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**FDI and Inequality in Latin America and the
Caribbean: A sectoral analysis**

**IDE e disuguaglianza in America Latina e nei
Caraibi:
Un’analisi settoriale**

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ABSTRACT

The aim of this thesis is to analyse the relationship between foreign direct investment and income inequality in Latin America and the Caribbean. In particular, in addition to the aggregate effect, its objective is to identify the presence of different effects according to the different sectors in which FDI flows. In addition, the relationship between inequality of outcomes and opportunities has been analysed. The sectors used are primary, manufacturing, and service. The period analysed is from 1990 to 2019 and the countries used are 14. The empirical analysis found that FDI in aggregate terms increases income inequality. Then, FDI divided by sectors increases income inequality with a different impact and robustness. Finally, the results suggest that inequality of opportunities worsens income inequality and income inequality tend to worsen equality of opportunities.

ABSTRACT IN ITALIANO

L'obiettivo di questa tesi è quello di analizzare la relazione tra investimenti diretti esteri e la disuguaglianza di reddito nella zona dell'America Latina e dei Caraibi. Oltre all'effetto aggregato è stato analizzato l'effetto degli IDE in base al settore ricevente. I settori identificati sono stati il primario, secondario e terziario, il periodo analizzato va dal 1990 al 2019 e le nazioni scelte sono state 14. I risultati suggeriscono che in media IDE tendono ad aumentare la disuguaglianza di reddito e che se divisi per settori hanno impatti diversi. Inoltre, in questa tesi è stata analizzata la relazione tra disuguaglianza di reddito e di opportunità. I risultati confermano l'esistenza di questa relazione e che un maggiore disuguaglianza di reddito peggiora l'uguaglianza di opportunità e viceversa una maggiore disuguaglianza di opportunità tende a portare ad una maggiore disuguaglianza di reddito.

INTRODUCTION

Latin America and the Caribbean is considered the most unequal region in the world and how we will see, the roots are in its history. Inequality in Latin America is about wealth, income, and opportunities. Even if inequality in the region is decreasing and it is the only region characterized by a generalized drop, it did not lose the primacy. At the same time, FDI inflows in the region are increasing substantially from 1990, also as a percentage of GDP, that in 2019 was higher than the world's average. This increase was widely viewed as a very good thing for the economy of the region and its development; however, little has been said about the effects of FDI on the region's income distribution.

The effect of FDI in the host countries has been widely studied by the literature, however, studies are mainly concentrated on effects on economic growth and productivity, while the effects on income distribution have been studied less, both by scholars and policymakers. It is possible to say that in recent years the effect of FDI on growth is one of the most studied topics by economists, seen the growth of FDI flows both in developed and developing economies, so their increasing role as globalizer of the world economy, and seen the increasing promotion policies done by developing countries.

How it is said by Sala I Martin, we have to take into account that an increase in inequality does not mean only worsening the poor but could mean improving the rich in an unequal way, and this could be the case.

Lately, the relationship between FDI and income inequality has started to be interesting, however, it is mainly analysed at an aggregate level and in a uniform way. From the literature emerges an ambiguous and not conclusive relationship, there are theoretical frameworks that suggest a nonlinear relationship according to the stage of development, however considering that FDI tends to decrease inequality, others that suggest the opposite and so, that FDI tends, on average, to increase inequality and others that are more specific about the importance of the level of development, education and

absorptive capacity. Furthermore, there are empirical works confirming all of these hypotheses, as well as there are scholars that did not find any significant relationship in their empirical works. Another important aspect is that in the literature there are very few works about sectoral effects about FDI and the aim of this thesis is to understand if FDI directed in different sectors could have a different effect on income inequality, due to the different level of skill required, according to the fact that the main channel on which FDI affect inequality is the wage-gap between skilled and unskilled workers and its consequences on their level of employment.

So, the first aim of this thesis is to analyse the effect of FDI on income inequality in Latin America and the Caribbean, and in particular, try to understand if there are different impacts according to the FDI's receiving sectors.

Understand the effects of FDI inflows on inequality is important for various reasons, first for the concept of equality in itself and so for the fair/unfair concepts, then for its social consequences, and finally for the possible offsetting effect on growth or in other economic factors in the long period. With regards to the latter reason, understanding more precisely the effect according to the receiving sectors could be very useful for policymakers, constituting another factor in the decision-making process about the promotion as a favorable host for FDI.

The second aim of this thesis is to capture and analyse the relationship between inequality of outcomes and inequality of opportunities. Understand the role of inequality of opportunities is particularly interesting in this region characterized by a persistently high level of income inequality. However, it is not only important for this region, indeed, B. Obama (2013) called inequality “the defined challenge of our time” and he was considering the increasing income inequality and the lack of upward mobility in the United States.

Exploiting this empirical analysis about the inequality of opportunities, other factors such as level of development, education and public policies will be inserted.

In the first chapter, I am going to define what is a foreign direct investment and the different classifications and types of it in order to understand also why different types of FDI can cause

different effects on the host economy. After this, in the same chapter, I am going to review the main determinants of FDI inflows in order to understand what a country can do to attract it with a short focus on developing economies and different sectors. To conclude the chapter, I am going to present data about FDI flows trends and projections about the world. In the second chapter are analysed mainly the concepts of inequality of outcomes and inequality of opportunities, then the focus is moved towards the relationship between FDI and income inequality both in the literature and in the various empirical analysis done in the past. In the third chapter, I am going to collect and analyse data about Latin America and the Caribbean regarding its economy, FDI, and income inequality. Finally, in the last chapter, I am going to try to capture with different econometric models the relationship between FDI and inequality with a special focus on its possible sectorial effects and, at the same time, I am going to try to capture the relationship between inequality of outcomes and inequality of opportunities.

1. FOREIGN DIRECT INVESTMENTS

1.1 DEFINITIONS

In the definition of Foreign Direct Investment, it is necessary to introduce the concept of multinational enterprises (from now on MNE). There is a strong linkage between these two concepts that becomes already clear from the definition of MNE, in fact, according to Dunning (1992), MNE is defined as an enterprise that engages foreign direct investment (from now on FDI) and owns or controls value-adding activities in more than one country. So, FDI in this definition represents the way an enterprise becomes multinational and it can be viewed as the main force of an MNE, finally, both are included in the group of key forces that have driven and are driving the economic globalization (Brakman and Garretsen, 2008). Seen the strong linkage between these concepts, many authors claim that they could be viewed as interchangeable terms, this could be clearer analysing the definition offered by The United Nation Conference on Trade and Development (from now on UNCTAD), that define MNE as an enterprise that exercises a sort of control and owns at least the 10% of capital in at least one foreign enterprise, that, as we will see later, is essentially the same guidelines to identify an FDI.

FDIs are capital movements, which in turn represent one of the three sections in which is divided the balance of payments (together with “current account” and “monetary movements”). Balance of payments is the registration of the transactions of the residents of one country (enterprises, households, public administration) with the rest of the world.

FDIs are not considered as international trade, we are not in the area regarding the exchange of good and services but in the area regarding the exchange of factors of production (capital, technology, entrepreneurship, and labor mobility). However, the areas are not completely separated, FDIs usually foster international trade and the exchange of goods and services.

As defined by the International Monetary Fund (IMF)¹ and by the Organization for Economic Co-operation and Development (OECD)², Foreign Direct Investment (FDI) is a category of cross-border investments. FDI occurs when a resident entity in one economy obtains a lasting interest in an enterprise resident in another economy. Through this type of investment come into relationship two parts: the resident entity that is defined as the direct investor and the foreign enterprise that is defined as the direct investment enterprise. The direct investor could be classified to any sector of the economy and could be any of the following:

1. an individual;
2. a group of related individuals;
3. an incorporated or unincorporated enterprise;
4. a public or private enterprise;
5. a group of related enterprises;
6. a government body;
7. an estate, trust or, other societal organization;
8. any combination of the above.

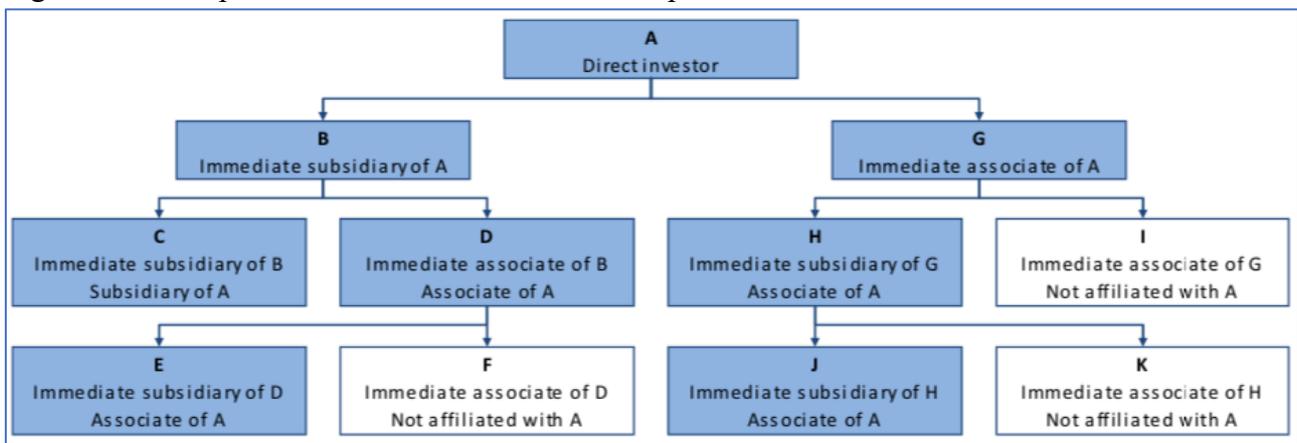
The lasting interest implies the existence of a long-term relationship between the direct investor and the enterprise and a significant degree of influence by the investor on the management of the enterprise. The element of influence, and so the concept of control over management policy and decision, is what distinguishes FDI and other forms of international investments. This significant degree of influence is represented by at least 10% of the voting power (ordinary shares) of the direct investment enterprise. Not only the initial transaction is defined as FDI but also all the subsequent transactions. The threshold of 10% and the concept of “long-term” are used to distinguish between direct investment and portfolio investment, which is characterized by a short-term nature.

¹ Balance of Payment Manual, International Monetary Fund. 1993

² OECD Benchmark Definition of Foreign Direct Investment, Fourth Edition, OECD.

Is possible to identify three different types of direct investment enterprises according to the percentage of shares that the direct investor holds, which could be interpreted as the direct investor's degree of influence, and if the direct investment enterprise is unincorporated or not. The first type comprises those entities that are subsidiaries, incorporated enterprises where the direct investor owns (directly or indirectly) more than 50% of the social capital and has the right to nominate or remove the majority of the Board of Directors, so the direct investor is able to exercise control over it. Then there are associates, incorporated enterprises, where the direct investor (directly or indirectly) has a participation to the social capital between 10% and 50%, here the direct investor is able to exercise a significant degree of influence, but it cannot be called control. Finally, there are branches (wholly or jointly owned unincorporated enterprises) either directly or indirectly owned by the direct investor. The relations between enterprises are complex, a single enterprise could be at the same time a direct investor and a direct investment enterprise, in the Figure 1.1 is represented some possible relations.

Figure 1.1 Example of direct investment relationships



Source: The impact of globalization on national accounts (United Nation, 2011)

FDI flows from the direct investor to the direct investment enterprise and reverses, include equity capital, which means financing a new investment or buying shares of an already quoted company or create an enterprise abroad, then reinvested earnings where the flow is constituted by undistributed earnings, so the capital is directly produced in the host country that remains in the host country and does not come back to the home country, and finally other forms of direct capital investments as an

intracompany loan between direct investor and direct investment enterprise or between direct investment enterprises under the same direct investor or cross-border merger and acquisitions.

1.2 FDI's CLASSIFICATION

Foreign Direct Investments can be classified according to different perspectives. In this paragraph, I am going to explain mainly FDI's classifications based on the entry modes, the motive or objective, the structure of the activity or target, and the direction. Then, I am going to introduce briefly other two possible classifications, the first one differentiates between expansionary and defensive FDI, and the second one classifies FDI from the perspective of the home country.

1.2.1 The entry modes

There are two main entry modes, the first one consists in the creation of a new establishment in the foreign country while the second consists in the merger with or in the acquisition of an existing firm in the foreign country. The first form of investment, in turn, could be realized in two ways, the first is named greenfield investment when the creation of the new productive structure is made in a site that previously is not used for economic activities, the second one is named brownfield investment when the site is available to host economic activities thanks to a reconvention or a bonification. This first form of investment in both sub-forms, creates automatically new productive capacity together with the new injection of capital, especially physical capital, in the host country. In particular, in the case of Greenfield investments the direct investor has to build its operations from scratch, so has to buy new facilities for production, establish new relations for distribution, and so on...

Cross-border Merger and Acquisitions do not create automatically new productive capacity being a change in the ownership of a firm, the direct investor essentially buy or take the control of existing assets and in general of an existing firm abroad, so a new injection of capital is not automatically and often could be limited.

Considering the modern business world and its dynamism and how the markets evolve rapidly, an important difference that emerges between these two forms regards the access time to the market, it is faster for cross-border Merger and Acquisition FDI where the foreign enterprise is already established and slower for Greenfield FDI where the direct investor has to obtain licenses, set up contracts, and create new locations. This could be viewed as an explanation of the growth of the value of cross-border M&A from the 2008 crisis to 2016/2017. Another explanation for the dominance of M&A over greenfield is that is widely shared the belief that, if a company does not acquire a firm then, its competitors will do it. Moreover, with the acquisition of a foreign firm, the direct investor is buying valuable strategic assets like customer relationships, brand loyalty, patents or trademarks, distribution and production systems. The common belief of a direct investor is that once capital, technology or management skills are transferred, there will be an increase in the efficiency of these valuable assets. Finally, M&As in the last years are facilitated by the privatization process that happened first in Europe and then in Latin America and South-East Asia.

Other differences between these two modes of entry regard the effect on competition, after a greenfield FDI the competition will rise and all the consequent positive effects of an increase in the competition will emerge, while cross-border M&A usually will increase the concentration of the market.

1.2.2 The motives

With regards to the motive that could influence an FDI decision, the most accepted framework is created by Dunning (Multinational Enterprises and the Global Economy, Second Edition), he proposed and identified four main categories of FDI according to the main purpose of the investment:

1. Resource seeking, here the motive to a foreign investment is to get access to resources that are not available in the home country or resources that in the host country are available at a lower price. Here the term resources do not refer only to natural resources and raw materials

but also other physical resources (products), technology, labor resources, and management skills. The use of these resources has the objective to make the enterprise more profitable and competitive, usually, this type of investment includes the relocation of some part of the production in the host country. Resource-seeking investments have a complementary relationship with international trade, thanks to the creation of trade between host and home countries of at least semi-worked and finish products and instruments to exploit natural resources.

2. Market seeking, when the investment gives to the enterprise the possibility to “bypass” tariff and barrier to export in the host country, to eliminate the limitation to access in a foreign market, to reduce or eliminate transportation cost, to satisfy better the local market getting closer to it, also with a better personalization of the products. Another possible reason that could be behind this type of investment is to have a physical presence into a market in order to discourage potential competitors. (Franco et al., 2008). They are usually used when the internal production of a country and its neighboring countries is not enough to satisfy the whole internal demand. Usually, enterprises driven by this motive are used to replicate the entire production process, so usually, these are horizontal FDI. In this type of investment, the relationship with international trade is substitutability, in fact, they are international trade reducing because without these investments the host country would import.
3. Efficiency seeking, with this type of FDI an enterprise wants to increase its efficiency, competitiveness, and productivity. The enterprise’s objective is to have access to activity geographically disperse in order to exploit, in the best way, different characteristics (skills, price) of the factors of production, different financial systems, different policies, economies of scale or purpose, and different consumers’ tastes or supply capabilities. Usually, the targets are developing countries, representing an opportunity to perform activities with high labor and low skill intensity. Often the foreign direct investments driven by this motive are vertical FDI.

4. Strategic Asset seeking (knowledge-seeking): here we are in the case where FDI's are realized to pursue medium/long-term strategy. The objective is the search for new competences and resources in order to make their competitive advantage sustainable or weaken the competence one. An example of the former is an investment in R&D, an example of the latter is the "follow my leader" strategy, which means imitating the delocalization policy of my competitors (Dunning, 2008).

It is important to underline that these different categories of FDI are not mutually exclusive, on the contrary, usually is the combination of two or more of them that provide a valuable reason to realize this type of investment, that are characterized by a high degree of risk.

1.2.3 The target

Another distinction is according to the target, here is possible to identify vertical and horizontal Foreign Direct Investments. An FDI is defined vertical when has as the main objective of reducing cost (cost-saving) through the use of resources like labor or raw material that are available at a lower cost in some foreign market. The consequence of this type of investment is the fragmentation of the production process in different countries following the different price of the factors of production (L, K) and their different intensity in the phases of production, these types of FDI boost export because of the creation of the intra-enterprise trade between subsidiaries, associates or branches, and direct investor, this because the enterprise will use some plant's output as input in another plant. Among vertical FDI is possible to distinguish between backward vertical FDI when is undertaken for the purpose to exploit raw materials and forward FDI when is undertaken to exploit distributional channels and so, to be closer to the foreign consumers. Seen the nature of this type of FDI, the theory suggests that is more likely that they are directed to poor or developing countries, where is more likely to find lower cost of factor of production.

Horizontal FDI has the main objective the market penetration (market-seeking). They lead to the “duplication” of the home activities abroad, this type of FDI has benefits like the reduction of the transportation cost, tariff, and the costs related to the supply of the markets and also the possible consolidation of the competitive position of the enterprise through the closeness to the market and the capacity to respond quickly to changes of the local environment and preferences. The theory about horizontal FDI predicts that is more likely that this type of investment is between similar countries, usually developed or high-income countries, in presence of high international commercial costs and high entrance barriers, and when the direct investor has low fixed costs. This type of FDI reduces international trade flows due to the fact that the market is served by the local production and not by imports.

The third type of FDI is named conglomerate or hybrid FDI. This type of investment has at the same time characteristics both of horizontal FDI and vertical FDI. For example, an enterprise invests in a country in order to export in a third country, here are both present the market and the resource motives. Usually, this type of investment is made to take advantage of a preferential trade area (PTA).

1.2.4. The direction

The classification according to the direction of the FDI divides them into outflows of FDI, when they flow out of a country, and inflows of FDI when they flow into a country.

When FDIs are under analysis is important to distinguish between flows of FDI and stocks of FDI. The difference is that flow of FDI refers to a variation, in fact, flow of FDI refers to the amount of FDI undertaken over a given time period, that is normally a year. The stock of FDI refers to an accumulation and so to the total accumulated value of foreign-owned assets at a given time, it includes the value (book value or market value) of the participation to the social capital, the value of the reserves (undistributed earnings included) of the direct investor and the value of net indebtedness of the affiliates towards the direct investor.

1.2.5 Further possible classifications

There is another possible classification by the perspective of the direct investor, expansionary, and defensive FDI (Chen and Ku, 2005). The former seeks to exploit firm-specific advantages in the host country like scale, profitability, R&D, and technology acquisition, moreover, has the benefit of contributing to the sales growth at home. The latter has the objective of reducing costs of production, usually targeting cheap cost labor. Seems to be neutral to sales growth. (Chen, Yang and Huang, 2013).

Until now we have seen the classification from the perspective of the home country, but FDI is classified also from the perspective of the host country. Is possible to identify three different FDI from the perspective of the host country, they are:

1. Import-substituting, that means FDI that involves the production of goods previously imported by the host country.
2. Export-increasing, that means FDI that involves new sources of input (natural resources, raw materials, intermediate goods), that then will be exported to the home country and other countries linked to the direct investor activities (subsidiaries).
3. Government-initiated, that means FDI that are triggered by the incentive's offer to the foreign direct investor from the government, for example to eliminate balance of payments deficit.

1.3 FDI's DETERMINANTS

Over time, seen the increasing relevance of the role of FDI flows in the economic growth and technological development, the determinants of these flows have been studied a lot. Researchers and scholars used a combination of factors in order to understand why a country or a zone is chosen with respect to another one as a destination of FDI. Seen the positive effect that seems to have a great amount of FDI inflow, especially where there is a lack of internal investments, understanding what determines the flow can results useful for countries with the intent to attract it. Scholars during the

years have used different methods, variables, countries and time period going increasingly deeper in the understanding of this phenomena, even if results were not always conclusive and in accordance with each other, it is possible to identify the most widely accepted determinants. The most common accepted determinants are linked to the dimension identified by Dunning in the OLI paradigm (infrastructure, human capital, economic stability, and production costs), identified by the Institutional approach (corruption, political instability, incentives, and institutional quality), and linked to the “New Trade Theory” (market size, market growth, openness to trade, and factors availability).

In this part, I will expose the main determinants that were emerged from different empirical studies. Then I focus my analysis on the relationship between FDI determinants and sectors. Finally, there is a short analysis of the determinants linked to developing countries and in particular Latina America and the Caribbean.

1.3.1 Literature and empirical review

The most analyzed factors are the economic ones, seen the clear linkage with FDI and the fact that FDI is an economic concept, but they are not sufficient to completely understand the reasons behind FDI flows. Market size is one the most mentioned determinants of FDI inflows, is usually represented by GDP or GDP per capita. The majority of studies as Mateev (2009), Riedl (2010), Sharma and Bandara (2010), and Khachoo and Khan (2012), demonstrate that larger markets or a higher level of GDP per capita lead to a higher level of FDI inflows, almost all the empirical works show a positive relationship between them and identified it as one of the key determinants. The reasons behind this positive relationship are more than one, for example, the possibility to exploit economies of scale, then the fact that GDP per capita can be used as a representation of the health of the country’s economic situation in the present and its trend can give clues about the possible future scenario, and the fact that a higher GDP per capita means higher possibility of sales. Obviously, this is a determinant particularly important to market-seeking FDI. Market size is one of the determinants identified by the

Classic Theory, Internationalization Theory, and “New Trade Theory”. Moreover, it is always accompanied by market growth that is another economic factor identified as an FDI determinant.

Market growth can be used also as an indicator of productivity. The theory suggests that a higher market growth in terms of GDP growth can be a favorable factor in the decision of investment in a country or in another (Pearson et al., 2012; Cleeve, 2008), but there is not a high number of investigations that obtained significant results, however, in almost all works emerged a positive relationship, for example in Noorbakhsh & Paloni (2001), and Kok & Ersoy (2009).

With regards to macroeconomic variables, the most commons mentioned are the inflation rate (Kersan-Skabic, 2013; Kok and Ersoy, 2009) and the exchange rate (Arbatli, 2011). They are used as representative of macroeconomic stability, which is an important part of the Institutional Theory, and emerged that a low inflation rate and a stable exchange rate can be viewed as favorable factors in FDI’s decision but empirically is not possible to confirm that because results are not always conclusive and in accordance with them. However, macroeconomic stability is considered important also for the link with the political situation and its stability.

Another factor identified in the Institutional Theory is the openness to trade, it is widely known as a factor that can stimulate FDI both inflows and outflows, and in fact, researchers such as Asiedu (2002), Kernan-Skabic (2013), Kok and Ersoy (2009), and Noorbakhsh and Paloni (2001), have found a positive relationship between trade and FDI inflows. The most common way to represent the openness to trade is the ratio between the sum of export and import and GDP.

Another important economic factor is labor costs, it is one of the main determinants of FDI inflows because of its importance on production costs, which is a part of both the Classic Theory and Product’s Life-Cycle Theory. Low wages and so a low level of production costs is positively related to FDI inflows, especially for those types of investment like efficiency-seeking or vertical FDI. Even if researchers used different variables to represent labor costs like average payment for manufacturing workers or natural logarithm of wages rate, they all have found a negative relation between labor

costs and FDI (Du et al., 2012; Hayakawa et al., 2013; Mateev, 2009; Khachoo & Khan, 2012; Riedl, 2010).

The last economic factor that has strong empirical evidence of its influence on FDI inflows is Agglomeration (Glaeser, 1992), and it is representative of the development of the industry sectors. Even with regards to this determinant, researchers used different variables to capture the phenomena, for example, the ratio of industry GDP to total sector GDP (Riedl, 2010) or a separate analysis between vertical and horizontal FDI (Du et al, 2012). However, all investigations conclude with the results of a positive relationship between Agglomeration and FDI inflows.

Infrastructure facilities can be considered as a different macro area of determinants (Shatz and Venables, 2000). Infrastructure facilities can be mainly represented by energy supply, communication facilities, and transportation but refers also to a favorable environment for work and leisure. Especially the former influences production and transportation costs, so are important factors in the decision of foreign investors. For example, the absence or the scarcity of infrastructure could result in a higher level of costs for an enterprise. One of the most common variables used to represent energy supply is Electric power consumption and Khachoo & Khan (2012) found a positive relationship between it and FDI inflows. For communication facilities is often used Telephone mainlines and also here researchers, one of them is Asiedu (2002), found a strong positive relationship with FDI inflows. For the transportation infrastructure is common to use variables related to the street, Khadaroo and Seetanah (2009) used the length of paved roads for squared kilometers and found a positive relationship also for this determinant.

Another macro area regards the technology area. Technology has an important role especially for developing countries, and in fact, FDI is often seen as a way to obtain technology from developed countries in an easier way, and in this way, these zones try to reduce the technology gap. The variables that are most commonly used are technology gap and absorptive capacity, the former from a theoretical perspective influences in a positive way some kind of investments and negative others, but if we take into account the general flow should influence it in a positive way, the latter that

represents the capacity of the host country to adapt the foreign knowledge and technology seems to have a positive influence on FDI inflows. However, empirical evidence (Gauselmann et al., 2011; Sharma & Bandara, 2010; Kok & Ersoy, 2009) about technology are not so conclusive and is not possible to state that the relationship is significant.

Institutional and political factors are determinants and influence the FDI inflows, they are strictly linked and influenced by each other. Institutional and political factors can be important for enterprise cost, incentives, and protection of enterprises' interests. The most common variable used is the Corruption Perception Index, where higher values mean less corrupt environment, and many empirical works, among which there are Mateev (2009), Du et al. (2012), Barassi & Zhou, (2012), and Asiedu (2006), have demonstrated the positive relationship between a less corrupts environment and FDI inflow even if different Corruption Indexes have been used, like the corruption index supplied by the International Country Risk Group used by Asiedu.

Another important factor that influences FDI inflow are Corporate Taxes because they directly influence the return of an investment. As one can expect empirical analysis (Arbatli, 2011; Tang, 2011) have found a negative relationship between Corporate Taxes and FDI inflows, while the results about incentives, that is a factor that can include more variables like tax holidays, tax concessions and exemptions from duties on imports of parts and components and export duties are not so conclusive and are ambiguous, also because how they are measured vary a lot.

Political risk is a determinant that is often tested in the empirical analysis on FDI determinants, it can be represented by different indicators that in turn are representative of different aspects. However, is widely accepted that a lower level of political risk leads to a greater amount of FDI inflows, whether it is meant as a favorable institutional and political environment or general instability, this because, in general MNEs are not attracted by uncertainty. Moreover, another favorable factor for FDI is a stable and transparent policy framework towards FDI (Morrissey e Udomkerdmongkol, 2012; Arbatli, 2011; Riedl, 2010; V.N. Balasubramanyam, 2001).

The Human factor is general considered as an important determinant in attracting FDI, however, it is strictly linked to the specific objective that the direct investor has, in fact, knowledge-seeking investments are attracted by countries where the skilled labor force is abundant while countries characterized by low wages are likely to attract other types of investments. In general, human capital is measured in terms of inscriptions to the secondary school, empirical works confirm that a higher quality of human capital is accompanied by a higher FDI inflow (Cleeve, 2008; Noorbakhsh & Paloni, 2001; Mateev, 2009).

A macroeconomic factor that is linked to the human one is the unemployment rate; it seems to have an ambiguous effect. At the same time from the theory is easy to hypothesize that a country with a high level of unemployment has also a high possibility to attract FDI inflows, this because a high unemployment rate means lower wages and in turn the possibility to have lower production costs, that is the main objective of some kind of FDI like the efficiency-seeking (Blanchard, 2011). Then, it is also true that usually high level of unemployment can cause socio-economic problems and so has a negative effect on the country's possibility to attract foreign investments, this ambiguous possible effect emerges also in various empirical works (Pearson, 2012).

A macro area that has importance and influence FDI flows around the world is legal integration, in particular in this category Supranational Integration and Bilateral Agreements have obtained significant results in various empirical works (Tang, 2012; Siegel et al., 2013; Hayakawa et al., 2013). For the former, empirical works showed how the membership or not to a supranational institution has an influence on the amount of FDI, that means that who has the membership of some supranational institutions has to expect a greater amount of FDI inflows. The latter follows the same logic and in fact, the existence of previous agreements, for example, on income or taxation between home and host country, seems to lead to a greater value of FDI flows between them.

1.3.2. Focus on sectoral variation

Another important aspect with regards to FDI determinants is their relationship with the three different main economic sectors. A paper supported by the International Monetary Fund and done by James P. Walsh and Jiangyan Yu, (2010) has tried to investigate and understand this possible relationship. This work tried to analyse the effects of some macroeconomic and institutional determinants on the inflow of FDI divided by sectors: primary, manufacturing, and services. Another reason behind the importance of this work for this thesis is the fact that its empirical analysis will be a sectoral analysis about the effects of FDI inflow in Latin America and the Caribbean. From this work emerged that the primary sector seems to have not a strong relation with macroeconomic stability, level of development and quality of the institutions. It is not surprising if we think that the primary sector is mainly driven by resource availability. Then, FDI in services seems to be more influenced by differences in macroeconomic variables than FDI in manufacturing, both manufacturing and services have a positive relationship with clustering effects and agglomeration. More in particular, the empirical analysis showed how a weaker real exchange rate has an opposite effect on manufacturing and services, for the former is positive and permits to the economy to attract more FDI and for the latter reduce the flow for services FDI. Finally, services FDI flows seem to be more attracted by economies with a higher degree of openness and with a higher growth rate. As they found differences about macroeconomic variables, they found differences about institutional and qualitative variables. An independent judiciary system and a better quality of infrastructure facilities seem to influence in a strong way the services sector rather than the primary and the manufacturing sectors. For FDI flows targeting the secondary sector seems to be more important in the investor's decision the flexibility of labor market, where more flexibility corresponds to a greater amount of FDI, and the quality of the financial markets, that has to be deeper.

In the work by James P. Walsh and Jiangyan Yu, (2010), they test also if a determinant could change its importance if we are analysing an FDI towards developed or developing economies. From this empirical analysis emerge that for the secondary sector FDI flows are driven by similar

macroeconomic conditions, however, labor market flexibility and financial depth seem to be more important conditions to invest in developing countries than in developed. The situation is different for the services sector where macroeconomic conditions influence in a stronger way the flow to developed countries, in particular, a stronger exchange rate and a lower average inflation seem to attract more services FDI in developed countries.

1.3.3. Focus on Latina America and the Caribbean

Latina America and the Caribbean are defined as developing economies, over time foreign investments in this type of economies were mainly driven by resources' availability or more in general by locational advantages. Then, with the passing of time other reasons emerged to invest in developing or emerging markets, for example, to exploit large markets and so enlarge demand, to reduce production cost not only using natural resources but also exploiting labor force, and also to develop new technologies (Buckley, 1992). A confirmation of this can be found in an empirical work done by Kumari and Sharma (2015) where they found a significant relationship between market size, R&D, and Human Capital and FDI inflows in developing countries.

