of the profits are repatriated, leaving a new investment in the country of only 1.0% (*Banco de la República de Colombia*, 2010).

theoretical contributions on foreign trade, and economic growth and development, understanding the functioning of the main variables which are of interest in the study, such as FDI and economic growth. Likewise, the main components of this area of study will be identified as well as their theoretical contributions towards the similarities and differences in relation to the variables to be approached.

In section two, the empirical evidence of some of the main effects and impacts of FDI will be described as regards economic growth in the Colombian context, using statistical information available for the period 2000-2010, as well as graphic expositions which support its illustration and contextualization.

The third section will look to estimate the effect of FDI on the economic growth of Colombia's economy for the period studied, along with the main variables which explain short-term economic growth. In order to carry this out, an econometric model will be used, which will introduce the balances of FDI in relation to the outflow of dividends and profits in order to achieve a more precise estimation, in the hope of achieving a more accurate approximation in order to clarify the existing ambiguity. Complementing this, the sectoral analysis will be tackled, from the development of a simulation input-output matrix of Colombia to observe the impact of the entry of FDI on key sectors, both for foreign investment and the economy as a whole, and finally, the conclusions are presented.

FDI AND ECONOMIC GROWTH

The theoretical relationship between FDI and economic growth will differ according to the analysis frameworks used. An initial analysis could start in the neo-classical growth models, which involve FDI in a neutral relationship towards long-term economic growth, where there are assumptions of perfect competition markets, decreasing marginal productivity, and constant returns to scale. Thus, the exogenous increase of FDI can only positively affect personal income temporarily, due to decreasing returns. Therefore, it is analyzed as the only channel of impact towards long-term economic growth, technological innovation and work as exogenous factors (Álvarez, Barraza & Legato, 2009).

From a different perspective, the literature referring to the models of exogenous growth point out that FDI has an indirect, positive effect on economic growth through capital formation and the development of resources and human capital. One of the determining effects of FDI on economic growth is through the so-called spillovers[4] or positive externalities, reflected mainly in the transfer of technology from more

[4] Referring to externalities, positive and negative, derived from the activities of multinational companies and economies of scale, product of FDI.

developed countries to flow recipients (Murra, 2006).

In other words, countries expect their companies to benefit from positive spillovers in productivity caused by the presence of multinational companies[5], which are supposed to have a higher level of technological development. The principal mechanisms of spillovers are presented through different channels, such as demonstration effects (the entry of foreign companies can show the host country the existence and the profitability of acquiring new technologies), the competition effect (multinational companies may locate themselves in sectors that are characterized by high entry restrictions because they have economies to scale), the effect of worker mobility between companies, the effects of vertical linkages (referring to the increase of productivity of the local firms as a result of being suppliers or clients of multinationals), effects on suppliers (increases the quality standards of the supplies), and, finally, the effect on the clients (more availability of supplies) (Murra, 2006).

Notwithstanding, said effects would be conditioned by the existence of certain factors in the host country, such as the minimum level of human capital. Other conditioning factors may arise from the development of the financial market of the host economy, the degree of openness of said economy, its revenue level, and its distributive conditions (Lensink, 2003).

On the other hand, considerations about FDI have led to identifying convergence processes among the countries that interact in the capital market, where it is noted that there is a conditioned tendency of the economies and that the capital tends to go from countries with low marginal returns to countries with higher rates, that is, from developed to developing countries (Álvarez, Barraza & Legato, 2009). As Fajnzylber (1976) notes: "the expansion in economic activity was accompanied, from the very beginning, by great capital flows that moved according to the demands of the same economic activity worldwide." An interesting study of this phenomenon is the contribution of Galindo and Escont[6], where they demonstrate that less developed countries tend towards convergence with developed countries by growing more rapidly, but under conditions of convergence of education, workforce, *foreign investment*, price structure, and a fixed investment rate; only if liquidity and risk levels of the studied countries are within a similar margin (Álvarez, Barraza & Legato, 2009)[7].

5 FDI of international capital flows in which a company of a country (investor) creates or expands a subsidiary in another country (host), and its distinctive characteristic is outlined in that it is an investment that not only implies a transference of resources, but also the acquisition of control (Krugman and Obstfeld, 2001).

6 Quoted by Álvarez, Barraza and Legato, 2009, with reference to the study of international capital flow, convergence, and growth, published in 2004 by The Journal of Economic Asymmetries.

7 In the case of certain economies, foreign investment flows solve chronic balance of payments bottlenecks, serving as an important factor in encouraging growth and conditioning towards convergence (Ibarra, 2004).

However, FDI may have negative effects on economic growth, as is the case in the existence of financial and commercial distortions[8] (Lipsey, 2000), as well as limits and conditionings (previously mentioned) of the host economies to make of it a variable which favors their growth.

FDI determinants

The magnitude as well as the routing of FDI flows depend on the perception of costs and benefits that the analyzed alternatives have to offer. Some theories[9] underline the role these incentives have in a foreign company, at the moment of making investment decisions, the advantages and disadvantages that may be faced in the potential host country. Hence, these types of factors complement the conditions typical of FDI location, in economic and political contexts as well as institutional. These characteristics shape themselves as determinants of the ability to attract FDI on the part of the host country, as well as important characteristics in determining the investment.

Within the study of the localization patterns of companies, the most common determinants are those that refer to the market size and its growth potential, the factors concerning social and cultural affinity, the stability of the market towards which the investment is directed, the economic and political system, and the ability of the companies and local economies to maintain their entry barriers (Ramírez & Rincón, 2010).

Thus, the main factors that determine the channels of foreign capital flows may focus on four specific categories:

- The global and regional context and the origin of the capital flows.
- The factors that influence the multinational company's decision to invest. This characteristic is focused on the localization decisions, on weighing the advantages and disadvantages of the host country with respect to expected costs and benefits of the investment (Cubillos & Navas, 2000). Within the costs can be characterized those: of production (labor factors, physical and human capital, land), of supplies (public services and fuels), raw materials, transport, and communications, those of transactions and taxes (Cubillos & Navas, 2000).
- The competitive ability of a country to attract foreign investment. This ability can be measured through factor endowment, availability of

[8] An example of these distortions is introduced, for example, with the appearance of the so-called "swallow capitals" which, because of their characteristic brief period of existence, create speculative platforms and do not generate solid externalities like the consolidation of some sector thanks to their financing. The same happens when capitals do not manage to generate their own exportation environments or efficient commercial openings.

