

## **Regional attractiveness for Foreign Direct Investments in developing countries: empirical review**

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**Abstract:** *Foreign direct investments are very important for the economic growth and development of the host countries; however these investments have a tendency to concentrate in few developed regions within the recipient countries, thus contributing to the widening of regional disparities. The economic and social impact of FDI on host countries is considerable that's why many scholars have studied the location determining factors of those investments. This paper offers a review of the empirical literature that deals with the economic determining factors of FDI location choice at the regional level in developing countries. We analyze the role of the most commonly cited factors in the literature, these are the following: the agglomeration economies, the market size, the infrastructure, and the human capital. We focus on the case of the regions of the following countries: China, Brazil, Turkey, Romania and Morocco. We conclude that the influence of each factor or (explanatory variable) in attracting FDI differs from one region to another. Indeed, depending on their geographic location and economic structures, regions attract differently FDI. This suggests that the gap between rich and poor regions will widen in the long term.*

**Keywords:** *Foreign direct investment, location determinants, empirical review, regions, geographic concentration, developing countries.*

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### **I. Introduction**

The past three decades have known a considerable increase of global foreign direct investment flows. In fact, those flows have been multiplied by 100 times, passing from 13 346 million in 1984 to 1 350 926 US \$ in 2014. This surge is mainly due to the significance of this type of investments for multinational firms (FMN) as well as for home and host countries (Lypsey, 2004). Indeed, FDI can benefit to host countries in many ways: help decrease the unemployment rate by creating new jobs, allowing technology and knowledge transfer, and improving human capital development. For these reasons among others, developing countries have been competing to attract the largest shares possible of FDI. Some of those countries have been very successful (China, India) and in a lesser extent South Africa, Turkey and Morocco which have achieved fair levels of FDI inflows, some have not. Indeed, countries such as Botswana, Zambia and Kenya still struggle and drain a tiny share of FDI flows.

Although there are large differences in terms of FDI attractiveness among the cited countries, there are similarities and shared patterns with regard to the location behavior of MNF in those countries. Indeed, FDI is geographically concentrated within few specific regions within those host countries: 80% of FDI in Morocco is located in 2 regions namely Grand Casablanca and Tanger-Tétouan. 70% of total FDI in China is concentrated in Beijing. In Brazil 60% of FDI is located in Rio De Janero. In Romania 61% of total FDI is located in Bucharest. These figures show that some regions are winning while others are losing. Many scholars have reached same conclusion (Veltz, 1993; Benko and Lipietz 1992).

In this article we review the role of 4 determining factors in attracting FDI flows at the regional level for the case of 5 developing countries. The factors are: agglomeration economies, market size, human capital and infrastructure. The countries are: China, Brazil, Turkey, Romania and Morocco.

This article is analytical in nature and is divided into 2 sections: the first one is dedicated to the discussion of the importance of FDI in developing countries and to a brief review regarding the relationship between FDI location and regional disparities.

In the second section we review some empirical studies that deal with the determinants of FDI at the regional level for the case of the 5 selected countries. We focus on the 4 determining factors (explanatory variables) already cited.

### **II. The importance of FDI in developing countries and the issue of regional disparities**

In this section we start by a brief review of the importance of FDI inflows in developing economies, and then in the second subsection, we shed some light on the issue of FDI polarization in the host countries.

## **2.1 The importance of Foreign Direct Investments in developing countries**

During the last three decades FDI have known a considerable surge. In fact, since the 1980s obstacles to foreign investment have decreased dramatically which lead to globalized markets and FDI have become one of the most important aspects of globalization. Countries around the world are now competing with each other to attract a larger share of the investment coming from MNF and regions within countries are also competing to get their fair shares.

In recent years the role of developing countries in draining FDI has increased substantially (UNCTAD 2012). Brazil, China, India and Turkey, with a reduced set of other developing and emerging countries, including South Africa, are behind this new phenomenon. The South hemisphere is becoming an important destination of FDI (Hormats, 2010).

Developing countries are seeking to attract the larger amount of FDI in order to benefit in terms of economic growth and social development, however those investments tend to locate in few developed regions within those countries leading to the widening of the existing regional disparities.