A confirmation that in recent years LATAM is not a destination of FDI only for resource-seeking investments, and so there has been a change in the objectives that MNEs have in developing countries and especially in Latin America and the Caribbean, there is an empirical work done by Amal, Tomio, and Raboch (2010) where were tested some determinants, economic and institutional, of FDI inflows focusing on Latin America and the Caribbean. They found three significant economic variables, trade openness, inflation, and GDP per capita. Trade openness has a positive influence on FDI inflows in Latina America, it is possible to interpret this result as a confirmation of the attractiveness of reduction cost in developing countries, and so of the presence of efficiency-seeking FDI. Then a positive sign between GDP per capita and FDI inflows could mean that MNEs are attracted by revenue possibility in developing countries and not only by the market size. Inflation has a negative influence on FDI inflows, this is widely expected seen the fact that a low inflation could represent a stable

macroeconomic situation. Passing to institutional variables, political stability resulted significant and with a positive influence on FDI inflows, which represents another confirmation of the fact that stability over uncertainty is preferable for foreign investors, however in an empirical work done by Singh and Jun (1995) is founded that the political risk has a different impact if a country is historically an attracter FDI country or not.

To conclude this paragraph I am going to point out the main message from this work, that is that with the passing of time developing countries and in particular Latina America and the Caribbean increased the opportunities that they can offer, that means that they do not offer only resource-seeking or efficiency-seeking opportunities but also market-seeking opportunities, not only linked to the market size but also in terms of increasing personal income and so also linked to added-value products. This is not surprising seen also the increase in the importance of developing countries as host countries, something that we will see deeper in the next paragraph about the trends of FDI.

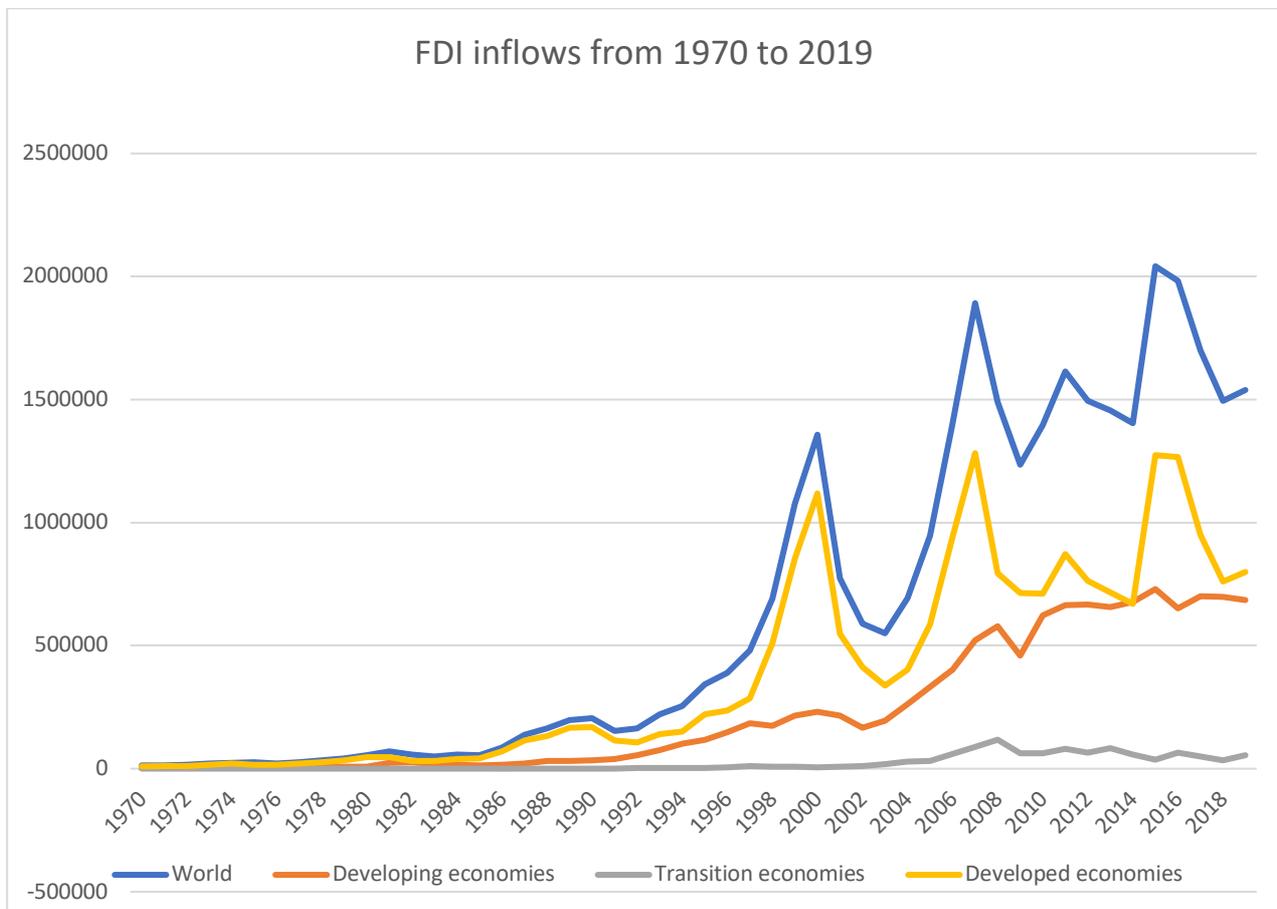
1.4. FDI TRENDS

In this part of the thesis, I am going to analyze the trend about FDI. From 1970 to 2018 the analysis will be in general terms regarding inflows and outflows at global level and then the respective contribution of developed, developing, and transition economies. Then, I am going to focus on 2019 data, here I am going to go deeper into the analysis of the trends about modes of entry, sectors, and countries. Finally, the paragraph will end with a short forecast about the effect of the pandemic crisis on FDI.

FDI has a boom during the '20, after that period they did not follow proportionally the growth of the GDP. The causes could be identified in the tension between countries throughout this period that started years before the second world war and ended with the finish of the Cold War. Another reason regards the fact that was not always seen in a good way the fact of bringing advanced technologies to countries that are not able to exploit that (Velde, 2003).

1.4.1 Inflows

Graph 1.2. FDI inflows from 1970 to 2019.



Source: Personal elaboration from UNCTAD statistics

From the Graph 1.2 above is possible to see how FDI inflow started to grow at a global level from around 1980, passing from about 39B\$ in 1984 to B\$ 200 in 1990, this first growth was practically only driven by the increase in the developed economies inflows, in fact, both developing countries and transition countries had a very little contribution to the global value of FDI inflows. Then, from 1990 to 2000 there was a dramatic increase, passing from B\$ 200 to B\$ 1357, that was an increase of 678% in 10 years. In this period is important to highlight the increase of FDI inflows in developing economies passing from B\$ 34 in 1990 to 231 B\$ in 2000. The FDI flows growth was due to various factors, in particular factors that had guaranteed a higher level of international mobility of economics activities, for example the combination of the rapid progress in the technological field with a reduction in transportation and communication costs (container, data), then the spread of deregulation

policies and the increasingly common openness of national economies, and finally the liberalization with regards to international trade and the foreign investments at global level.

An important fact is that in the period from 1985 to 1999 the FDI inflows have grown at a greater pace with respect to both international trade and global GDP. The real global GDP in those years grown at a 2.5% annual growth rate, international trade at a 5.6% and FDI inflows at a 17.7% (World Bank and UNCTAD).

Analysing the general trend about FDI inflows is clear their main direction towards higher values but it is also evident the presence of drops and jumps following or anticipating important changes in the global scenario, highlighting the link between FDI and the global economy.

The value of FDI inflows in 1999 and 2000 seems to be incredibly high with respect to the past, in fact, they are defined, in more than one analysis, as anomaly values, however, these high values are in part explained by the increase of intra-European flows due to the unique currency.

The drop happened from 2000 to 2003 (from 1357 B\$ to B\$ 550) was mainly driven by developed countries and they were years full of events like 11th September, the start of the Iraq War, the new economy bubble that “exploded” (Dot.com bubble), and the financial market crash. Events that hit in a strong way the developed part of the world, in fact developing countries values remaining more or less stable, thank to this, developing countries increased their position as the direction of FDI flows. In numbers in 2000 developing countries’ FDI inflows accounted for about 17% of the global amount, while in 2003 their contribution passed to about 35%. From 2003 to 2007 global FDI inflows value is characterized by a great increase, from 550 B\$ to 1891 B\$, reaching one of the highest values of FDI inflows. Then, between 2007 and 2008 there was the financial crisis that caused a dramatic drop in the FDI inflows, from B\$ 1891 in 2007 to B\$ 1236 in 2009. The financial crisis of 2008 was the worst event since the great depression of 1929 and had a great negative impact on international activities, in particular to the developed countries. This is evident also analyzing the FDI inflow pre- and post-crisis, in the developed countries there was a decrease of about 50% while for developing countries was only about 12%. So, thanks to the fact that the developing countries were the less “hit”

by the crisis, there was a change in the distribution of FDI inflows, developing countries increased a lot their position as host countries for FDI flows.

After 2009, despite the ongoing crisis and its effects, FDI inflows have grown both in 2010 and 2011, however, demonstrating more volatility in the following years, and they reached the top value in 2015. Again, the volatility of global FDI flow is due to movements in developed countries' flow, seen the fact that the path of developing countries remained in constant growth with an only drop in 2009 caused by the financial crisis, and also transition economies remained more or less stable but having a little contribution in the global amount of FDI inflows. Another important "event" that influenced the FDI flows during the period 2013-2014 was the sovereign debt crisis in 2012 that again caused a great decrease in developed economies' values, in fact in 2014 developed and developing countries gave to world FDI inflows the same contribute, and for the first time developing economies and transition economies together overcome the contribution of developed economies to the global amount of FDI inflows.

Transition economy had not a lot of weight on the global level of FDI inflows from 1970 to 2005 when they start to increase, even if they maintained a marginal position.

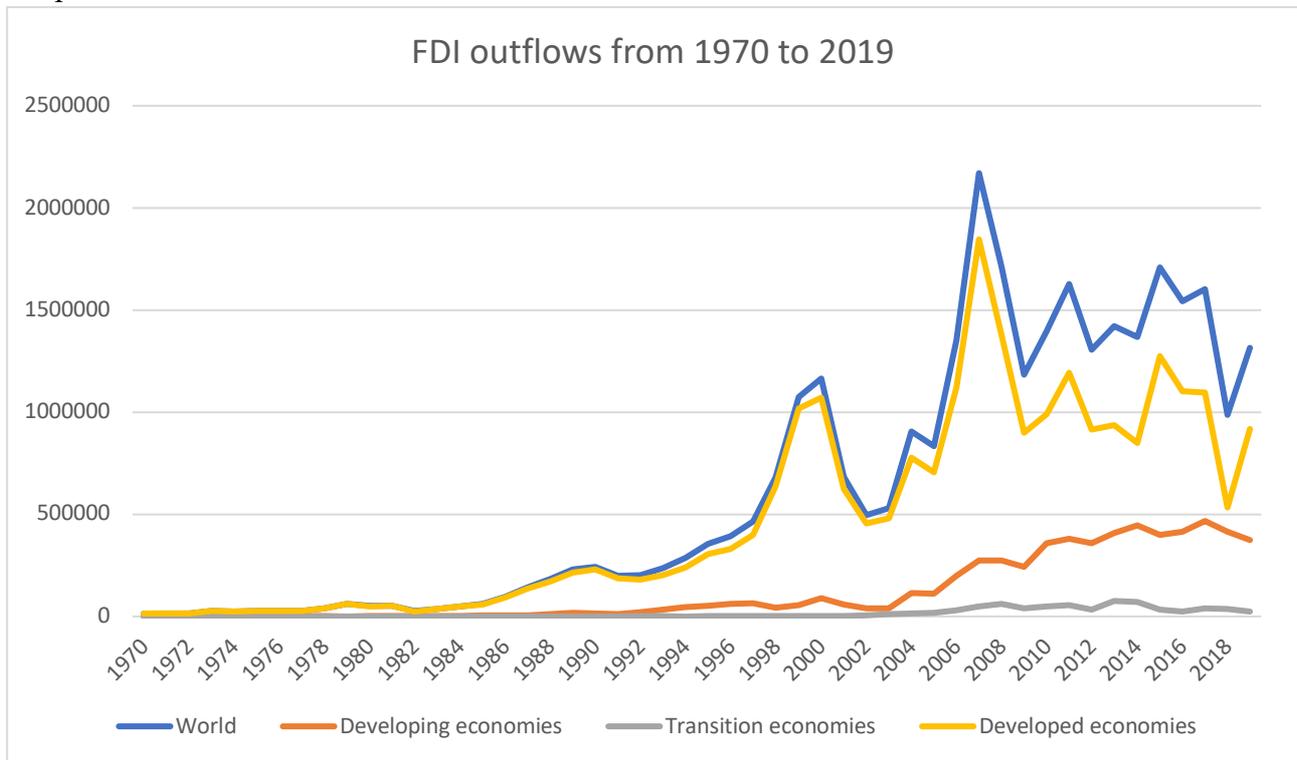
Table 1.3. FDI inflows divided for economy types and as percentage of global value for the years 2017, 2018 and 2019.

| | 2017 | 2018 | 2019 |
|-----------------------------|-------------|-------------|-------------|
| World | 1700 | 1495 | 1540 |
| Developed countries | 950 (56%) | 761 (51%) | 800 (52%) |
| Developing Countries | 701 (41%) | 699 (47%) | 685 (44,5%) |
| Transition Countries | 50 (3%) | 35 (2%) | 55 (3,5%) |

Source: Personal elaboration from UNCTAD statistics.

1.4.2. Outflows

Graph 1.4 FDI outflows from 1970 to 2019.



Source: Personal elaboration of UNCTAD statistics

The graph is elaborated from the UNCTAD database and is clear that at least until 2004/2005 outflows of FDI are mainly driven by developed economies representing almost the only zones where FDI have been generated, even more than the inflows FDI. Developed countries maintain their leadership position as generators of FDI flows. From 2005 the contribution of the developing countries started to increase and reach its maximum weight in 2017, “thanks to” the drop between 2016 and 2017 in developed countries. Transition economies, even here, maintain a marginal contribution to the global level of FDI.

A similarity with inflows regards the different reaction to the crisis, looking to both graphs (inflows and outflows) is possible to see how when developing countries started to increase then maintained the growth while developed countries seem to be more subject to events and so presents a path with more volatility.

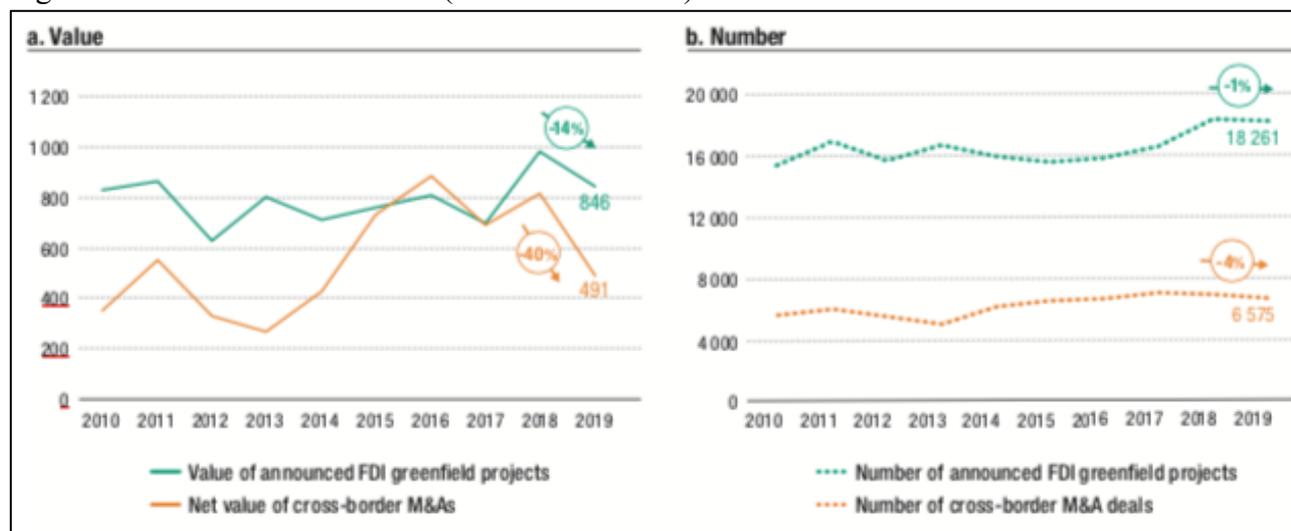
Table 1.5. FDI outflows divided for economy type and as percentage of global value for the years 2017, 2018 and 2019.

| | 2017 | 2018 | 2019 |
|-----------------------------|-------------|-----------|-----------|
| World | 1601 | 986 | 1314 |
| Developed countries | 1095 (68%) | 534 (54%) | 917 (70%) |
| Developing Countries | 467 (29,5%) | 415 (42%) | 373 (28%) |
| Transition Countries | 38 (2,5%) | 38 (4%) | 24 (2%) |

Source: Personal elaboration of UNCTAD statistics.

1.4.3. Greenfield and M&A FDI trends

Figure 1.6. Greenfield and M&A (value and number) FDI from 2010 to 2019.



Source: World investments report 2020, UNCTAD.

In these figures are possible to see the trends regarding the two main entry modes of FDI: announced greenfield FDI projects and cross-border M&A. If we look at the path of the numbers, it seems more or less stable meaning that the drops and jumps “movement” about the values of the investments are due to the “size” of the deals. In 2019 announced greenfield FDI project decrease by 14% reaching the value of B\$ 846 while the number of them is decreased only by 1% reaching 18’261 projects.

So, in response to a decrease of more than B\$ 100 the projects diminishing only about 100 in number. If we take a look at the trends with respect to the sectors, first, the primary sector represents 2.5% of greenfield FDI in 2019, the manufacturing sector represents 47% and the service sector the 50.5% (UNCTAD statistics). In 2019 all of them suffered a reduction. The value of announced greenfield FDI projects in the primary sector decreased by more than 50% in 2019, according to the UNCTAD database is due in major part to the decline in mining and quarrying, which reached the lowest value since 2003. The decrease of announced greenfield FDI projects in the manufacturing sector decreased by 14%, here is possible to highlight the decline of extractive industries and the rose in manufacturing of coke and refined petroleum products. The services sector suffered a decrease of 10%, however, it maintains the leadership position as the main recipient of greenfield FDI projects. The top 3 industries that dominated greenfield projects are electricity, gas, steam and air conditioning supply, coke and refined petroleum products, and construction. The projects with the highest values are made in the manufacturing sector.

The value of cross-border M&A decreased by 40% in 2019, the lowest value since 2005, and the numbers decreased by 4%. Even here is possible to see how in response to a decrease of more than B\$ 300 the number of cross-border M&A diminishing only about less than 300. So even here the drop in the value of M&A is mainly due to the lack of large operations. The weight of the sectors is the following: primary sector represents 7%, manufacturing represents 49%, and service represents 44%.

Even in cross-border M&A, all the sectors suffered a decrease. The value in the primary sector decreased by 14% in 2019. In the manufacturing sector the value decreased by 21% and in the service decreased by 54%, passing from B\$ 470 to B\$ 215. The top three industries in terms of the value of cross-border M&A are pharmaceuticals, medicinal chemicals and botanical products at the first place that doubled their value with a value of B\$ 98 in 2019, followed by business activity and financial and insurance activities with a value respectively of B\$ 66 and B\$ 46. Is important to point out the fourth industry that is chemicals and chemical product that passed from B\$ 119 in 2018 to B\$ 35 in

2019, which comes close to the value of B\$ 65 in 2017. Cross-border M&A with the target in developed countries decreased by 40%, then, if we look at the European zone was even worse with a decrease of 50% (Brexit). Then the United States as a target remains important and its share is about 32% of the total, making U.S. the main host country for M&A. In developing and transition countries there was a decrease of 37%.

1.4.4. 2019's Trends

According to the data collected by UNCTAD, in 2019 global FDI flow increased by 3% as it is possible to see in the Figure 1.7. This is a modest increase if we consider that from 2016 to 2017 it decreased by 23% and from 2017 to 2018 it decreased by 13%. It is possible to claim that despite the increase from 2018 to 2019, FDI flows remained at a low level, below the level registered between 2010 and 2017, even with respect to GDP the level is considered low, in fact, FDI flows represent 1.6% of its composition, while from 2015 to 2017 the value was stable above 2%. The value of FDI inflow in 2019 is B\$ 1540 while the value of the stock increased by 11%, reaching 36 trillion. The increase in the FDI flow is mainly driven by the flow to developed countries, which increased by 5% reaching a value of B\$ 800, here is important to point out that one reason for this increase was the fact that in 2019 were vanished the effects of the tax reforms in the United States. With regards to FDI inflows, there was an outstanding performance of Europe as FDI destination, in fact, the inflows increased by 18% from 2018 to 2019, reaching B\$ 429, weighting the 28% of global FDI inflows value. Developing countries experienced a slight decrease in FDI inflows of about 2%, reaching B\$ 685. Transition countries experienced an important increase of 59% reaching B\$ 55, and so, increasing their global weight from 2.3% to 3.6%. In particular, if we consider the top host countries the first position is again occupied by the United States that even with a decrease of 3%, count B\$ 246 that is about 16% of the global flow in 2019, also the second position remained the same of 2018 and it is occupied by China, that with a slightly increase reached B\$ 141, they are followed by Singapore, Netherlands, and Ireland.

Outflows FDI increased from B\$ 986 in 2018 to B\$ 1314 in 2019, developed economies invested B\$ 917 abroad, an increase of 72% with respect to the value of B\$ 534 in 2018. In particular, outflows from MNEs based in Europe increased by 13% thanks to a large amount of abroad investments generated from Netherlands and Germany, while France and Switzerland suffered a decline.

Developing and transition countries suffered from a reduction in their FDI outflows respectively of 10 and 37%. It is important to highlight that into the developing countries, Latina America and the Caribbean increased a lot its value of investments abroad, in fact, its value passed from B\$ 0.1 in 2018 to B\$ 42 in 2019. China's FDI outflows decreased again, after the decline occurred in 2017 and 2018. The decline is mainly driven by a decrease in M&A that in turn was linked to restrictions on outward investments, investment policy environment, and geopolitical tensions.

Thanks to these shifts in FDI outflows, in 2019 there was a different composition of the global FDI outflows, in fact developed countries counted 70%, developing countries 28%, and transition countries about 2%.

The country that has generated more FDI in 2019, as well as in 2018, is Japan with B\$ 227 and an increase of 58% with respect to 2018. The growth in outflows FDI in Japan is mainly driven by an increase of cross-border M&As, then, Japan doubled its investments in Europe and North America.

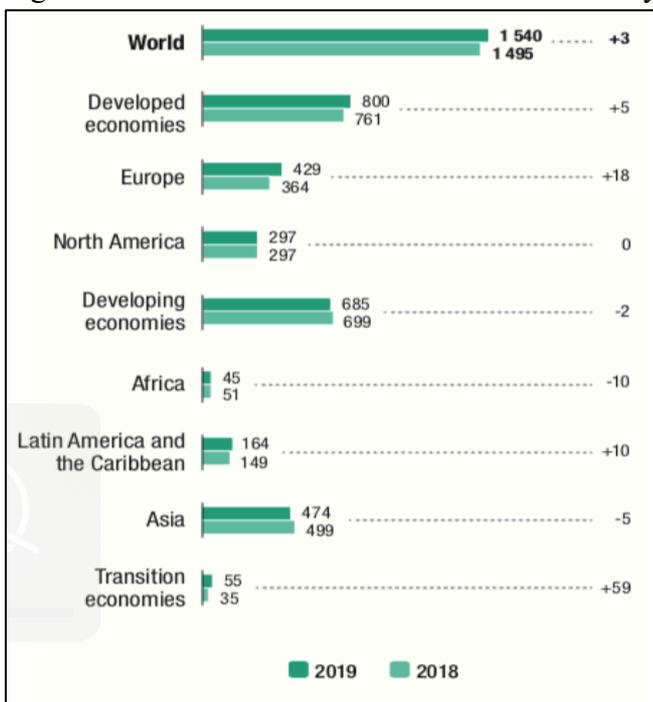
The second largest investor is the United States with B\$ 125 that came from its negative value of 2018, their FDI outflows are mainly composed by the reinvested earnings, the negative value of 2018 was due to the tax reforms that caused a repatriation of funds. The third place is occupied by Netherlands, that in 2019 registered a value of B\$ 125. At the fourth place there is China with B\$ 117, as we said before China has had a decline in its outflows passing from B\$ 143 in 2018 and its previous second place. At the fifth place there is Germany with a value of B\$ 99.

If we analyse the two top-five of home and host countries with respect to FDI flows, we find that three countries are in both list, United States, China, and Netherlands. Germany is 11th in the inflow top host countries, while Japan despite of its first position as generator of FDI is not present in the

top 20 host countries. Singapore and Ireland are both present in the top 20 home countries (Figure 1.8 and 1.9).

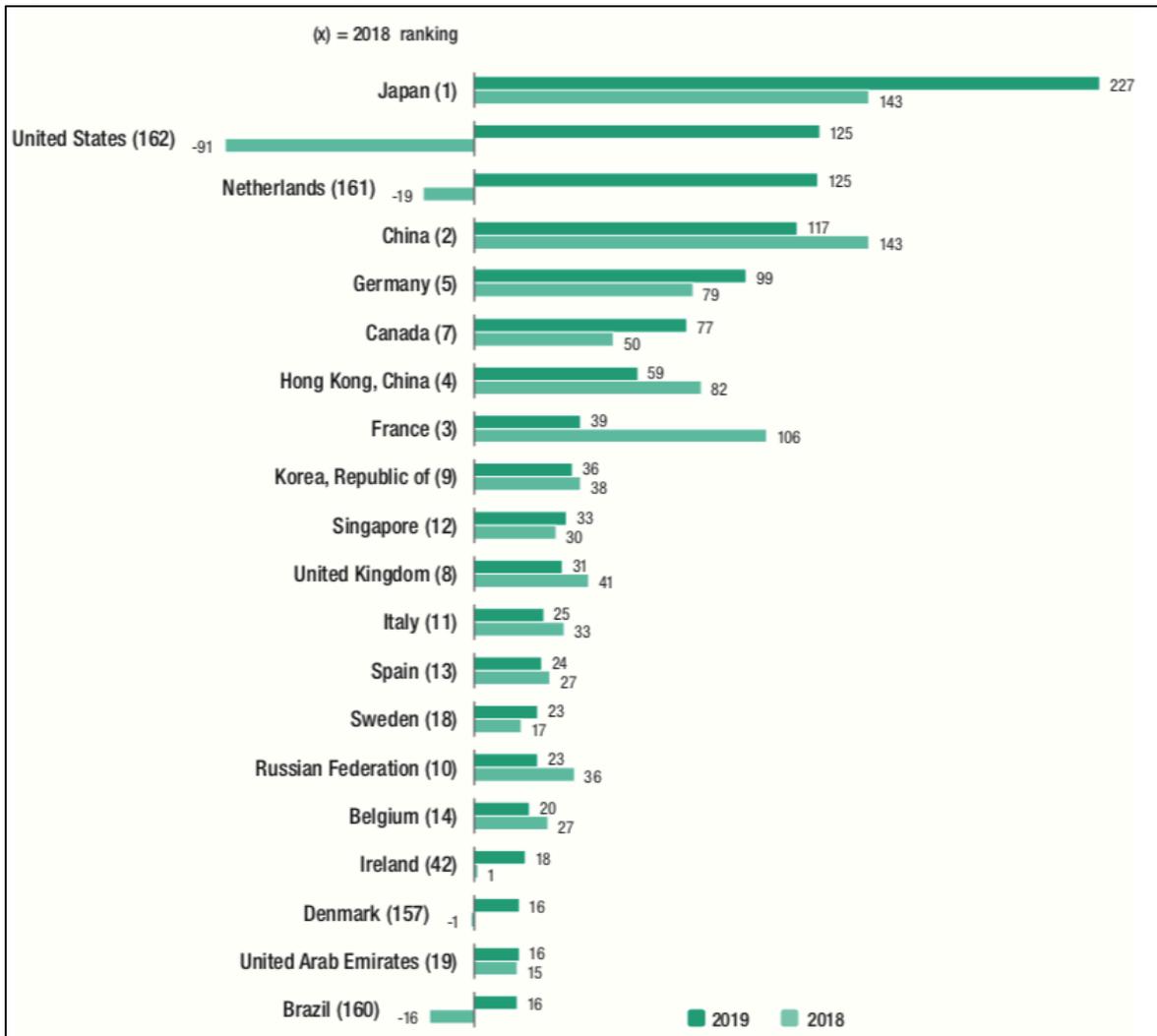
In conclusion FDI is in most part directed to developed economies, but the developing world is constantly increasing. Then, FDI is in most part generated by developed economies. M&A domination, mostly in developed economies. FDI is in major part directed to sector with high intensity of skilled-labor and technology.

Figure 1.7. FDI value in 2018 and 2019 divided by different economies and percentage variation.



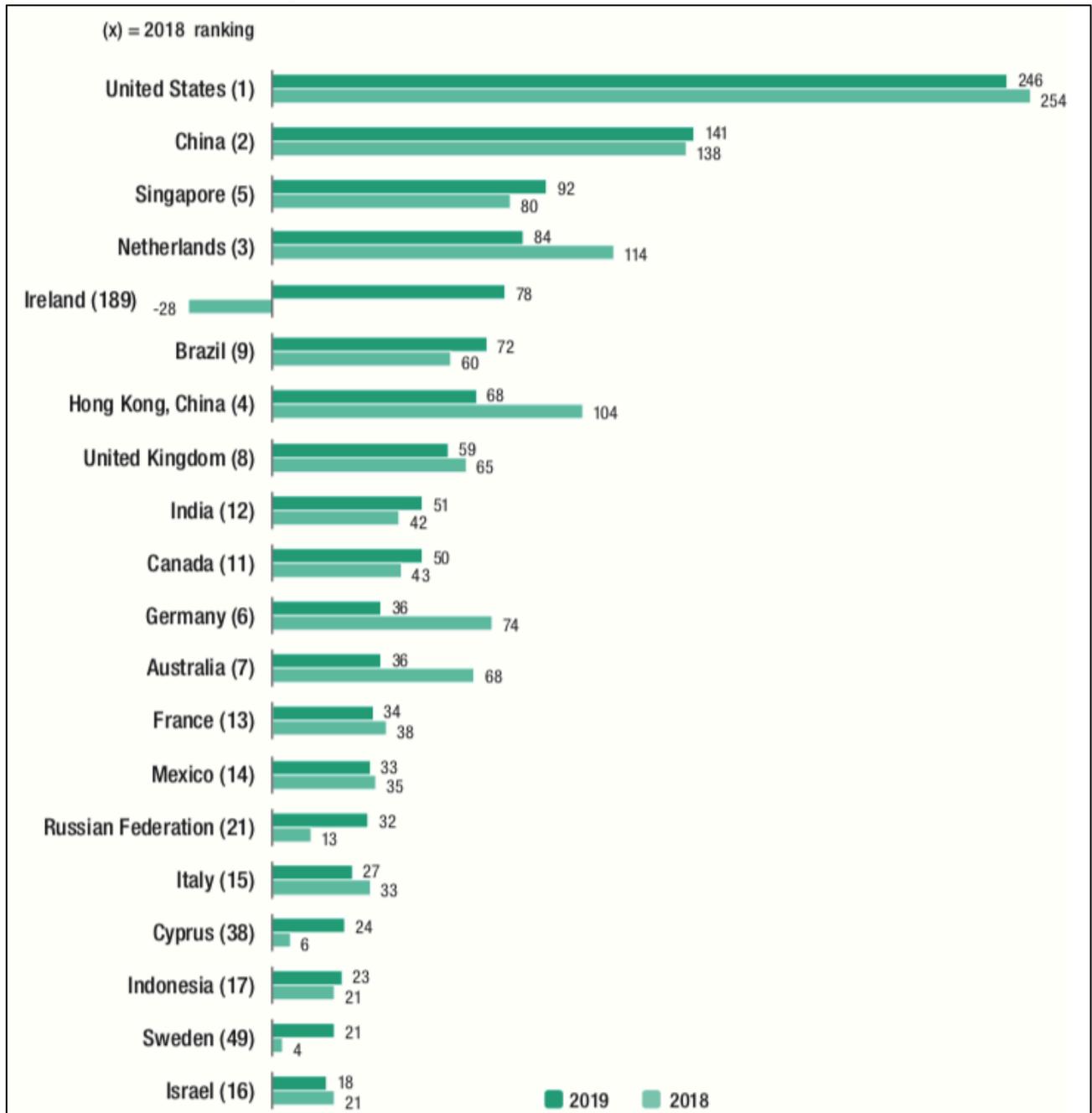
Source: World investments report 2020

Figure 1.8. FDI outflows top 20 home economies in 2018 and 2019.



