

ECONOMIC GROWTH: DO THE TYPE OF IMPORTED GOODS AND FDI MATTER?

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Abstract

Theories of endogenous growth emphasize that imports of inputs (intermediate and capital goods) and foreign direct investment [FDI] may play a key role on economic growth as a means of international diffusion of technology and knowledge. Nevertheless studies which analyze together the importance of both imported inputs and FDI for economic growth are less frequent. The contribution of this study is mainly empirical. The goal is twofold. The first aim is to examine the simultaneous impact of the different categories of imports by end-use and FDI on the economic growth in 53 countries during 1996-2010. The second target is to capture the different responses in the economic growth derived of the consideration of advanced and emerging economies. Results reveal that imports of inputs play a key role on growth economic while FDI is not significant. We also find that the answer of economic growth is distinct between the two groups of economies.

Keywords: imported inputs, foreign direct investment, economic growth, advanced and emerging countries, international technology diffusion

JEL Classification: F10, F14, F43

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1. Introduction

Theories of endogenous growth emphasize that imports of inputs (intermediate and capital goods) and foreign direct investments [FDI] may play a key role on economic growth as a means of international diffusion of technology and knowledge (Grossman and Helpman, 1991; Coe and Helpman, 1995). Nevertheless, the majority of the existing empirical literature in the context of trade-growth nexus have focused primarily on the relationship between openness and growth (Dollar and Kray, 2001; Baldwin, 2003; Samman, 2005; Dufrenot et al., 2010), or between export and growth (Krueger, 1978; Bhagwati, 1988; Yang, 2008). In contrast, studies which examine the importance of imported inputs and FDI for economic growth are less frequent.

On one hand, most present analyses handling the relation imports-economic growth are usually made by considering the imports as total values without making distinction by domestic end-use categories (Awokuse, 2008; Ugur, 2008; Kim et al., 2009; Mishra et al, 2010). However, some scholars have only focused on the impact of one category of imports on the economic growth. Thus, while researchers like Mazumdar (2000) examine the importance of imports of capital goods, others authors such as Feltenstein et al. (2008) and Berdell et al. (2011) emphasize the role of intermediate goods. Recently, an emerging literature points out the relevance of tackling with the different types of imported goods according to their end-use due to the dissimilar impact on growth (Veeramani, 2008; Iscan and Yildirim, 2012; Lo Turco, 2012). As a result, the distinction between imports of intermediate goods, capital goods and consumption goods achieves a great concern. The first two goods may embody foreign technology to produce goods inside the importer country, being considered as a means of diffusion of international knowledge. This way, it may be assumed that this type of imports impact positively on economic growth (Miroudot et al. 2009). On the contrary, consumption goods' imports may do it negatively since they are associated to a decrease in economic growth by substituting domestic goods with imported ones (Miroudot et al. 2009; Iscan and Yildirim, 2012). Consequently, to disaggregate the imports by end-uses is required.

On the other hand, FDI is also a channel of technology diffusion. It may promote knowledge spillovers to local producer. These benefits could derive from the access to more sophisticated inputs, from design, more efficient management styles, better organizational method, labour training. The gains will be also influenced by the ability of human capital of a country's manufacturers to absorb new technology (Fernández and

Márquez, 2012). In this context, some scholars have argued that FDI affects economic growth positively (van Pottelsbergue de la Potterie and Lichtenberg, 2001; Borensztein et al., 1998; Xu, 2000) even though it is necessary a threshold level of human capital.

Despite the relevance of the mentioned mechanisms of knowledge diffusion, few previous works have examined simultaneously the importance of both imports and FDI for the economic growth. For example, Savvides and Zachariades (2005) investigated the role of capital goods imports and FDI in Total Productivity of Factor and value-added growth in the manufacturing sector of 32 developing countries. They concluded that imports of capital goods and foreign direct investment play a positive role on growth, although often small. Miroudout et al. (2009) tested the relationship of trade in intermediate inputs and inward FDI stock to output growth for 10 OECD economies at the sector level. They found that these two variables contributed positively to the economic growth.