We discuss in the sub section below the issue of FDI geographical concentration and regional disparities among recipient countries. We offer many examples of studies that dealt with the impact of FDI location decision on regional disparities.

## **2.2 The gap between regions within recipient countries: regional polarization of FDI**

As economies develop, economic activity generally becomes geographically more concentrated. In about a quarter of the world's nations such as Botswana, Brazil, Russia, and Thailand more than half of national income is generated on less than 5 % of the land area. In half of all nations such as Argentina, Saudi Arabia, Slovenia, and Zambia a third or more of national income is generated on less than 5 percent of land (World Bank, 2009).

Only one country in 10 has a dispersed economic mass, with less than a tenth of national income generated on 5 percent of its land. Among the few countries with this high spatial dispersion: Bangladesh, the Democratic Republic of Korea, the Netherlands, and Poland (World Bank, 2009).

Many empirical studies have dealt with the link between FDI location and regional disparities within the host country. We discuss in the following some of those studies.

On the case of India and Brazil, over the period 1980-2003, Daumal (2013) constructed an annual indicator of regional inequalities, the series regressions showed that both for India and Brazil, FDI inflows contributed to the increase of regional disparities.

Wei, Yao, and Liu (2009) in their article about the impact of FDI and regional inequality in China, found that the uneven distribution of FDI caused regional growth differences. The authors used an augmented Cobb-Douglas production function.

Another research work by Yu, Xin, Guo, and Liu (2011) on the case of China measured the impact of China's stock of FDI on its regional income inequality using simultaneous equation model and the shapely value regression based decomposition approach. The authors concluded that China's stock of FDI accounted for merely 2 % of its regional income inequality.

Another study conducted by Ahmad and Lydon (2012) on the case of Malaysia aimed to investigate the effect of FDI on economic development and regional disparities in the period (1980-2008), using a classical production function which explained output as function to capital and labor and involved time series and cross section data that was then regressed with Least Square Dummy variables (LSDV regression Model and Random effects Model). This study reached two main results: first, regions with higher level of FDI tended to have higher GDP. Second, concentration of FDI widened regional disparities which brought about the imbalances between the society with regards to poverty, manufacturing activities and many more.

By analyzing those studies among others, we conclude that the tendency of MNF to concentrate in the most developed regions within host countries can be explained by the fact MNF are looking to benefit from the numerous advantages that those regions offer such as: good infrastructure, abundant labor force, economies of agglomeration and a high demand and purchasing power (market size) among others.

We discuss in the following section the importance of each of those variables in attracting FDI flows.

## **III. Empirical Review of The Regional Location Determinants of FDI In Developing Economies**

Until the late 1980s the empirical literature on the regional determinants of FDI was still focused on the case of developed countries. This is due to two main reasons: first, developed countries were the most important destination of FDI inflows. Second, these countries were the first ones to experience the issue of the uneven distribution of FDI and regional inequalities that result.

In the mid 1990s, the attention of scholars started to shift from the analysis of developed countries to the analysis of emerging and developing countries. Indeed countries such as China, Brazil, India, Turkey, and

others started to attract huge amounts of FDI flows, and therefore experienced the same issue of regional concentration and increasing inequalities.

In this section we review some empirical studies on the case of developing countries and more particularly on China, Brazil, Turkey, Morocco and Romania. We focus on the most commonly used factors: these are the agglomeration economies, the market size, the human capital, and the infrastructure.

### 3.1 Agglomeration economies

Agglomeration economies and positive externalities that result from the geographical concentration of firms is a determining factor in firms' location decision. Indeed firms seek to benefit from the numerous advantages that the spatial concentration and the proximity to one another can offer them. These advantages are:

- Access to a large demand ( Backward linkages)
- Proximity to a large number of suppliers (Forward linkages)
- Access to a specialized labor market (labor pool)
- Pure externalities: technological spillovers and information exchange.

These advantages are called the centripetal forces or concentration forces, they push firms to cluster. These forces play an important role in shaping the geographical distribution of economic activities.