Source: World investments report 2020

Figure 1.9. FDI inflows top 20 host economies in 2018 and 2019.



Source: World investments report 2020

1.4.5. Effects of the pandemic crisis on FDI projections

In the analysis of FDI's trends it is impossible to do not point out the possible effects of the pandemic crisis created by the spread of COVID-19. The main effect of the pandemic crisis is that FDI flows are expected to decrease sharply due to demand contraction, supply disruption, and also a pessimistic view about economic factors and actors in the next future.

According to the data collected by UNCTAD in the annual report named World Investment Report 2020, it is possible to identify immediate, short-term, medium-term, and long-term effects of the pandemic crisis. The immediate effect regards the FDI's stuck in the lockdown as a consequence of public health measures put in place to contain the virus, as the closures of the places of business, the construction sites, the manufacturing plants, that have caused an economic disruption that will affect firm's decision on FDI. So, the immediate effect of this is a slowdown in the implementation of the ongoing projects and also in cross borders' mergers and acquisitions and new projects starts. In the short-term this will bring to a reduction of the margins, that automatically has an effect on the reinvested earnings, which is an important component of FDI, counting 50% worldwide. Moreover, equity capital flows will also be reduced in the short-term, which means new investment restrictions that naturally will bring to a reduction in cross-border M&A and greenfield FDI projects. A help will come from intracompany loans and movement of equity capital from parent companies to foreign affiliates with the objective to offset these reductions, these financial linkages contribute and have contributed to the resiliencies in crisis. However, we have to take into account that effects on earnings will have a different impact on different sector, from a study made by Refinivi (2020) emerged that the sectors that are most likely to suffer the pandemic crisis in terms of FDI will be: energy, industrials, materials sectors, and consumer discretionary sectors. The latter sector includes food and accommodation, textiles and apparel, and much entertainment spending by households. While other sectors like health care, technology, and communications are more likely to increase their earnings. Seen this very likely situation, developing and emerging economies are likely to suffer a lot in terms of FDI seen the importance and weight of the primary and the manufacturing sector in their

GDP composition, while in developed economies the services sector plays a more important role. Not only the level of earnings is expected to fall but also the share of earnings that will be reinvested are expected to follow the same trend.

In the medium-term, the very likely global economic recession and its consequent contraction of demand, the uncertainty about the future, and the liquidity crisis could have only a negative effect on new investment plants and also on the ongoing or the announced projects. Three possible scenarios are identified by OECD in its contribution named: “Foreign direct investment flows in the time of COVID-19: optimistic scenario, middle scenario, and pessimistic scenario”. The scenarios have been created in base of the effectiveness of the public health and the economic policy measures. The optimistic scenario will be the one where the economic policies are very effective and avoid structural damage to the economy and also the public health measure will be very effective in the control of the spread of the virus in the present but also to be ready for the future. In this optimistic scenario, economic growth will resume at the end of 2020 and will reach the pre-crisis level by the end of 2021. In numbers, disinvestments will remain at their historical level while FDI flows are expected to fall by 20/30% in 2020 before return to their pre-crisis level by the end of 2021. The middle scenario is the one where the public health measures are initially successful but are not so effective in the future, that means that some stringent measures will be needed and the economic policies are not completely effective, here the recovery will be discontinuous and not so strong, that means a decrease by 35/45% fall in FDI flows in 2020 and a recovery in 2021 that will bring FDI flows to one-third of their pre-crisis levels, moreover disinvestments are expected to increase above their historical level. In the pessimistic scenario, the public health measures do not contain the spread of the virus and so the stringent measures have to remain in place, then economic policies are not able to offset structural damage, here is the scenario where there will be a lot of bankruptcies and defaults, so earnings will remain depressed in many sectors. In numbers FDI flows are expected to fall by more than 45% in 2020 and then will be flat until the production of the vaccine, then disinvestments will be more common with a major part of liquidations.

In conclusion, in the medium-term, a decreased by at least 30% is expected for FDI flows in 2020.

In the long run, the pandemic crisis will affect investors and the economy in a different way with respect to locality context and motivations of FDI. Seen the growth of health care and ICT sector is likely that in the long-run will be an increase of the knowledge-seeking investments while the downward trend of the energy sector and the collapse of its demand will cause problems to those countries that are used to rely on resource-seeking investments. About geography, is likely that in the long run enterprise will have the objective to get suppliers and consumers closer, also a shorter supply-chain could be a will. Moreover, enterprises want to be more resilient about location-specific shocks (e.g., lockdown), for this, an option could be diversifying their supplier networks, that in turn could cause disinvestments in some areas and new investments in others. The long-run effect of the pandemic crisis can be reinforcing some existing trends regarding FDI flows, for example, the trends towards sustainable products and production or digital technologies. About digitalization, the pandemic crisis forces the use of dematerialized and automatized processes and e-solutions and then, it can be a solution to be more resilient with respect to other shocks.

Finally, in Latin American and the Caribbean, according to the investments' prospects created by UNCTAD, FDI flows are expected to halve in 2020 also because of political turbulence and structural weaknesses in more than one economy worsened and highlighted by the pandemic crisis.

Figure 1.10. FDI 2020 projections divided by economies/region in absolute and relative terms.

| Group of economies/region | 2017 | 2018 | 2019 | Projections |
|--|--------------|--------------|--------------|---------------------|
| | | | | 2020 |
| World | 1 700 | 1 495 | 1 540 | 920 to 1 080 |
| Developed economies | 950 | 761 | 800 | 480 to 600 |
| Europe | 570 | 364 | 429 | 240 to 300 |
| North America | 304 | 297 | 297 | 190 to 240 |
| Developing economies | 701 | 699 | 685 | 380 to 480 |
| Africa | 42 | 51 | 45 | 25 to 35 |
| Asia | 502 | 499 | 474 | 260 to 330 |
| Latin America and the Caribbean | 156 | 149 | 164 | 70 to 100 |
| Transition economies | 50 | 35 | 55 | 30 to 40 |
| <i>Memorandum: annual growth rate (per cent)</i> | | | | |
| World | -14 | -12 | 3 | (-40 to -30) |
| Developed economies | -25 | -20 | 5 | (-40 to -25) |
| Europe | -16 | -36 | 18 | (-45 to -30) |
| North America | -40 | -2 | 0 | (-35 to -20) |
| Developing economies | 7 | 0 | -2 | (-45 to -30) |
| Africa | -10 | 22 | -10 | (-40 to -25) |
| Asia | 7 | -1 | -5 | (-45 to -30) |
| Latin America and the Caribbean | 14 | -5 | 10 | (-55 to -40) |
| Transition economies | -25 | -31 | 59 | (-45 to -30) |

Source: World investment Report 2020, UNCTAD

2 FDI AND INEQUALITY

In this chapter, I am going to define the concepts of inequality, its definitions, its most common drivers and its most used measures. Then, I am going to review the literature and the empirical works about the relationship between FDI and inequality.

In general, scholars are more focused on the relationship between FDI and growth, however, we have to take into account the possible effects that inequality has on growth, or in general why inequality is important. The reduction of inequality is important for its own sake, which means that people prefer to live in an equal society, so in general, the reduction of inequality has also ethical and philosophical reasons (Ray, 1998). Then, it is also important for its possible effects on other economic factors such as economic growth.

To highlight the importance of income inequality, Obama defined the widening of income inequality as “the challenge of our time”.

So, it is clear that understand a possible offsetting effect on economic growth could result important for those countries which have decided to attract FDI, in particular for developing countries as they are increasingly dependent on FDI to stimulate growth.

2.1. INEQUALITY

2.1.1. Inequality of outcomes and inequality of opportunities

The topic of inequality, in particular income inequality, has been always an important subject both for scholars and policymakers, however, its importance has grown after the Great Recession. Lately, has been defined one of the major social issue of our time (Stiglitz, 2013), mainly due to its increasing trend from the 70s.

The concept of inequality, the state to be unequal, is complex because could have different meaning according to different perspective and context, for example, it is possible to refer to economic,

monetary or a right-based concept of inequality. In this thesis, the focus is on economic inequality and within this context, we have to distinguish between inequality of outcomes and inequality of opportunities. In very simple words, if we are in the context of a race, there is equality of opportunities if all the racers start at the same time and there is equality of outcomes if they arrive at the same time. With regards to inequality of outcomes (ex-post view), it usually refers to income, wealth, or consumption and measures their distribution across households or individuals within an economy. Then, inequality of opportunities (ex-ante view) refers to the extent to which every individual has the same opportunities to reach outputs, for instance, refers to unequal access to education, labor and financial markets or health service. More in specific, according to the definitions of Roemer (1998), the concept of inequality of outcomes refers to the product “produced” by both the efforts of an individual (factors under his control) and the circumstances, inherited or faced, under which the effort is made, and how is said before usually is identified with income, consumption or wealth inequality. The concept of inequality of opportunities refers to the circumstances out of the control of the individuals that have an effect on the outcomes but also on the effort needed to obtain the outcomes under those circumstances. In a practical way, perfect equality of outcomes (income) means that within a population all the individuals have the same share of the total income, while equality of opportunities means that circumstances at birth such as race, ethnicity, family backgrounds, location and gender do not determine an individual’s future education possibility, job and at the end, earnings. This does not mean that equality of opportunities means that every individual within an economy has to have the same educational level or job or earnings but that the outcomes have to be determined by individual’s choice and effort and so be independent to circumstances.

A lot of studies and empirical works have been done about the determinants of income inequality and also its possible effects on other economic variables such as growth as we will see later in this chapter, while empirical works are limited with regards to inequality of opportunities, however, the reasons behind this are also practical, in fact it is difficult to distinguish between circumstances and effort

both conceptually and practically. Moreover, there is also the difficulty to find indexes or variables describing circumstances in a way that is also comparable across countries.

Despite the relative scarce attention put on the inequality of opportunities, we have to take into account that it is considered more morally unacceptable than inequality of outcomes and the presence of interdependence between inequality of outcomes and opportunities. In fact, inequality of outcomes could affect the future inequality of opportunities and reverse (Atkinson, 2015), and it is possible to look at them as two sides of the same coin, where equality of opportunities cannot exist in the presence of a high level of inequality of outcomes (UNDP, 2013). In a work done by Brunori, Ferreira and Peragine (2013) it is found that a large portion of the inequality in the world can be attributed to factors such as family background, gender, race or place of birth and they find also a positive correlation between inequality of opportunities and inequality of outcomes, that means that countries with a high level of inequality of outcomes are also characterized by a high level of inequality of opportunities.

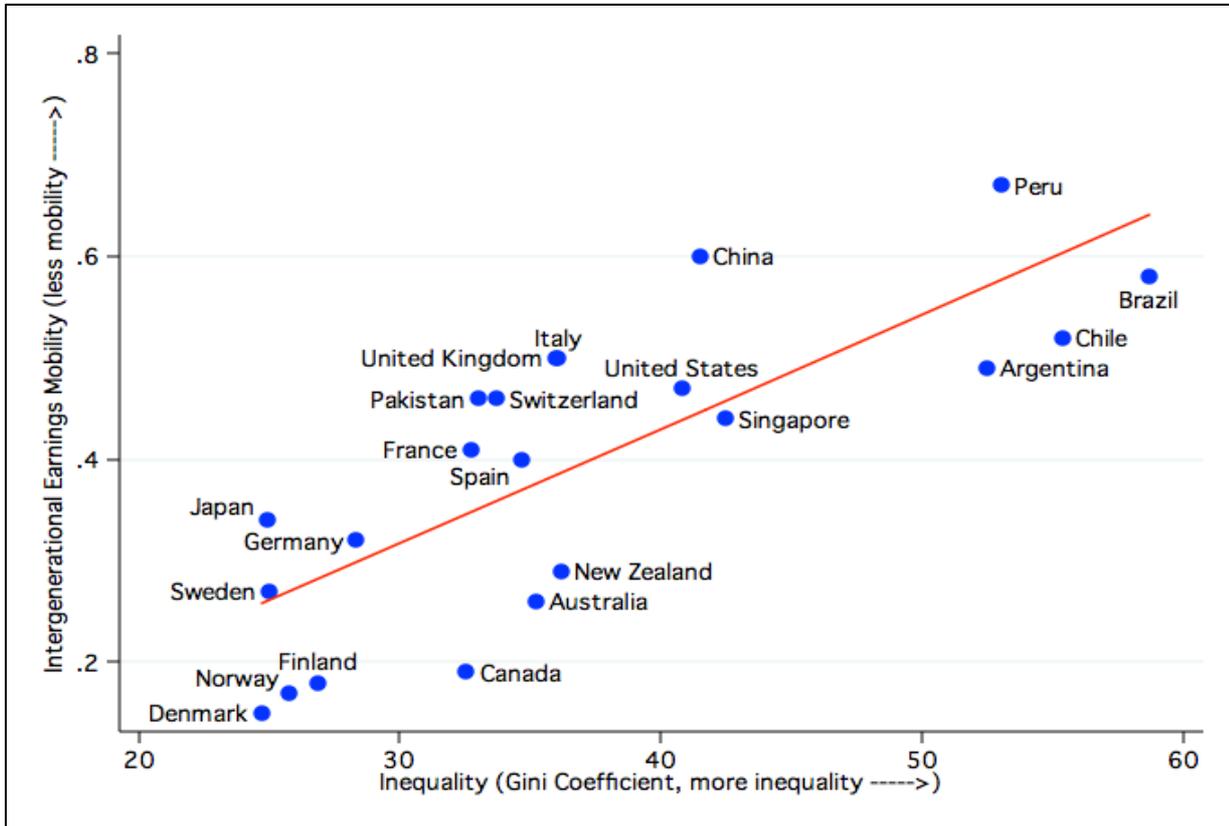
Results that are in accordance with “The Great Gatsby Curve” done by Corak (2012), a work that came to the attention of Alan Krueger, Chairman of President Obama's Council of Economic Advisors, that emphasize the link between the increasing income inequality in the United States and its equality of opportunity.

The curve plot Gini coefficient (income inequality) with the elasticity of intergenerational earnings, which can be viewed as a measure of social mobility that in turn can be viewed as a representation of realized opportunities, seen that it is difficult to directly measure inequality of opportunities. As it is possible to see in the Figure 2.1, countries characterized by a high level of income inequality presents also a low level of social mobility, which means a high level of inequality of opportunities considering also that the same results have been obtained plotting income inequality with the elasticity of intergenerational education (OECD Adults Skill Survey). The theory has identified education as the key mechanism linking income inequality and intergenerational mobility and considering countries with a high level of income inequality and a low level of intergenerational education mobility, it is

not surprising that they have also a low level of intergenerational earnings mobility. In sum, the Great Gatsby Curve shows how, in countries characterized by a high level of income inequality, children from poorer families have less probability to improve their both education and earnings, however, the relationship is bi-directional, in a country characterized by both a high level of educational and earnings mobility poor and uneducated children have a higher possibility to obtain a better economic condition than their parents lowering income inequality, even if a higher or a lower level of income inequality could depend also on changes in economic behaviors that are independent on circumstances or on how the economic system transforms behaviors in outcomes (Bourguignon, 2018). The fact is that if we consider that the less mobility is due to the persistence of households' income differences then, that income differences are strongly linked to skills differences, become clear that skills are determined by the development of individuals' human capital and finally income differences result in a different capacity to invest in children's human capital. For instance, the possibility to invest in children's education is strictly linked to their families' income and wealth as the possibility to continue to study instead of starting work in early ages, then, educated families are also more inclined to give importance to the education of their children and for example, educated families usually live closer, producing positive neighborhood externalities (Chusseau and Hellier, 2013) or educated and wealthy families usually have better job networks. In the Figure 2.2. the line (8) could represent the intergenerational transmission of inequality, affecting circumstances and preferences. The intergenerational transmission of inequality, and in turn future inequality, could be strongly affected by a well-designed educational system. A confirmation to this, in Finland that is characterized by one of the highest values of earnings mobility, was done a school reform (1972-1977) that significantly reduced the degree of the heterogeneity in the Finnish primary and secondary education, with the aim to provide equal educational opportunities to all students independently to their place of residents or families' background. Pekkarinen, Uusitalo, Pekkala (2006) estimated the effect of the reform on the correlation between son's earnings in 2000 and father's average earnings

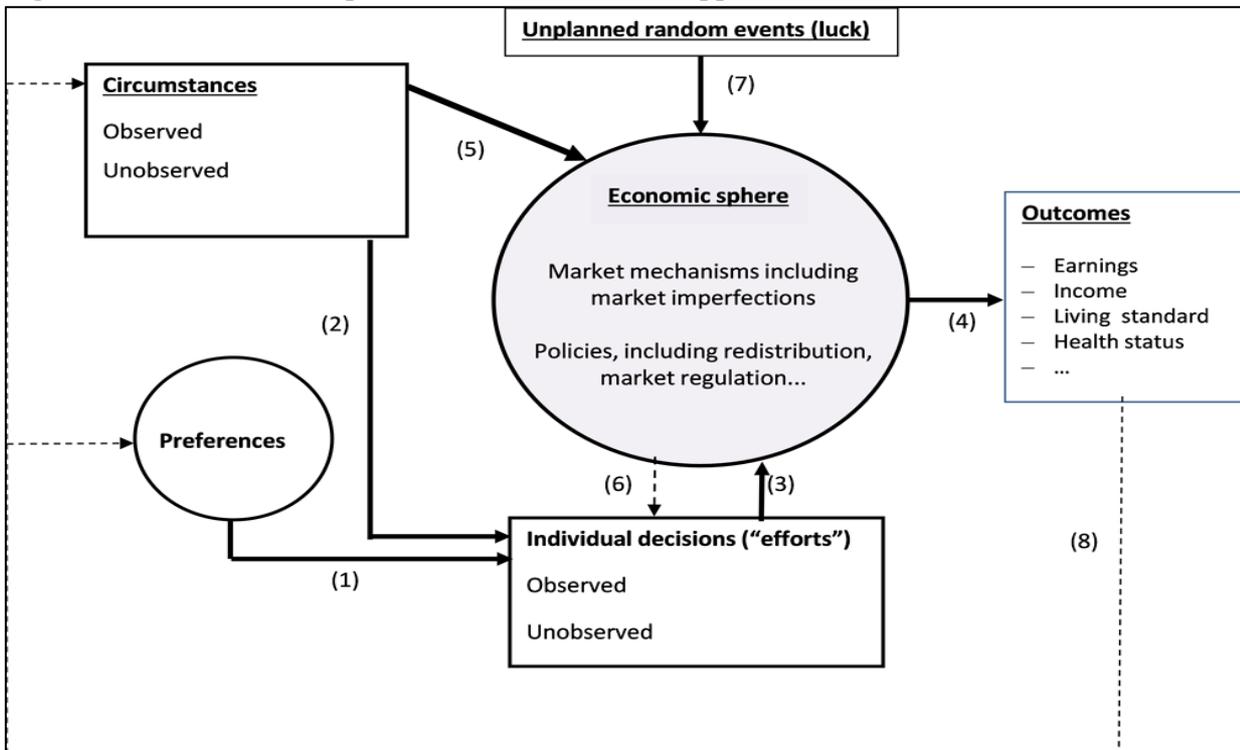
during 1970-1990 using a representative sample of males born during 1960-1966 and they found that the reform reduced the intergenerational income correlation by seven percentage points.

Figure 2.1. The Great Gatsby Curve



Source: Corak (2013), "Inequality from Generation to Generation: The United States in Comparison".

Figure 2.2. The relationship between circumstances, opportunities and outcomes.



Source: For good measure: Advancing Research on Well-being Metrics Beyond GDP, Chapter Five (Bourguignon, 2018).

2.1.2 Inequality's effects on growth

In this paragraph, I am going to go deeper in the analysis of the possible effects of inequality on economic growth, but not the revers that it will be addressed later in this chapter, also in order to understand better the positive offsetting effect in countries where FDI causes an increase in inequality. The theory suggests that both positive and negative effects are possible, for example, the prospect to have a higher income than others could have a positive incentive to invest more in own education, to take more risk (innovation), to put more effort into the work but could have also a demotivating effect, leading to opposite individual behaviors. Other possible positive effects can be generated thanks to the fact that high-income people have a higher capacity to accumulate savings that in turn can be used for investments, so with a higher capital stock, a higher GDP can be produced. Then, income inequality together with inequality of opportunities are perceived as unfair and this can lead to an increase of social conflicts such as strikes, property crimes and protests leading to a context

where is more difficult for the government to ensure law and order, to provide social services and to develop good institutions, to reduce poverty and can also lead to unsustainable macroeconomic policies (Addison and Cornia, 2001), it is easy to understand that inequality in general could have also these negative indirect effects on growth, together to a possible decrease of investments. The line between obtaining positive or negative effects on economic growth is the inequality itself that is present, which means that an increase of inequality causes positive effects on economic growth until a certain level of inequality after which other increases cause negative effects on growth.

Empirical works suggest that inequality has a negative and statistically significant effect on economic growth (Barro, 2008; Cingano, 2014). In particular, Barro (2008) argued that the negative effect on growth diminishes as per capita GDP increases and could be positive for very rich countries. Cingano (2014), focused his attention on the effect of inequality on investments' opportunities for the bottom of the income distribution, in particular in education, that in a context of a high level of inequality are lesser. In various analysis supported by OECD emerged how reducing inequality can boost economic growth and also that its reduction matters for the growth sustainability. All this suggests that a major part of the countries have crossed the optimal level of income inequality.

In a research done by the Directorate for Employment, Labor and Social Affairs (OECD, 2014), emerged that the link between income inequality and intergenerational education mobility, that we saw in the previous paragraph, is the key mechanism that permits income inequality to affect economic growth. Limiting intergenerational education mobility, high levels of income inequality weaken education opportunities, both in quantity and quality terms, for disadvantaged people, which in turn affect their skills and learning development. Disadvantaged people are not to be interpreted only as the poorest because is included the bottom 40% of the population in terms of the income share. In the same research emerged also that redistribution through taxes and benefits do not lower economic growth if well-targeted, if not, it is possible to have a waste of resources and inefficiencies, while others consider redistribution policies negative for economic growth also due to the fact that high taxes could have a negative effect on performance.

Moreover, inequality of opportunities is economically inefficient, because it prevents people from making the best use of their skills or realising their entrepreneurial ideas and this, in turn, may negatively affect economic growth in the long term and trap a country on a path of increasing income and wealth inequality (Ferreira, 2014). Another problem is about incentives to perform better, that in a system where there is a high level of inequality of opportunities are less for both the advantaged and disadvantaged people.

2.1.3 Main drivers of income inequality

According to the focus of this thesis, it is important to understand what the drivers of inequality are, in order to understand in which ways inflows of FDI could impact income distribution, both in the short and long term.

In the previous chapter, we have seen how income inequality has a negative impact on economic growth after a certain level of inequality, according to Kuznets (1955) and its Kuznets' curve the same it is true for the reverse, economic development has a negative effect on income inequality a certain level of development. Kuznets provided one of the first contributions to the literature about inequality, the Kuznets' curve (inverted U-shaped) describes the relationship between the level of economic development and the income inequality. Briefly, he concluded that until a threshold of economic development, economic growth increases income inequality and after that threshold will happen the opposite, economic growth decreases income inequality; so, according to Kuznets economies passed from situation characterized by low-income, low-inequality and agricultural economy to a high-income, low-inequality and an industrial economy passing through a middle-phase where there are both high and low income and so high-inequality. Conclusions that, after Kuznets' publication, have found confirmation of various empirical works but also criticism. In fact, seen the fact that from the 80s within inequality in developed countries increased, mainly due to an increase of the share of the top 10% and a decrease of the share in the bottom 50%, various scholars, in particular Picketty, agree on a different shape of the Kuznets' curve, that is more similar to a

horizontal “S” where inequality re-increase in very high stage of development. According to Tridico (2018), this re-increase is due to a change in some features of the developed world’s economic model such as financialization and the increasing role and return of capital, more labor flexibility, contraction of the social spending and a decrease in the trade unions’ power.

So, considering the widely accepted view that FDI has a positive impact on economic growth, we have to take into account the possible long-run effect that FDI could indirectly have on inequality and the possible different indirect effect that FDI could have based on the level of development of the host countries. However, not only the size of the economic growth matters but also its “nature”.

Now I am going to analyse the other possible determinants of income inequality.

First, how we have seen before, education has an important role in reducing inequality and in its possible persistence, this is due to the fact that education can determine occupational choices, level of wages and access to different jobs. Then, we have to consider that one of the main channels through which inequality may increase is the wages-gap between skilled and unskilled workers. Moreover, education has an important role in influencing the productivity of the labor market. For those reasons and for what we have seen before, education is a key determinant of income inequality. In general, the impact of education on income inequality depends on the size of education investments by individuals and governments and the rate of return on these investments (Dabla-Norris, Kochhar, Ricka, Suphaphiphat, and Tsounta, 2015). Then, how we have seen before, strictly linked to education there is the role of social mobility, and in turn the role of the level of inequality of opportunities.

Technology advances is another important determinant, that widening the skill-premia has contributed to increase income inequality. Essentially, this happens because technology advances raise demand for capital and skilled labor over the low-skilled and, increase the skill level required for various jobs and substituting some medium-skills task, increasing the unemployment among medium-low skilled workers in favor of the more skilled.

Political factors are other drivers of income inequality, they can play an important role in the reduction of income inequality, especially in the long run. For political factors, it is meant various factors such

as the state sector, government transfers and social service, in particular in the literature is stressed the importance of the redistributive policies, like a progressive tax system and social transfers (Couto, 2018). In particular, taxes affect directly inequality, in fact, if we consider the top marginal income tax rate and the share of the top 10% of the income distribution from 1900 to 2010 is possible to see how when the former increased the latter decreased and reverse, for example considering the United States is possible to see how the income share of top 10% recorded its lowest values from the 40s to 70s when the top marginal income tax rate was around 90%. Another confirmation came from the fact that from the 60s, the share of the top 1% of the income distribution increased more in countries where the top marginal income tax rates decreased more (Picketty and Saez, 2013).

Another important role is played by institutions, good institutions such as democracy and market labor regulations seem to reduce income inequality while bad institutions such as corruption tend to increase income inequality (Couto, 2018). With regards to labor market regulations, evidence shows how minimum wages, unionization, and social security contributions tend to reduce income inequality (Calderón and Chong, 2009) while labor flexibility has the opposite effect.

Lately, has emerged a debate about the consequence of globalization on income inequality, the first thing to highlight is that trade openness could have a mixed effect on income inequality. It could increase income inequality increasing the skill-premium through the increase of specialization, especially true for advanced economies, due to the factor price equalization (wages), but could also be due to moving income distribution towards the capital, then it may decrease income inequality by increasing demand and wages of unskilled workers, especially true for less developed and developing countries. Seen the possible offsetting effects of globalization and also that its effect may depend on various countries' characteristics, technology advances seem to have more power to increase income inequality. However, there is evidence that for some developing economies such as Latin America, it is true the opposite, and so that trade liberalization has led to an increase in income inequality. In particular, with regards to financial globalization and one of its main instruments, FDI, we will see later the relationship with inequality. About financial deepening, Dabla-Norris (2015) argued that if

accompanied by more inclusive financial systems can lower inequality, however, theory indicates that in the early stages of development could benefit the richer and only when the economies develop the benefits will be shared in a widely way (Greenwood and Jovanovic, 1990).

2.1.4. Historical path of global inequality

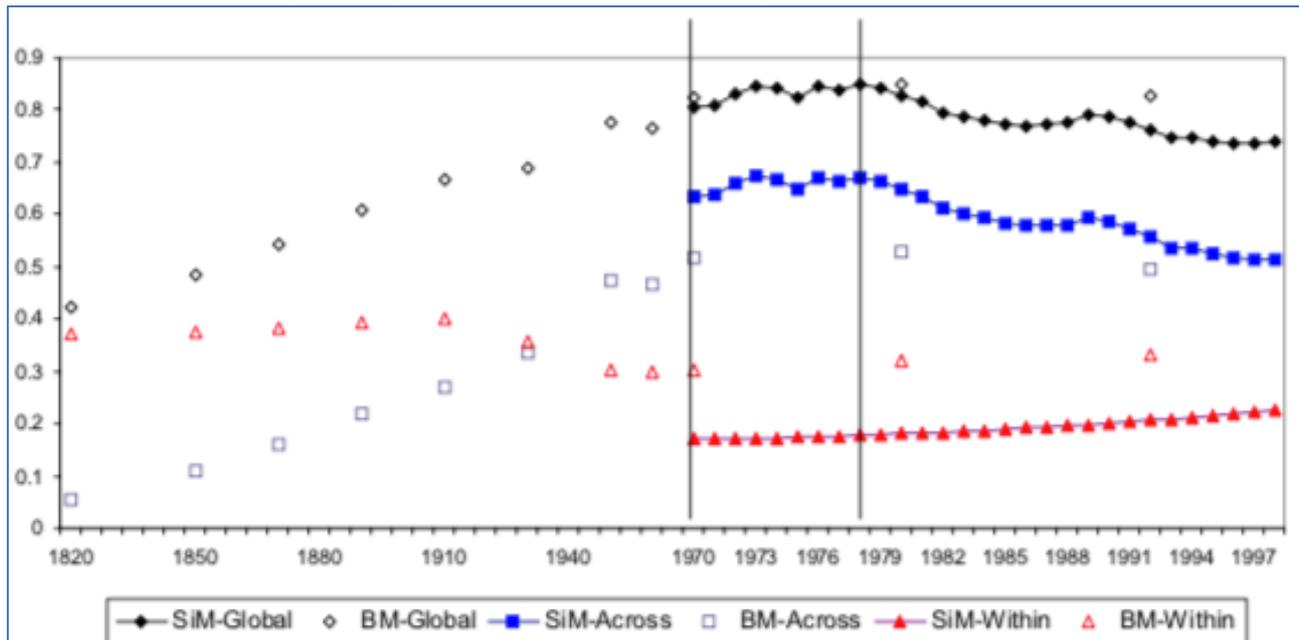
An important and useful distinction in the analysis of income inequality is between the so-called within and the between/among countries inequality, they are included in the global inequality measure. Within country inequality compares the differences between households or individuals in the same country or region, while between country inequality compares income differences between countries. Global inequality is the sum of these two components. Thanks to this composition in a work done by Sala I Martin is analyzed the long-run path of the three measures. In this analysis (Sala I Martin, 2002), emerges that global income inequality increased constantly from 1820 to 1970/1980, then between 1970 and 1980 there was a period characterized by a higher degree of volatility, finally global income inequality had a decreasing trend until 2000, where it seems to start to increase. In the analysis of the two components emerge that until 1940 global inequality had to do almost only with within inequality, meaning that differences in income had to do with class, while from 1940 until now the major component is the between inequality, meaning that differences in income had to do more with location than class. So, it is possible to say that the reduction that happened after 1980 was due to the reduction of the between component, especially thanks to the growth of China. According to World Social Report (2020) and confirmed by the empirical work done by Milanovic (2012), from 1990 to 2016 the global level of inequality has remained stable or increased, according to some measures, and high. Income inequality among countries has decreased reaching 0.53 in the score of the Gini coefficient of international inequality in 2010. Moreover, also after 2000, inequality among countries is declining in relative terms, and again it is confirmed the Asian growth as the main driver of this. However, we have to take into account that in absolute terms, there is a high level of disparities among countries, and absolute income differences between countries continue to grow. Seen that

inequality among countries is decreased, inequality within countries had to be increased in order to make global inequality stable. In fact, the within contribution to the global level of inequality, that after WWII decreased, around the 70/80s started to increase in most countries, in particular, seemed to increase from 30% in 1990 to 40% in 2010 (Bourguignon, 2015). With regards to this increase after the 80s, it is important to highlight that the middle class lost its relative position both towards the top and the bottom classes in term of relative employment and wages, about the share of the top 10% of the population it is important to remind that from the 80s increased a lot, then from the 80s increased the weight of education in determining income gaps between skilled and unskilled workers. Moreover, how it is said before, this increase in within inequality has to do both with labor income and capital.