Due to the lack of this type of studies within the relation between foreign trade and growth literature, this paper aims to give empirical evidence on this issue. Therefore, its contribution is mainly empirical. Thus, the purpose of the present paper is to examine the simultaneous impact of the different categories of imports and FDI on the economic growth for 53 countries, clustered in advanced and emerging economies over the period 1996-2010. This study departs from the previous ones in it is not only focused on the effect of all imported varieties according to their main end-use in the importer country, but also it is centred on FDI. In addition, this paper tries to capture the different behaviours in the economic growth derived from the two grouping countries. In order to split imported goods by end-use, End-Use Categories (EUC) identified in OECD STAN Bilateral Trade Database are followed. As regards the FDI, this paper supports the idea that it may improve the economic growth regardless of the imported inputs.

The paper is organized as follows. Section 2 briefly reviews the theoretical relation between foreign trade, FDI and growth. Section 3 presents the empirical strategy and data used. Estimation results are discussed in Section 4; and Section 5 gives some concluding remarks.

2. Theoretical background

Based on the expectation that trade promotes economic growth, a wide empirical literature has been focused mainly on the causality relationships between trade and economic growth. However the empirical evidence has not managed to clarify it. Some authors argue that trade affects economic growth positively (Grossman and Helpman,

1991; Rivera-Batiz and Romer, 1991; Dollar, 1992; Ben-David, 1993; Sachs and Warner, 1995; Krueger, 1997; Edwards, 1998; Frankel and Romer, 1999; Wacziarg, 2001; and Greenaway et al., 2002). Moreover, other scholars are more skeptical (Rodriguez and Rodrik, 1999¹; Redding, 2002; Clemens and Williamson, 2002; and Vamvakidis, 2002). They have suggested that the trade-growth nexus depends on the specification of the empirical model and the variables used.

In this context, the research has been focused mainly on the role of export expansion on economic growth. Most studies attribute to exports a positive impact, providing support to the export-led growth hypothesis (e.g. Emery, 1968; Kravis, 1970; Krueger, 1978; Balassa, 1978; Feder, 1983; Dreger and Herzer, 2012). This effect stems from different channels: the increase of production due to foreign demand, efficient resource allocation, access to economies of scale, increasing competition and boosting productivity by means of specialization in the production of export products. By contrast, other scholars have reached different conclusions. For example, Lorde (2011) suggests an inverse relationship between exports and GDP for the case of Mexico. He concludes that this fact may derive from the high import content of exports and weak linkages with domestic suppliers. Jung and Marshall (1985) only reach significant export-growth evidence for four countries in a sample of 37 developing economies. Qayyum and Arshad (2008) find no evidence for the case of India.

Recently, according to the theories of endogenous growth, the emphasis has been placed on imports-growth nexus. Some scholars such as Esfahani (1991), Lee (1993) and Lawrence and Weinstein (2001) have only identified positive impacts of imports on economic growth. Otherwise, others authors have found a predominant role of imports in economic growth, providing empirical support for import-led growth hypothesis. For example, Mahadevan and Suardi (2008) found that the Japanese economic growth depends on imports instead of exports. In the same line, Awokuse (2008) showed that the strength of the imports' impact on growth is relatively stronger than the exports for the case of several Latin American. Islam et al. (2011) obtained similar results for a sample of 40 developed countries. Derived from these previous studies it may consider that imports play a main role on economic growth, even though the evidence also

¹ Starting from the positive relationship between openness and growth argued by the works of Dollar (1992), Sachs and Warner (1995), Ben-David (1993) and Edwards (1998), Rodriguez and Rodrik (1999) conclude that these previous results were not robust. They found that the results relied either on inappropriate openness indicators or on a questionable use of econometric methodologies.

provides mixed results. Thus, the findings of Wang et al. (2004) denoted that imports originate no significant effect on developed countries' growth.

