

The effect of Corporate Income Tax rates on Foreign Direct Investment in Small Island Developing States (SIDS)

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Master Thesis in Finance and Taxation

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“I have fought the good fight, I have finished my course, I have kept the faith. (2 Timothy 4:7) – but I was not alone.

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ABSTRACT

This study mainly examines the effect of the corporate income tax rate on foreign direct investment (FDI) for Small Island Developing States (SIDS). We aim to verify if the effective corporate tax rate on company profits, the Gross Domestic Product per capita (GDPpc), the market size and growth, the degree of openness, the availability of natural resources, the growth of the financial sector and the macroeconomic and political stability influence the behavior of FDI in 22 SIDS countries studied from 2004 to 2013.

Empirical evidence based on data collected from World Bank, UNCTAD and Annual Reports of PWC is presented. The results of the partial adjustment model with panel data show that FDI is negatively related to both the corporate income tax rate, evidencing the initial role of fiscal policy in the attraction of FDI, and the growth of the financial sector, showing the inefficiency of the domestic finance sector in supplying capital needed by FDI. Furthermore, FDI is positively related to GDP per capita, market size and growth, degree of openness and macroeconomic stability.

Key words: foreign direct investment, corporate income tax rate, degree of openness, market size, financial activity, SIDS - Small Island Developing States, panel data, partial adjustment econometric model.

Acronyms

AFDB	African Developed Bank
AGOA	Africa Growth and Opportunities Act
DB	Doing Bussiness
EBA	Everything But Arms
EU	European Union
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GDPpc	Gross Domestic Product per capita
IMF	International Monetary Found
MNE	Multinational Enterprise or Corporation
OECD	Organization for Economic Co-operation and Development
OLI	Ownership, Location and Internalization
PAD	Public Aid for Development
PWC	PriceWaterCooper
SIDS	Small Island Developing States
TIC	Technology of Information and Communication
UNCTAD	United Nations Conference on Trade and Development
USA	United States of America
USD	United States Dollars
WB	World Bank

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CHAPTER I: INTRODUCTION

The researchers' concern about the effect that the tax rate has on Foreign Direct Investment is not recent. The problem in study has been investigated since the 1980s, when there was a *boom* of foreign direct investment (FDI) in the United States.

One of the first authors that accurately initiated studies on tax rates and foreign direct investment was Hartman (1984), who concluded that the tax rates' elasticity concerning the retained earnings is significant, while for the funds transferred it is meaningless. Hines (1993), through a panel data analysis, determined that high tax rates have a significantly negative effect on FDI in the USA; 1% increase on tax rate reduces FDI on average 7-9%.

This study's aim is to analyze the effect of corporate income taxes rate in attracting Foreign Direct Investment in Small Island Developing States (SIDS) and answer some questions: Will the tax on the income of companies be a relevant factor in attracting FDI in Small Island Developing States (SIDS)? Are there any other factors that determine the inflows of FDI in SIDS?

The FDI provides for the host country numerous advantages; in particular, promoting innovation, new technologies, new management techniques, improving performance and competence, capital increases, creation of employment opportunities, the work conditions of employees and developing infrastructures in the host country (Wadhwa and Reddy S. 2011 and OECD 2007. 17).

The nominal corporate income tax rate in Small Island Developing States (SIDS) fell on average approximately six percentage points over the last 10 years (2004-2013), from 28% to 22 %. The question is if this economic stimulus is enough to potentiate the growth of FDI or if other factors also contribute to the final result. The model of analysis to be

used must additionally take the countries' specificities and yearly fluctuations into account.

Foreign Direct Investment has assumed the role of the engine of economic growth in many economies, especially in developing economies.¹ Taxes are a crucial factor when deciding to invest. However, the inflow of FDI is attracted not only by tax factors but also by a number of other factors such as macroeconomic stability, legal and regulatory framework to support well-structured, skilled labor and a flexible labor market, the available natural resources, financing, degree of openness, the growth of the market size, purchase power of local markets; institutional factors, commerce and location.