So, also within inequality is high, even if less than the across component, but is not increasing everywhere. How we will see in a deeper way later, in Latin America since the end of the 90s income inequality is decreasing, while is increasing in most developed countries.

However, inequality trends differ across countries both in the same region and at a similar level of development. Within inequality from 1990 to 2016 increased in 49 out of 119 countries that have sufficient data, however, those countries counted for more than 70% of the world's population, including India and China. In particular, within inequality increased in most developed countries and middle-income countries, how we have seen deeply previous in this chapter. To understand better, according to WID (World Inequality Database), 26 out of 49 countries where within inequality increased in that period are from Europe, North America, Oceania and Japan.

Figure 2.3. Historical path of global inequality and its component from 1820 to 2000.



Source: “The disturbing “rise” of global income inequality”, Xavier Sala-i-Martin (2002)

2.1.5. Measure Inequality

Income inequality measures the distribution of income (flows) across households or individuals within an economy in a given time-period. However, when there are more than two individuals or let’s say, entities, rank intermediate distribution it is not quite easy. To build a desirable inequality index, it has to fulfill four criteria or principles. The first one is the Anonymity principle, which means that every individual has the same importance, an index fulfills this principle if its result doesn’t change if you exchange the income of one individual with that of another. The second one is the Population principle, so indexes must be insensible to the size of the population. Then there is the Relative income principle, which imposes to care about relative and not absolute income. The last one in the Pigou-Dalton principle, according to it indexes must be sensible to the regressive transfer of money (transfer some money from a not richer to a not poorer).

One of the most interesting ways to measure inequality is the Lorenz Curve, that is a graphic method represented in Figure 2.4 and it fulfills all the principles. The vertical axe represents the cumulative share of income while the horizontal one represents the cumulative share of population. Perfect equality, where everybody had the same income, is represented by the 45-degree line because any

cumulative fraction of the population would share exactly the same that fraction of total income. With increasing inequality, the Lorenz curve starts to distance itself from the 45-degree line, and the overall distance between them represents the amount of inequality in that population. The highest amount of inequality is reached when the Lorenz curve coincides with the ACB line, that population would be characterized by perfect inequality, which means, when a single individual has the 100% of available income. So, the Lorenz curve offers an intuitive way to measure and compare inequality, but it cannot provide useful inequality rankings when two Lorenz curves cross each other, moreover, it cannot summarize inequality with a number. The most used inequality index in the empirical works is the Gini coefficient, like the Lorenz curve it fulfills all the principles and is precisely the ratio of the area between the Lorenz curve and the 45-degree line, to the area of the ABC triangle. The Gini coefficient takes differences between all pairs of income and sums them and it is normalized by dividing by population squared and mean income.

$$Gini = \frac{1}{2n^2\mu} \sum_{j=1}^m \sum_{k=1}^m n_j n_k |y_j - y_k|$$

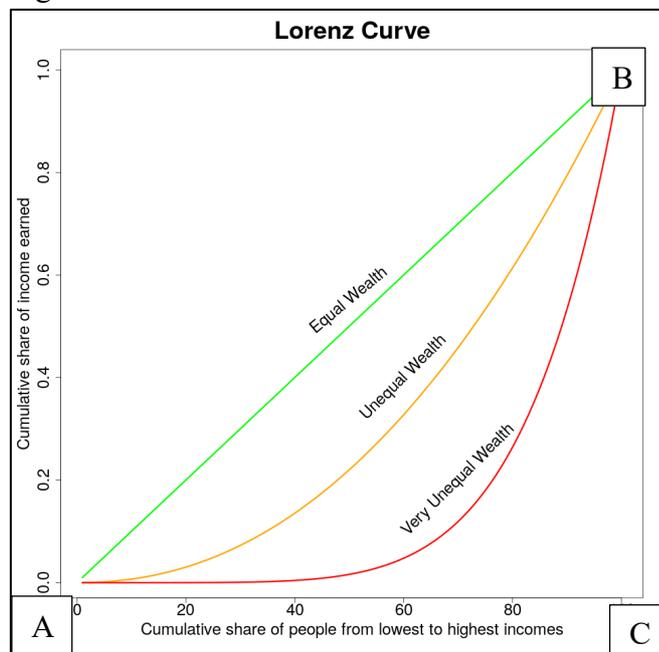
In the formula above, n is the number of individuals of the population analysed, μ is the average income and y is the income of each individual.

One of the reasons why Gini is the most used measurement of inequality is that it allows for comparison with other countries over a long time period. Then, it provides a synthetic information in a single coefficient. Gini index can vary between 0 and 1, usually, it is multiplied by 100 in order to have a 0 to 100 rank. A Gini index of 0 means perfect equality while 100 means perfect inequality. Nowadays, it is considered that countries with a Gini index ranging from 0.20 to 0.30 are characterized by a low level of inequality while countries with a Gini greater than 0.50 are characterized by a high level of inequality. However, there are other methods to measure income inequality, for instance, the Kuznets Ratio compares the income of the richest group of the population to the poorest, usually are used the 20% richest and the 40% poorest as factors. Another index is the

Theil index, it is an entropic index, and it can be split into the two components, within and across, without leaving residuals.

In conclusion, it is always better to use more than one index to avoid losing something.

Figure 2.4. The Lorenz Curve.



Source: www.economicshelp.org

With regards to inequality of opportunities, there are various methodologies to measure it, however, it is not easy to find an index that allows to compare countries. How we have seen before, intergenerational earnings mobility can be one measure, however, even if provides important information about inequality of opportunities it measures the outputs of inequality of opportunities and its indirect overall effects.

In the following empirical analysis, I am going to use the Human Opportunity Index (HOI), which was proposed by Barros (2008) and data for LATAM are available and collected by LAC Equity Lab. HOI regards children's inequality of opportunities. It is defined by Barros, Ferreira, Vega and Chanduvi (2009) as a composable indicator that combines two elements, one is the level of coverage of basic opportunities necessary for human development, such as primary education, water and sanitation, and electricity, the second is the degree to which the distribution of those opportunities is conditional on circumstances exogenous to children, such as gender, income, or household

characteristics. So, it measures how individual circumstances can affect a child's access to basic opportunities such as water, education, electricity, sanitation and ICTs. The circumstances taken into account are per capita income, location (urban/rural), presence of siblings, parents' education, the gender of the child and of the household head and the presence or not of both parents in the household. Circumstances have been chosen both theoretically and according to data availability.

HOI has three main characteristics as an index, it is defined as equality-sensitive coverage rate, it is Pareto consistent and when the coverage rate of all circumstances groups increases proportionally the HOI will increase by the same portion.

The HOI is calculated for education including completion of sixth grade on time and school attendance for children, for housing conditions including access to clear water, sanitation and electricity, and for information and communication technologies including access to internet and mobile phones. The ages taken into account for most opportunities are from 10 to 16, however, for school attendance are considered children from 10 to 14 and for finished primary school children from 12 to 16. Then, it is also possible to calculate an overall HOI.

The coverage of a particular opportunity is essentially the percentage of children take into consideration that have access to it. How the coverage is distributed is measured by the D-index that essentially measures the inequality of opportunity. The D-index ranges from 0 to 1, and in a situation of perfect inequality of opportunity, D will be 1. According to Latin America and the Caribbean Equity Lab, the D-index is interpreted as the share of opportunities that would have to be "reallocated" across different groups of children so that all groups would have equal access or $1-D$ can be interpreted as the fraction of opportunities fairly allocated.

HOI is equal to the coverage rate multiplied by $1-D$, so it is equal to the coverage rate discounted by one minus the inequality of opportunity index D.

2.2. THEORETICAL LITERATURE REVIEW, FDI AND INEQUALITY

Starting from the '90s the relationship between FDI and growth received attention by the literature, concluding in a major consensus on the overall positive effect on growth by FDI inflows, however how I said before due to the different channels in which effects are spread throughout the economy, we have to consider different factors. It is possible to argue that the literature and a major part of empirical works and economic models are in accordance with the fact that FDI has an overall positive effect on growth, however in recent years is growing the attention to absorptive capacity, human capital and other factors of the host country as determinants to obtain a positive effect from FDI inflows. Moreover, also in the analysis of this relationship has emerged the attention to sectoral effects, for example, Wang (2009) found that FDI in manufacturing has a major contribution to boost growth rather than the other sectors or Alfaro (2003) that found that FDIs in the primary sectors are likely to have a negative effect on growth, FDI in the secondary a positive effect and FDI in service an ambiguous effect on growth. Finally, also the effect of growth on FDI has been analysed, and generally has been found that growth may cause FDI inflow.

On the contrary, the relationship between FDI and inequality has received little attention, also because of data limitation, in particular with regards to developing economies. However, it is also true that the interest in this relationship is growing lately, interest mainly driven by the increase that FDIs' flow value has had and at the same time, how we have seen before, the increasing importance of inequality in the social, political and academic fields.

There is a widely accepted opinion on the role of FDI and on its capability to influence the income distribution, however, scholars reached opposite conclusions about the direction of its distributional effect, especially on developing and less developed countries. It is important to point out that FDI impact on inequality is controversial and ambiguous, how we will see then, and one of the reasons is the different ways in which FDI can affect the host economy and in turn income inequality in particular.

2.2.1. FDI's effect on the host economy

Before trying to understand if FDI has an overall positive or negative effect on the income distribution of the host country, it is important to understand which mechanisms play an important role in this relationship. Moreover, it is also important to point out how the motive of FDI, the MNE's strategy, the countries' characteristics and policies (home and host) and the labor market composition play an important role with regards to the distributional effects of FDI.

The first effect that is easily identifiable is on the balance of payments. FDI flows have a positive effect on the balance of payments because usually lead to a decrease in import, being FDI a substitute for import and an increase in export, when FDI leads to the creation of a foreign subsidiary with the goal of export in other countries. FDI has negative effects through the repartition of earnings and when the foreign subsidiary imports a considerable amount of input.

With regards to income distribution, it is obviously important to analyse the effect of FDI on the host country's labor market, it is widely accepted that MNEs tend to pay higher wages, lead to higher productivity and in particular for developing countries FDI seems to have a positive effect on employment. In particular, the wages paid, and the employment created by MNEs are the most widely accepted mechanism and linkage between FDI and income distribution.

Another important distinction is the direct effect on the target-firm and the indirect effects on the suppliers, the collaborators, the local competitors, the market and the industry in general.

With regards to the target firm, in the theory is widely accepted that together with FDI is brought superior technology, especially if the host country is a developing economy or in general if the home country is more technologically advanced. The higher level of technology leads to an increase of the total factor productivity (TFP) and also an increase of the labor productivity. Moreover, the introduction of a higher level of technology has an effect on the composition of the labor force, which means that is likely to see a shift from less-skilled to more-skilled workers, both in terms of technical and managerial expertise, also because MNEs have the willingness to obtain a higher level of absorptive capacity. As a consequence of the fact that usually, more skilled workers are better paid

and also due to the MNE's objective to retain employment, wages in general increase in target firms. Moreover, it is also true that MNEs pay higher wages with respect to domestic firms, and especially in developing countries, the premium is higher for skilled than that for unskilled workers (Velde, 2003).

With regards to employment, if we consider developing countries, it is widely accepted that FDI has a positive and modest effect on employment. One of the reasons is that usually FDI in developing countries are vertical and they have a stronger impact on labor demand. This positive effect on employment could include low-skilled workers, even if we have to take into account the different perceptions of the level of skills required between home and host countries and the fact that the positive effect is stronger on the skilled part of the workforce (skill-bias technology transfer). With regards to the employment, it is possible that with the presence of a higher level of technology there is a decrease on the demand of labor, however, the various empirical analysis done, shows how this possible effect is overwhelmed by the others.

At the same time, evidence about employment from more developed countries are mixed, however, according to Hale and Xu (2016), the studies indicate that FDI may have a negative effect on employment due to labor-saving technologies usually introduced by horizontal FDI (more knowledge and capital intensive) but in the long run may have a positive effect due to increasing labor productivity.

With regards to the perception of skills, we have to take into account that if FDI brings training and formation for their workers, they are usually addressed to the skilled part of the developing country's labor force, widening the gap of skills and having also a negative influence on intergenerational mobility.

Passing to competing firms, the most likely affected are those operating in the same industry and in the same geographic area. First, the effect of FDI is weaker on domestic firms than on target firms. Especially for developing economies, there is evidence of positive technology, wages and productivity spillovers. This because FDI leads to an increase in the demand for the skilled labor

force, which being characterized by an inelastic supply function, leads to an increase in wages. The effect on wages is mainly driven by the competition for local workers. However, this general increase of wages in competing firms is also linked to the presence of positive technology spillovers. In particular, technology spillovers towards domestic firms can occur thanks to various channels such as the labor mobility from the target firms, where workers are better trained and can bring with them knowledge and others technical skills, then also they can occur due to an imitating process or as a response to the increase of the competition, especially if FDI takes the form of greenfield investment, in the market where the foreign firms are operating, finally trade and commercial relationship between foreign and domestic firms is another possible channel.

With regards to the evidence from advanced economies, they are more mixed about the presence of positive or negative spillovers, highlighting the importance of the technological gap and the scarce supply of skilled labor.

Another important aspect to analyse regards vertical spillovers, that means that we have to take into account the possible effects on the firms that are before and after the target firm in the supply-chain. Here evidence is scarce and more ambiguous, there is the possibility that occurs vertical spillovers towards upstream industries and so an increase of the demand of skilled labor and in turn higher wages or the possibility that thanks to the likely increase of the target firm's production, and so an increase of the demand of input, there is an increase of demand of labor and can lead to an improvement of the domestic suppliers' efficiency and again an increase of wages. At the same time, target firms could choose to use foreign suppliers, having negative effects. For downstream industries, it is likely to gain from higher quality and lower prices of the product produced by the target firms.

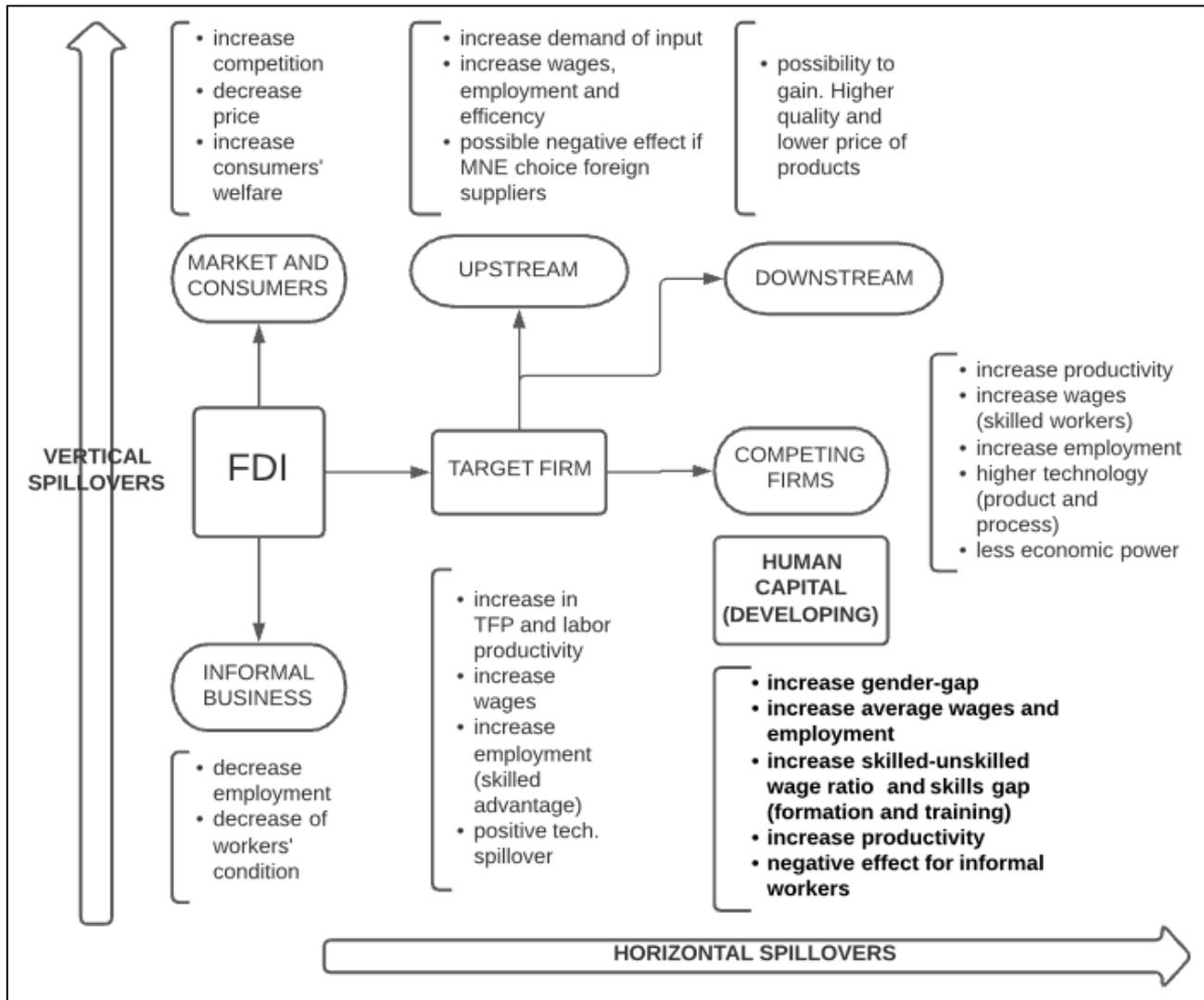
To conclude the analysis of spillovers, various empirical works confirm the theory according to the importance of absorptive capacity, especially in the absorption of knowledge transfer, and the importance of the characteristics of the FDI (motives) in the creation and magnitude of positive spillovers.

Finally, the theory suggests taking into account the role of MNE's activities with regards to the informal sector, especially with regards to developing and less developed economies where it is spread. The impact is linked to the requirements about product and working conditions that suppliers (not only the closer) of MNEs have to meet. These requirements are usually impossible to meet by informal businesses causing a decrease in their operations, which in turn lead to worse the condition of informal workers that are already at the bottom of the income distribution and also living conditions.

Moreover, another important aspect that has consequences on the income distribution of the host countries is linked to the gender inequality. Especially for developing and less developed countries, initially, efficiency-seeking FDI fostered female employment, this because female employment was the cheapest low-skilled labor force and at the same time the most productive. Their wages were very low, and this was socially accepted as their limited access to training, education and labor rights. Then, when also efficiency-seeking FDI become characterized by more skills required the demand for female labor decreased, considering that in these economies, on average, women are less educated and trained than men.

In conclusion, FDI may have a positive or a negative effect on income distribution in accordance with the direction of MNE's wage premium and employment creation, if it is addressed to skilled labor FDI tends to increase income inequality while if it is addressed to unskilled labor FDI tends to decrease income inequality. Employment creation that seems to be, at least, more addressed to skilled workers, while the positive impact for unskilled workers is weaker and could be also negative. This has to be summed to the fact that the use of labor with respect to capital may be higher or lower with respect to domestic firms, so can lead to the opposite effect on income distribution. Moreover, we have to take into account the possible indirect effects of FDI on inequality, such as its positive effects on growth. Now that we have a clearer idea about the effects of FDI in the host country, we can pass to review the theories that try to answer in the specific if FDI tends to increase or decrease income inequality in the host country, especially if it is a developing economy.

Figure 2.5. FDI effects on the host economy.



Source: Personal elaboration.

2.2.2. Literature Review

There is a theoretical framework that suggests that the relationship between inward FDI and income inequality is non-linear. This theoretical argument is based on the modernization theory, even if modernist scholars did not address directly that FDI could reduce inequality, their position emerged from their consideration of foreign and domestic capital as homogeneous goods (Tsai, 1995). According to King and Váradi (2002), modernization theorists identify in FDI the ideal mechanism for the diffusion of capital, markets and knowledge that in turn leads to development. The main concept is that an output must be created before redistributing it. They focus their attention on the direct and spillovers positive effects of FDI on the host economy, like the transfer of technology,

know-how and managerial skills, employment creation, enhancement of competition, productivity and growth. They argue that over time those benefits, that how we saw before are initially addressed to high-skilled workers, will be spread throughout the whole economy. So, the income inequality initially generated due to the skill-premium paid in favor of skilled workers is considered as a “necessary” condition before everyone can enjoy the positive effects of FDI inflows in the host country. For example, in their model, Aghion and Howitt (1998) take into account learning and skill upgrading in the process towards a higher level of technologies in the host country. They considered FDI as a mean for introducing new technologies in developing economies and noticed that in the short run income inequality increases while as more FDI flows into the economy, income inequality decreases leading to an inverted-U shape curve as the Kuznets one between inequality and level of development. According to Aghion and Howitt (1998), there are two stages of development and inequality, the skill premium between skilled and unskilled workers increases as long as learning efforts result in high demand for skills that are in short supply, that is when initially MNEs introduce new technologies into the host country, while in the long run, when domestic firms follow up by imitating the more advanced production used in MNEs, wage inequality will decrease due to the fact that also the supply of skills increases. How we will see in the next paragraph in the analysis of empirical works, some evidences in this direction are founded by Figini and Gorg (2011).

In general, this theoretical framework does not consider important the “provenience” of capital, but only the fact that it is present inside the country. So, FDI as domestic capital does, fosters growth, thus it is not considered important if this growth initially is focused on some sectors, on some labor-category or on some activities because in the long-run the whole system will enjoy the benefits generated.

Against the implicit consideration of the modernization theory, dependency theory has some specific criticism about the effect of FDI on the distribution of income of the host country. Dependency theory argues and sustains the harmfulness of FDI on the host country and with regards to inequality, it states that FDI inflows increase it, especially when FDI flows to less developed countries. This theory

argues that a country's relative position in the world economy plays a key role in determining its income distribution, in particular put the attention on the relations between core and peripheral countries. More in specific, in less developed countries the industrialization process together with the presence of FDI leads to the formation of a new social class of "international workers" that has higher wages and other higher social benefits with respect to domestic workers (Tsai, 1995). According to Reuveny and Li (2003), the beneficiaries are usually skilled workers and usually, it is also promoted unemployment among unskilled workers. So, according to this perspective, FDI tends to create disparities and dualism within the host country, leading to an increase of income inequality. Another argument emerging from this theory is that usually these "workers elites" strive for maintaining their privileges, and in this process, they are helped by the fact that usually, they are powerful actors of the state organization. State that has the power to affect market and production and is usually sustained by foreign credit. According to Evans (1979), these three actors form a sort of economic alliance that has not the objective to reduce inequality but tends to maintain those privileges.

Another theoretical framework addressing the relationship between FDI and inequality is the traditional trade theory, in particular in the 2 by 2 skilled/unskilled labor variant of the Hechscher-Ohlin model, FDI inflows should increase inequality in the generator country (more advanced) and decrease income inequality and accelerate growth in developing countries, often characterized by abundant low-skilled workers with low wages, by inducing the specialization in less-skilled activities in the host country, and so, increasing the relative demand of low-skilled workers and offering also higher wages than informal and rural sectors.

There are two main problems with this theory, one is the fact that in developing and less developed countries the perception of skilled and unskilled activities is different from the perspective of developed countries, so even if from the perspective of the investor he is using low skilled labor, actually he is using the skilled part of the host country's labor force, then lately the skill demand for efficiency-seeking FDI is increasing, so these two problems enforce each other and can to some extent

explain why the evidence show that FDI to developing and less developed countries tends to increase inequality.

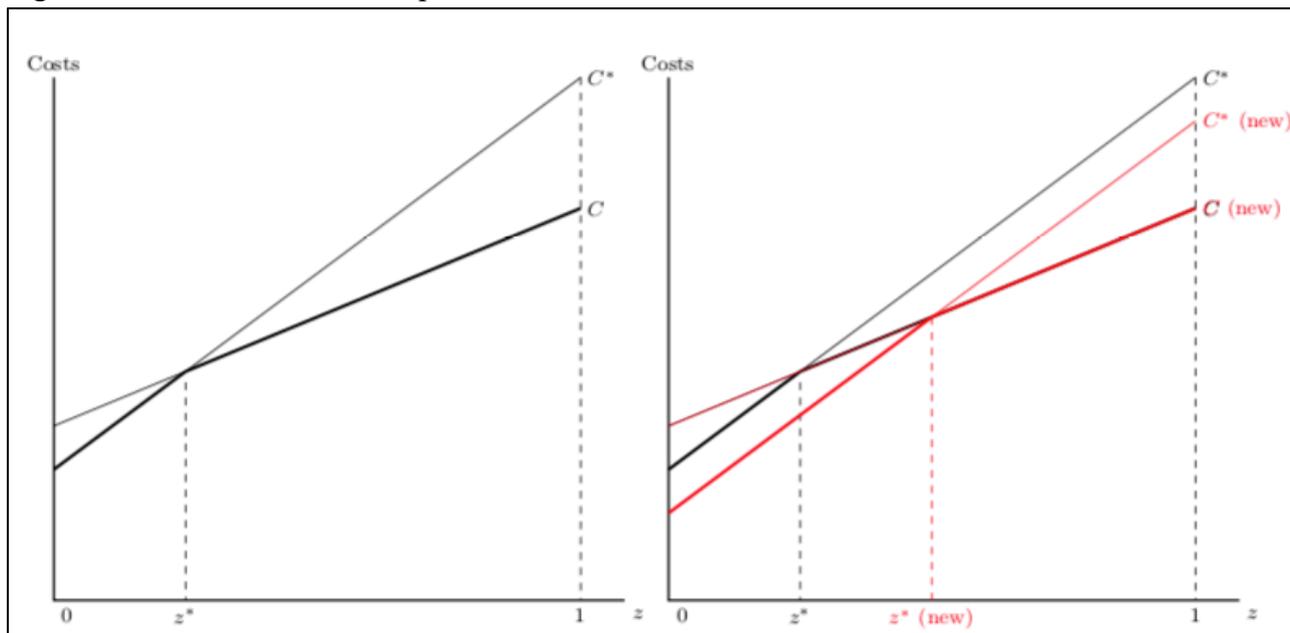
Furthermore, how we will see in the next chapter in the analysis of inequality in Latin America, a region characterized by an abundant less skilled labor force, evidence shows the opposite.

Seen the evidence from developing countries, in contrast to the traditional trade theory, emerged a model by Feenstra and Hanson (1997) based on the North-South model, that examined the impact of FDI on wage inequality and seen the large contribution of wages to income can be extended to income inequality. It is important to analyse this model due to the fact that the following empirical part of this thesis has its focus on the FDI's effects on developing countries. In the North-South model, it is considered a world economy where there is a single final good in the manufacturing sector and two countries (north and south). Each country has given endowments of capital, skilled labor, and unskilled labor, North is specialized in activity skill intense while South is specialized in unskilled activities. The initial condition, without international factor mobility, is that the return of capital in the South is higher than the return of capital in the North, then also the ratio between skilled and unskilled workers' wages is higher in the South. The final good is assembled from a continuum of intermediate inputs that vary in terms of the relative amounts of skilled, unskilled labor and capital used in production. What happens is that MNEs from the North are encouraged by the relative low-cost labor in the South to undertake vertical and cost-saving oriented FDI to offshore unskilled labor-intensive activities. The problem is that from a South perspective the activities offshored by North's MNEs are skilled-intensive and so, actually is the relative demand of skilled workers that increase that in turn leads to an increase in the wage inequality. In addition, we have to take into account that is common that foreign enterprises pay higher wages with respect to domestic enterprises (Overseas Development Institute, 2002), and the differentials are even more marked for non-production workers (teVelde, 2003).

Now I am going to shows deeply a model to explain this theoretical framework. The model is stylized by Hang and Xu (2016) and is a useful interpretation and it is very close to the model created by

Feenstra and Hanson. It is useful for this thesis because they considered a world economy with two countries Home and Host (*), where the Home country more advanced and larger than the Host, so it is a situation that can fit the scenario of the empirical works of this thesis where Latin America and The Caribbean are represented by the Host country while the 5-top investors in Latin America in 2018 were United States, Spain, Netherlands, Ireland and Canada can easily be represented in the model by the Home country. Each country has its endowments of capital (K, K^*) with its corresponding returns (r, r^*), unskilled Labor (L, L^*) and its wages rates (w, w^*), skilled labor (H, H^*) and its wages rates ($w\alpha, w^*\alpha^*$). The coefficient α is the skill premium and it is assumed to be higher than 1 because they take into account that skilled labor requires an extra compensation. In the initial situation without FDI, $r^* > r$ and $\alpha^* > \alpha$. Both countries produce intermediate goods z in order to assemble the final consumption good C , using capital, skilled and unskilled labor. If we rank intermediate goods from 0 to 1 according to the ratio between skilled and unskilled labor required to produce z , the ratio is an increasing function of z . Then, seen that $\alpha > 1$, also the cost to produce C is an increasing function of z as it is possible to see in the figure 2.6. Then in presence of trade of intermediate goods, the production is placed where intermediate goods cost less, that means that from 0 to z^* the intermediate products are produced in the Host country while from z^* to 1 they are produced in the Home country. In this equilibrium, there are a higher skill premium, a higher ratio of skilled to non-skilled employment, and higher average wages in the Home economy than in the Host. With the presence of FDI (capital) from the home to the host country, r^* decrease while r is not so much influenced. As a consequence, the cost of producing intermediate goods in the Host country decrease and so there is an increase of z^* , meaning that more intermediate products are produced now in the Host country.

Figure 2.6. Cost function of the product C with and without FDI.

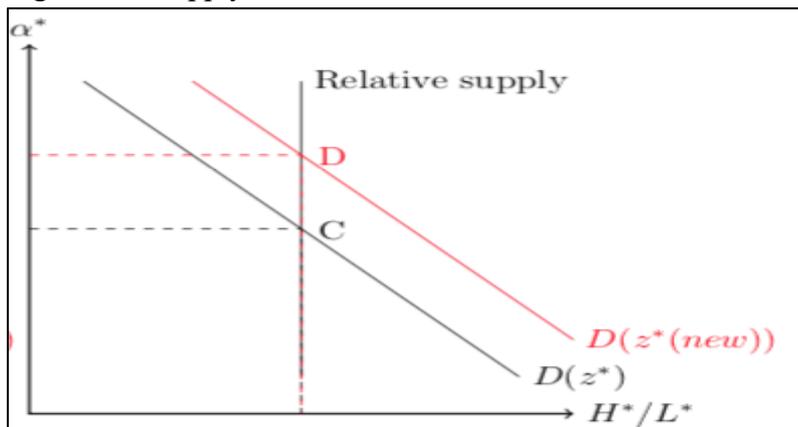


Source: Hale and Xu (2016). FDI effects on the labor market of host countries.