The benefits of imports on growth derive mainly from the role of imported inputs on international technology transfer, and consequently on productivity increase. Furthermore, one can reasonably assume that most imported inputs may be more technologically advanced than domestic ones (Mirodout et al., 2009). But also the exposure to superior foreign firms may explain the positive impact of imports since it could encourage innovation in domestic producers. Lawrence and Weinstein (1999) argued these positive effects on Japanese economy. However, the empirical evidence is no conclusive, (see e.g. Keller, 2001; Keller and Yeaple, 2003; Muendler, 2004; MacGarvie, 2006; and Fernandes, 2007).

In this framework, decomposition imports by end-use it is required since not all types of imports may originate the same effects on economic growth. In this sense, Jesko (1992) emphasized the importance of disaggregating imports to avoid the possible estimation bias. He considered that if total imports and investment expenditures are used as exogenous variables it may imply that imported capital goods are counted twice. By comparison, Hakkı and Yildirim (2012) examined how the type of imported products (consumption, intermediate goods, capital) affects growth. They found that capital and intermediate goods' import affect growth positively and consumption goods' import affects growth negatively. In addition, authors such as Lo Turco (2012) pointed that imports of intermediates only affect economic growth when they are from advanced economies.

According to theories of endogenous growth, the inclusion of FDI is required. This way a better understanding of the contribution of technological transfer to economic growth may be reached. It is widely believed that FDI generates a positive impact on economic growth (Saggi, 2002). Thus, while some scholars argue that FDI may affect host country through the role that it plays in the diffusion of technology and knowledge (Blomstrom and Kokko, 1998, Saggi, 2002); other authors stress that FDI may generate important externalities to domestic producer, for which input-output relationships and inter-industry linkages may act as propagation channels (Rodriguez-Clare, 1996; Capello, 2009). In contrast, there are research results available on the negative impact of FDI on economic growth, especially in emerging and developing countries (Kawai, 1994; Mencinger, 2003; Wang, 2004; Herzer et al., 2007). On one hand, an emerging empirical literature underline that the impact of FDI on growth mainly depends on the

characteristics of the host country (Zhang, 2001; Hansen and Rand, 2006). In this framework Wang et al. (2004) explained the negative effect of FDI by the lower capabilities of developing countries to assimilate new knowledge. In the same line, Wijeweera et al. (2010) suggested that FDI has a positive impact on economic growth only in the presence of a highly skilled labour. Otherwise, some authors underline the likely existence of a dominating negative crowding out effect (Sadik and Bolbol, 2001). In other words, domestic firms may be displaced by foreign firms due to their superior technology and greater access to economies of scale and financial resources. Finally, it may assume that impact of FDI on economic growth depends on the type of investment. In this sense, greenfield FDI is likely to promote growth more than mergers and acquisitions (M&A).

Aside from that, researchers like Bergstrand and Egger (2008) have highlighted the strong FDI-trade nexus. That is, they emphasized the growth of FDI relative to trade. They found that an important share of the growth of FDI is explained by the growth of intermediates goods trade flows. In this sense, this fact may lead to fail to take in consideration simultaneously FDI and trade in the analysis of the contribution of technological transfer to economic growth.

Finally, it is interesting to note that economic growth is also influenced by other factors that are omitted from the empirical models including education, development level, domestic institutions and macroeconomic stability (Kneller and al., 2008). At the same extent, benefits of technological diffusion rely on the ability of domestic human capital to absorb new technology.

3. Empirical strategy and data

3.1. *Econometric specification*

The focus of this study is to capture the impact of foreign technology transfer on the economic growth of a group of countries including advanced and emerging. The model specification follows a standard methodology. The point of departure is a general aggregate production function, with economic growth modelled as a function of capital stock and labour force. This paper expands on the growth equation by incorporating other important factors such as exports and imports. Regarding this latter factor, as it is above mentioned, imports are disaggregated by end-used since not all types of imports originate the same effects on economic growth. Imported inputs (intermediate and capital goods) are seen as an important channel of international technology transfer. FDI is also included as another means of diffusion of technology. It is supported the idea that

FDI may improve the economic growth regardless of imported inputs. Another important contribution of this paper is that it is tried to catch the different responses in the economic growth derived of the consideration of advanced and emerging economies.