The inflow of Foreign Direct Investment brings to SIDS several benefits, in particular on the level of technological development, infrastructure, economic growth, human resources, and economic and social well-being²

In 2013, FDI in SIDS was quite high (72%) when compared to world FDI (30%) – using FDI in proportion to the economy's size. This is due to tax advantages and the attractiveness of natural resources existing in some of SIDS countries (UNCTAD 2014).

¹ "Developing market economies maintain their lead in 2013. FDI flows to developed countries increased by 9 percent to \$566 Billion, leaving them at 39 per cent of global flows, while those to developing market economies reached a new high of \$778 Billion, or 54 per cent of the total. The balance of \$108 Billion went to transition market economies. Developing and transition market economies now constitute half of the top 20 ranked by FDI inflows". (World Investment Report 2014).

² "These constraints are reduced when low competitive pressure result in relatively high market shares for market-seeking FDI, mitigating the impact of the small size of the market and making add SIDS - in particular those with relatively high purchasing power - attractive niche destinations is specific services such the retailing, telecommunications, and energy. In the case of efficiency-seeking FDI, the development of information and communication technologies (ICT) has opened up opportunities in new areas that are not sensitive to transport costs, including call centers, data entry, and back offices (such the purchases, logistics, accounting, claims and payment processing), provided the skilled labor force and access to telecommunication and information networks are available". (UNCTAD 2014)

Recent studies have demonstrated that exogenous variables (market size, geographical and cultural proximity between the country of origin and the host country) and other investment climate factors such as financing, infrastructure and human capital are influential in the decision of the FDI (Simões et al. (2014) and Kinda (2014)).

We take as a reference the methodologies used in the study carried out by Pereira (2011) and Babatunde and Shakirat Adepeju (2012), using the model with partial adjustment and time effects and the method of selection of variables, respectively.

The result show that high tax rates have a significantly negative effect on FDI in the SIDS, an increase in the rate of corporate income tax by 10 percentage points drops the proportion of Foreign Direct Investment on GDP in 3.5 percentage points to the short term, but in the long term, this effect is 4.7 percentage points.

We specifically contribute to the literature in the following ways:

1. We focus on SIDS, countries which possess specific characteristics, when studying the link between tax rates and FDI.
2. We use recent panel data from 2004 to 2013 for the empirical analysis of SIDS.
3. We use the regression model with partial adjustment, which allows us to identify both the short and long term effects on FDI.

The rest of the work is structured as follows: Chapter II shows the literature review about tax and FDI; Chapter III discusses the theoretical framework of tax policies and other determinants of FDI; Chapter IV describes the research methodology – data, variables and model; Chapter V presents a characterization of Small Island Developing States (SIDS); in Chapter VI we present and discuss the results. The last Chapter concludes this study.

CHAPTER II: LITERATURE REVIEW

This chapter aims to present some previous studies related to this thesis' theme.

Dunning's eclectic paradigm OLI (Ownership, Location and Internalization) regards two specific FDI determinants to MNEs; one related to the characteristics of the country where the investor is located and the other focused on the characteristics of the investment host, where MNEs seek to invest (Dunning (1999, 2000) and Pinto et al (2010)).

In the host country there is a huge range of factors that lead to the location of FDI. Some authors say the location decision of foreign direct investment by multinational companies has mainly to do with exogenous factors, such as exchange and tax rates (Blonigen, Bruce A. 2005). On the other hand, other studies conclude that the foreign direct investment in developing countries is more attracted by the resources available in these regions, according to Asiedu (2004). Kavita & Sudhakara (2011) refer that factors such as natural resources, market size, government policies and political instability and are fundamental for the location of FDI in Africa and Asia. They show that larger countries betray a greater flow of FDI and that FDI is adversely affected in countries with weak and unstable policies

Júlio et al. (2013) concluded that improvements in institutions of origin may increase FDI, i.e. countries with better institutional conditions attract greater FDI flows. The geographical distance and factors of economic order follow the same path. Regarding the institutional aspects, it was discovered that low corruption is correlated with a higher level of inflow of FDI.³