This increase in the production of intermediate goods leads to an increase in the employment in the Host country and to an average increase of wages. Moreover, the new parts of intermediate products produced in the Host country are more skill intensive and so, there is an increase in the demand of skilled labor. This increase in the demand of skilled labor may have a different effect depending on the elasticity of the supply of skilled labor, that in developing countries, or in general in the short-term is usually inelastic (Figure 2.7). So, is likely to see an increase in the skill premium and in turn an increase in the wage inequality. To sum-up, the model explains how FDI, especially towards developing countries, can cause an increase of the average level of the wages, an increase in the employment, in the demand of skilled labor and at the end thorough the increase of the skill premium an increase in income inequality.

The model uses capital transfer but it is possible to obtain the same conclusions using technology transfer and so an increase of productivity and then a decrease of the cost of production.

Figure 2.7. Supply function of skilled labor.



Source: Hale and Xu (2016). FDI effects on the labor market of host countries.

However, this model and also the model built by Feenstra and Hanson are less valid for FDI flows among developed countries, how we saw before in the first chapter, FDI among developed countries are usually horizontal, and so, they are not based on wages differentials, moreover, there is not the difference in the perception of skilled/unskilled activities. With regards to horizontal FDI, they usually occurred between countries with similar factor endowments and factors price, so usually between developed countries and only recently also between developing countries. For this reason, the distributional effects of horizontal FDI are even more difficult to predict and usually cause less concern among scholars and policymakers.

Here it is already possible to see why the analysis of the relationship between FDI and inequality is complex, these two types of FDI are likely to have different effects on the income distribution of the host country. To be more specific, Basu and Guariglia (2007) argued that FDI inflows in developing countries tend to increase inequality if low-skilled workers are not able to handle modern technologies, that means when the country is characterized by a low level of human capital that in turn emphasizes the role of education. If we think that different sectors are characterized by different level of skill required, a possible consequence, is that more FDI flows to high-skill activities more it will worsen the income distribution, that means that for instance FDI addressed to the service sector would have a major impact on increasing inequality, especially in less developed countries or

developing economies such as Latin America, that is historically characterized by a low level of mass education.

So, according to this perspective, the effect of FDI on inequality, through the increase of the relative demand of skilled or unskilled workers, depends also on the level of economic, technology and education development of the host countries. Moreover, in the analysis on the effect on inequality in the host country, it is important to understand if the types of work created and used in the host country are skill intensive or not from the perspective of the host country and not the home. The hypothesis of this thesis is based on this perspective, in particular, the fact that the effect of FDI would be different in accordance with the skills required in the activities where they flow and the skills level of the workers in those activities, that in the empirical analysis of this thesis will be divided by sectors in order to understand if this hypothesis holds, at least for Latin American countries.

This theoretical literature review of about the distributional impact of FDI shows how this relationship could result ambiguous and complex to capture, in particular, if are analysed economies with different level of development, human capital and technology. So, there is not a single theory that could fit all the cases, and how we will see later, it is important to distinguish the different channels linking inward FDI and inequality.

In a few words, FDI may increase or decrease inequality, and so this relationship is difficult to be addressed theoretically.

In the following paragraph I am going to do an empirical review in order to go deeper in the understanding of which really happens in developing and developed countries and so to have the situation clearer.

2.3. EMPIRICAL LITERATURE REVIEW

Empirical works interesting on this relationship are not few, however, the results are not so conclusive and often lead to contesting views. So, even if the amount of empirical works is sufficient, results are mixed. However, empirical tests are needed in order to overcome possible composition effects. The first thing that emerges in the analysis of various empirical works is that, as happened in the theory, all the possible conclusions are present, which means that there are different works where FDI seems to have a positive relationship with income inequality, others found a negative effect and there are also works that have found an ambiguous or no effect of FDI inflow on income inequality.

Starting from empirical findings that confirm, in a certain sense, the modernization perspective about the negative relationship between FDI and income inequality, Firebaugh & Beck (1994) analyzed 62 developing countries in the period between 1965 and 1988, using FEM³ regressions. Then, also Alarcon & McKinley (1996) and Jensen & Rosas (2007), draw the same conclusion analysing Mexico, a middle-income country, respectively between 1989 and 1992 and between 1990 and 2000, so in the period after the Mexico's liberalization of FDI in 1990, using respectively OLS⁴ regression and 2SLS⁵ regressions. Moreover, Jensen and Rosas (2007), argued that flows of FDI can also be associated with a reduction of income inequality for less developed countries.

With regards to empirical works including also developed and less developed countries, also Im and McLaren (2015) concluded that FDI has a positive effect on reducing income inequality, they used a mixed sample of 65 countries from 1960 to 2010 and OLS indicates no relationship between inward FDI and the Gini coefficient, but correcting for the endogeneity of FDI produces results of a negative relationship that is significant both statistically and economically. More precisely, with regards to

³ Fixed effects model

⁴ Ordinary least-squared

⁵ Two stages least-squared

lower income developing countries, they find that the lower second and third population quintile enjoy the largest benefit in terms of income shares, while the highest quintile suffers a reduction.

So, according to these empirical works, there are not different effects according to the level of development, seen that both developing and developed countries are analysed separately and also mix samples have been used. Moreover, empirical works about developing countries seem to be in accordance with the Heckscher-Ohlin model.

As regards to confirming the hypothesis that FDI has a positive effect on inequality and so increases it, there are more empirical works. In particular, some of them focused on developing countries, Tsai (1995) used data about 33 developing countries in the period between 1968 and 1981, and found that FDI increases inequality especially in Asian countries, Dollar and Kraay (2001) used data about 73 developing countries in the period between 1975 and 1998 but they highlighted that trade liberalization does not increase income inequality, Basu and Guariglia (2007) used 119 developing countries in the period between 1970 and 1999 focusing in educational inequality, they find also that FDI tends to foster growth and that FDI and the share of agriculture to GDP are negatively related. Bogliacini and Egan (2017) used data about 60 developing countries in the period between 1989 and 2010 and later we will see more precisely what they found about sectors.

Here is possible to find evidence against the main argument of the traditional trade theory and in accordance with the model proposed by Feenstra and Hanson (1997), in fact from these empirical works emerges that FDI inflows have the opposite effect on inequality in developing countries, that in fact, increase.

With regards to Latina America, the focus of this thesis, both Velde (2003) and Suanes (2016) found the same positive relationship between FDI and income inequality, using respectively data from 1985 and 1998 and from 1980 to 2009. Both authors noticed that the main cause of this greater inequality is that FDI tends to take part in high-skilled activities and sectors, widening the relative wages gap. In addition, also Herzer, Hühne and Nunnenkamp (2012) find a positive relationship between FDI and income inequality both on average and individually in Bolivia, Chile, Colombia, Mexico and

Uruguay, using panel cointegration analysis. In particular, they find that FDI contributed to widening income gaps in all individual sample countries, except for Uruguay.

Then, other empirical works without a focus on developing countries reached the same conclusion, for instance, Choi (2006) found that an increase of FDI stocks (as % of GDP) increase income inequality without distinguishing between developed and developing countries using pooled data from 1993 to 2002 for 119 countries or Reuveny and Li (2003) that founded that FDI increases income inequality analysing 69 countries (developed and developing) in the period between 1960 and 1996. With a focus only on developed countries, Taylor & Driffield (2005) analysed the role of MNEs in affecting wage inequality in the United Kingdom in the period between 1983 and 1992 using GMM regressions, and they find that FDI led to an increase in the wage inequality. More precisely, they find that over the period analysed, FDI activity explains on average the 11% of wage inequality. Therefore, according to this group of empirical works FDI seems to tend to increase inequality without having different effects according to the level of development.

Another confirms about the complexity and ambiguity of this relationship came from empirical works that did not find any relationship like Sylwester (2005) that used a sample of less developed countries between 1970 and 1989 and he did not find a strong association or Milanovic (2005) that used a sample composed by low, middle and high-income countries.

Other empirical works that found mixed and interesting results, for example in the work done by Figini and Gorg (2011) FDI increased inequality in developing host countries but diminishes with further increases in FDI, while inequality decreased in advanced host countries (OECD countries), they used both Gini and Theil index and data were about 100 OECD and no-OECD countries in the period between 1980 and 2002, however even if they did not find robust evidence of non-linear effect they find results in accordance with the theoretical framework that suggests that the effects of FDI differs according to the level of development and to the education level of the labor force of the country.

Another example is the empirical work done by Couto (2018), where the results suggest that on average FDI tend to increase inequality, however, when are analysed the effects according to the level of development emerged that for low-income countries FDI inflows tend to decrease inequality while for middle- and high-income countries FDI inflows tend to increase inequality. The impact is stronger for middle-income with respect to high income inequality. The underlying reasons are identified in the fact that low-income countries are actually abundant of unskilled labor workers and FDI mostly take part in low-skilled sector and so here is possible to see the predictions of the traditional trade theory. With regards to middle-income/developing countries seems to hold the model predicted by Feenstra and Hanson (1997), which means that the sectors considered low-skilled intensive by MNEs are actually high skilled intensive from the perspective of the host country. Finally, the increasing effect of FDI on inequality in high-income countries is less strong due to the fact that these economies are in a higher stage of technological, educational and social development.

In conclusion, even if the majority of empirical works analyzed confirm that FDI increases income inequality, it is impossible to take them for truth. For example, Alarcon & McKinley (1996) and Jensen & Rosas (2007) argue that there is a negative relationship, at least for Mexico, covered together the period between 1989 and 2000 and used OLS regression, but at the same time, Feenstra & Hanson (1997) using OLS and IV⁶ regression, draw the opposite conclusions. It is likely that FDI effects on inequality depend on different factors due also to the fact that how we saw before, FDI has different channels to affect the host economy and so, to affect income inequality. So, using data from both developed and developing countries can give us a result strongly dependent on various opposing effect and using aggregate data about FDI could give us only general conclusions without highlighting which are the determinants to have a positive or negative effect on the income distribution. For example, Wu and Hsu (2012), using 54 countries (high, middle and low income) in the period between 1980 and 2005, argued that FDI could be harmful to the income distribution of those host countries

⁶ Instrumental variables

that have low levels of absorptive capacity while for countries with a better absorptive capacity FDI seems to have little effect on income distribution. Absorptive capacity in their empirical work has been used because they considered it an important factor for enhancing the efficiency of FDI and was represented by four indexes of infrastructure, that are: air transport, electric power consumption, telephone main lines and their composite infrastructure index (PCM), in addition also the initial GDP has been used.

What emerges from this literature and empirical review is a lack of the sectoral analysis. Even if is often recommended as a useful further investigation, there are little regards to the possible sectoral effects of FDI in the literature, more focused on aggregate and uniform analysis. Could seem strange do not consider a sectoral approach, seen both the various channels through FDI can affect the host economy and so inequality, the different types of FDI that can flow into an economy and the different sectoral composition about skilled and unskilled activities. It is important to understand if there is a relationship between FDI effects and sectors because in this way is possible to have a better understanding on which country or which type of economy is more likely to have a positive return in terms of equal income distribution, if it decides to attract FDI. However, in the last years, something is moving. With regards to developing countries, Suanes (2016) found evidence for a positive effect of FDI on income inequality in the service and in the manufacturing sectors for 13 Latina American countries, in particular the manufacturing sector presents the higher coefficient for the impact of FDI on inequality and the service sectors presents the most robust estimates, while Bogliaccini and Egan (2017) found that FDI in services is associated with more income inequality, FDI in the manufacturing sector seems to do not have a strong effect in increasing inequality and that FDI in the primary sector is not associated with inequality. They argue that service FDI usually contains a skill bias that in turn results in a wage premium for high-skilled workers and so tend to increase inequality, moreover, they identified in the high degree of polarization within the service sector another factor that can explain the increase of inequality due to service FDI.

Ascani (2018) analysed data about 15 European countries (highly developed economies) from 2003 to 2012 and found a significant negative relationship between FDI in the manufacturing sector and income inequality in the short-run and insignificant in the long-run, while its results on the service sector did not find a significant impact on income inequality. His interpretation is that the countries analysed have already a high level of technology development and use of mature technologies. Therefore, the demand towards higher skilled labor diminishes with further increases in FDI, implying that foreign investments may ensure that technologies become easier to use and more frequently available (Ascani, 2018). However, he could not test directly for the channels of skilled-labor demand.

Table 2.8. Empirical review on the relationship between FDI and inequality.

| Authors | Main findings | Data span | Empirical approach |
|---------------------------|--------------------------------|-------------------------------------|--------------------------|
| Firebaugh & Beck (1994) | FDI decrease income inequality | 62 developing countries (1965-1988) | FEM regressions |
| Alarcon & McKinley (1996) | FDI decrease income inequality | Mexico (1989-1992) | OLS regressions |
| Jensen & Rosas (2007) | FDI decrease income inequality | Mexico (1990-2000) | OLS and 2SLS regressions |
| Im and McLaren (2015) | FDI decrease income inequality | 65 mixed countries (1960-2010) | OLS and 2SLS regressions |
| Tsai (1995) | FDI increase income inequality | 33 developing countries (1968-1981) | OLS regressions |
| Feenstra & Hanson (1997) | FDI increase income inequality | Mexico (1975-1988) | OLS and IV regressions |
| Dollar and Kraay (2001) | FDI increase income inequality | 73 developing countries (1975-1997) | VAR regressions |
| Velde (2003) | FDI increase income inequality | Latin America (1975-1995) | OLS regressions |

| | | | |
|-------------------------------------|--------------------------------|--|-------------------------------|
| Taylor & Driffield (2005) | FDI increase income inequality | United Kingdom (1983-1992) | GMM regressions |
| Choi (2006) | FDI increase income inequality | 119 countries (1993-2002) | OLS regressions |
| Basu and Guariglia (2007) | FDI increase income inequality | 119 developing countries (1970-1999) | GMM and FEM regressions |
| Herzer, Hühne and Nunnenkamp (2012) | FDI increase income inequality | Bolivia, Chile, Colombia, Mexico and Uruguay | Panel cointegration analysis |
| Suanes (2016) | FDI increase income inequality | Latin America (1980-2009) | GMM and 2SLS regressions |
| Bogliacini and Egan (2017) | FDI increase income inequality | 60 developing countries (1989-2010) | VAR and ECM regression |
| Ascani (2018) | FDI increase income inequality | 15 European countries (2003-2015) | FEM regression |
| Sylwester (2005) | Mixed results | 29 developing countries (1970-1989) | OLS and FEM regressions |
| Milanovic (2005) | Mixed results | 89 countries (1985-1997) | GMM regressions |
| Figini and Gorg (2011) | Mixed results | Ireland (1979-1995) | GLS Regression |
| Wu and Hsu (2012) | Mixed results | 54 countries (1980–2005) | OLS and Threshold Estimations |
| Couto (2018) | Mixed results | Developed and developing countries (1990 – 2013) | OLS and 2SLS regressions |

Source: Personal elaboration from different sources.

3. LATIN AMERICA AND THE CARRIBBEAN

Before the analysis of Latin America's trend both of inequality and FDI, is useful begin with a socio-economic analysis of the area. First, the area is composed by South America, Central America and the Caribbean. It is composed by 41 countries, 12 belonging to South America, 8 belonging to Central America, and 21 are Caribbean's countries. LATAM, as usually is named, is a middle-income region. In this first part I collected some data about some determinants identified by the literature in order to understand the appeal of this region in attracting FDI, then I briefly present its sectors and finally I am going to focus on data and trends about FDI and Inequality to understand better the relationship that will be analyzed in the empirical part.

3.1. LATIN AMERICA AND THE CARIBBEAN SOCIO-ECONOMICS FEATURES

Population in Latin America and the Caribbean is 656,118,957 based on the last United Nations estimation, corresponding to 8.42% of the world population. In particular, in 2019 urban population weighted more than 80% of the total population. How it is said before, Latin America is a middle-income region, in 2019 GDP per capita (constant US \$) was 9578,7. So, even if is a middle-income region, the extent of the population and the percentage of the urban population make market size a significant and an appealing determinant to attract FDI. GDP growth annual was on average, -0.3% in 2016, 1.8% in 2017, 1.6% in 2018, 0.8 in 2019 and it is expected to decrease due to the pandemic crisis. Even if data are not bad, we cannot consider market growth the best features that attracted and will attract FDI in Latin America. In addition, Latin America is characterized by a stagnant productivity. To have a hint on the macroeconomic stability in Latin America, the inflation rate is increasing lately, it passed from 1.6% in 2016 to 3.2% in 2019, however, we have to take into account countries like Venezuela and Argentina that respectively have 88% and 26% of inflation. Labor costs in Latina America are low, making the region an appealing zone for cost-saving and efficiency-

seeking FDI. Latin America is characterized by a high level of corruption and it is also one of the most dangerous regions in the world, with one of the highest crime rates, something also connected to the high level of social and income inequality in the region. However, according to data from World Bank, CPIA (transparency, accountability, and corruption in the public sector rating) in 2019 was 3 that is a middle score. About human capital, in Latin America in the last five years, more than 80% of the working population have an advanced education. With regards to R&D, the average spending in Latin America is 0.7% while the average for OECD countries is 2.3%.

How it is said in the first chapter, resource availability is historically one of the main appealing traits in Latin America for FDI investments. What is interesting is that if we look at the path of the GDP coming from natural resources is similar to the path of FDI inflows, that means an increase from the twenties to 2011 and then a decrease until 2016 and again an increase. In particular, the extractive industry is appealing for FDI, due to the high volume of investments required and the few limits of export. Another important determinant could be the presence of free trade agreement, especially for MNEs with the objective to produce in one country and then, export from there. In Latin America are present intraregional agreements such as MERCOSUR, Andean Community, ALADI and MCCA, then extra regional agreements such as APEC and trade agreements with European Union, finally each country could have different bilateral agreements.

To sum up this section, through the data presented is possible to argue that resource availability remains the main reasons why MNEs invest in Latin America and the Caribbean together with the low labor cost, however, how it said before, also market size is becoming a significant determinant and also the possibility to exploit technologies that are not present in the region. This is something confirmed by a survey of European companies that revealed that the main reasons for investing in Latin America are market size and growth, cost of labor and efficiency gains, while at the end of the ranking there are political, social and macroeconomic stability and quality of infrastructure.

For a great number of countries in Latin America, agriculture is the reference sector, however, these countries are the less developed ones.

Agriculture in Latin America is characterized by a strong presence of MNEs with the objective of export. The reason for the importance of the primary sector is the richness of the underground. Moreover, a confirmation to what we will see later, lands are distributed in an unequal way. Latin American countries produce and export a great variety of agricultural products and they are responsible for about 16% of the world's production of these products. However, the primary sector in general, passed from produced more than 16% of GDP during the 1960s to 4.85% in 2019.

The mining sector was the most important economic engine in the colonial period in Latin America, however, is still fundamental for some countries such as Venezuela, Chile and Bolivia. Recently, with the increasing importance of Lithium in the global economy due to its use in the electronics sector (telephone, electric car), Argentina and Chile increase Lithium extraction. With regards to the manufacturing sector, it is important to highlight that 75% of the Latin American industrial sector is represented by Argentina, Mexico, Brazil and Chile. On average it represented 23% of GDP in 2019, remaining more or less constant over the last 10 years. Moreover, the secondary sector is linked in major to the transformation of the raw materials, that are abundant. We have to highlight that from the '80s there has been a deindustrialization process in Latin America, making it a natural resources supplier, again.

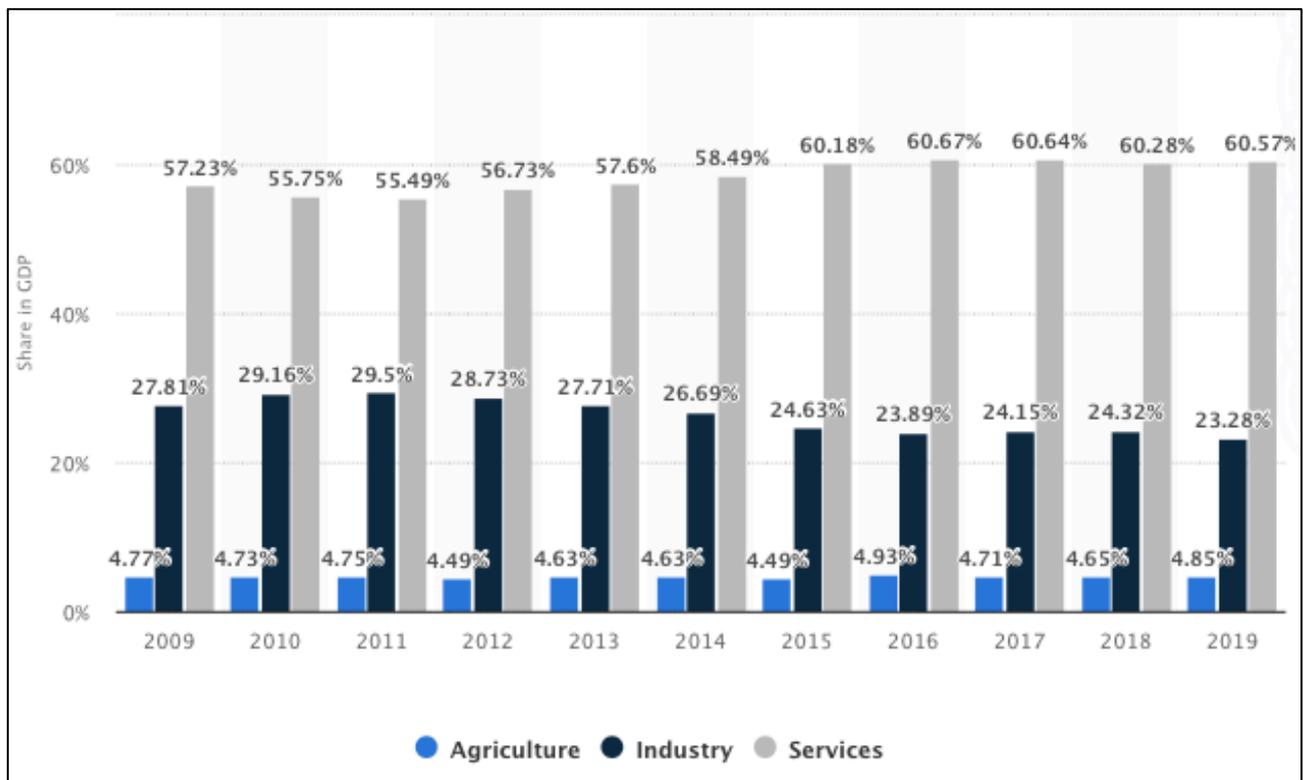
In the service sector, we have to mention tourism as one of the most increasing industries for importance and also for foreign participation, especially in the Caribbean, then it is followed by transport, especially in Panama and Peru. However, in general, it is the sector that contributes, on average, for the major part of the GDP, in 2019 more than 60% (Graph 3.1.), so it is the main economic activity of the region.

To understand better the economies in Latin America, they are strongly dependent on the export of raw materials and manufacturing products characterized by a low level of technologies. Moreover, the price of raw materials is not controlled by them, something that makes clear their sensitivity to external shocks. How I said before, Latin America is characterized by a stagnant productivity of the work, in 1950 a Latin American worker produced about 43% of an American worker, in 2018 about

26% (Nastasi, 2019). Another problem is that there are also great internal differences between high productivity sectors such as mining and energy and the average. The structure of the economy is composed for the 99.5% by micro, small and medium enterprises, that however, represents 61% of the workers and only 25% of the production. Big companies are concentrated in the high productivity sectors while the rest of the companies are concentrated in activity with a low productivity and a low creation of added value.

Another important thing to highlight is that the Latin American labor market is characterized by one of the highest skill gaps in the world, that means that FDI directed to skilled labor could increase easily that gap and consequently income inequality. Furthermore, there is a strong presence of undeclared and informal work.

Graph 3.1. Share of economic sectors in GDP (2009-2019) in Latin America and the Caribbean.



Source: Statista (2020)

3.2. INEQUALITY IN LATIN AMERICA AND THE CARIBBEAN

Latin America is and was one of the most unequal zones in the world, its high and persistent level of socioeconomic inequality is one of the principal features of the zone, to understand why it is necessary to analyse the historical causes of it. Moreover, Londoño and Székely (2000) argued that Latin America suffers from an excess of inequality with respect to its level of development. Inequality in Latin America regards income, wealth, assets, health, education and opportunities.

In this analysis, we have to take into account that quantitative data are limited until about 1870. Even for this, there are scholars such as Williamson (2015) that consider the fact that Latin American inequality has its roots in the colonial period a myth, they argue that inequality in Latin America became relatively high between 1910 and 1970, while before it did not present particular differences with respect to North America or Western Europe, and they think that is because Latin America missed the Great Egalitarian Leveling that took place almost everywhere else.

However, a major part of the scholars agrees on the importance of the historical causes and identify in the colonial period the roots of inequality in Latin America.

3.2.1. Historical causes of Latin American income Inequality from the colonial period to 1950

The presence of this extreme inequality is noticed soon after the Europeans colonized the Americas more than 500 years ago when European communities were advantaged over natives' communities with regards to economic opportunities, legal status and human capital. Once inequality was established it persisted, and one of the reasons was the continuing exploitation of Indian labor and resources. Even when, a century later the start of the colonization period, the Indian population was declined by 90%, that activity remained the preferable and the model remained the same also due to the fact that the native's labor force was substituted by African slaves (Ferranti, 2004). This activity was accompanied by a very unequal distribution of land and power, moreover, also mercantilist policies have contributed to the concentration of resources, profit, know-how and legal privileges in

the hand of the elites (Frankema, 2008). All this resulted in the development of institutions inclined to favor the interests of the elites, in fact, the colonial period was characterized by the presence of slavery, serfdom, various forms of bounded labor and restrictions on labor mobility (Frankema, 2008). With regards to the post-independence period in the 19th century, seems that even if most of Latin America obtained independence from Spain and Portugal, this had little or no effect on inequality, actually inequality seems that has increased in the following decades. The main reason was the high level of disparities in resources, inherited from the colonial period, that permitted easily to the elite to control these “new” independent countries, and so determine, again, institutions that were inclined to favor the interests of the elite while a major part of the Latin America population had only limited access to economic opportunities (Ferranti, 2004). Another important factor is that education did not represent an important feature for the labor force, on the contrary, was viewed as an undesirable process, so education could not play its potential positive role against inequality in that period. Even if this thesis is focused on economic inequality, we have to take into account that political inequality and economic inequality are interconnected, both cause and are caused by each other. In the 19th century as in the colonial period, political power distribution was highly unequal. The elite was able to influence government policies, both using informal and formal channels, for example, we have to take into account the absence of secret ballot and the limitation on who had the right to vote based on wealth and literacy.

From the late 1800s until the First World War in Latin America there was a rapid increase in inequality. There are various reasons, the first is the boom of Latin American commodity exports and the consequent economic growth, in the period between 1870 and 1915 Latin America became a major world supplier of agriculture commodities, this together with the situation described above brought a major part of the benefits and profits to flow to the elites, in particular to the land elites (crops and minerals). This could represent one of the reasons why the nature of economic growth matters on the path of inequality and not the rate and the size of the economic growth. At the same time the expansion of education did not affect inequality, this because it has occurred later than in the

rest of the New World, Europe and Japan and because of the very low quality of the mass education, to understand better is enough to think that acceptable levels of grade promotion and school completion were achieved only around 1920/1930. Then, there was also a very monopolized financial market, for example in Mexico in 1910 there were 42 banks and two of these controlled more than 60% of total banking assets (Ferranti, 2004), and without the access to the financial market, it is less likely that poor people could improve their income and their economic condition. Another aspect that remained essentially unchanged was the political inequality, it is important to highlight the prevalence of authoritarianism in Latin America and the fact that where democratization has taken place in the region was usually unconsolidated.

In the interwar period, it is likely that inequality decreased, it was mainly due to the stop of the “globalization” and so the declined in the world trade. However, there are other reasons, for example, in this period most Latin American countries (especially the most advanced) put in place labor-orientated policies, that contributed to improve the rate between wages and land profits and at the same time contributed to increase the political participation. Inequality in Latin America rosed in the 1930s and according to Frankema (2008), the increase was due to a failure of Latin American governments in the complementation of redistributive policies with policies to redistribute assets (lands) and remove factor market imperfection. So, Latina American countries were characterized by structural weakness and they also did not improve the quality of mass education, this did not change the unequal composition of skill in the labor force that in turn fostered the polarization of income.

3.2.2. Causes and trends of income Inequality in Latin America from 1950 to 2019

What we have seen until now shows why in 1950 Latin America was characterized by the presence of high structural inequality (Cornia, 2012). This structural inequality depended on various factor, the first is the very unequal land distribution, in numbers, the Gini coefficient about land distribution in Latin America in 1950 ranged from 0.61 in Mexico to 0.93 in Paraguay (Frankema, 2009), second, there was an unequal distribution of human capital, as we saw before, due to both low quality of mass

education and a limited access to education for the poor, then other important things are the low level of labor mobility that is very important in the persistence of inequality and the persistence political inequality that characterized the region. In the 1950s, the Gini coefficient for the income distribution in Latin America ranged between 0.47 and 0.65.

From 1950 to 1980 is possible to see a general moderate decreasing trend of inequality, mainly due to import-substituting industrialization, urbanization and an increased role of the government with the introduction of income tax and some redistributive policies. In particular, there was a substantial decrease of the inequality in Argentina, Uruguay, Venezuela and Costa Rica. However, according to World Bank, in the 1970s, on average, the bottom 20 percent in Latin America shared the 2.9% of total income while the richest 10 percent shared more than 40% of total income that were respectively the lowest and highest value compared with other developing countries.

From the 1980s inequality in Latin America increased again, this period was characterized by a slowdown in job creation with the consequent increase of unemployment, then a shift of the labor market towards informal sectors (low productivity and low wages), minimum wages fell and the gap of wages by educational level increased. In the same period, started the process of the liberalization of international trade (FDI included), leading to an increase in income inequality in the region (on average) at least until the first years of the twenties. According to Cornia (2012), one of the main reasons for this increase in the 1980s and in the 1990s is named “skill bias technical change”, that essentially means that due to trade liberalization there was an increase of the demand of skilled workers with consequently increase of their wages while this did not happen to unskilled workers. Gasparini and Lustig (2011) associate the increase of inequality in this period also to macroeconomic crisis and market-orientated reforms, together with the fact that Latin America was characterized by weak labor institutions and weak social safety nets. During the 1980s the Gini coefficient increase in almost all Latin American countries; however, it is important to say that not only the income share of the poor fell but also the middle-class share, which fell in a more marked and disproportionately way. At the same time, the share of the top 10% increased substantially.

From the late 1990s and the early 2000s (depending on the country) is possible to identify a widespread decreasing trend of income inequality in Latin America, that is the only region in the world characterized by this generalized fall. Obviously, each country has its drivers if inequality decline, however, it is possible to identify some likely common drivers (Cornia, 2012; Lopez-Calva, Lustig and Monga, 2016; Gasparini and Lustig, 2011). First, the gap between the earnings of skilled and unskilled workers have fallen and there was a more progressive allocation of government spending (in particular money transfer) towards the poor. In turn, the former seems to be linked to the improvement of the external conditions such as the macroeconomic situation of the region, the expansion of basic education (rise of educational investments) and the improvement of labor institutions. While the latter was due to the introduction of transfer programs. In general, there was an improvement in fiscal and labor market policies and more attention was put on social issues, all these factors have been confirmed by a recent empirical work done by Clifton, Diaz-Fuentes and Revuelta (2019). The importance of policies in the decreasing trend of inequality in Latin America is confirmed by an empirical work done by Tsounta and Osueke (2014), according to them, policies explained more than 50% of the decline and in particular investments in education and tax revenue were the mainly drivers.

3.2.3. Focus on Inequality of opportunities

In this paragraph, I am going to show some data about the Human Opportunity Index presented in the previous chapter and that will be used in the following empirical analysis. Data for Latin America and the Caribbean (LAC) are updated to 2014. First, I am going to analyse the data divided by basic opportunities and then I will go deeper analysing the circumstances affecting them.