In this framework, after the log-transformation, the empirical specification is given by:

$$\begin{aligned} \Delta \log(GDPpc_{jt}) = & \alpha_{0j} + \alpha_{0t} + \beta_{1ij} \Delta \log(Emp_{jt}) + \beta_{2ij} \Delta \log(GFKF_{jt}) + \beta_{3ij} \Delta \log(Exp_{jt}) + \beta_{4ij} G(FDI_{jt}) + \\ & + \beta_{5ij} \Delta \log(MCapInt_{j(t-1)}) + \beta_{6ij} \Delta \log(MCons_{jt}) + \gamma_0 D_{jt} + \gamma_1 D_{jt} * \Delta \log(Emp_{jt}) + \\ & + \gamma_2 D_{jt} * \Delta \log(GFKF_{jt}) + \gamma_3 D_{jt} * \Delta \log(Exp_{jt}) + \gamma_4 D_{jt} * G(FDI_{jt}) + \\ & \gamma_5 D_{jt} * \Delta \log(MCapInt_{j(t-1)}) + \gamma_6 D_{jt} * \Delta(\log(MCons)) + e_{jt} \end{aligned} \quad (1)$$

In this equation given a country j at time t :

- The dependent variable $\Delta \log(GDPpc)$ represents the first difference of natural log of real national gross domestic product per capita (as a measure of national economic growth).
- $\Delta \log(Emp)$ expresses the first difference of the natural log of the percentage of employment of ages 15+ over to population. A positive sign is expected.
- $\Delta \log(GFKF)$ is used as proxy of capital factor in a country. It represents the first difference of the natural log of the percentage ratio of gross fixed capital formation respect to GDP. It is assumed a positive sign.
- $\Delta \log(Exp)$ is the first difference of natural log of real national exports (growth rate of real national exports). A positive sign it is supposed.
- $G(FDI)$ is the perceptual variation of this ratio: net inflow of FDI divided by GDP. Following the theories of endogenous growth, a positive sign may be expected due to the role of investment as a channel for the international transmission of technology. Even so, this impact may be influenced by a set of conditions in the host economy and by the type of foreign investments.
- $\Delta \log(MCapInt_{(-1)})$ expresses the first difference of natural log of the lag value of the weight of imported inputs used in the domestic production process in total imports (capital goods and intermediate goods). This lag is explained because it is expected that these types of imports affect economic growth after a period. A positive sign may be expected.
- $\Delta(\log(MCons))$ represents the first difference of natural log of the percentage of

import of consumption goods to total imports. A negative sign may be hypothesized.

- D_{jt} is a time dummy variable equal to one when the country belongs to the group of advanced economies and equal to zero in the case of emerging country. Finally, the interactions between D_{jt} and the rest of variables are included into the specification in order to show evidence about the different elasticities derived of the belonging to advanced and economies countries. In this sense, this way to proceed it allow us not only to analyze the impact of some factors in a sample of countries, but also to test the existence of relevant differences across group of countries.
- e_{jt} denotes de error term.

3.2.Data and methodology

This paper is focused on the analysis of the economic growth of 53 countries in the period 1996-2010. For empirical purpose, in line with the 2012 World Economic Outlook Report of IMF, 21 members of the OCDE are considered as advanced economics, and other 32 non-OECD economies as emerging (see Annex 1).

The data used in the following study come from two different data sources. Trade data derive from the OECD STAN Bilateral Trade Database by Industry and End-Use Category (BTDIxE). This Database groups commodities according to their main end use into intermediate goods, household consumption, capital goods, mixed end-used –which include personal computers, passenger cars, personal phones, precious goods and packed medicines- and miscellaneous. Following this categorization, a new dimension to the traditional United Nation’s Broad Economic Categories (BEC) classification it is added, which generally distinguishes into intermediate, consumption and capital goods (Zhu et al., 2011)². Imports data are also gathered into 45 sectors defined in terms of International Standard Industrial Classification Revision 3 (ISIC Rev.3). Their values are measured in current US dollars. On the other hand, the remainder of data used in this analysis are obtained from the World Development Indicators (World Bank 2012).