[9] Industrial organization theory.

technology, market size, customer`s preferences, product differentiation and eventual economies to scale (Fedesarrollo, 2007). In the same way, an institutional framework is considered especially important which guarantees the efficient allocation of resources, achieves sustainable political[10] and social balance, preserves macroeconomic stability, and establishes a clear regulation for FDI (Lahiri, 2009)[11]; a credible government; a market of a certain magnitude, with expansion perspective and minimum distortions; an adequate per capita income; a trade policy which achieves access to regional and global markets, in addition to the existence of comparative advantages as regards natural resources endowments[12], infrastructure, workforce, human capital, and other factors like knowledge, which foster the generation of positive externalities (Cubillos & Navas, 2000). Moreover, it is necessary to add the depth of financial markets[13], the favoring of labor and tax law arrangements and the quality of the institutions.

- Public policies and incentives offered by host economies of capital flows. This type of characteristics gain their importance to the degree that they "act on the institutional framework and the economic, political, and social order, public policy, market structure and the incentives for the accumulation of factors and provision of public goods, and also through the deliberate generation of stimuli in order to attract foreign investments" (Proexport, 2007). To this extent, tax, commercial, and financial policies provide incentives for FDI through the granting of tax advantages and the targeting of public expenditure, treaties and preferences, and through special credit conditions (Cubillos & Navas, 2000)[14].

On the other hand, Dunning (2001) proposes the OLI eclectic paradigm (Ownership, locational, and internalization advantages) where a work recognizing all the different factors that motivate a company to carry out an international expansion of their activities is carried out. The paradigm establishes that internationalization is mainly due to the

10 The conditions of an economy as regards its political environment can affect the perceptions of economic stability of the foreign investors that evaluate the advantages of their capital within the recipient country.

11 In Colombia, the legal regime for FDI has been transforming since the beginning of the nineties as a result of the transition from being an economy that was virtually closed to foreign capital to an open economy with an active policy of attracting FDI (Proexport, 2007).

12 Depending on the activity that the foreign capital company carries out, some countries will be more advantageous than others as regards natural resources, as this translates into greater and more varied sources of raw materials, easier acquisition and easier access to them, as well as a better management of the costs within the production process.

13 Especially the depth in what is referred to as domestic financial markets (Cubillos & Navas, 2000).

14 In the policy towards FDI in Colombia, three stages can be distinguished. The first, a relatively hostile attitude of the authorities and restrictive legislation, coherent with the import substitution model; the second, the "passive attraction" stage, which took place at the beginning of the nineties; and the third, "active action" from the beginning of the XXI century (Proexport, 2007).

advantages of ownership, location, and internalization. As regards the advantages of ownership, it refers to the accumulation of specific assets, or their technological characteristics or product, which are specific to the company and may exert more pressure on their competitors in host markets. The locational advantages refer to the productive and institutional agents which are manifested in a certain geographic zone. There is a potential advantage of being capable of integrating activities among sectors of the world with very different costs of factors and resources. And, finally, internalization advantages are those that derive from exploiting specific assets internally, instead of doing it in the foreign market, with the construction of economies to scale and economies of scope through internationalization activities in different areas that, either way, would be distributed among numerous companies (Ramírez & Rincón, 2010).

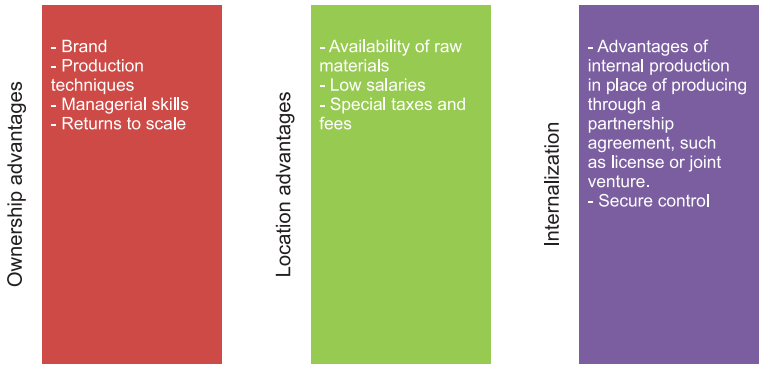

Figure 1. Dunning´s OLI
Source: Coleman (2012)

FDI IN COLOMBIA

FDI legislation in Colombia

The Colombian legal regime has been subject to important changes throughout the economic history of the country. Its transformation has been taking place in various periods marked by strong economic and social transitions in the national and global context[16]; among them, the abandonment of the

[16] For example, the opening to foreign capital took place in a moment in which the whole world changed its legislation in favor of foreign investment. Also, global changes in development strategies have had an influence, such as the liberalization of the markets (Steiner & Giedion, 1995).

import-substitution model and, later, the transition to economic openness can be highlighted. In this way, Colombian legislation has gone from being that of an economy virtually closed to foreign capital to that of an open economy with a policy attractive to FDI (Fedesarrollo, 2007).

A first phase of this analysis extends from the end of the 60s to the beginning of the 90s. With the Foreign Exchange Statute (Decree-Law 444 of 1967), the legislation of the first period is to reflect the concern and the measures adopted as a consequence of the possible negative effects of foreign investment over the balance of payments, as well as the risk of supplanting national capital with foreign capital. After this Decree, there was a long period of restriction of foreign investment (FI) in accordance with the import-substitution model, which promoted productive development mainly from domestic resources. "At the same time that the importance of FDI as a supplement to domestic saving and as a technology transfer mechanism was acknowledged, it was considered that it could have adverse effects on the balance of payments and that the country could make a profit if it managed to channel FI according to their needs" (Steiner & Giedion, 1995).

The debt crisis in the 80s imposed a change in the evaluation of FI and started to give way to a transition as regards restrictions. Positive aspects started to prevail again in sectors that could receive FDI and because of the free movement of capital and utilities, this brought about a successive simplification of the related paperwork and repatriation of utilities and capital (Steiner and Giedion, 1995).