On average LAC's HOI for finished primary school in 2014 was 71,99 and the countries with the most unequal distribution were Guatemala, El Salvador, Colombia and Honduras while Mexico, Argentina and Uruguay had the most equal distribution. HOI for electricity was 90,90 and the countries with a value under 80 were only Guatemala and Nicaragua. LAC's average for Internet was

very low, 19,12 with any countries recording values over 50 and with Nicaragua and Guatemala recorded value under 3. HOI for mobile phone was 89,08 with all countries performing quite the same, the lowest value it is registered by Mexico. HOI for sanitation was 65,44 and Bolivia, Guatemala and El Salvador had the lowest values. HOI for-school enrollment was 94,23 with only Guatemala and Honduras with values under 85. Finally, HOI about water was 62,5 with Argentina, Chile and Costa Rica with the highest values and Bolivia, Nicaragua and El Salvador with the lowest values. The overall HOI on average for the region in 2014 was about 70 while in 1995 was 64 and in 2010 was 73, showing an increasing but slow trend. It is estimated by Barros (2012) that the region will reach universalized basic opportunities in 2034. To understand why it is said that LATAM was also characterized by a high level of inequality of opportunities, even the countries that score the best in the region, are far from reaching values of Europe and North America, especially regarding the quality of education and the gap is mainly explained by how services are distributed and not by the coverage.

Table 3.2. LAC's HOI average divided by basic opportunities.

| Basic opportunities | LAC's Average HOI |
|----------------------------|--------------------------|
| Finished primary school | 71,99 |
| Electricity | 90,90 |
| Internet | 19,12 |
| Mobile phone | 89,08 |
| Sanitation | 65,44 |
| School enrollment | 94,23 |
| Water | 62,50 |

Source: Personal elaboration from LAC's Equity Lab data.

With regards to D-index, so the influence of circumstances on the equal/unequal distribution of these basic opportunities, on average for finished primary school the circumstances that matter most is parent's education followed by gender of the child and per capita income and quite the same is valid for school enrollment where the only difference is that the gender of the child matter less. For both

basic circumstances, Guatemala, El Salvador and Nicaragua had the highest influence by parent's education. For electricity seems to be the location (local/rural) to matter the most, followed by per capita income. With regards to internet, location, per capita income and parent's education had more or less the same importance while the other circumstances are very marginal. The same seems to be true for mobile phone, however here per capita income seems to have the highest influence. For sanitation, the highest influence is exercised by the location followed by per capita income. Finally, for water, the circumstance that matters the most is location, followed by per capita income.

In conclusion, on average in Latin America and the Caribbean, finished primary school, internet, sanitation and water are the basic opportunities for which the circumstances at birth matter most. Then, the circumstances that on average have the highest degree of influence are parent's education, per capita income and location. The countries that have the lowest HOI are Nicaragua, El Salvador, Guatemala and Honduras while those that have the highest HOI are Argentina, Costa Rica, Mexico and Uruguay.

3.2.4. Some numbers about Latin American Inequality

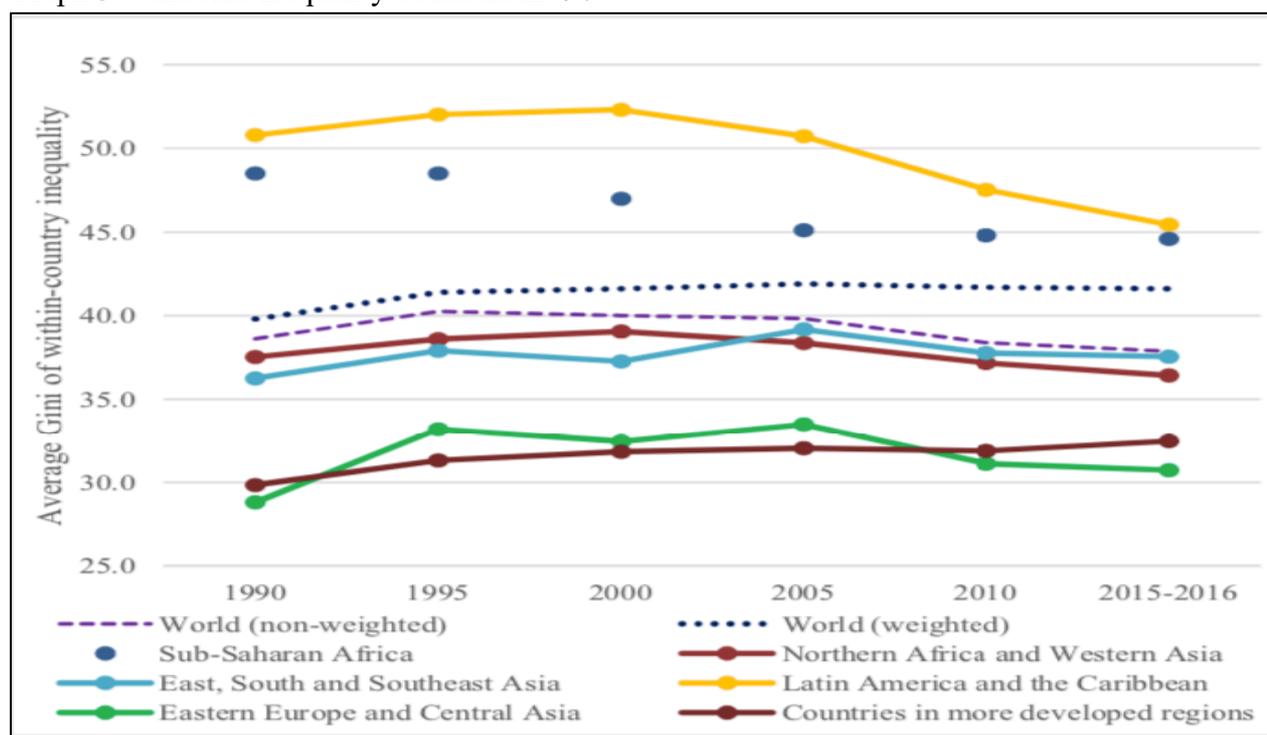
In the Table 3.3 and in the Graph 3.4 it is possible to see how Latin America presents, historically, the highest value of the Gini Index in comparison with the rest of the world, despite the decreasing trend highlighted before. Moreover, it presents inequality both in wealth and opportunities, these characteristics make it the most unequal region of the world. In the table below it is evident, in all the decades analysed Latin America was the most unequal region.

Table 3.3. Average Gini Coefficient by region.

| | 1960s | 1970s | 1980s | 1990s | 2000s | 2010s | 2015 |
|--|-------|-------|-------|-------|-------|-------|------|
| Latin America and the Caribbean | 53.2 | 49.1 | 49.7 | 52.2 | 52.1 | 48.8 | 45.2 |
| Africa | 44.7 | 45 | 41.8 | 42.5 | 42.8 | 44.3 | 41.5 |
| East Asia and Pacific | 37.4 | 39.9 | 38.7 | 38.1 | 37.7 | 37.4 | 37.5 |
| OECD | 35 | 34.8 | 33.2 | 33.7 | 32.5 | 32.8 | 33 |
| Eastern Europe and Central Asia | 30.7 | 29.3 | 30 | 30.4 | 31.5 | 30.7 | 31 |

Source: Personal elaboration, Velde (2003), DESA (2019), WIID database.

Graph 3.4. Income inequality trends from '90.



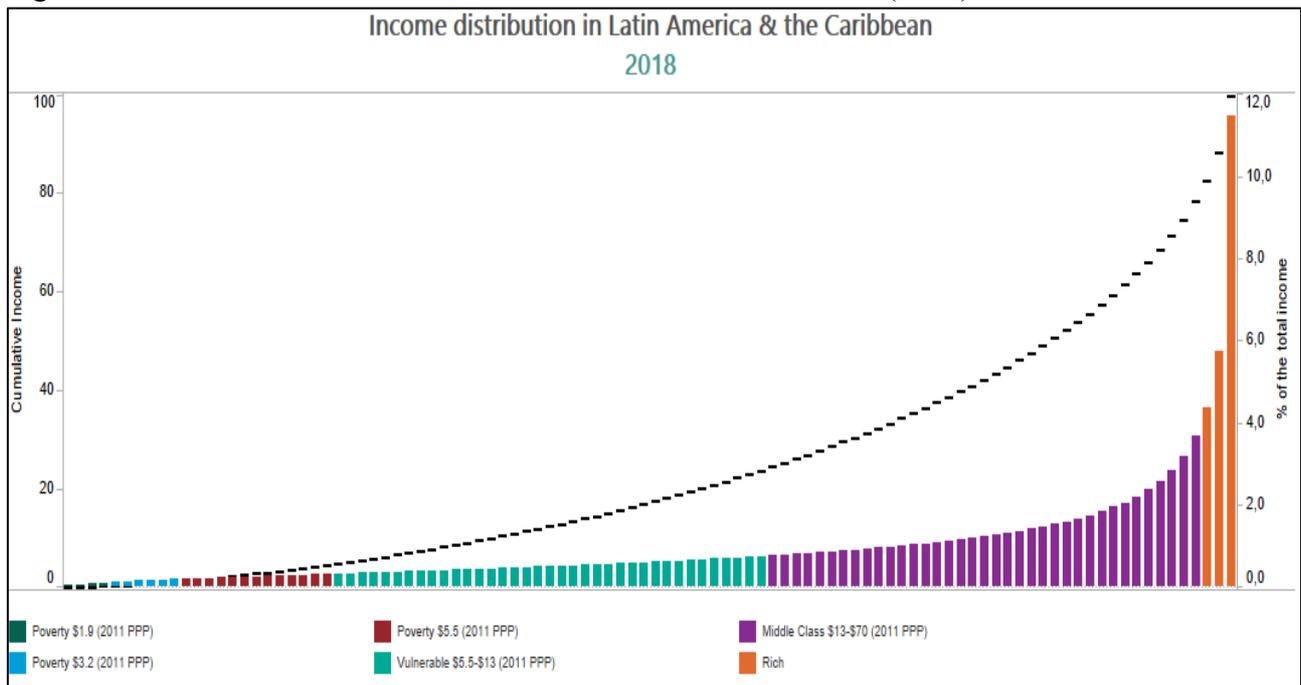
Source: Income inequality trends: the choice of indicators matters, DESA (2019)

In the Figure 3.5 is showed the income distribution by centile in 2018, it is evident how in Latin America and the Caribbean the 97 centile belongs to the middle-class (from 61st centile) and its share is 3.7 % of the total income. The 60 centile belongs to the vulnerable-class and its share is 0.8% of the total income. The richest 3 centiles have more than 20% of the total income that is the cumulative

share of the bottom 55% of the population and in particular, the top 1% has more than 11% of it, the same of the bottom 39% of the population. We have to arrive at the 70th centile to find a centile that has at least 1% of the total income. From the shape of the cumulative share of the total income, it is possible to see how in Latin America and the Caribbean income inequality has mainly to do with the top, in fact, is evident how the difference between the richest and the middle class are greater than the difference between the middle class and the poorer, however, even that difference is present.

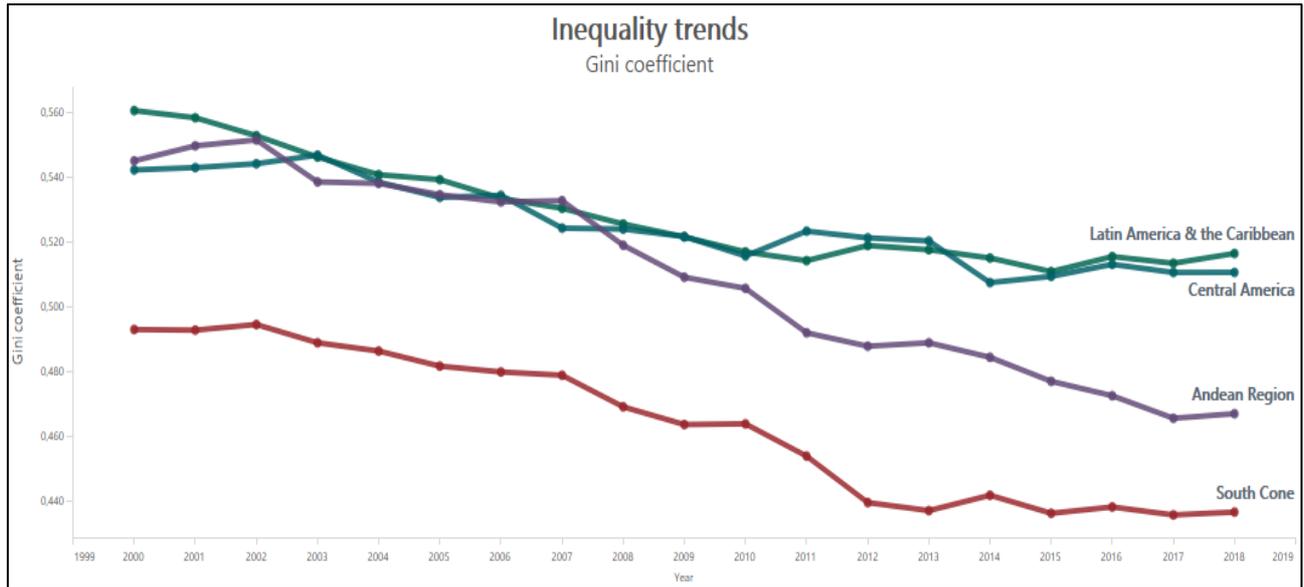
In the Figure 3.6 is possible to see how income inequality measured by the Gini coefficient is decreasing on average in Latin America and the Caribbean, however shows how the level of income inequality differs among zones and how they have not the same decreasing pace, in fact on average LATAM passed from 0,561 in 2000 to 0,516 in 2018 (-8%), Central America passed from 0,542 in 2000 to 0,511 in 2018 (-5,7%), the Andean region passed from 0,545 in 2000 to 0,467 in 2018 (-14%) and finally the South Cone passed from 0,493 in 2000 to 0,437 in 2018 (-11,4%). It is important to point out that on average from 2017 to 2018 the Gini coefficient for LATAM slightly increased (+0.6%).

Figure 3.5. Income distribution in Latin America and the Caribbean (2018)



Source: LAC Equity Lab Tabulation of SEDLAC and WDI (2018).

Figure 3.6. Inequality trends in LATAM divided by zones.



Source: LAC Equity Lab Tabulation of SEDLAC and WDI (2018).

In the Table 3.7 is possible to see data about inequality regarding single countries in Latin America. Analysing these more specific data emerge how inequality not only differ from different part of the world but also within a region or a continent, in this case within Latin America. In fact, even if, more or less all the countries are characterized by high values of the Gini coefficient, in 2018 it is possible to identify countries such as Uruguay, Argentina and El Salvador that recorded the lowest scores, while Brazil, Colombia and Panama with the highest scores and the other that are positioned in the middle. According to Velde (2003), in most Latin America's countries inequality is higher in urban than in rural areas.

With regards to the general trend, how it is said before, inequality is decreasing on average from 2000, in fact if we compare data about 2000 and 2018 only Costa Rica and Venezuela registered an increase. In particular, Brazil passed from 60.5 in 1990 to 54 in 2018 or Chile that passed from 57.2 to 45.4 in 2017, then also Ecuador and Nicaragua have recorded an important decrease in the Gini coefficient, respectively about 15% and 20%. However, on the other hand in other countries like Venezuela and Paraguay inequality increased substantially.

Table 3.7. Income inequality in Latin America's countries over the period 1990-2018.

| | 1991 | 1995 | 2000 | 2005 | 2010 | 2015 | 2018 |
|---------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Argentina | 46.8 | 48.9 | 51.1 | 48 | 44.5 | 41.8 | 39.6 |
| Bolivia | 49.1 | 57 | 61.6 | 58.5 | 47.6 | 46.7 | 43.8 |
| Brazil | 60.5 | 59.6 | 58.7 | 56.3 | 53.3 | 51.9 | 54 |
| Chile | 57.2 | 54.9 | 52.8 | 49.5 | 46.5 | 44.4 | |
| Colombia | 51.5 | 56.9 | 58.7 | 53.7 | 54.7 | 51.1 | 52 |
| Costa Rica | 46.6 | 45.7 | 47.4 | 47.5 | 48.2 | 48.4 | 49.3 |
| Ecuador | 53.4 | 53.4 | 56.4 | 53.1 | 48.7 | 46 | 45.4 |
| El Salvador | 54 | 49.9 | 51.5 | 48.5 | 43.5 | 40.6 | 40.5 |
| Honduras | 51.9 | 55.5 | 55.5 | 59.5 | 53.1 | 49.6 | 48.1 |
| Mexico | 53.7 | 54.5 | 52.6 | 50.1 | 47.2 | 47.5 | 47.5 |
| Nicaragua | 57.4 | 57.4 | 53.5 | 48.8 | 43.9 | 46.2 | |
| Panama | 58.2 | 57.8 | 56.8 | 53.8 | 51.6 | 50.8 | 49.8 |
| Paraguay | 40.8 | 58.2 | 54.6 | 51.4 | 51 | 47.6 | 47.4 |
| Dominican Republic | 51.4 | 47.4 | 51.5 | 50 | 47.3 | 45.2 | 44.4 |
| Uruguay | 40.2 | 42.1 | 43 | 44.7 | 44.5 | 40.1 | 39.1 |
| Venezuela | 42.5 | 47.8 | 48.2 | 52.4 | | | |

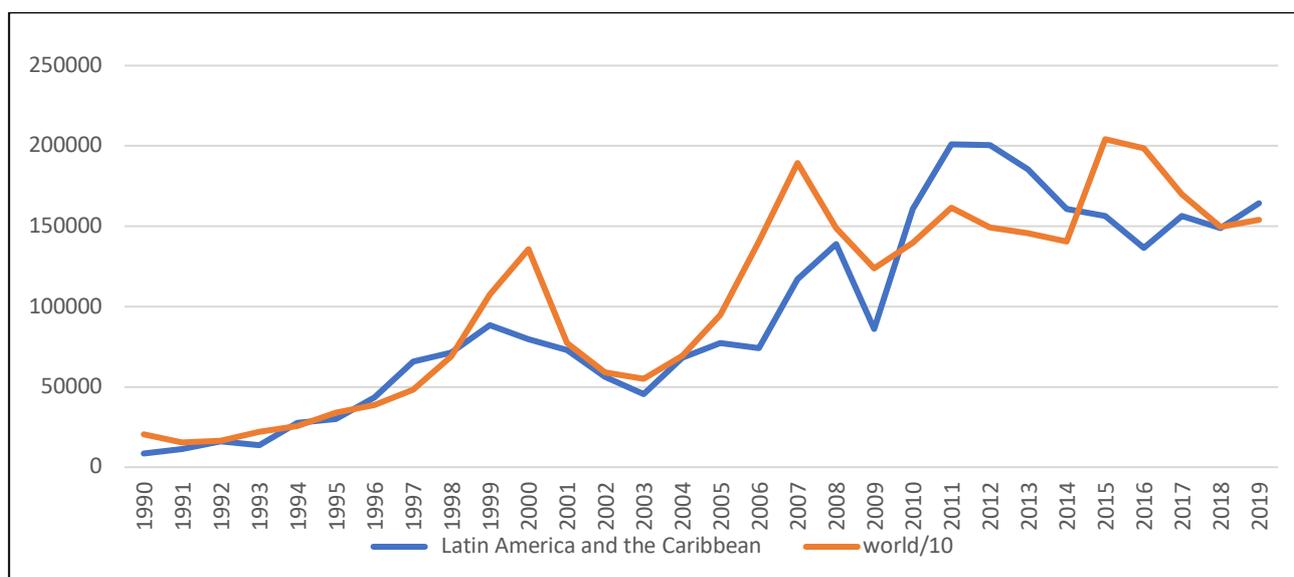
Source: Personal elaboration from World Bank database.

In conclusion, despite the fact that from the 2000s is the only region that presents a decreasing trend of inequality, Latin America remains one of the most unequal regions of the world. If we consider the main drivers of inequality identified in the previous chapter, this cannot be surprising. In fact, in sum, Latin American countries are historically characterized by an unequal distribution of land, low level of the quality of education and low level of social mobility, low quality of institutions, a high level of political inequality, and poor market labor regulations. However, from the 2000s something is moving, even if it is likely that the region will suffer from an increase of inequality due to the pandemic crisis.

3.3. FDI TRENDS IN LATINA AMERICA AND THE CARRIBBEAN

The first thing that is important to highlight is that the data that I used for this section came mainly from the UNCTAD database, and they do not include fiscal centers. In the graph 3.8 is presented the path of FDI inflows in Latina America and the Caribbean, the first thing that emerges is that it presents a similar path of the world's FDI inflows analyzed in the first chapter, here the global value of FDI is divided by 10 in order to compare these two trends. FDI inflow in Latin America started to grow in 1990 after the reform that increased the “openness”. Even here two great drops are evident, one in 2003 and one in 2009. However, is possible to see the speed recovery that happened after the crisis in 2008, in fact in 2011 FDI inflows in Latin America reached their maximum value, \$ 200 Bn. After 2011, is possible to identify a decreasing trend until 2016, reaching \$ 136 Bn, that is a 35% decrease with respect to the 2011. Then, seems to start an increasing path until 2019, even if is expected to halve in 2020 due to the pandemic crisis. Another thing to say is that according to UNCTAD statistics, from 1990 to 2018, FDI inflows in Latina America have had a higher annual average growth with respect to the world's average, respectively 10.7% and 6.8%.

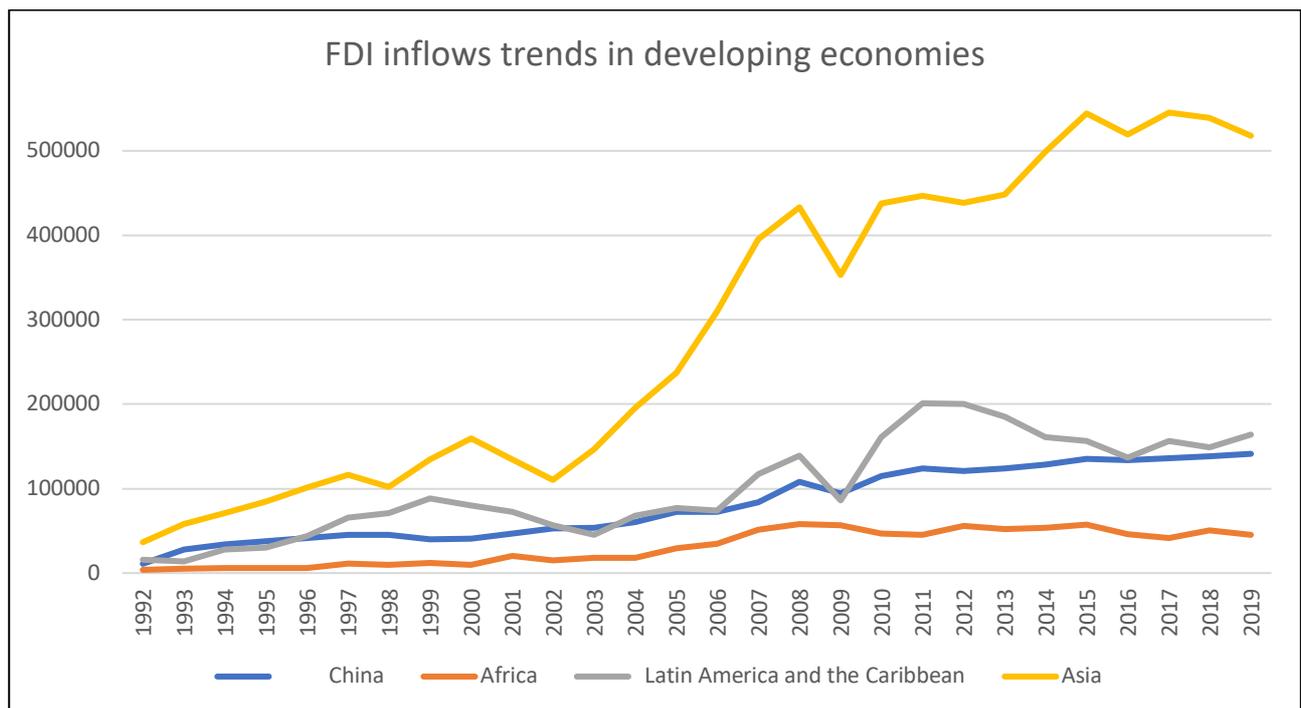
Graph 3.8. Fdi inflows from 1990 to 2019 in Latin America and the Caribbean and in the world (divided by 10).



Source: Personal elaboration of UNCTAD statistics

In the Graph 3.9 is possible to compare FDI inflows in Latin America to other developing economies. Asia is clearly the region that attracts the greatest amount of FDI, however, Asia is the region that also has the highest annual growth rate of FDI inflows, about 11.5%. It is possible to argue that the main factor that has influenced this growth was and is China that in absolute value attracts more or less the same amount of FDI that are attracted by Latin America. Another interesting thing is that from 2008 FDI inflow in Asia increased in a substantial way, reaching in 2019 \$ 517 Bn, more than three times the value reached in Latin America, and more than 11 times the value reached in Africa. Africa that despite the small amount in absolute terms, from 1991 has had an annual average growth of 9.5%.

Graph 3.9. FDI inflows in some developing economies from 1992 to 2019.

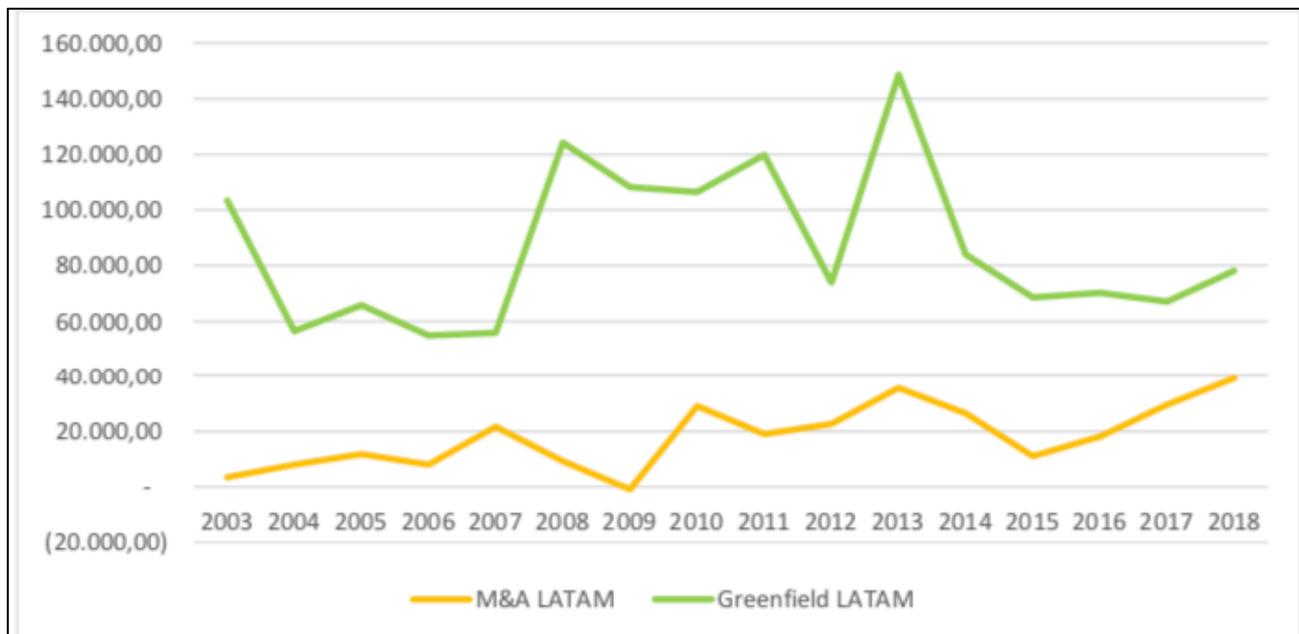


Source: Personal elaboration of UNCTAD statistics.

In the Graph 3.10 there is the confirmation of the importance of greenfield investments and their domination with respect to cross-border M&A in FDI inflows in Latin America. Even if they present a similar path, in absolute terms the value of greenfield investments has been always higher than M&A, however, after 2015 it is possible to see a quite convergence trend. The increase in M&A in

recent years is mainly due to operations done in Brazil, which has also the first position in attracting greenfield investments.

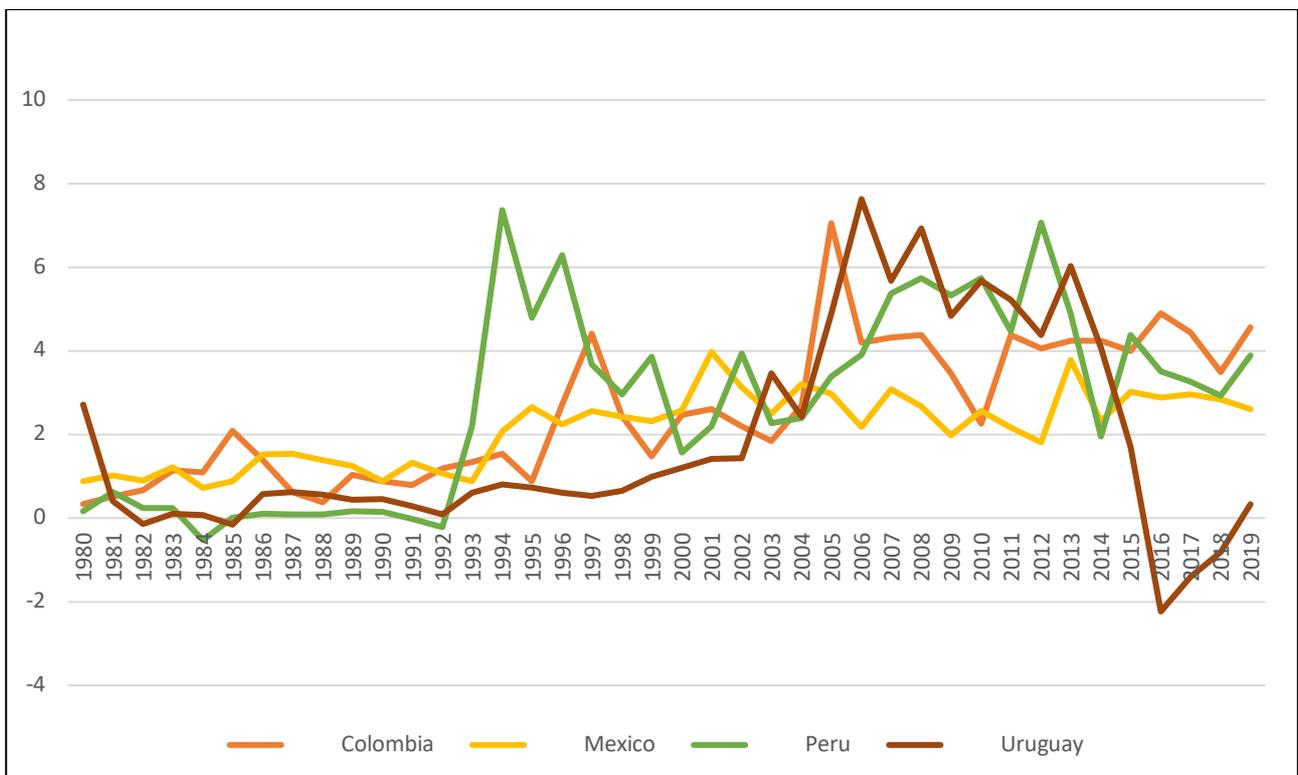
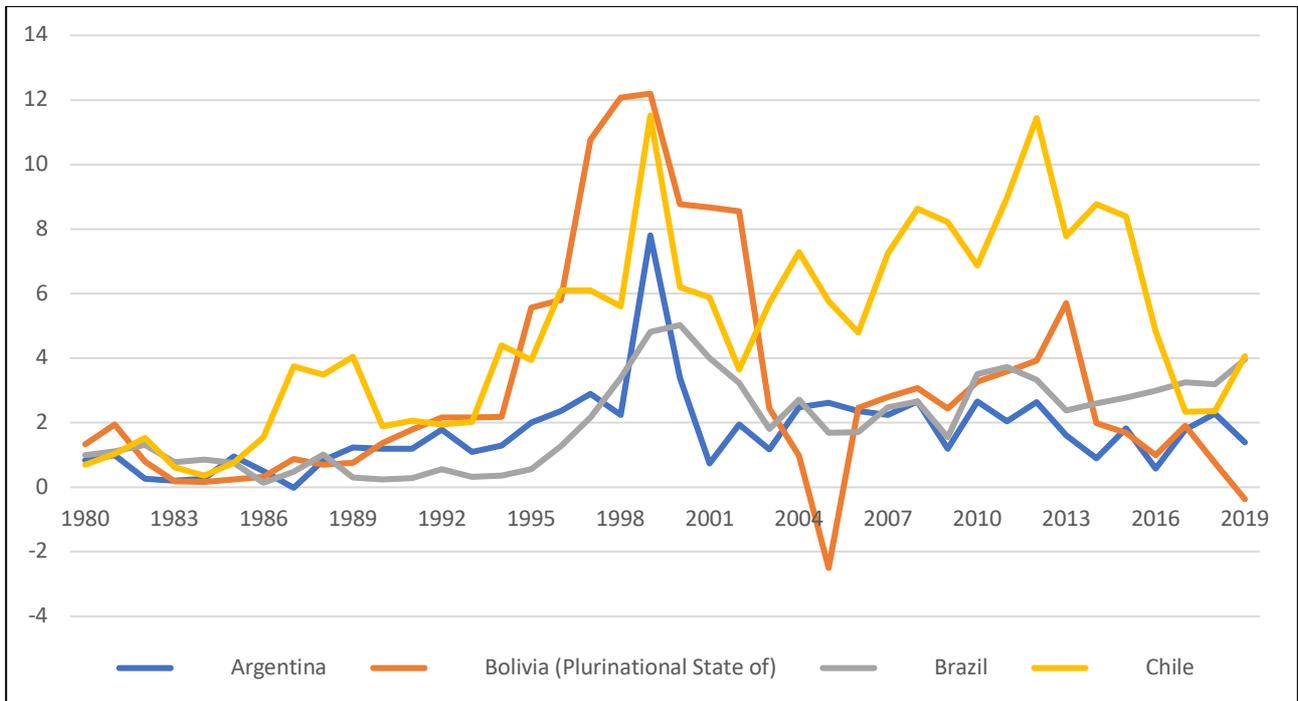
Graph 3.10. Greenfield and M&A in Latin America from 2003 to 2018.