Table 1 reports the average and standard deviation of the growth of the basic statistics of all countries chosen from 1996 to 2010. It is also distinguished between emerging and advanced economies. On average, all countries have been more dynamic both in terms of FDI and economic performance than in terms of trade (exports or

² We use this classification instead of BEC categories because this last one can sometimes be ambiguous (Zhu et al., 2011).

imports). These results may suggest that the levels of long-term growth in these economies could not be independent of the FDI dynamism. Furthermore, the performance of exports has been more relevant than the imports. This finding may support the export-led-growth hypothesis instead of import-led-growth. The most important differences between countries are observed in the pace of growth of FDI and imports, especially in imports of consumption goods. By contrast, the labour force displays the least variation.

To the same extent, some distinct features also exist among two grouping of economies. In general terms, advanced economies appear as a more homogeneous group than emerging countries. It is not surprising since the last group includes Asian, Latin American and Eastern countries with deep differences among each other. Particularly, emerging economies are more dynamic in terms of economic growth. This group of countries display also higher growth rate of imports than advanced. By contrast, advanced economies show higher rate of exports. Thus, imports may play a more important role on the economic growth in emerging countries than in advanced. Finally, it is important to note that the pace of growth of FDI shows a great heterogeneity across countries belonging to the two groups considered.

Table 1. Description of basis statistics, 1996-2010

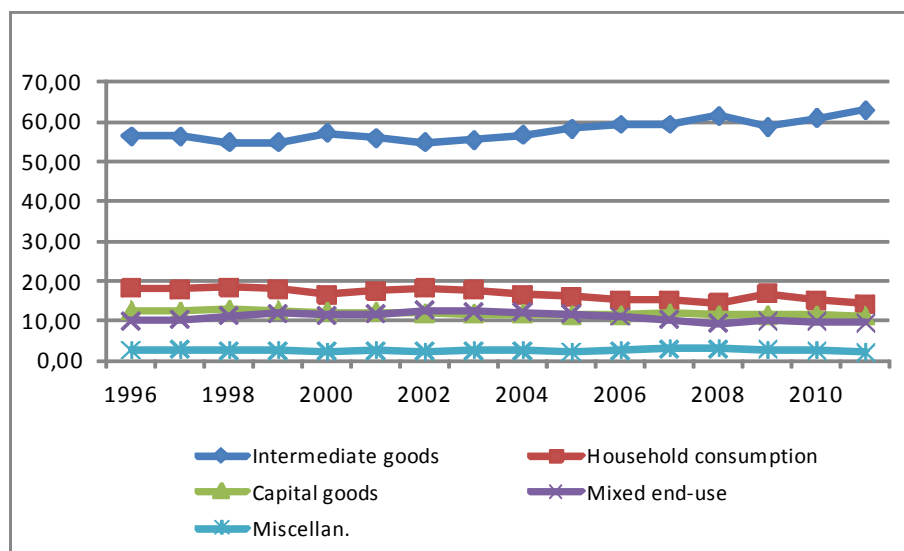
Variables (Average growth)	All economies (53 countries)		Advanced economies (21 countries)		Emerging economies (32 countries)	
	Mean	sd.	Mean	sd.	Mean	sd.
GDPpc (constant 2000 US\$)	2,66	3,89	1,62	2,47	3,34	4,46
GDP (constant 2000 US\$)	3,24	3,84	2,27	2,52	4,04	4,36
GFKF (% GDP)	-0,08	8,21	-0,37	5,33	0,11	9,65
Emp	-0,01	2,20	0,29	1,62	-0,20	2,50
MCapInt(%imports)	0,02	6,10	-0,08	3,,18	0,09	7,42
MCons (%imports)	0,75	10,87	0,48	7,14	0,93	12,74
FDI	30,58	398,05	46,74	356,63	19,97	423,09
Exp (constant 2000 US\$)	2,93	5,36	3,29	1,56	2,70	6,71