The second phase can be identified from the beginning of the 90s with economic opening. In 1991, Law 9 was issued, which under the modality of Foreign Exchange Statute would stipulate the general norms of the foreign investment legislation in the country, framed in an internationalization process of the economy with free capital flow. FDI started to be seen as an important factor for Colombia's economic development, for the reform of the FDI legislation was based on its acknowledgement. The law eliminated all restrictions to invest in any sector or economic activity, except for security and defense, the real estate sector, as well as toxic, radioactive or hazardous waste management[17] (Suarez, 2010).

Thus, Law 9 of 1991 established as fundamental principles *equality* in the treatment of nationals and foreigners, *universality* of access to the sectors, and *automaticity* in approval (Steiner & Giedion, 1995). However, jurisdiction was kept to regulate the movement of capital; for an important differentiation was made between direct foreign investment and

[17] In some sectors partial restrictions on FI were maintained, like in the sectors of telecommunications, and air and maritime transport (Fedesarrollo, 2007).

portfolio investments[18]. Likewise, *national treatment* was granted to foreigners with the exception of profits transfer (which was subject to limits and conditions imposed by the national government) (Suárez, 2010).

The third phase covers the time elapsed from the start of this new century. Thereby, the deepening of the reforms to the FDI regime and increasing simplicity and better conditions for attracting foreign capital is an important characteristic of the current economic strategies.

> In the last years, the government has sought that regulation responds to the needs of the foreign investor as regards the new alternative forms of investment that have arisen with the development of capital markets. Nevertheless, there is still a division in the legislation between direct investment and portfolio that restricts forms of investment based on financial innovations and, cost-sharing arrangements in general, in the capital of domestic companies, other than those traditionally used. (Fedesarrollo, 2007).

With the government of Andrés Pastrana, Decree 2080 was passed, also known as the General Regime of Foreign Capital Investment in Colombia and Colombian Investment Abroad. In this, the national treatment of foreign investment is reiterated, the forms and types of foreign investment are redefined, the registration of foreign investment is set up, and in accordance with what was established in 1991, those investments in the sectors of finance, hydrocarbons, mining, and portfolio are dealt with as special regimes. (Suárez, 2010).

On 8 June 2005 the so called Law of Legal Stability for Investors in Colombia (Law 963) was approved, in which were established contracts of legal security and guarantees for investors through the improvement of the status of the special free trade zones. However, there has been criticism for problems in not defining the criteria for the approval of requests; as well as the role that free trade zones play in the generation of employment[19].

Finally, one of the greatest incentives given to foreign investment by Colombian legislation is expressed in Law 1111, of 27 of September 2006, in which the 7% remittance tax that investors had to pay was eliminated[20].

---

18 The portfolio modality is the one that is directed towards the values market.

19 For the declaration of free trade zones in Colombia, the requirements indicate that greater capital demands a lesser number of work positions, which gives bias for these types of installationss to be more intensive as regards machinery and equipment, and not in work force (Suárez, 2010).

20 This measure has affected the public finances of the country given that the proceeds (parallel to earnings from remittance) is the result of the not very large net effect of the FDI in Colombia. “Of the 9.04 billion dollars that entered in the year 2007, 7.534 billion dollars left again because of profit repatriation” (Suárez, 2010).

Dynamic of FDI in Colombia during the years 2000-2010

The process of economic opening, which not only eliminated the barriers to foreign capital, but also opened up new investment opportunities for the private sector, was intensified with the significant influx of FDI in the mid-nineties[21]. However, at the end of the decade, the international economic crisis, the complicated political and public order situation, the end of the privatization boom, and the economic recession that the country had experienced since 1999, reduced the inflow of foreign investment resources into Colombia until the early years of the new century. (Fedesarrollo, 2007).

For the first decade of the XXI century, FDI was fluctuating but demonstrated a trend of constant growth (Figure 2). Between the years 2000 and 2003, the revenues and expenditures of FDI were seen to be affected by the global downturn in the world economy; especially in developed countries where a large part of these flows were concentrated. In the year 2008 it reached a maximum of US$10.596 billion and in the year 2006 it registered a low level of US$6.656 billion. The general upward trend tends to be attributed to several factors, among which are found the policies and regulations implemented by the government to attract higher levels of investment, as well as the rekindled confidence of investors, given the improvements in security within the whole of the national territory (Coleman, 2012).

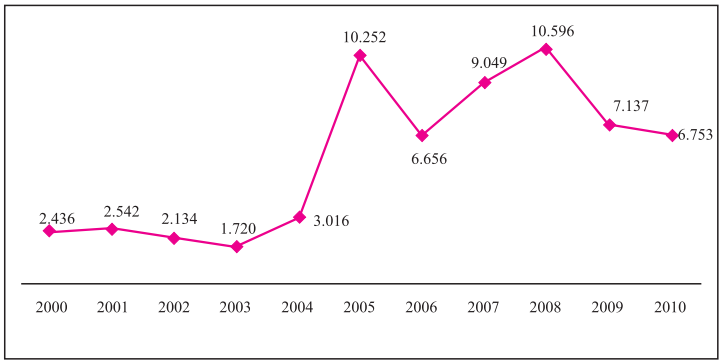

Figure 2. Foreign Direct Investment in Colombia (2000-2010) (billions of dollars)
Source: Banco de la República. Economic Studies Deputy Management- Balance of payments.

[21] The FDI flows went from representing 2% of the GDP in 1994 to more than 5% of the GDP in 1997.

In the same way, the economic and financial crisis that started at the beginning of 2008 disrupted FDI in the whole world. This led to the reduction of the prospects for economic growth (a fundamental determinant of FDI), restricted access to national and foreign financial resources, and increased uncertainty and the perspective of risk. Nonetheless, despite the instability in the world economic climate, the region achieved considerable levels of foreign investment flows thanks to the good performance of the Latin American economies and the industries linked to natural resource extraction (Coleman, 2012). As well as that, FDI continued to enter the country, cushioning the reduction of other capital inflows that occurred during this period.

In the year 2005, one of the years of the decade that registered the highest flow rate, more than half of foreign investment arrived into the country in the fourth trimester, due mainly to the good economic climate that the country was experiencing. In fact, the amount for that year was much higher than that shown for any year since 1994 (Suárez, 2010).Thus, since that year, inflows started to arrive with force, which shows a transition to inflows that were much better than in the first years of the decade.

However, it is important to examine the FDI inflows in parallel with the transfer of dividends and profits (which, as well as the revenues of foreign investment, have been of significant amounts) to make a deeper analysis of its net behavior. In Table 1, the annual proportions of outflow against inflow through investment can be appreciated and, there it is evident, that during this period there was a relationship that tended to be one to one.