In addition to these cited forces, there exists another type of forces called the centrifugal forces or dispersion forces. These are immobile factors such as natural resources, and land, these elements in Paul Krugman's words "*militate against the concentration of economic activities*". (Krugman,1998).

Though the concentration of firms can be beneficial to new coming firms; it can also generate some negative externalities which can lead firms to leave the central place. In fact the location choice results from a confrontation between the centripetal forces and the centrifugal forces.

The following table shows the forces affecting the spatial concentration of firms and illustrates the ideas discussed above.

**Table 2:** Forces affecting geographical concentration

Centripetal forces	Centrifugal forces
Market-size effect (linkages)	Immobile factors
Thick labor markets	Land rents
Pure external economies	Pure external diseconomies

Krugman (1998)

With regard to developing countries, Popescu (2013) on the case of 8 Romanian regions found that the spatial concentration of foreign firms measured by the invested stock of foreign capital has a positive impact on FDI inflows. Kwan and Chen (2000) on the case of 29 regions in China from 1985 to 1995 found similar results on the case of Chinese regions (Self reinforcing effect of FDI).

Another research was conducted by Deichmann, Karidis and Sayek (2003) who analyzed the case of Turkish regions, the authors found that agglomeration economies have a positive influence on FDI inflows. Similar results were found by Wei, Parker and Vaidya (1999) on the case of Chinese regions.

Other evidence in favor of the positive role of agglomeration economies were found on the case of Sao Paolo: Korez-Vide1, Voller and Bobek (2014) found that firms that chose to locate in this region are motivated by the Investor-nation specific agglomeration as well as the industrial specialization and backward linkages (the geographical proximity to customers and final consumers).

Even though most studies agree on the positive effect of the clustering of industrial firms in attracting foreign firms, some empirical studies show the opposite. ( )

Those paradoxical findings can be explained by many factors such as the heterogeneity of the economic structures and sectoral specialization of regions. For instance, for the case of Morocco, the positive externalities of firms clustering played an important role in draining MNF in the automotive industry to the coastal peripheral region of Tanger-Tétouan. However this same factor had a negative role in draining foreign firms to the central region of the Grand Casablanca.

### 3.2 Market size

The importance of a large market for FDI can be justified by the fact that a large market allows firms to benefit from economies of scales as well as a rational use of resources. For these reasons this variable is used in almost all empirical studies dealing with the determinants of FDI. Indeed, Artige and Nicolini (2005) claim that market size measured by the GDP is the most important FDI determinant in econometric studies. The GDP per capita, the GDP growth rate, the population and the purchasing power are also very often used. Cheng and Kwan (2000) found that the regional market has a positive impact on the attractiveness of FDI. In the same line

of thoughts Wei, Parker as well as Vaidya (1999), Lighfoot and Na (2006) found similar results on the case of Chinese regions and provinces.

Even though most empirical studies found that the regional market size has a positive impact on FDI inflows, some studies found contradictory results. Popescu (2013) for example on the case of Romanian regions found that this variable isn't important for FDI inflows. Also, on the case of the Moroccan peripheral region of Tanger-Tétouan. Ettoumi (2016) found that the market size has no positive effect in draining new FDI flows. This is explained by the fact that most firms that locate in this region are resource seeking and consider this region as a platform of exportation to the European Union.

### **3.3 Human capital**

Most of the literature agrees on the importance of the human capital in the attraction of foreign investments. In fact, this factor is composed of two aspects: the cost and the quality of labor: the availability of a qualified labor force is a key factor in the location choice of firms. (UNCTAD 1998)

Berry and Glaeser (2005) as well as (Bromstrom and Kokko, 2003) claim that the educative differences between workers explain greatly the differences in term of regional growth.

Most empirical studies that dealt with the role of the human capital in the attraction of FDI in the case of Chinese regions and provinces reached the same conclusion: the human capital is an important factor in attracting FDI flows. (Kang, Helldin, 2007 ; Lighfoot, Na, 2006 ; Cheng, Kwan, 2000 ; Wei, Parker et Vaidya, 1999).