Source: authors' elaboration from WDI and OECD

Figures 1, 2 and 3 show a decomposition of import flows by their end-use for all countries and by groups of economies. A few stylized facts emerge from data regarding trade in imported goods. Firstly, imports flows are mainly made up of inputs rather than final consumption goods. Considering overall countries averages for the entire period, trade in imported inputs account for about 71% of total imports (while intermediate goods, represent 58% of total imports capital goods are 13% of total), and the share of

consumption goods is at 16%. Thus, the composition of imports emphasizes the key role of internationalisation of world production. It is interesting to note that the share of mixed end-use goods reaches at 10%.

Figure 1. Imports by end-use in all economies, 1996-2010
(% of total imports)



Source: authors' elaboration from OECD

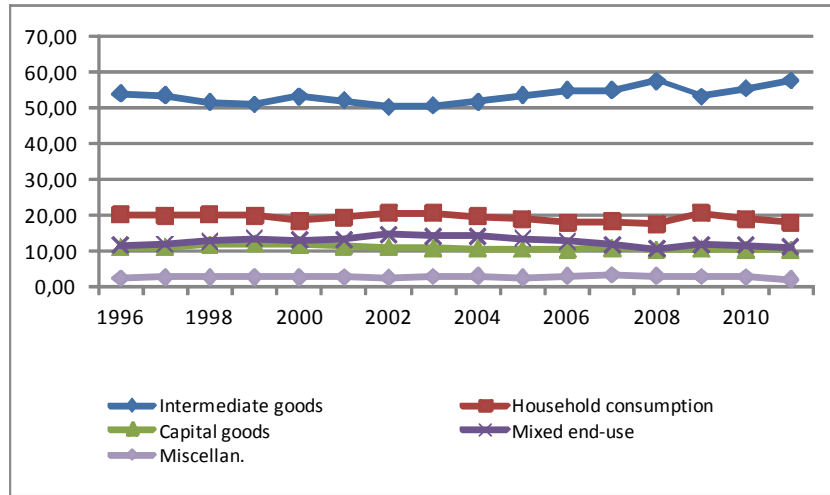
Secondly, despite the rapid internationalization of supply chains observed during the last two decades (that is, the outsourcing and the fragmentation of the world production), it should be highlighted that the relative share of the different categories of goods in total imports has remained almost stable in all countries³ (see Figure 1). In other words, the growth rates of these categories have been very similar over the period 1996-2010. They have been following the same pace as aggregate imports.

Thirdly, in general terms, both groups of economies are well adjusted to the pattern commented above. That is, the shares of the different categories of imported goods have remained largely unchanged. In addition, intermediate goods are predominant category. However, there are two important differences between advanced and emerging economies (See Figures 2 and 3). First, emerging countries have experienced a higher rate of growth in import flows, being also accompanied by a higher pace in the different categories. In this sense, the average annual growth rate of total imports between 1996 and 2010 was 10,5% in emerging, while it was 6,5% in advanced economies.). Second, in relative terms, emerging countries account for a larger share of trade in imported inputs in total imports (with a percentage of 76% compared to 66% of advanced). On

³ Same results are obtained by Miroudot et al. (2009).