As can be observed, this relationship during this period of time had a declining tendency. For the year 2000, the relationship between the amount of FDI and the outflow for the payment of profits and dividends, was 3.6; that is to say, 3.6 was invested for every one that came out. For the following years, the reduction of this relationship started to consolidate until the year 2005 (Suárez, 2010), when it rose again to 2.86. In the last years, the relationship has been declining once more, which is why at the end of this period outgoings for rent were higher than income from capital investment, the relationship being 0.66.

Table 1. Relationship between the amount of foreign direct investment (FDI) and the outflow for profit and dividend payments (2000-2010).

YEAR	FDI (BILLIONS OF DOLLARS)	TRANSFER OF DIVIDENDS AND PROFITS (BILLIONS OF DOLLARS)	RELATION BETWEEN FDI/TRANSFER
2000	2.436	674	3.61
2001	2.542	938	2.71
2002	2.134	1.070	1.99
2003	1.720	1.525	1.13
2004	3.016	2.453	1.23
2005	10.252	3.585	2.86
2006	6.656	4.615	1.44
2007	9.049	6.667	1.36
2008	10.596	8.152	1.30
2009	7.137	7.719	0.92
2010	6.753	10.164	0.66

Source: Banco de la República.

FDI flows in Colombia by sector

The sectoral distribution of FDI flows shows that in the last years foreign investment resources have been concentrated specifically in some sectors. The average sectoral composition of FDI flows in the period 2000-2010 shows that the largest part of the resources were concentrated in the oil sector, attracted by the high international prices of crude and the improvement in the contractual terms (Coleman, 2012), with a total share of 26%. In the same way, the mining and quarrying sector, and the manufacturing industry have been the receivers of a significant part of those resources with 23% and 20% respectively. Hence, the high and increasing prices of raw materials, along with favorable legislation, have attracted many foreign investors to the activities of the primary sector especially, and have concentrated these resources in a few sectors of the Colombian economy.

Sources of foreign investment in Colombia 2000-2010

Traditionally Colombia has received high levels of foreign capital from countries such as the United States, Spain, and Holland (Coleman, 2012). Figure 4 shows the distribution of the principal countries that invested in Colombia between 2000 and 2010. In this period, 58% of investment came from the United States (27%), England (14%), Panama (9%), and Spain (8%).

In the year 2007, for every 100 multinational companies installed in Colombia, 25 were from the United States, registering operational revenues of US$10.857 billion, which is the equivalent of 6.3% of the Colombian GDP. In the same way, the records indicate that for this year, 10% of the sales of the main 1000 companies in the country represented 5% of the total tax revenue and 10% of total exports (Coleman, 2012).

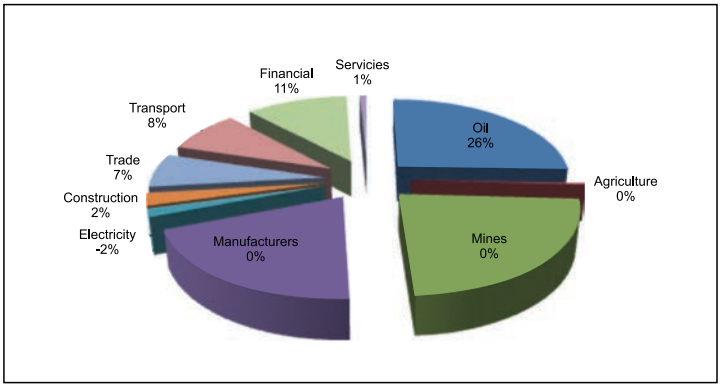

Figure 3. Average sectoral composition of FDI flows 2000 - 2010
Source: Banco de la República, Economic Studies Deputy anagement- Balance of payments

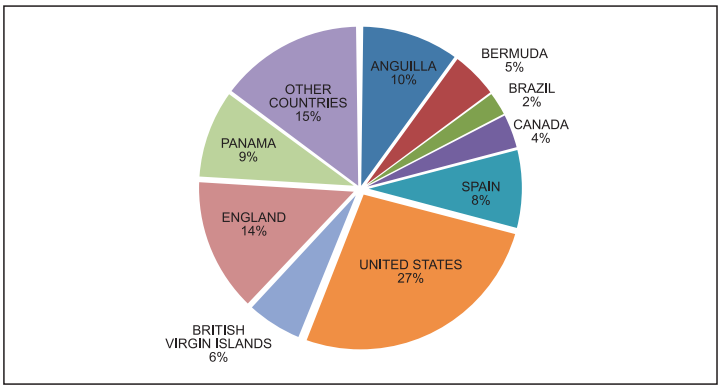

Figure 4. Foreign investment sources in Colombia.
Source: Banco de la República, Economic Studies Deputy Management

EMPIRICAL ANALYSIS

Throughout the literature on FDI it is possible to find diversity of studies and positions concerning the causality and magnitude of effects, direct and indirect, of foreign investments on the growth of the economies that receive them. To analyze the effect of FDI, an analysis was carried out on an aggregate level as well as a sectoral level.

Firstly, an econometric model was used, focused on the historical effect of FDI on the growth of the Colombian economy, as well as the impact of other variables, in order to strengthen the observation. In the same way, and to complete the analysis, a sectoral exercise was carried out, using the input-output matrix for Colombia to identify the importance of foreign investment within the backward and forward linkages of key related sectors, and be able to observe its impact on the economy.

Macroeconomic analysis

As has been mentioned throughout the document, among the determinants of economic growth of a country, the influx of foreign investment into an economy can derive positive effects; nevertheless, it is necessary to consider other variables to be able to progressively measure the behavior of GDP, and therefore complement the analysis.

Likewise, diverse factors exist that can affect the economic growth of a country. The growth models have generally used elements such as work, capital, human capital, natural resources, technological advances, domestic savings, and external savings, among others, to explain growth.

However, given that the period of study was relatively short, it was important to focus the analysis on the determinants of short term economic growth or on the side of demand (as it is addressed by approaches of a Keynesian slant) for an open economy (Jiménez, 2010).