Source: Personal elaboration from UNCTAD statistics.

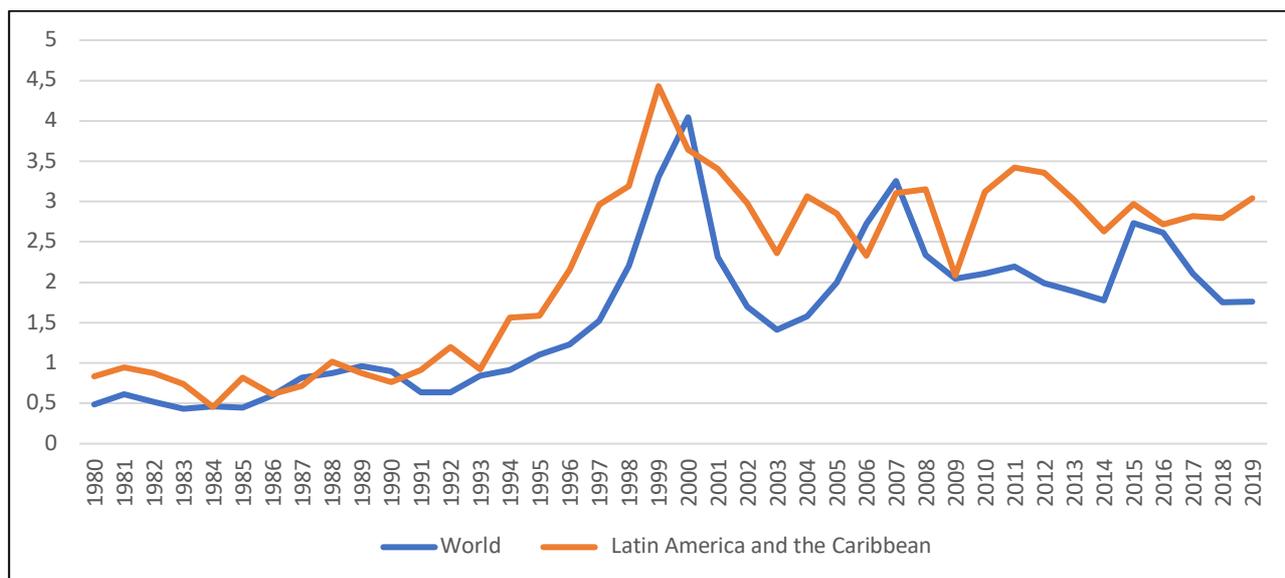
In the Graphs 3.11, 3.12, 3.13 and 3.14 are presented data about some Latin American countries, from the 3.14 emerges the leader position of Brazil, in absolute terms, in attracting FDI, followed by Mexico and Chile. Then, emerges that the countries selected presented different path in the period analyzed, both in absolute terms (Graph 3.14) and if they are analyzed as a percentage of GDP. From the Graph 3.13 emerges that Latin America recorded a similar value of FDI inflows if calculated as a percentage of GDP, however in 2019 it attracted FDI that are equal to 3% of GDP while the world's average is almost the half. In particular, from 2004 to 2013, Chile, Colombia and Uruguay registered the highest values as a percentage of GDP. However, in 2019 the highest value is recorded by Colombia and it is 4.6%, followed by Brazil and Chile with about 4%. There are three countries that in 2019 have a value below the world average, they are Argentina, Uruguay and Bolivia. In particular, Uruguay and Bolivia have negative values.

Graph 3.11 and 3.12. FDI inflows as % of GDP in some Latin America and the Caribbean countries, 1980 to 2019.



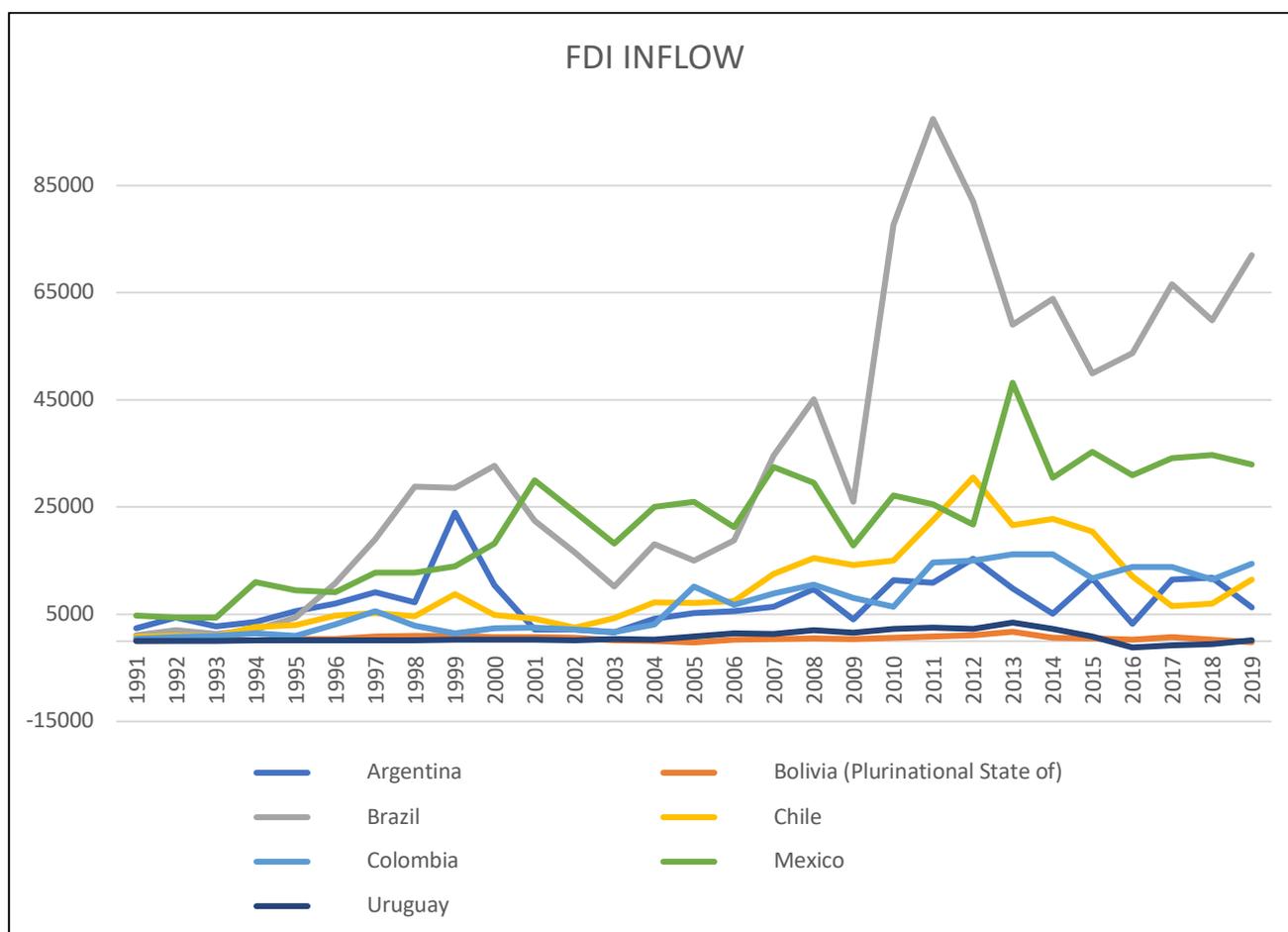
Source: Personal elaboration of UNCTAD statistics.

Graph 3.13. FDI inflows as % of GDP on average in the world and in LATAM, 1980 to 2019.



Source: Personal elaboration of UNCTAD statistics.

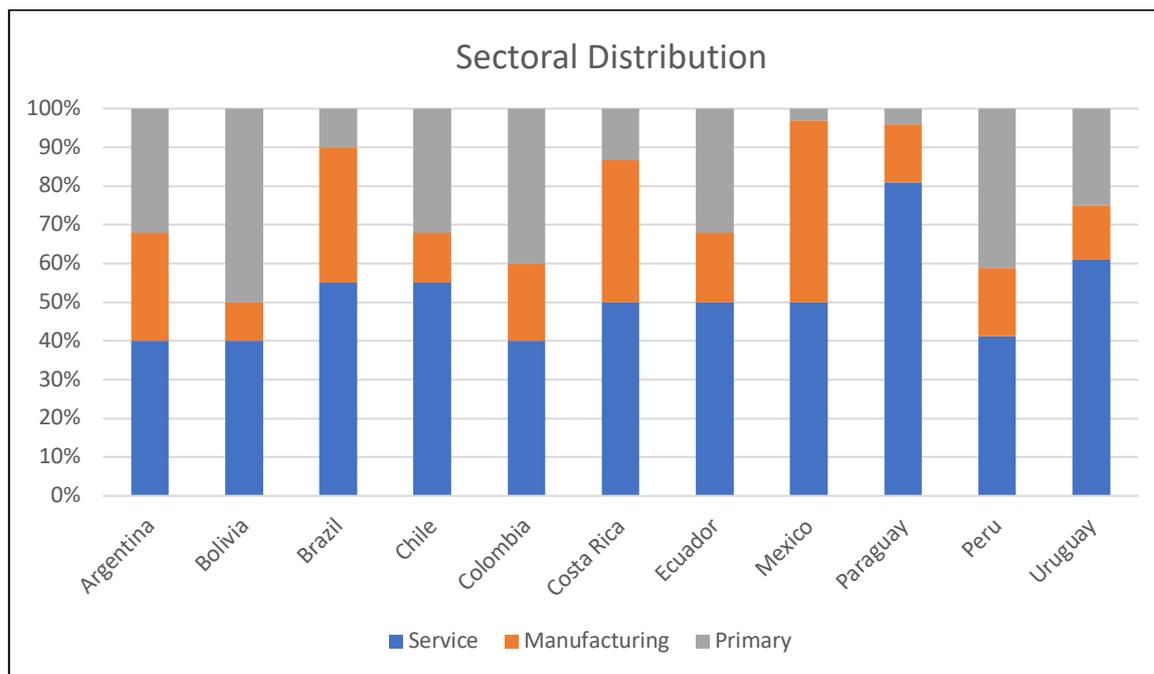
Graph 3.14. Fdi inflows in some countries in Latin America and the Caribbean from 1991 to 2019.



Source: Personal elaboration of UNCTAD statistics.

To conclude this historical analysis, in the Graph 3.15 is possible to see the sectoral distribution of FDI in Latin America in some countries. What emerges, on average, is a service dominance as a percentage of GDP, followed by the manufacturing and then the primary sector. Moreover, differences between countries are clear, for example, Bolivia and Peru are characterized by a strong presence of FDIs in the primary sector while in Mexico and Paraguay they are almost not present. In addition, FDI in the manufacturing sector are relevant in Argentina, Brazil, Costa Rica and strongly in Mexico, then it is important to highlight the strong service dominance in Paraguay. From this graph emerge that there is a sort of relationship between the weight of the sectors on the GDP and how they attract FDI.

Graph 3.15. FDI sectoral distribution as % of GDP, 1980-2010 averages.

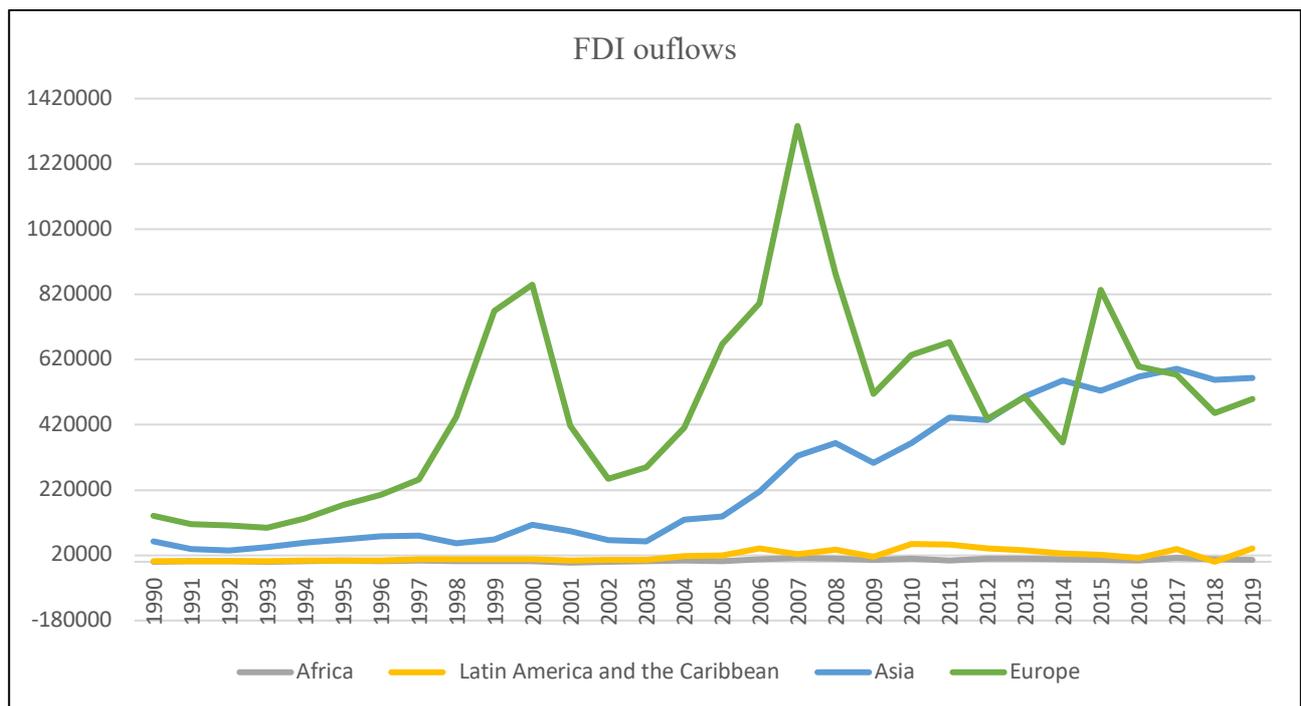


Source: Personal elaboration from Suanes (2016).

To conclude, according to UNCTAD data, outflows from Latin America have been always minor than inflows, in particular, the difference increase a lot from 2010, mainly due to the continuing decrease in the outflows. In the Graph 3.16 is possible to see how different the trend of FDI outflows is from Latin America to the inflows, the total value is similar to Africa and it is very far from the

level of Europe and Asia. How I said before, from 2010 there is a decreasing trend, in fact in 2010 FDI outflow was \$ 54 Bn while in 2016 was about \$ 10 Bn, however from 2018 the trend change direction and in 2019 there was \$ 41 Bn of FDI outflows. Unfortunately, the projections for 2020 due to the pandemic crisis are not good and a substantial decrease is expected.

Graph 3.16. FDI outflows produced in World, Africa, Latin America and the Caribbean, Europe from 1990.



Source: Personal elaboration from UNCTAD statistics

3.3.1. Focus on financial centers

Here I am going to focus on the financial centers in Latin America, with a short analysis of their FDI flows. With regards to FDI, the most important centers are the Cayman Islands and the Virgin Islands both for inflows and outflows. If we consider data from UNCTAD statistics, emerges that inflows in the financial centers from 2000 are about the half of the whole Latin America region, and the outflows from the financial centers are higher than those coming from Latin America. The last important thing to conclude this short analysis is that a major part of the investments arriving in the financial centers is reinvested abroad, then in numbers in 2018 FDI inflows were both about \$ 100 Bn.

3.3.2. 2019 trends and 2020 projections

In this paragraph, I am going to focus on the 2019's data. In particular, about inflow and outflow, top investor and top host countries, sector preferences about both greenfield and cross-border merger and acquisition, and some projection for 2020. First, outward FDI by Latin American multinational enterprise increased to \$42 billion. In particular, the most active countries were Brazil (\$ 15.5 Bn), Mexico (\$ 10.2 Bn), Chile (\$ 7.9 Bn), Colombia (\$ 3.2 Bn) and Argentina (\$ 1.6 Bn). Brazil, Mexico and Chile recorded an increase with respect to 2018, in particular Chile increased its FDI outflows by 2753%, while Colombia and Argentina recorded a decrease respectively by about 40% and 12%. According to UNCTAD report (2020), this increase had to do mainly with the reduction of negative outflows and supported by falling interest rate. Moreover, also intraregional flows increased in 2019.

With regards to inflows, in 2019 they increased by 10.3% in Latin America and the Caribbean, reaching \$ 164.2 Bn. This amount of inflow represented in 2019 the 10.7% of the world's amount. In particular, in 2019, the top 5 host economies in Latin America and the Caribbean were Brazil with \$ 72 Bn, Mexico with \$ 32.9 Bn, Colombia with \$ 14.5 Bn, Chile with \$ 11.4 Bn and Peru with \$ 8.9 Bn, then all these countries, with except to Mexico where inflow decreased by about 5%, registered an increase in FDI inflow beyond 20% with respect to 2018. According to UNCTAD (2020), the top 5 investors in Latin America in 2018 were United States, Spain, Netherlands, Ireland and Canada, maintaining their position from 2014, so it is possible to identify a sort of constancy. With regards to the differences in greenfield and M&A in the Figure 3.17 is possible to see the amount and the sector where they are directed both in 2018 and 2019. From these data emerge that the services sector has been chosen as the preferred destination of FDI, both greenfield and M&A and both in 2018 and 2019. In 2019, FDI in the service sector represented more than 50% of the total for greenfield investments and more than 80% of the total value of M&A. However, greenfield investments in the service sector increased by 64% with respect to 2018, while in M&A there was a decrease of about 16%. The service sector is followed by the manufacturing sector both in 2018 and 2019, the same is

true for both greenfield and M&A. The manufacturing sector represented more than 35% of greenfield investments in 2019, and about 12% of the total M&A. As happened to FDI in the service sector, also in the manufacturing sector there was an increase in greenfield investments (+56%) and a decrease in M&A (-71%). With regards to the primary sector, it represented in 2019 the 7% of greenfield investments and 6% of M&A. This sector from 2018 to 2019 suffered by a decrease in both greenfield and M&A. In conclusion, in 2019, the entry mode preferred by the investor was greenfield investment, that was about \$ 112 Bn, while M&A was about \$ 24 Bn. Moreover, greenfield increased by 40% with respect to 2018 while M&A decreased by 40%.

Figure 3.17. Greenfield and M&A (inflow) in 2018 and 2019, divided by sector.

| Sector/industry | LAC as destination | | Sector/industry | Sales | |
|--|-----------------------|----------------|--|---------------|---------------|
| | 2018 | 2019 | | 2018 | 2019 |
| Total | 78 520 | 112 315 | Total | 39 148 | 23 854 |
| Primary | 13 445 | 8 026 | Primary | 6 237 | 1 491 |
| Manufacturing | 26 320 | 41 204 | Manufacturing | 9 429 | 2 706 |
| Food, beverages and tobacco | 4 250 | 3 147 | Food, beverages and tobacco | 2 063 | 1 042 |
| Paper, printing and packaging | 1 598 | 5 526 | Chemicals and chemical products | 6 987 | 193 |
| Basic metal and metal products | 2 348 | 4 405 | Pharmaceuticals, medicinal chemicals and botanical products | 108 | 311 |
| Motor vehicles and other transport equipment | 6 676 | 10 087 | Services | 23 482 | 19 657 |
| Services | 38 755 | 63 084 | Electricity, gas and water | 9 040 | 11 331 |
| Electricity, gas, steam and air conditioning supply | 8 008 | 25 701 | Trade | 483 | 393 |
| Transportation and storage | 5 579 | 8 270 | Transportation and storage | 2 019 | 4 016 |
| Accommodation and food service activities | 7 506 | 6 691 | Information and communication | 8 384 | 1 014 |
| Information and communication | 8 264 | 9 272 | Financial and insurance activities | 2 265 | 1 826 |
| Financial and insurance activities | 3 169 | 3 626 | Business services | 728 | 690 |

Source: World Investment Report, UNCTAD (2020)

According to the World Investment Report 2020 (UNCTAD, 2020), FDI inflows are expected to decrease by 50%. In particular, data on the number of announced greenfield investments for the first quarter of 2020 shows a decrease of 36%. As it has been said in the first chapter about the different impacts on sector, also in Latin America the pandemic crisis will affect the sectoral distribution of FDI inflows. It is likely that commodities, due to both falling price and lower volume of export,

tourism, mainly in the Caribbean and Central America, and transportation will be the most affected. In the manufacturing sector, automotive and textile will be suffering both in demand and supply. Announced greenfield investments in automotive decreased by over 73%, while the textile industry, fundamental for the poorest countries, found some relief from the production of masks and other medical gears, however, it remains several affected. There are few and isolated positive effects, regarding in major part medical supplies, for example, announced projects for manufacturing medical devices increased by 30% in the first quarter. Another positive signal came from renewable energy, in particular in Brazil. In the region, in the first quarter of 2020 announced projects regarding renewable energy increased by 12%, even if is likely that they decrease in the second quarter, as consequence of the general economic deterioration. With regards to cross-border M&A, in April the number is decreased by 78% with respect to the monthly average in 2019 (UNCTAD, 2020).

As we see in the global projection on the effects of the pandemic crisis, also in Latin America and the Caribbean, we have to highlight the importance of the reinvested earnings and their drop due to the general decrease of the margins. We have to take into account that for the major economies in Latin America, reinvested earnings counted more than 30% of FDI inflows, and in particular for Argentina, Mexico and Chile they counted more than 50%. If we take a look at the medium period, all depends on the extent of the economy contraction and its possible recovery. However, a lot depends on Latin America's partners, for example a good sign came from the speed recovery in China, if we consider that China is one of the most important importers of raw materials for Argentina, Brazil, Ecuador and Venezuela. In the other hand, the contraction in the United States will affect with major consequences Mexico, Colombia, and other countries in the Caribbean and in Central America.

4. EMPIRICAL WORK

After the definition and the analysis of FDI flows in the world, the concept of inequality and its relationship with FDI, here I am going to try to test empirically their relationship. In this chapter, I am going to perform two major empirical analysis, one about the income inequality and one about the inequality of opportunities. The two empirical analysis are focused on the role of FDI both in aggregate and disaggregate terms in its relationship with both types of inequality, in particular, the objective is to try to understand if FDI addressed to different sectors could have different effects on inequality. Moreover, within the two major empirical analysis there is also an attempt to understand the relationship between inequality of outcome and inequality of opportunities.

4.1. INCOME INEQUALITY AND FDI

The empirical model is based on the works done by Suanes (2016) and Couto (2018) in the choice of variables, database and methods. In particular, Suanes (2016) is focused on Latin America and The Caribbean and provides useful advice about databases where it is possible to find data about FDI's sectors differentiation that are not easily available. In order to capture the effect of FDI on income inequality two equations were estimated, the first with the aggregate data of FDI inflows and the second with data about FDI inflows differentiated by sectors of activities. The three major sectors primary, secondary and tertiary have been chosen instead of sub-sectors due to data availability consideration. For aggregate analysis was also used data about FDI stock but not for the disaggregate analysis due to data limitations, in fact, they are available only for a short time period and for very few countries.

For each of these two equations was also estimated another equation that included The Human Opportunity Index as an attempt to capture the possible effect of inequality of opportunities on income inequality. Covering the same period, in this latter estimation has been added two control variables: Top marginal tax rate and Transfer and subsidies as a percentage of GDP.

The program used for this empirical analysis was GRETL (e2020).

Following the work done by Suanes and Couto the estimation methods used for both aggregate and disaggregate FDI and were OLS (heteroscedasticity corrected), 2SLS and Panel (fixed effect).

2SLS was chosen because, according to Suanes, using the lags of explanatory variables as instrumental variables is possible to control the existence of endogeneity between the dependent variable and the various explanatory variables.

The period under analysis was from 1990 to 2019 for each country in the equations without HOI and from 1995 to 2014 in the equations that include HOI. The countries included in both analyses are represented in Figure 4.1, they were chosen for their representative power and the data availability, then in Figure 4.2 are represented all the control variables and their respective indicator and sources. Following the work done by Couto (2018) other control variables have been tested such as short-term economic growth, economic structure and labor market regulations, but then it has been decided to exclude them due to a problem of representativity, especially with regards to labor market regulations that was represented by an index that goes from 0 to 10 and was available only for few years and not for all the countries.

Figure 4.1. Countries included in the sample.

| | | | | | | |
|-----------|----------|--------|------------|--------------------|-------------|---------|
| Argentina | Bolivia | Brazil | Costa Rica | Colombia | Chile | Ecuador |
| Honduras | Paraguay | Perú | Uruguay | Dominican Republic | El Salvador | Mexico |

Source: Personal elaboration.

In Table 4.2 are showed the four different models estimated with the respective variables used. In the table the symbol “X” means that the variable has been used in that model. The model 1 and the model 2 tried to capture the aggregate effect of FDI on income inequality, the difference is that in the model 2 have been added the HOI, transfers and subsidies and top marginal tax rate as control variables. The model 3 and the model 4 tried to capture the sectoral effect of FDI, and also here in the model 4 have been added, with respect to the model 3, the HOI, transfers and subsidies and top marginal tax rate as control variables.

Table 4.2. The four models estimated.

| DEPENDENT VARIABLE: GINI | | | | |
|---------------------------------|----------------|----------------|----------------|----------------|
| | Model 1 | Model 2 | Model 3 | Model 4 |
| constant | X | X | X | X |
| Ln GDP | X | X | X | X |
| Ln GDP squared | X | X | X | X |
| Pop. Growth | X | X | X | X |
| Trade openness | X | X | X | X |
| FDI inflows | X | X | | |
| Human Capital | X | X | X | X |
| Government spending | X | X | X | X |
| Human Opportunity Index | | X | | X |
| Top Marginal Tax Rate | | X | | X |
| Transfer and Subsidies | | X | | X |
| FDI primary | | | X | X |
| FDI secondary | | | X | X |
| FDI tertiary | | | X | X |

Source: Personal elaboration.

The dependent variable is the Gini Index that, as we have seen before in this thesis, is the most used index to capture income inequality and to have data comparable across countries.

The database used was the fifth version of the Standardized World Income Inequality Database (SWIID) and it is the same used by Couto (2018), this database incorporates data from United Nations University's World Income Inequality Database, the Socio-Economic Database for Latin America and the Caribbean (CEDLAS and World Bank), Eurostat, the World Top Incomes Database, the UN

Economic Commission for Latin America and the Caribbean, and University of Texas Inequality Project.

With regards to FDI, have been used data about inflows as a percentage of GDP, in order to control the size of the country. Even if data about stocks have been identified by the literature as more useful in capture the long run effect, data about flows are more available in terms of sector differentiation and they have been also already used by Suanes. The database used for FDI is the UNCTAD statistics database, while for data about sector have been used each National Bank statistics, OECD database and IMF database.

Moreover, in accordance with the literature FDI and HOI are set with a lag of 3 years while Human Capital with a lag of 5 years. Moreover, data about the primary sector have been included, while they have usually been excluded in the previous empirical analysis.

In Table 4.3 are summed the control variables used in the various model and their respective indicator and sources, then in Table 4.4. are summed the statistics of the variables.

Table 4.3. Control variables and sources.

| Control Variable | Indicator | Source |
|----------------------------------|---|--|
| GDP per capita | Natural logarithm of GDP per capita and its squared. | World Bank |
| Government Spending on Education | Total government expenditure on education as a percentage of GDP. | CEDLAC |
| Human Capital | Averaged years of schooling in the population between 15 and 64 years. | Lee-Lee (2016), Barro-Lee (2018) and UNDP (2018) |
| Population growth | Annual population growth rate. | World Bank |
| Trade Openness | The sum of imports and exports as a percentage of GDP. | World Bank |
| Human Opportunity Index | It measures how individual circumstances can affect a child's access to basic opportunities. It is from 0 to 100, higher values mean less inequality. | LAC Equity LAB |
| Top marginal tax rate | An index from 0 to 10. Higher value means higher top marginal tax rate for lower income. | EFWI, Fraser Institute. |
| Transfer and Subsidies | General government transfers and subsidies as percentage of GDP. | EFWI, Fraser Institute |

Source: Personal elaboration.