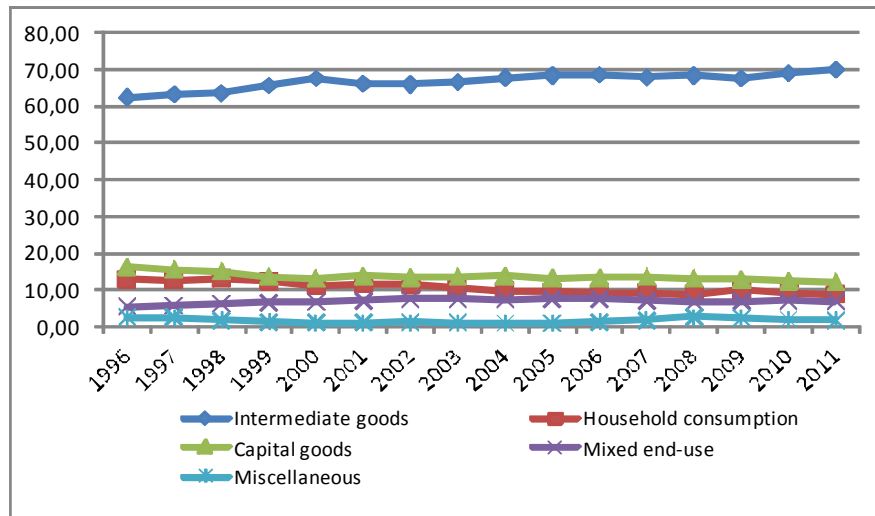
the contrary, the share of consumption goods (household consumption) is more important for advanced economies (with a share of 19,7% in comparison by the percentage of 13,4 % in emerging economies).

Figure 2: Imports by end-use in advanced economies, 1996-2010
(% of total imports)



Source: authors' elaboration from OECD

Figure 3: Imports by end-use in emerging countries, 1996-2010
(% of total imports)



Source: authors' elaboration from OECD

In this framework, the most dynamic economies in terms of economic growth, that is emerging countries, have been the most dynamic in terms of imported inputs. These results may suggest that the levels of long-term growth in these economies can be linked with the dynamism of imported goods. This way, a matter of concern will be the potential importance of type of imported goods at country level.

Aside from imported goods, this paper includes FDI as explanatory variable. Some

scholars point out the possible relationship between trade and FDI at country level (Wang et al. 2004; Bergstrand and Egger, 2008). Thus, the simultaneous impact of both imported inputs and FDI may originate the problem of multicollinearity in the confirmatory analysis. Nevertheless, after examining the data, the multicollinearity seems not be a problem. In this sense, the correlation coefficient between the variable of imported inputs and the FDI variable is (-0,01). In the same way, the correlation matrix between all the explanatory variables did not show high coefficients.

4. Empirical results

This section presents the estimation results of the econometric specification (1) mentioned. The hypothesis that the different categories of imports and FDI are significant component of economic growth was checked by utilizing panel data model. Random effects by country and fixed effects by time were incorporated. The results of estimating are given in table 2.

Table 2. Estimation results of GDPpc national growth equation.

Explanatory variable	Dependent variable: $\Delta \log(\text{GDPpc})$
$\Delta \text{LOG}(\text{Emp})$	0.2664 (2.424)*
GFDI	0.0003 (1.245)
$\Delta \text{LOG}(\text{GFKF})$	0.1797 (10.323)***
$\Delta \text{LOG}(\text{MCapInt}_{(-1)})$	0.0220 (3.241)**
$\Delta \text{LOG}(\text{MCons})$	0.0308 (1.755)*
$\Delta \text{LOG}(\text{Exp})$	0.0983 (5.857)***
D	-0.0167 (-4.377)***
D* $\Delta \text{LOG}(\text{EMP})$	0.1574 (1.067)
D*GFDI	-0.0003 (-1.338)
D* $\Delta \text{LOG}(\text{GFKF})$	-0.0655 (-2.593)**
D* $\Delta \text{LOG}(\text{MCapInt}_{(-1)})$	-0.0212 (-1.174)
D* $\Delta \text{LOG}(\text{MCons})$	-0.0367 (-1.825)*
D* $\Delta \text{LOG}(\text{EXP})$	-0.0703 (-4.028)***
R ²	0,65
Time periods (after adjustments)	13
Cross-section included	53
Total Pool Observation	689