Thereby, it was convenient to consider variables such as gross capital formation (variable flow of the stock market), public expenditure (proxy for public capital formation), indicator of economic openness (proxy for relationship of the economy with the outside), financial portfolio (scale of the financial system), and foreign direct investment (is part of the foreign financing of capital accumulation) determinants of economic growth in Colombia for the period 2000-2010. However, consumption is not considered to be an exogenous variable in order to avoid reverse causality. That is to say, given an explanation of income to consumption it is not adequate to establish the growth of consumption as explanatory of the growth of income.

Now, one of the important characteristics of FDI is that it works like a foreign savings return generator within the domestic market, where the savings have important effects on the short term over increases in the output of the financing and investment chain (Antúnez, 2009). Likewise, the

transfer of technology that it brings about is translated into qualitative and quantitative advances in the social fund of knowledge of mechanisms and techniques of production, which affect the growth of the domestic economy (Antúnez, 2009). In a similar manner, the theory of *Harrod* (quoted by Antúnez, 2009) points out that investment, like increases in capital *stock* (GKF), is fundamental to the growth of an economy in the long term, as these investments contribute to improving labor productivity, which raises the product level (Antúnez, 2009). Notwithstanding, for a short term analysis GKF is used, which is a flow, different to capital stock which is used for long term analysis, given that it is stock; which impacts equally on the different sectors where it intensifies, generating better competitiveness, making the use of factors more efficient and, consequently, impacting on economic growth (Antúnez, 2009).

Moreover, the movements of the financial portfolio and the movement of credit in an economy, become an important driver of investment and financial momentum for economic agents, as well as an indicator of domestic consumption and its consequent dynamizing effects on the short term economic processes. As Keynes (1936) argued in his general theory, consumption (together with investment) is one of the determinants of the demand for consumer goods and of production, and what implies is that, effective demand, would determine effective production.

Public expenditure also causes increases in aggregate demand, as within the market excess demand for goods is produced which allows for a decrease in stock and, consequently, an increase in production (Antúnez, 2010). This, from the theoretical approaches of Hicks (quoted by Antúnez, 2010), implies that public expenditure affects employment levels and with it, the private consumption capacity of individuals and economic agents within the economy, which stimulates total growth of the product and, also, justifies it.

Finally, and so as to complete the analysis of some the determinants of economic growth according to different approaches, the commercial dynamic of an open economy with the outside turns out to be a necessary condition for achieving greater rates, and even "miracles", of growth (Ministry of Commerce, Industry and Tourism, 2013)[22]. This means that the transfer of the benefits of economic opening (improvements in efficiency, competitiveness, access to new technologies and specialization) has been established to be a robust strategy for product growth in an economy on the short term (Ministry of Commerce, Industry and Tourism, 2013).

[22] This refers to growth in underdeveloped countries and non-exporters of oil that register rates above 3% per annum (Ministry of Commerce, Industry and Tourism, 2013).

- **Methodology of estimation**

An econometric exercise was conducted taking into account variables that acted as explanations for the behavior of the growth of the Colombian economy (measured through GDP) in the short term, together with the variable of interest, FDI, oriented to observe its contribution to different scenarios of the principal model within a horizon of eleven years with trimestral data for the period 2000-2010, from which 44 observations were obtained. The data was obtained mainly from two sources: the data bases of the Banco de la República and from the National Administrative Department of Statistics, (DANE).

The econometric technique used was that of Ordinary Least Squares (OLS) to estimate different relationships among the observed variables, being that OLS complies with the properties of the classic linear regression model (CLRM), obtaining BLUE (best linear unbiased estimator) estimators.

Particularly, the data with which the foreign investment worked corresponds to the gross FDI, that is to say, that which corresponds to the total of the inflow of foreign capital to the economy that receives it, not discounting the outflow of the same, where in this case it made reference to the net FDI; equally, from those amounts the transfer of profits were discounted abroad, with the aim of taking into account all of its effects and reaches within the analysis.

In the case of the data of the FDI and GKF variables, a deflator of the gross capital formation was used (with constant values based on 2005) as well as current values and constants based on the GDP of 2005, as the availability of data allowed it. Finally, all the values of each of the pieces of data used were converted into Colombian pesos, using the average trimestral market representative rate (MRR), so as to handle the amounts in a single currency.

- **The econometric model**

Based on the analysis above, the following theoretical model is defined:

$$g_t = \beta_1 + \beta_2 fdi_{t-1} + \beta_3 gkf_t + \beta_4 pe_t + \beta_5 eoi_{t-1} + \beta_6 portfolio_{t-1} + \mu_t \qquad [1]$$

The endogenous variable g_t is the rate of growth of the Colombian economy. The values of fdi_t correspond to the relationship of the gross foreign direct investment flows minus the outflows that take effect by way of profits and dividends regarding the GKF in pesos at 2005 prices[23].

[23] The deflator of the GKF corresponds to the trimestral amounts of the gross formation of capital at current prices over the trimestral amounts of the gross formation of capital at constant prices based on the year 2005.

The outflows of profits and dividends are discounted to obtain a more precise indicator of the foreign capital flows, as it is intended to approach the analysis from the impact of the FDI on the gross formation of capital and thus, consequently, on investment and growth of the economy. In this way, greater flows of foreign capital from FDI, directly reflected as involvement in gross capital formation, would positively affect the growth of the gross domestic product of the economy. Likewise, if the share of FDI within the total investment in the economy were reduced by means of the equation it would be expected that the level of growth would decrease for the following period.

The gkf_t indicates the relationship of the gross formation of capital with respect to the GDP minus the value of FDI with respect to GDP, hence, it is expected that if the share of the investment is greater, this would be reflected in the rate of growth; however if the share of the investment is less, that could affect the growth levels of the Colombian economy within the period analyzed. This variable is fundamental, given that if the FDI positively affects economic growth, the GKF should have a positive effect.

Some control variables are added, such as: central government participation in public expenditure in the total GDP (pe_t), the economic openness indicator (eoi_t), and the gross portfolio participation in the GDP ($portfolio_t$). In general, this analysis was carried out expecting that the variables gkf_t and pe_t had immediate impact on the endogenous variable whereas the fdi_t , eoi_t and $portfolio_t$ variables, which present lags, impacted on the growth of the GDP in a later period.

As regards the classification of the model, it is random, as it contains probabilistic variables which are formed by those variables which affect the endogenous variable, but the value of which is not predetermined, but it is known through probability processes (μ_t); it is complete, as it has an equation and an endogenous variable, that is to say, the number of equations equals the number of endogenous variables; and it is linear, given that its variables and parameters are raised to a power that is equal to 1 (Gujarati, 2001).