The capital's international mobility is mainly related to the fiscal policies (corporate income tax rate, rules of capitalization, carry-over of tax losses and elimination of international double taxation of profits). Simões et al. (2014) concluded that these policies affect the investment decisions more than the other policies (economic and social),

³ Júlio et al. (2013)

referring⁴ to the countries of the euro zone, because the level of competitiveness between these countries is high in relation to policies on attraction of FDI. Becker et al (2006) concluded that tax reforms in terms of the decrease of corporate tax rate tend to attract inflow of FDI in Germany, but alert tax policy-makers to consider the appropriate costs of tax reforms in terms of decreasing tax revenue or the possible loss of well-being before starting the process of reform.

Tax policies are related to the FDI's country of destination's size. According to Andreas Haufler (2006) and Hines (2005), the extension of the model with countries of different size shows that the smaller countries tend to grant more tax preferences than the larger ones, in addition to having less than effective tax rates. Hines (2005) studied cross-sectional patterns of adjustments in tax rates in the face of capital's international mobility elasticity. The author sought to justify why an increase in the mobility of capital in a group of countries did not go along with the decrease of the tax rate. There was a disparity between capital mobility in smaller and larger countries. He noticed that larger countries have greater capital mobility, even with the highest tax rates, while the small countries are inclined to lower their tax rates in order to attract greater capital's international mobility.

When referring to smaller countries, studies suggest the opening up to the outside world in order to attract greater FDI, through economic cooperation with the closest areas and more developed markets, Espirito Santo (2013). Although this may have other consequences, Akinbobola & Saibu (2014) recently discovered that the economic liberalization of the countries of Sub-Saharan Africa may not be the main factor of economic growth, because these countries are vulnerable to external shocks from foreign capital. In other words, in a period of international crisis (for example, 2009) the proportion of FDI in these countries is affected much more than in developed ones.

⁴ Set of governmental actions carried out by the agents and agencies of economic and social policy national (Government, Central Bank and the European Parliament) and international (IMF, World Bank, United Nations) that are planned to achieve certain goals related to the social and economic situation of a country, a region or a set of countries.

A review of the literature suggests that the taxes' influence on the FDI is complex and depends on a number of factors difficult to measure. Historically there is not an unanimous conclusion, although the majority of the studies (Hartman 1984, Hines (1993, 2005), Desai, Foley and Hines 2004, Erdal Demirhan & Mahmut Masca 2008, Pereira 2011), conclude that the FDI reacts negatively in face of the increase of the corporate income tax rate. Babatunde & Shakinat Adepeju (2012) conclude that in the presence of fiscal incentives the FDI tends to react positively. By this time, Haberly & Wójcik 2014 and Kinda (2014) have not found any type of reaction from the FDI face tax rates – so there is always the need for an additional empirical work to better understand the role of taxation among the main factors that influence the location decisions of FDI.

One of the ways to study the relationship between tax rates and foreign direct investment recently found by several authors is to compile a series of studies on the same subject (using different data and methodology) and find a harmonized way to assess the effect that the tax rate has on foreign direct investment.

The results in the majority of these studies are similar. The foreign direct investment reacts negatively to increases in tax rates, Mooij & Ederveen (2003), Simoes, Ventura & Coelho (2014). The variability of these estimates depends on the degree of heterogeneity of the used data, the sensitivity of FDI to tax variations, depending on the conditions of the country, the tax policies on business, the period of time in analysis and the methodology used (OECD 2007). The authors Mooij & Ederveen (2003) found some difficulties: the quantitative dimension of the results strongly depends on the quality of the data and the methodology used for the empirical analysis.

The inconstancy of elasticity's estimates may not be surprising, given the degree of heterogeneity of the data used; i.e. expect that, *a priori*, the sensitivity of FDI to the taxation varies and depends on the conditions of the host country and the policies (including the level of tax rates on business), the types of industries, commercial activities covered, the time period examined, and other factors.