Notes: 1) t-statistics are in parentheses

2) Significance levels are represented as (*) 10%. (**) 5% and (***) 1%

3) Estimated Generalized Least Squares estimation with random effects by country and fixed effects by time

In general terms, it can be seen that the signs of coefficients on almost all explanatory variables are consistent with the expectations. Labor force and capital have a positive and significant effect on economic growth. The results confirm not only the positive and significant role of exports on economic growth for countries chosen, but also the relevance of imports. As regards as imports of inputs, their positive and significant coefficients support the view that the benefits from technology embodied in imported inputs may be important for countries. The positive complementary impact of consumption goods' imports is unexpected since an increase of this type of good may lead to drop demand for domestic goods⁴. On the other hand, the FDI variable is statistically insignificant but this is not very surprising. This finding suggests that the impact of FDI on economic growth may be influenced by certain conditions in the host country as well as the different types of foreign investment.

In addition, it was examined whether the answer of economic growth was similar between advanced and emerging countries. Results show that there are significant differences in the level between both groups of economies. In general terms, elasticities are lower in advanced than emerging. Particularity, the elasticity of GDP pc with respect to the capital, imports of consumption goods and exports are lower in the advanced countries. This is an important result since the shocks abroad that affect demand for imports and exports will have different impact between advanced and emerging countries. Thus, the answer of emerging countries is more sensitive to this type of shocks.

However, the answer of economic growth with respect to changes in labour force and imported inputs is similar between both groups of countries. Hence, it is concluded that benefits derived from the technology embodies in imported inputs may be important for all countries chosen. Unlike FDI, the impact of imports of intermediate and capital goods may not be influenced by the conditions of the importer country.

5. Concluding remarks

Economic theory suggests that imported inputs (intermediate and capital goods) and

⁴ To the best of our knowledge there are essentially no research results available on the positive impact of imports of consumptions goods on economic growth. From another perspective, it could be explained by the causality relationship between imports and higher economic activity. In accordance to Ugur (2008) consumption goods' imports have no significant effect on economic growth for the case of Turkey.

FDI may contribute to economic growth through the international technology diffusion. From this framework, the first aim of this paper is to examine whether imported inputs and FDI may be driving simultaneously economic growth in a sample of 53 countries from 1996 to 2010. The second purpose is to capture the different responses in the economic growth derived of the consideration of advanced and emerging economies.

From the descriptive analysis it is concluded that not only exports but also imports may play a key role on promoting economic growth. In this context, it is interesting to note that performance of exports has been more relevant than the imports. This findings may support the export-led-growth hypothesis instead import-led-growth.

The findings of the econometric analysis also suggest that intermediate and capital goods' imports may be considered as an important channel of technological diffusion. Thus, the study identifies a positive impact of this import category on economic growth. Otherwise, the results show no significant impact of FDI which suggest that this effect is likely conditioned by a set of factors. These may include the characteristics in the host country and the type of FDI.

Finally, this paper shows that the response of economic growth may change between advanced and emerging economies. Particularly, the elasticity of GDP pc with respect to the capital, imports of consumption goods and exports are lower in the advanced countries than emerging economies. However, both groups of countries suggest the same answer of economic performance with respect to the imported inputs.

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Annex 1. Economic Groups

Advanced economies	Emerging economies
Australia	Albania
Austria	Argentina
Belgium	Brazil
Canada	Bulgaria
Denmark	Chile
Finland	China
France	Croatia
Germany	Czech Republic
Greece	Estonia
Ireland	Hong Kong SAR, China
Italy	Hungary
Japan	India
Netherlands	Indonesia
New Zealand	Israel
Norway	Korea, Rep.
Portugal	Latvia
Spain	Lithuania
Sweden	Macedonia, FYR

Switzerland	Malaysia
United Kingdom	Mexico
United States	Moldova
	Philippines
	Poland
	Romania
	Russian Federation
	Saudi Arabia
	Singapore
	Slovak Republic
	Slovenia
	South Africa
	Thailand
	Turkey

Source: International Monetary Fund (2012)