- **Results**

Initially, the estimation of the regression is carried out by adding every variable simultaneously so as to observe the behavior of the models in general and of the FDI variable in particular.

For this regression, the variation in economic growth in the period 2000-2010 is explained as 24.39% for the FDI set of variables, gross capital formation, public expenditure, economic openness, and portfolio; the remaining 75.61% of the variability would be determined by non-explicit variables in the regression model that are collected in the random variable. To choose the adequate regression model the Schwarz information criterion (SIC)

and the Akaike information criterion (AIC) were followed, so we can infer that this is the most appropriate for the analysis, given that it shows an improvement as regards goodness of fit by including the proposed variables.

Table 2. Regression of the FDI effect on Colombian economic growth (2000-2010)

	Dependent variable: GDP growth rate
	Period 2000-2010
	Regression
Constant	0.024733
	[0.025714]
Foreign direct investment (-1)	0.018947**
	[0.0082229]
Gross capital formation	0.199352*
	[0.110857]
Public expenditure	0.181697*
	[0.103828]
Economic openness (-1)	-0.196777*
	[0.121291]
Financial portfolio (-1)	-0.006773
	[0.008749]
Observations	44
R-squared	0.243909
Durbin-Watson stat	2.376584

* Significance level 5 %.
** Significance level 10 %.

In this estimation exercise, the global significance test indicated that, with a 90% level of confidence and 10% of significance, the FDI variables: public expenditure, financial portfolio, economic openness, and gross capital formation do have an impact on the GDP growth in the studied period. With regard to individual significance, the results suggest that, with a 5% significance level, the FDI variable showed an effect on the GDP growth in the period 2000-2010. At the same time, with a 10% significance level, the explanatory variables GKF, PE, and EOI have an impact on the endogenous.

In the same way, hypothesis tests were carried out to prove the assumptions behind the elaboration of the regression model. Thus, the results shown by the Breusch-Pagan-Godfrey test for the homocedasticity assumption, where the Chi-square (5)=0.8594 probability is bigger than 0.05, that is to say, there is a 5% probability of committing a type I error (rejecting the null hypothesis), as the null

hypothesis was accepted and, with 95% certainty, indicated that the model does not present heterocedasticity, which means, that the variance of the model remains constant. The Breusch-Godfrey test for the analysis of (negative autocorrelation) of the residuals indicates that, with a 95% level of confidence there is no correlation of errors in time. With respect to the correct specification, the test carried out through the Ramsey's Reset method showed that with 95% confidence it was convenient to accept the null hypothesis, which argues that the estimators are unbiased and consistent for asymptotic sampling.

A test to prove the inexistence of a spurious regression is that of unit root, which was carried out by means of the Augmented Dickey-Fuller test (ADF), taking as a null hypothesis the existence of a unit root against the negation of the conjunction, intending to verify the stationarity of the residuals, which prove the existence of a balanced relationship of the long-term variables. Meanwhile, if the p value of the ADF test is 0.00, then, the null hypothesis is rejected at 1%, so there is no presence of unit root in the residuals and the regression is not spurious.

- **Relationship between variables**

Within the behavior of the variables, the sign of the coefficients of the estimation that evaluates the relationship between growth and investment is the expected one. It indicates that an increase in foreign direct investment has a positive effect on the growth rate. This means that, if FDI increases, the growth of the GDP does, too, which corroborates many of the statements that other studies have put forward[24].

There is a direct relationship between gross capital formation and product growth. As the GKF increases, the GDP increases also. This relationship confirms some of the main theoretical statements defined.

The relationship between public expenditure and GDP growth is direct, which means that as public expenditure increases, GDP growth increases, too

There is an inverse (-) relationship between economic openness and GDP growth as well as between the gross portfolio and GDP growth. An increase in openness will lead to a decrease in economic growth; as is the case of the gross portfolio, which contradicts the direct relationship between the variables that is put forward by the theory. This results in the invalidation of the main theoretical macroeconomic statements, given that the theory points to a positive relationship between these variables. This phenomenon can be explained as the temporality chosen may limit the satisfaction of the theoretical assumptions.

[24] That is the case of the impact study of FDI in Colombia, carried out by Fedesarrollo (2007)

As regards the most relevant results, and as is shown in Table 2, the estimator $\beta_2 = 0.018947$ is the partial regression coefficient that measures the average effect on GDP growth for the period 2000-2010, explained by FDI flows, maintaining as constant: public expenditure, economic openness, and the financial portfolio. The value of the Durbin Watson, which is greater than R^2, is a good indicator that the regression is not spurious[25]. In this way, when the participation within GKF of the FDI minus the outflow of profits increases by 1% in a trimester, the growth of the GDP increases by 0.019% in the following trimester; or which is the same, for each 1% increase in FDI with respect to GKF during the year the growth of the economy would be more than 0.076%, in this sense, a 20% *fdi* during the year leads to 1.52% additional annual growth.

In this context, a logical compliance within the model is presented, given that *fdi* as well as *gkf* affect economic growth, as FDI is part of the GKF. Therefore, following this logic, for a period of high growth it is inferred that increases in FDI disturbed economic growth as it was affected by the levels of investment. Both variables, due to their relationship, affect the growth of the GDP in the same way.

Sectoral analysis

With the aim of complementing the above study, an analysis was carried out of different sectors that allowed the identification of the importance and relative impact that the production sector can have, strongly related to FDI flows, on the rest of the branches of economic activity through forward linkage – by means of demand for productive inputs that help production to increase - or of backward linkage – through the sale of their products as inputs that contribute to the expansion of other branches of activity.

With forward linkages the idea is to evaluate the sale of goods for the expansion of the productive capacity of other sectors, to see how they "push" other sectors through the sale of production inputs. With backward linkages, the idea is to evaluate the purchase of goods from other sectors so as to increase the production of a specific branch that "encourages" others through the purchase of inputs (Fedesarrollo, 2007). The linkages tool becomes very useful in that it allows the quantification of the impact of FDI flows, allowing the establishment of the scale of the response of the different production activities to the variations of the dynamics of the sectors that are strongly linked to these investments on the short term.