Table 4.4. Descriptive statistics. (Continue in the following page).

| VARIABLE | | MEAN | STD. DEV. | MIN | MAX | OBSERVATION |
|---------------------|---------|--------|-----------|--------|--------|-------------|
| GINI | Overall | 50.129 | 5.0988 | 38 | 61.6 | 420 |
| | Between | | 3.6542 | | | |
| | Within | | 3.6998 | | | |
| Ln (GDP) | Overall | 9.2757 | 0.46167 | 8.2293 | 10.112 | 420 |
| | Between | | 0.42927 | | | |
| | Within | | 0.20725 | | | |
| (Ln (GDP)) ^2 | Overall | 86.251 | 8.5157 | 67.721 | 102.26 | 420 |
| | Between | | 7.8985 | | | |
| | Within | | 3.8615 | | | |
| Government Spending | Overall | 12.873 | 3.3705 | 1.9834 | 22.161 | 420 |
| | Between | | 2.8053 | | | |
| | Within | | 2.0408 | | | |

| | | | | | | |
|------------------------|---------|---------|---------|----------|--------|-----|
| Human Capital | Overall | 7.3190 | 1.4735 | 3.5 | 10.4 | 420 |
| | Between | | 1.2305 | | | |
| | Within | | 0.88684 | | | |
| Pop. Growth | Overall | 1.4187 | 0.58811 | -0.07134 | 2.8784 | 420 |
| | Between | | 0.49161 | | | |
| | Within | | 0.35326 | | | |
| Trade Openness | Overall | 56.465 | 24.562 | 9.0639 | 131.32 | 420 |
| | Between | | 23.969 | | | |
| | Within | | 8.4097 | | | |
| HOI | Overall | 72.031 | 14.33 | 42.1 | 98.522 | 262 |
| | Between | | 14.004 | | | |
| | Within | | 4.8247 | | | |
| Top marginal tax rate | Overall | 7.0019 | 1.7301 | 0 | 10 | 264 |
| | Between | | 1.1615 | | | |
| | Within | | 1.3228 | | | |
| Transfer and subsidies | Overall | 6.9007 | 4.8631 | 0.5 | 22.067 | 264 |
| | Between | | 3.9381 | | | |
| | Within | | 3.2198 | | | |
| FDI | Overall | 3.0261 | 2.2914 | -2.4989 | 12.197 | 420 |
| | Between | | 1.2934 | | | |
| | Within | | 1.9523 | | | |
| FDI primary | Overall | 0.7361 | 1.0102 | -1.1032 | 9.4938 | 420 |
| | Between | | 0.6727 | | | |
| | Within | | 0.7864 | | | |
| FDI secondary | Overall | 0.65374 | 0.5863 | -2.1739 | 3.7899 | 420 |
| | Between | | 0.3672 | | | |
| | Within | | 0.4746 | | | |
| FDI tertiary | Overall | 1.6164 | 1.3798 | -1.1865 | 9.3075 | 420 |
| | Between | | 0.7271 | | | |
| | Within | | 1.2071 | | | |

Source: Personal elaboration from GRTL.

4.1.1 FDI and income inequality results

In Table 4.5. and 4.6 are summed the results of the estimations. In the tables about the results are presented the coefficient and their statically significance, in particular, * means that the variable is statistically significant at 10%, ** at 5% and *** at 1%. Moreover, if $\beta > 0$ means that the variables increase income inequality and if $\beta < 0$ means the opposite.

Table 4.5. Aggregate FDI and Income Inequality results.

| Dependent Variable: GINI (Income Inequality) | | | | | | |
|---|----------------------------------|--------------|---------------|----------------------------------|---------------|---------------|
| | Model 1 | | | Model 2 (with HOI) | | |
| Estimation method | OLS heteroscedasticity corrected | Panel Fixed | 2SLS | OLS heteroscedasticity corrected | Panel Fixed | 2SLS |
| constant | -22.4975 | 362.66 (***) | -15.635 | 243.652 (**) | 190.706 (*) | -51.5642 |
| Ln GDP | 20.1444 | -52.91 (**) | 18.041 | -36.9594 (*) | -14.074 | 26.5496 |
| Ln GDP squared | -1.16214 | 2.37 (**) | -1.0409 | 1.87501 (*) | 0.2115 | -1.5557 |
| Pop. Growth | 5.6135 (***) | -3.69 (***) | 5.0759 (***) | 5.2567 (***) | -3.121 (***) | 5.0929 (***) |
| Trade openness | -0.9437 (***) | -0.079 (***) | -0.1122 (***) | -0,12078 (***) | -0.0232 | -0.1089 (***) |
| FDI inflows | 0.44017 (***) | 0.341 (***) | 0.7821 (***) | 0.35921 (***) | 0.2919 (***) | 0.82478 (***) |
| Human Capital | -1.79749 (***) | -2.848 (***) | -1.9754 | -1.85328 (***) | -1.6504 (***) | -1.5652 (***) |
| Government spending | -0.043056 (***) | 0.057 (***) | 0.0077 | 0.00917 | 0.0309 (*) | -0.0248 |
| Human Opportunity Index | | | | 0.00389 | -0.1735 (***) | 0.0152 |
| Top Marginal Tax Rate | | | | -0.6543 | -0.0953 (*) | -0.7525 |
| Transfer and Subsidies | | | | -0.00023 | -0,1387 (*) | -0.05429 |
| Observations | 337 | 313 | 323 | 262 | 242 | 234 |
| R-squared | 0.745 | 0.855 | 0.601 | 0.735 | 0.886 | 0.587 |
| P-value (F) | 1.72e-93 | 7.2e-111 | 3.58e-59 | 1.27e-68 | 2.94e-92 | 4.0e-40 |

Source: Personal elaboration from GRETL.

Table 4.6. Sectoral FDI and Income Inequality results.

| Dependent Variable: GINI (Income Inequality) | | | | | | |
|---|----------------------------------|---------------|----------------|----------------------------------|---------------|----------------|
| | Model 3 | | | Model 4 (with HOI) | | |
| Estimation method | OLS heteroscedasticity corrected | Panel Fixed | 2SLS | OLS heteroscedasticity corrected | Panel Fixed | 2SLS |
| constant | -119.151 | 77.7192 | 34.4263 | -255.610 (***) | -183.113 | -517.017 (**) |
| Ln gdp | 39.9208 (**) | 2.999 | 5.79381 | 67.6637 (***) | 58.412 (**) | 122.323 (**) |
| Ln gdp squared | -2.14751 (**) | -0.4693 | -0.28682 | -3.50124 (***) | -3.339 (**) | -6.40785 (**) |
| Pop. Growth | 5.11658 (***) | -0.3598 | 4.74853 (***) | 5.14109 (***) | 1.1021 | 3.98162 (***) |
| Trade openness | -0.07995 (***) | -0.0934 (***) | -0.09291 (***) | -0.06682 (***) | -0.1213 (***) | -0.07789 (**) |
| FDI primary | 1.47175 (***) | 0.4025 (**) | 1.81701 (***) | 1.81997 (***) | 0.1976 | 2.24462 (**) |
| FDI secondary | 0.626003 (***) | 0.6458 (*) | 0.36314 | 0.031416 | 1.2022 (***) | 0.335713 |
| FDI tertiary | 0.243021 (***) | 0.2547 (*) | 0.40148 | 0.116201 | 0.1443 | -0.48238 |
| Human Capital | -2.24997 (***) | -2.1347 (***) | -2.36051 (***) | -1.55669 (***) | -1.7101 (***) | -1.84817 (***) |
| Government spending | -0.03333 (**) | 0.0780 (***) | 0.013639 | -0.043453 (***) | 0.02486 | 0.0374691 |
| Human Opportunity Index | | | | -0.121164 (***) | -0.0996 (**) | 0.210564 |
| Top Marginal Tax Rate | | | | -0.0621 | -0.0754 (*) | -0.5249 |
| Transfer and Subsidies | | | | -0.0035 | -0.0465 (**) | -0.0278 |
| R-squared | 0.745 | 0.788 | 0.608 | 0.755 | 0.801 | 0.590 |
| Test-F | 3.84e-70 | 5.8e-85 | 4.7e-58 | 1.06e-89 | 4.6e-59 | 5.0e-34 |

Source: Personal elaboration from GRETL.

In Table 4.5. it is possible to see the results of the various models divided by estimation methods regarding the effect of aggregate FDI on income inequality. In all the various specification (Panel, OLS, 2SLS) FDI results statistically significant at 1% with a positive coefficient between about 0.3 and 0.8, meaning that an increase in FDI inflows (as a percentage of GDP) of 1% increases GINI

(from 0 to 100) of 0.3-0.8 points, keeping the remaining variables constant. So, the results of these empirical analyses are in accordance with the empirical works that have demonstrated that FDI has a positive effect on inequality, increasing it, especially with which of them focused on developing economies and Latin America and the Caribbean, such as Suanes that found a positive relationship, on average, and a positive coefficient of 0.40.

With regards to the Model 2 and the Human Opportunity Index, it is statistically significant only in the Panel specification, and it has a negative coefficient, so it can be interpreted as a confirmation on what has been said before about the influence of inequality of opportunities on the inequality of outcomes, in this case seems that an improvement in the equality of opportunities decreases the future income inequality. Moreover, in Model 3, HOI is statistically significant and has a negative effect on income inequality both in OLS and Panel specification.

As regards to the control variables, from the analysis, emerges how Human Capital has a negative effect on income inequality, it is statistically significant in all the specification with the exception of 2SLS (Model 1), moreover, the coefficient ranges from -1.5 to more than -2.5, meaning the magnitude of the effect of the years of schooling on the income inequality. The same type of relationship between Human Capital and Income inequality is confirmed in the analysis of sectoral FDI, where Human Capital is statistically significant and with a negative impact on income inequality in all the specifications. So, this can be viewed as a confirmation of the key role of education as one of the main instruments to reduce income inequality, especially in Latin America where education it is identified as one of the main causes of the decreasing trend of income inequality from 2000.

Another control variable that is statistically significant in almost all the specification in the analysis of aggregate FDI and in all the specification in the analysis of sectoral FDI, is Trade Openness, it has a negative coefficient, confirming the literature about this factor and developing economies, moreover, this result can be interpreted as a change in the Latin America economy (level of development) and trade, in fact as we have seen before in the XX century trade openness has been

linked to an increase in income inequality by the scholars while know seems to have the opposite effect.

About growth and level of development, a sort of Kuznets Curve seems to be confirmed, however, we have to take into account that being Latin America and the Caribbean a developing region it is very likely that it is in the first stage of the horizontal “S” hypnotized by Picketty, so the squared ln (GDP) cannot capture the very long term, that means the increasing part of the horizontal “S”.

Then, Population Growth and Government spending on education have a more ambiguous behavior, both are almost in all specifications statistically significant, but they have also different signs of the coefficient. However, Population growth seems to have a positive effect on income inequality, especially in the sectoral FDI analysis. With regards to the Government spending on education, we have to take into account the quality of the institutions in Latin America and the Caribbean and also the high level of educational inequality already presents in the continent.

Finally, as suggested previously in this thesis and in general by the literature, Transfer and Subsidies and Top Marginal Tax Rate are both significant and both has a negative impact on income inequality, even if the period covered it is not so wide and they are significant only in the Panel specification. However, these results are in line with the literature that identifies in public spending and fiscal policy two important instruments to fight income inequality, and to the various empirical works that identified fiscal policy as one of the drivers of the decreasing trend of income inequality in the region. With regards to the sectoral differentiation, in Table 4.5 it is possible to see the results of the estimations. The results show that all the three different sectors have a positive impact on income inequality, however Primary FDI is statistically significant in 5 out of 6 specifications, Secondary FDI in 3 out of 6 and Tertiary FDI in 2 out of 6. In particular, in the Panel and OLS specification without the HOI, all three sectors resulted statistically significant.

Moreover, looking at the coefficient seems that Primary FDI has the strongest impact on income inequality, followed by Secondary FDI and finally Tertiary FDI.

4.1.2 Possible interpretation

With regards to aggregate FDI, this result can be viewed as a confirmation of the theoretical framework suggested by Feenstra and Hanson (1997) and another evidence against the suggestion of the traditional trade theory about FDI and inequality, in particular against the predictions of the 2 by 2 skilled/unskilled labor variant of the Heckscher-Ohlin model that we have seen before in the analysis of the literature.

Considering that top investor in Latin America and The Caribbean are and historically were developed economies, the fact that FDI tends to increase income inequality could be linked to the wage gap between skilled and unskilled workers and the different perception of skills through the mechanism that we have seen before in the theoretical framework presented by Feenstra and Hanson. In this analysis was not possible to control the effect of FDI according to different levels of development due to the fact that only Latin America and the Caribbean was taken into analysis and so due to the similar level of development present in the region, so it is only possible to argue that FDI tends to increase income inequality in middle-income/ developing countries.

Moreover, it is important to point how the low quality of the education systems in Latin America could play an important role in this relationship, that how it is said by Basu and Guariglia (2007) it is a factor that could lead to an increase in inequality due to FDI inflows. Another important fact is the dominance of greenfield investment with respect to merger and acquisition in Latin America and the Caribbean, investments that have a stronger impact on employment and wages.

In addition, also FDI stock as a percentage of GDP has been tested finding the same positive relationship with income inequality.

Then, focusing on sectoral FDI, first, we have to consider that not much has been written about the possible mechanism and relationship about FDI addressed to different sectors and inequality, then, it is also important to highlight the need of sub-sectoral analysis, especially with regards to the service sector. It is important to take into account sub-sectors for the same reasons for which is important to analyse both aggregate and data about major sectors, which means to go more deeply in the

understanding of this relationship. In particular, it is important to analyse the sub-sectors in the tertiary sector, and it is important for various reasons, first because it is the major recipient of FDI on average in the region but also specifically in each country, then it is important to take into account that inside the sector there is differentiation and polarization that can influence results of aggregate data and finally to understand the role of finance that is the true main recipient of FDI in recent years. The results obtained suggest that the more a country attracts FDI in the primary and in the secondary sectors more is likely that its income inequality will increase, while results about the tertiary sector are more ambiguous, even if when the coefficient is statistically significant it is always positive. The fact that even in the primary sector FDI tends to increase income inequality is a strong evidence against the traditional trade theory, in fact, it is the sector that is more abundant of unskilled work and even there FDI flows tend to increase income inequality and seems to have also the highest impact with respect to secondary and tertiary.

The first factor that we have to take into account is that lands in the region are characterized by the most unequal distribution in the world, that it is a factor that has to be considered in the analysis of the effects created with FDI flowing in the primary sector, contributing to the explanation of these results.

A possible interpretation could be that the primary sector is the lesser skill intensive and lesser paid and so the impact of FDI through the increase of the gap between unskilled and skilled workers in this sector is higher, then we have to consider the trend of efficiency-seeking FDI with an increasing degree of skill required that could explain why also in a sector characterized by low skill intensive FDI could cause an increase in income inequality. Moreover, we have to consider the gap that is usually created between those who work in MNEs and those who work in local firms, then also the possibility that FDI could replace human labor with machines. At the same time, we cannot do not consider the possible role of training in a sector where the possible upgrade is more evident and important.

Finally, we have to consider also the effect that the increase of skill required could have on the gender gap, as we briefly see before FDI tends to increase it, excluding women due to their lower level of skills, especially in the primary and secondary sector. So, this can be viewed as another channel through which FDI in these sectors could cause a worsening in the income distribution.

However, especially in doing policy consideration, we have to consider that the primary sector is also the last recipient of FDI in Latin America and the Caribbean.

Moreover, how we have seen in the theoretical review, indirectly FDI addressed to the primary and the secondary sector could affect negatively the informal sector, that is widely spread in Latin America and the Caribbean, worsening the condition of already disadvantaged people could easily result in a more unequal income distribution.

Passing to the secondary sector, the results are in line with a previous work done by Suanes, and in general with the literature. Here is still and perhaps more valid the argument of the skill premium that FDI could create in favor of the skilled workers and “foreign workers”. It can be considered more valid, because the focus of the literature was often on the secondary sector also in the empirical analysis, so the results can be viewed as another confirmation of what has been said about FDI in the secondary sector and income distribution, especially in developing countries.

With regards to the service sector, the fact that results are less robust, and the coefficient is lower than the other sectors could be the results of opposing effects due to the high degree of polarization and differentiation within the sector. However, when the coefficient is statistically significant it is also positive, indicating that even if with a different impact, also when FDI is addressed to the service sector the results is the same, it tends to increase income inequality. Again, also here the gap between skilled and unskilled workers can be identified as the main channel, especially the gap with the other sectors, however, if on one hand this can be seen as the truth, especially considering both the fact that MNEs pay even higher wages in non-production sectors and the degree of polarization in the sector, that means the co-presence of high-skilled and high-paid workers and workers characterized by the opposite, on the other hand we have to take into account the higher average level of skills already

present in the sector (with respect to primary and secondary), so on average in this sector it is present a higher degree of technology absorptive capacity that how we have seen before could play an important role in determining the FDI effects on income distribution.

To conclude the interpretation of the results about the sectoral analysis, even if results about the service sector are a little bit more ambiguous, what emerges is that FDI addressed to all three major sectors tends to increase income inequality but emerge also a different impact.

With regards to the relationship between inequality of outcomes and inequality of opportunities, we have to keep in mind that the analysis has been done using the most unequal region in the world. The negative statically significant coefficient of HOI can be interpreted as a confirmation of what the theory says about the existence of the relationship between inequality of opportunities and income inequality and the fact that more a society has and offers equal opportunities and more the outcomes will be equals, moreover, could be viewed as a confirmation that circumstances have a role in the formation of outcomes and the relationship is that less the circumstances matter, more equal are the outcomes. In particular, the results suggest that an improvement in the equality of opportunities decrease income inequality, this could happen thanks to an increase of the opportunities for the most disadvantaged part of the population to improve their economic condition, that means that in a situation of very unequal outcomes, such as the Latin American situation, an improvement in the availability of opportunities, that means less linked to resources and discrimination (various types), helps to interrupt the persistence of inequalities of outcomes.

In practical terms, for example, this could happen through education, in fact, an improvement of education opportunities and access to education (included in the HOI) can permit to children of poor people to improve their education and skills development and so, improve their economic condition in the future. Moreover, seen that in this case HOI considers also access to sanitation and ICT, we argue that also those basic opportunities as a way to improve a child's future economic condition, for example, with regards to ICT, it is widely knew its present and its increasing importance. About

numbers, from the results emerged that an increase of 1% in the HOI, that is the annual growth rate on average in Latin America and the Caribbean, decrease GINI about 0.1 percentage points.

4.2. FDI AND INEQUALITY OF OPPORTUNITIES

Here, I am going to analyse the possible effect of FDI both in aggregate and disaggregate terms on inequality of opportunities, using the Human Opportunity Index as a proxy. Moreover, it is also a possibility, as before, to capture the relationship between income inequality and inequality of opportunities. The same estimation methods of the previous analysis have been used, Bolivia has been excluded due to lack of data about the HOI, the time period is from 1995 to 2014 according to the data availability of the HOI and different control variables have been used according to Vega, Barros, Chanduvi and Giugale (2012). In particular, from the previous empirical analysis are used: GDP per capita, Human Capital, Trade Openness, Population Growth, and Transfer and Subsidies, then is added the Government spending per primary student as a percentage of GDP. Then, the difference between the Model 5 and the Model 6 is that in the former aggregate data about FDI have been used and in the latter data divided by sectors.

So, model 5 is the following:

$$\text{HOI} = \alpha + \beta_1 \log(\text{GDP per capita}) + \beta_2 (\log(\text{GDP per capita}))^2 + \beta_3 \text{Trade Openness} + \beta_4 \text{Human Capital} + \beta_5 \text{GINI} + \beta_6 \text{FDI (\% of GDP)} + \beta_7 \text{Government Spending per student (\% of GDP)} + \beta_8 \text{Population growth} + \beta_9 \text{Transfer and subsidies} + \varepsilon.$$

Model 6 is the following:

$$\text{HOI} = \alpha + \beta_1 \log(\text{GDP per capita}) + \beta_2 (\log(\text{GDP per capita}))^2 + \beta_3 \text{Trade Openness} + \beta_4 \text{Human Capital} + \beta_5 \text{GINI} + \beta_6 \text{Government Spending per student (\% of GDP)} + \beta_7 \text{Population growth} + \beta_8 \text{Transfer and subsidies} + \beta_9 \text{Primary FDI (\% of GDP)} + \beta_{10} \text{Secondary FDI (\% of GDP)} + \beta_{11} \text{Tertiary FDI (\% of GDP)} + \varepsilon.$$

Table 4.6. Control variable and sources.

| Variable | Indicator | Source |
|---|--|-----------|
| Government spending per primary student | Government expenditure per student is the average general government expenditure (current, capital, and transfers) per student in the given level of education, expressed as a percentage of GDP per capita. | WorldBank |

Source: Personal elaboration

Table 4.7. Descriptive statistics.

| VARIABLE | | MEAN | STD. DEV. | MIN | MAX | OBSERVATION |
|---------------------------------|---------|--------|--------------|--------|--------|-------------|
| Government spending per student | Overall | 12.908 | 4.3749 | 2.8583 | 26.715 | 189 |
| | Between | | 3.0861 | | | |
| | Within | | 3.2549 | | | |

Source: Personal elaboration from GRETL.

4.2.1. Results and interpretation

Table. 4.8. Estimations' results about Inequality of Opportunities.

| | Dependent variable: Human Opportunity Index (Inequality of opportunities) | | | | | |
|----------------------------------|--|-------------------|-------------------|------------------------------|-------------------|-------------------|
| | Model 5 | | | Model 6 | | |
| | Heteroscedasticity Corrected | Panel-fixed | 2SLS | Heteroscedasticity Corrected | Panel-fixed | 2SLS |
| Constant | -1360.93 (***) | -358.428 (**) | -2260.85 (***) | -1204.16 (***) | -378.726 (**) | -2723.86 (***) |
| Ln GDP | 278.073 (***) | 85.0041 (***) | 470.867 (***) | 244.236 (***) | 89.3984 (***) | 567.729 (***) |
| Ln GDP squared | -13.8766 (***) | -4.3334 (**) | -24.1499 (***) | -11.9560 (***) | -4.59024 (***) | -29.2372 (***) |
| Trade Openness | 0.09543 (***) | 0.0540 | 0.1176 (***) | 0.06596 (***) | 0.06014 | 0.1589 (***) |
| Human Capital | 4.68518 (***) | 4.17275 (***) | 5.22716 (***) | 3.9589 (***) | 4.1034 (***) | 4.761 (***) |
| GINI | -0.0079 | -0.28089 (***) | -0.11873 | -0.1242 | -0.2567 (***) | -0.0136 |
| FDI Inflows | 0.14667 | -0.0737 | -0.09698 | | | |
| Government expenditure (student) | 0.1281 (**) | 0.14478 (*) | 0.00548 | 0.12422 (*) | 0.16414 (**) | 0.052568 |
| Pop. Growth | 4.31564 (***) | -2.94995 (**) | 1.57017 | 5.05146 (***) | -2.9682 (**) | 1.27872 |
| Transfer and Subsidies | 0.251430 (***) | -0.04592 | 0.60655 (***) | 0.14863 (*) | -0.01512 | 0.72768 (***) |
| FDI primary | | | | 0.57787 (***) | 0.30177 | 0.24526 |
| FDI secondary | | | | -1.13418 (***) | 0.02754 | -3.06477 |
| FDI tertiary | | | | 0.2897 (*) | -0.13537 | -0.1453 |
| Observation | 134 | 134 | 134 | 134 | 134 | 134 |
| R-squared | 0.968 | 0.987 | 0.881 | 0.997 | 0.988 | 0.865 |
| P-value (F) | 3.76e-88 | 5.91e-97 | 3.04e-44 | 1.7e-147 | 4.53e-95 | 7.98e-40 |

Source: Personal elaboration from GRETL.

First, in the interpretation of these results, we have to take into account the quality of the Human Opportunity Index as a proxy of inequality of opportunities and the fact that it contains a measure of inequality of opportunities. In particular, it is not the index per se the problem but the way it has been

estimated to cover the period from 1995 to 2014, so we have to be careful but at the same these results could be viewed as useful hints.

In this analysis and interpretation, we have to remember that if HOI increases it means that there is less inequality of opportunities in the countries about the access of the basic opportunities that are included in the index, that can be summed as education, housing and ICT.

With regards to FDI, it is possible to see how in aggregate terms it is not statistically significant in any specification while in disaggregate terms only in the heteroscedasticity-corrected specification, where FDI in primary and tertiary sectors seems to have a positive effect on the inequality of opportunities, while FDI in secondary seems to have a negative effect. However, it is fair to argue that it has not a direct effect on the inequality of opportunities.

As regards to the relationship between inequality of opportunities and income inequality, as in previous analysis, emerged that GINI has a negative impact on HOI and so an increase in income inequality increases inequality of opportunities. In particular, the coefficients are about 0.25 meaning that an increase of 1% in the GINI index decreases the HOI of 0.25 percentage points that considering the fact that Latina America and the Caribbean has an average growth rate of 1% it cannot be considered a low value.

We can see these results as a confirmation of what the theory suggests about the relationship between income inequality and inequality of opportunities, moreover, before we have seen that inequality of opportunities influences income inequality and here that also the opposite it is true, confirming their interdependence. In particular, it is a confirmation of the thought that outcomes influence circumstances, in this case that means that an increase in income inequality decreases the HOI that in turn means that there is more unequal access to basic opportunities or in other words that the circumstances matter more in the access to these basic opportunities. The main mechanism through which inequality of outcomes influence opportunities is the differences in family's resources that it is strictly linked to inequality of access/provision of basic opportunities that then if we take into

account inequality of treatment (discrimination) and differences in talent and/or motivation we arrive to the true inequality of opportunities.

As we have seen before, in Latin America the circumstances that matter more are income, location and family's background, so it is not surprising that a worsening of income distribution decreases HOI, considering also the existence linkage between income and education.

Moreover, also the fact that education is the possible key mechanism has been confirmed by the positive effect founded by both Human Capital and Government spending per student.

Passing to the control variables, the level of development seems to have a positive effect in the short-run and a negative effect in the long-run, according to Barros, Ferreira, Vega and Chanduvi (2009) the positive relationship can be explained by the fact that HOI can be viewed as a part of development, however, the negative relationship in the long-run can be interpreted as a lack of right policies in accompanying the long-run growth.

Then, emerged clearly how Human Capital has a positive and strong effect on the HOI, with a coefficient ranged from 3.9 to 5.22 in the various specifications, and also the government spending per student seems to have the same positive relationship. We can interpret an improvement of these variables together as an improvement of the level of the education system to a certain extent, so we can look at these results as another confirmation of the fundamental role of education in fighting inequality, as we have seen before thanks to the analysis done in Finland.

Transfer and subsidies as a variable has a positive relationship with HOI, here the mechanism is the same but with the opposite direction of income inequality, which means that transfer and subsidies from the government have also the objective to reduce differences in family's resources, and in general are addressed to the more disadvantage part of the population, so we can say that it is an attempt to fight the circumstances of income in the access of opportunities. More in general, public spending if included in a right policies' system could have a key role in reducing inequality of opportunities.

Trade openness has resulted statistically significant and with a positive effect, however, as we have seen before usually the influence of trade openness is the result of mixed effects, and this is true for both inequality of outcomes and inequality of opportunities.

Finally, as before, population growth has ambiguous results that are statistically significant but in different estimations presented different sign of its impact, both positive and negative and so little can be said about this variable.

4.3. SUMMARY

What emerged from these empirical analyses is that inflows of FDI, at least for Latin America and the Caribbean, have, in aggregate terms, a positive effect on income inequality, that means that income inequality tends to increase.

In particular, if we take into analysis FDI divided by the three major sectors, primary, secondary and tertiary it is possible to see how they have all a positive effect on income inequality but with a different impact.

Then, emerged that the relationship between income inequality and inequality of opportunities is statistically significant, moreover, an increase of the income inequality tends to worsen equality of opportunities and an improvement in the equality of opportunities tend to decrease income inequality.

To conclude, in the interpretation of these results it is important to take into account some limitations.

First, the difficulty to collect data about FDI divided by sectors for the time period taken into account.

Then, with regards to the Human Opportunity Index, even if can be used as a proxy of inequality of opportunities, it is not the best measure. However, other synthetic indexes are not available for enough countries and enough periods, in order to have a comparable measure. Moreover, HOI is available only from 1995 to 2014 and for some measures it has been estimated from their authors.

5. CONCLUSION

We are living in a time of increasing world economic integration, FDI is one of the major channels through which countries, especially developing economies, try to capture the benefits. A lot of studies have been made focused on the relationship between FDI and growth, resulting in a widely accepted conclusion of a positive relationship, however, fewer studies have been focused on the possible distributional effect of FDI, and in particular on the relationship between FDI and inequality.

This thesis has tried to go deeper into the understanding of the relationship between inequality and FDI, considering both the aggregate effect and the effect by sectors of FDI. What emerged is that there are different types and modes of FDI, and this is something that has to be taken into account. Latina America and the Caribbean has been chosen due to its high level of inequality and its persistence.

The interest in the relationship between FDI and inequality is growing due to both the increasing importance at the global level of FDI and the increasing trend of inequality in most parts of the world. However, the literature is not exhaustive and conclusive, and the results are ambiguous, both in theoretical and empirical terms.

Furthermore, not only the type of FDI matters but also the level of development of the host and home country, its level of human capital, absorptive capacity and technology. So, it is very difficult to find a theoretical framework that fits all the situation. In the situation of the Latin America and the Caribbean, a developing economy with not a high level of absorptive capacity, human capital and technology, where the investors are mostly developed economies the more suitable model it is the one presented by Feenstra and Hansom (1997) that predicts an increase of income inequality due to increase in inward FDI and the main mechanism identified is the creation of employment and the wage gap between skilled and unskilled workers.

The period analysed in the empirical analysis has been from 1990, when FDI flowing to Latin America the Caribbean started to increase, to 2019. The countries taken into analysis were 14 and chosen according to representative power and data availability.

With regards to aggregate FDI, it is found that tends to increase income inequality, results that are in accordance with various empirical works focused on developing economies (Basu and Guariglia, 2007; Herzer, Hühne and Nunnenkamp, 2012; Suanes, 2016; Bogliacini and Egan, 2017). Essentially, this happens because, considering the whole situation, the employment and wage gap creation tend to be in favor of skilled workers widening more the gap and so increasing the income inequality.

With regards to FDI divided by receiving sectors, has emerged that all the three major sectors have a positive impact on income inequality but with a different impact.

The highest impact seems to be in the primary sector, here the mechanisms identified are the wage premium in favor of skilled workers, the unequal distribution of land, the worsening of the gender gap and the indirect effect on the informal sector.

Then, in the secondary sector, the main mechanism identified is the creation of the wage gap between skilled and unskilled as widely accepted by the literature.

Finally, the lower coefficient of the tertiary sector has been interpreted as a result of opposing effects due to the great degree of polarization within the sector, the great differentiation of the activities within the sectors, the creation of the wage gap between skilled and unskilled inside and especially in comparison with workers outside the sector, and the higher average degree of human capital and technology absorptive capacity with respect to the other sectors.

It is important, especially for policies' consideration, to consider that the main recipient of FDI in Latin America and the Caribbean is the tertiary sector, receiving more than one and a half of the secondary and more than seven of the primary Greenfield investments and more than ten times of the secondary and almost twenty times of the primary of M&A in 2019. Moreover, for policies' consideration, it is important to consider this as an offset of the decreasing trend of the income

inequality in the region and the effect of inequality on other economic factors, not only economic growth, as we have seen before.

In addition, the opposite results obtained about Trade Openness and FDI could be interpreted as an ulterior hint about the complexity of the economic globalization and the integration processes and their possible effects, at least for Latin American and the Caribbean and especially in relation to their distributional effects.

In the empirical analysis has been tested also the relationship between inequality of opportunities and inequality of outcomes. What emerged is that they influence each other, an increase of income inequality increases inequality of opportunities and even more important, an increase of equality of opportunities can reduce income inequality.

With regards to both types of inequality, from the empirical analysis emerged a confirmation of the key role of education and fiscal policy in reducing inequality.

In the interpretation and usefulness of these results, it is important to consider their limitations.

First, the analysis has been focused only on Latin America and the Caribbean, second, data about sectors are collected from various data sources so can suffer by comparability issues while aggregate data are all collected by UNCTAD statistics, and third the limitation of the Human Opportunity Index as a proxy of inequality of opportunities.

There are various areas where can be useful to conduct further analysis, for example, go deeper taking into account data about subsectors, especially service's subsectors. In addition, it could be useful to analyse what will happen after the pandemic crisis, especially due to the likely shift of receiving activities, like sustainable products and digital technology. With regards to inequality of opportunities could be very useful to find or construct a database containing comparable information for a longer time period.

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