Other evidence in favor of the positive role of the human capital is provided by the study of Korez-Videl, Voller and Bobek (2014) who analyzed the location decision of German and Austrian firms in the region of Sao Paolo, the authors found that a high level of education as well as qualified labor are essential factors in the location choice of these firms. Also, Ettoumi (2016) found that the availability of the labor in the manufacturing industry is an important for 7 regions (80% of FDI that operate in Morocco).

Even if most empirical studies agree on the positive role of the human capital some studies found contradictory results. Popescu (2013) found that the number of workers in R&D is seen by firms as a negative aspect of regions.

In fact the quality of the human capital is an important aspect in the location decision of MNF, but it's not the only one when it comes to the human capital, the cost is an essential aspect that should be taken into account. Popescu (2013) found that the cost of the labor force is an encouraging factor in the attraction of FDI. Kang and Helldin (2007) found similar results on the case of eastern regions in China. As for any variable there exist some contradictory results: Wei, Parker and Vaidya (1999) found that the effective rate of wages is not a significant factor in draining FDI flows.

Those paradoxical results can be explained by the motivation of firms and the sector in which they operate: a high technology firm that produce highly innovative goods will not be attracted by cheap unqualified labor. However, a MNF that operates in low technology industry will be attracted by an abundant cheap labor force.

### **3.4 Infrastructure**

A good quality of infrastructure is a very important factor for attracting FDI: foreign investments need roads, ports, railways, airports and telecommunication in order to operate efficiently. Indeed, good quality of infrastructure increases the returns potential of investments in a country and therefore encourages FDI inflows.

On a vast sample of developing countries, Wheeler and Mody (1992) found that infrastructure quality is an important variable for FDI originating from the United States. Similarly, Rolfe and White (1992) found that infrastructure quality has a significant effect in the attractiveness of FDI in the offshore manufacturing sector. In the same line, Wells (1987) point out that good infrastructure is necessary to attract export oriented investment.

Concerning the countries of our sample, Popescu (2013) measured the role of infrastructure by road density and found that this variable has a positive impact on FDI inflows. Also, (Cheng and Kwan 2000; Kang and Helldin 2007) found similar results. Deichmann, Karidis and Sayek (2003) measured the role of infrastructure by the proxy public investment and found that it has a positive impact on FDI inflows. On the case of Morocco, Ettoumi (2016) found that the infrastructure variable is important for foreign firms for only 3 regions; this variable has no positive effect on the other 4 regions of the sample.

## **IV. Conclusion**

Globally, the empirical literature on the regional determinants of FDI in developing countries suggests that variables such as: the market size, the agglomeration economies, the infrastructure, and the human capital play an important role in the attractiveness of FDI; however the importance of these variables vary greatly from one region to another. This can be explained by 4 main reasons:

First, regions have different geographic positions: for instance, the size of the market isn't important for coastal regions located nearby harbors; these regions will mostly attract vertical FDI also called resource seeking FDI (which is interested in exporting) in this case, low trade barriers for example will be a more important determinant than the size of the local market

Second, foreign firms have different motivations depending on their activities (in fact depending on the sector in which they operate MNF can be attracted by different factors (e.g.) firms operating in low technology industry will not rely on a high quality of the human capital. Also a good quality of infrastructure will not be a motivation for firms seeking to invest in infrastructure.

Third, there are differences in terms of the economic structures of the host territories: Depending on their economic structures regions may rely on different factors to drain FDI inflows: for example regions that are abundant in natural resources such as oil generally don't need a large local market in order to drain FDI flows (the case of the MENA oil producing countries is one example)

Fourth, empirical studies use different proxies and methodologies to estimate the effect of the explanatory variables. Also the samples and the time periods largely differ from one study to another.

Finally, this paper has some shortcomings: we only focused on reviewing the role of 4 explanatory variables; however there exist numerous other factors that have been treated in the literature, such as the exchange rate, taxes, land availability, natural resources and the role of formal and informal institutions. Also we only focused on a limited number of developing countries.

It would be very interesting to investigate the role of a larger number of explanatory variables in further research and to extend the sample of countries for a comprehensive review of the subject.

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