For this, it is vital to have the information on the interactions between the different activities that appear in the input-output matrix, in which are presented the total that a specific sector produces, for

[25] When there is a regression of one time series variable over another time series variable it is possible to have an elevated R^2 although a significant relationship does not exist between these variables. In this case there could be spurious regression problems (Gujarati, 2001).

intermediate consumption as well as for the final product. With this matrix, it is possible to identify the links between the different branches of production activity with respect to which sectors serve as inputs and which sectors are benefited from a sector in particular through their outputs.

To carry out this exercise, the information from the input-output total symmetric matrix was used, product by product, based on 2005 published by DANE. To build the input-output matrix it was necessary to analyze the matrix of technical coefficients (A) and the matrix of imports (M).

Below, there is a input-output matrix (L) or Leontief matrix:

$$L = (I - A + M)^{-1} \qquad [2]$$

The matrix multipliers (L) are calculated as the inversion of the difference between the identity matrix (*I)* and the sum of the matrix of technical coefficients and of imports.

The two sectors worked on particularly, were those in which the FDI flows have been, on average, the highest of the decade, using deflated data at 2005 prices, given that the base matrix is from 2005. However, for each case a peak year (that with the greatest foreign investment) and a valley year (in which the lowest flows were registered) were selected, in accordance with historical antecedents; the aim being to have a broad observation of the impact of these flows on different sectors of the Colombian economy throughout its economic history and under different – and pronounced – openness policies.

Notwithstanding, it is important to bear in mind that this methodology has limitations and constraints that make it solely a complementary tool. Thus, in these exercises proportional relationships are expected between the inputs and the product. That is, that it is implicitly assumed that the production technologies of all the sectors are fixed (constant), for which the reactions of the producers to the change in prices are not taken into account (Fedesarrollo, 2007).

Within the simulation, the oil and coal sectors are used, which constituted a significant involvement in the FDI flows during the decade, and in the same way, sectors with important linkages, both forward and backward. These flows were registered in billions of pesos at 2005 prices, with presumed increases in the GKF in the corresponding sector.

Table 3. Simulation of the impact on the oil sector

BILLIONS OF PESOS 2005	OIL SECTOR IMPACT				
	Crude oil, natural gas and minerals uranium and thorium	Refination of oil; nuclear fuel	Overland transport services	Remuneration of employees	Gross surplus from exploitation
2000/Valley year FDI	-913.07 -5.536 %	-10.25 -0.084 %	-69.45 -0.297 %	72.17 -0.066 %	-680.56 -0.602 %
2008/Peak year FDI	8558.07 51.89 %	96 0.78 %	650.92 2.779 %	3 0.003 %	6378.83 5.642 %

Source: elaborated by the authors.

Taking the previous considerations into account and based on the statistics of the DANE and the Banco de la República, the effect of FDI, which entered into two crucial years as regards the oil sector, was quantified. In the year 2000, these flows were the lowest of the decade, with a total of -$831.746 billion pesos[26], for which, in accordance with the input-output matrix and the results of its linkages (forwards as well as backwards), the divestment in the oil sector generated production losses of $913 billion pesos (a reduction of 5.5%). It is worth clarifying that this type of impact sends shockwaves both backwards and forwards, making the overland transport sector the one that suffered the highest losses in production (around $69 billion pesos), as well as a decrease in the gross operating surplus of $680 billion pesos.

On the contrary, in the year 2008, the flows were the highest of the decade in the sector, reaching the sum of $7.795 billion pesos, which within the simulation, augments its production by $8.558 billion pesos, and the gross operating surplus by $6.378 billion pesos. But, as these dynamics generally impact, directly or indirectly, practically the whole economy, many other sectors are also affected. Rubber and plastic products, chemical substances and products, machinery and equipment, electricity, motor vehicle repair services, personal and domestic items, trade, hospitality, financial and insurance services, taxes, etc., are examples of the sectors that are interrelated with the oil sector, and are affected by the changes in the simulation.

Another exercise (which could be extended to each of the sectors that are recipients of FDI, using the same interpretative logic) was carried out in the mining and quarrying sector (including coal). As can be observed

[26] A negative inflow means that the capital reimbursements are higher than the new investment (Banco de la República).

in Table 4, the year with the lowest FDI flow registered in the sector was 2001, with $936 billion pesos, which had an impact mainly on their own production, overland transport services (with increases in their production of 0.17%), construction, civil engineering works and machinery rental services with operator (0.18%), complementary and auxiliary transport services (0.7%), the gross operating surplus (0.6%), among others.

Table 4. Simulation of the impact on the sector

BILLIONS OF PESOS 2005	IMPACT OF COAL				
	Coal	Overland transport services	Construction civil engineering and rental of machinery with operator	Complementary and auxiliary transport services	Gross operating surplus
2001/Valley	948.45	40.24	37.82	31.18	650.81
year of FDI	15.278 %	0.172 %	0.178 %	0.677 %	0.576 %
2009/Peak	6018.6	241.27	226.74	186.96	3901.89
year of FDI	96.949 %	1.030 %	1.066 %	4.060 %	3.451 %

Source: the authors.

The peak year of FDI regarding the mining and quarrying sector for the decade was 2009, when the flows reached the sum of $5.615 billion pesos. Together with the sectors shown in Table 4, this sector would impact with force on the sectors of oil refining, nuclear fuel, chemical substances and products, electricity, motor vehicle repair services, personal and domestic items, intermediary financial services, insurance and related services, services to companies (except for financial and real estate services), wages, taxes, among others.

CONCLUSIONS

Most of the economic literature points out that, in general terms, FDI has important effects of a varied nature and scope on the economy of the host country through direct and indirect channels, such as *spillovers* or forward or backward production linkages. Among the main effects on the economic dynamic of the country caused by FDI, can be found those directed towards gross capital formation (investment), technological development, improvement in the productivity of

the related sectors, international trade, better innovation processes, employment growth, availability of financial resources, development of domestic markets, among others.

However, their impacts also extend towards the displacement of domestic companies, cultural and social alterations, the exploitation of domestic resources and the concentration of revenue, especially in developing countries. This depends, among other factors, on the strategic objective of the investment (on whether FDI is focused on the exploitation of the domestic market, the exploitation of its natural resources, the acquisition of key assets, or the use of the host economy as an exportation platform) and on the conditions of the host economy.

In Colombia, between the years 2000-2010, with legislation and development plans, the conditions facilitating the entry of foreign capital and its progressive positioning within the national economy began to strengthen. In this way, throughout the decade, FDI registered a tendency towards growth despite the fluctuations that the world economic climate generated, and, along with economic growth, this relationship was maintained in positive rates of growth. For this reason, FDI became one of the main sources of financing, an important determinant of the capital account and the supply and demand of foreign currencies in the exchange market; its effects were also shown by improved employment, technological transfer, and diversification in exportation sectors.

Nevertheless, the relationship between the amount of FDI that has arrived into Colombia and the outflows for the payment of profits and dividends between the years of 2000-2010 has been decreasing. At the beginning of the period, this demonstrated a trend of 1 to 1, but at the end of the decade the outflows for rent were greater than the inflows of capital investment. The relationship indicated that now the amount of money that was transferred abroad was greater than what was being invested in Colombia.

For this reason, the analysis made in this study to observe the effect of FDI on economic growth during the set period, was carried out, in contrast to other studies, from this relationship between the amounts of foreign investment and the outflows for profits of the same. To this end, an Ordinary Least Squares (OLS) econometric model was used and, in complement to this, a simulation of the sectoral impact of FDI using the input-output matrix for Colombia was carried out.

The result of the estimation carried out with the Ordinary Least Squares method shows that, on the one hand, FDI had positive effects on the growth of the Colombian economy during the period 2000-2010, despite the growing outflows in profits and dividends. This effect is reflected in the explanation of

economic growth of around 0.00072% due to the average annual FDI. On the other hand, the macroeconomic variables *gkf* and the financial portfolio were determinants of economic growth with positive effects (as was expected) for the period analyzed. Likewise, the economic openness index and public expenditure explained the growth in production for the decade; however, the relationship was determined by negative signs, which could be explained by the short temporality used.

The previous analysis was complemented by a simulation of sectoral linkages using the input- output matrix for Colombia. The main results suggest that the sectors that are promoted by FDI in its current form (in the exercise, the sectors of oil exploitation and coal), indirectly benefit other sectors through their role as drivers of economic activity through the purchase and sale of inputs. Moreover, with this simulation it was possible to detect the sectors in which it would be more productive to focus this type of investment through the size of the linkages; inferring that, for example, sectors with greater added value, such as those of industry and manufacturing, with more robust forward and backward linkages, could improve the quality of the allocation of resources by FDI.

REFERENCES

Álvarez, A., Barraza S. & Legato, M. (2009). *Inversión extranjera directa y crecimiento económico en Latinoamérica.* La Mancha: Universidad de Castilla.

Antúnez, C. I. (2009). *Crecimiento económico. Modelos de crecimiento económico.* Lima, Peru: Editorial Universidad de San Marcos.

Banco de la República (2010). Flujos de inversión desde y hacia Colombia: conceptos, medición y su comportamiento en 2009. *Reportes del Emisor* (131).

CEPAL Comisión Económica para América Latina y el Caribe. (2004). *La inversión extranjera.* México: Organización de las Naciones Unidas.

Coleman, T. (2012). *Tendencias e impactos de la inversión extranjera en Colombia.* Tesis de postgrado. Bogotá: Universidad EAN.

Cubillos, M. & Navas, V. (2000, junio). Inversión extranjera directa en Colombia: características y tendencias. *Boletines de divulgación económica,* (4).

Dunning, J. (2001). *El paradigma ecléctico de la producción internacional: pasado, presente y futuro.* Gran Bretaña: Edward Elgar Publishing

Fajnzylber, F. (1976). *Las empresas transnacionales: expansión a nivel mundial y proyección en la industria mexicana.* México: Fondo de Cultura.

Fedesarrollo (2007). Impacto de la inversión extranjera en Colombia: situación actual y perspectivas. Bogotá D.C: Editorial Fedesarrollo.

Garavito, A., Iregui, M. & Ramírez, M. (2012). *Inversión extranjera directa en Colombia: evolución reciente y marco normativo.* Borradores de Economía. Bogotá: Banco de la República de Colombia.

Guerra, A. (2001). *Factores determinantes de la inversión extranjera: introducción a una teoría inexistente.* México D.F: UNAM.

Gujarati, D. N. (2001). *Econometría*. (4 ed.). México D.F: McGraw-Hill Interamericana.

Hernández, G. (2012). Matrices insumo-producto y análisis de multiplicadores: una aplicación para Colombia. *Revista de economía institucional, 14*(26).

Ibarra, D. (2004). *La inversión extranjera*. México: Comisión Económica para América Latina y el Caribe, CEPAL.

Jiménez, F. (2010) *Crecimiento económico: enfoques y modelos*. Pontificia Universidad Católica del Perú, Departamento de Economía y Cartolan Editora.

Keynes, J. M. (1936). *Teoría de la ocupación, el interés y el dinero*. México D.F: Fondo de Cultura Económica.

Krugman, P., Obstfeld, M. & Melitz, M. (2001). *Economía internacional. Teoría y política*. (9 ed.). Madrid: Prentice Hall.

Lahiri, S. (2009). *Foreign direct investment: an overview of issues. International of Economics and Finance,* volume 18, número 1, págs 1-3.

Lensink, R. (2003). Inversión extranjera directa, desarrollo financiero y crecimiento económico. *The Journal of Development Studies,* volume 40, número 1, págs 142-163.

Lipsey, R.E. (2000). The role of foreign direct investment in international capital Fflows. *NBER Working Paper.*

Ministerio de Comercio, Industria y Turismo (2013). *Apertura económica y crecimiento.* Recuperado de http://www.mincit.gov.co/publicaciones.php?id=11202.

Murra, S. (2006). Revaluando la transmisión de spillovers de la IED: un estudio de productividad para Colombia. *Desarrollo y Sociedad, CEDE, Universidad de los Andes.*

Proexport (2007). *Impacto de la inversión extranjera en Colombia: situación actual y perspectivas.* Bogotá: Editorial Proexport.

Ramírez, J. & Rincón, V. (2010). *Empresas multinacionales y su impacto en la economía de Pereira: sector industrial.* Tesis de pregrado. Universidad Católica Popular de Risaralda.

Suárez, A. (2010). *Confianza inversionista. Economía colombiana, primera década del siglo XXI.* Bogotá D.C: Aurora.

Steiner, R. & Giedion, U. (1995). Características, determinantes y algunos efectos de la inversión extranjera directa en Colombia. Bogotá: Fedesarrollo.