Haberly & Wojcik (2014) and Babatunde & Shakirat (2012) addressed the importance of

tax incentives on attracting the FDI, concluding that it reacts positively to tax incentives and that when an economy is associated with high tax rates it tends to attract less FDI.

Babatunde & Shakirat Adepeju (2012) concluded that in the presence of tax incentives foreign investors tend to increase their investments. The authors studied the impact of tax incentives on FDI in Nigeria " *The Impact of Tax Incentives on Foreign Direct Investment in the Oil and Gas Sector in Nigeria*", looking to identify the main determinants of FDI into sectors of oil and gas, such as tax incentives, availability of natural resources, macroeconomic stability, market size, openness to trade, infrastructure, and political risk. To assess the impact of tax incentives in the FDI, they resorted to annual statistical data in the Report of the Central Bank of Nigeria (RCBN)) and the United Nation Conference On Trade and Development (UNCTAD) in a sample of 21 observations per year (1990-2010), a period marked by greater economic reform in this country.

The results were obtained by using the correlation of Pearson. The authors concluded that tax incentives are the greatest determinant of FDI, serving to stimulate it (FDI reacts positively to tax incentives), and discovered that *statutory tax rate* has a significantly negative impact on FDI.

The studies of Hartman (1984), Hines (1993, 2005), Desai, Foley and Hines (2004), Erdal Demirhan & Mahmut Masca (2008) and Pereira (2011) concluded that the FDI reacts negatively to the increase of the rates of tax on corporate income.

Hartman (1984) showed that all foreign direct investment in subsidiaries to pay dividends to parent companies are paid through retained profits. He argues that if the government eliminated the system of tax credit abroad it would increase the incentive for investors to maintain profits retained abroad. Slemrod (1990), sharing the same idea, concludes that the decision of foreign subsidiaries to repatriate profits does not depend on the tax treatment of the host country on external resources.

Pereira (2011) studied the "*Impact of the tax on company in attraction of Foreign Direct Investment in the countries of the EU-15*", aiming to find evidence of the impact that corporate income tax rate has in attracting Foreign Direct Investment in the countries of

the EU-15, with a sample of 15 countries of the EU in the period of 1997-2007, with the extracted data in the database of the OECD and EUROSTAT. He estimated a partial adjustment model to explain the effects of the tax rate in the FDI, looking to capture the effects of tax rates on FDI in the short and long terms. To explain this effect he used as a dependent variable the FDI as a proportion of GDP; as independent variables, revenue from the tax on the income as a proportion of GDP, per capita GDP in Euros, degree of openness and labor costs. The results were obtained using panel data, with the econometric model proposed⁵ and by use of the method of least squares and the test of White. He concluded that the tax rate has statistically significant and negative effects in Foreign Direct Investment both in the short and the long term.

The equation estimated for Desai, Foley and Hines (2004) including the fixed effects for parent company, industry, in the years of 1982, 1989 and 1994, showed concordant results with most of the empirical studies on the subject – High tax rates are negatively associated with the FDI of American multinationals, an association related to all kinds of taxes.

The indirect taxes are negatively correlated with levels of investment (measured by assets); when the tax rates increase by 10% it causes the level of the companies' assets to fall 7.1 %.

In the same way, an increase in the direct tax (corporate tax rate) in 10% drops the assets of affiliated to 6.6 %.

These effects on the levels of investment are mirrored on the product – a 10% higher rate of indirect taxes is associated with 2.9% less than production, and the rates of income tax of 10% higher are associated with 1.9% less than production. High rates of income tax depresses the ratio capital/work of subsidiary and profit rates, while the high rates of indirect taxes have no visible effect on these variables. The high rates of income tax are associated with low levels of FDI, because it imposes additional costs on investments, encourages taxpayers to substitute capital for labor and affects the returns to the

⁵ See Pereira, Manuel Jose R. C. (2011) "Impact of the rate of tax on the income of the Companies in the Attractiveness of Foreign Direct Investment in the countries of the European Union to 15 ", Faculty of Economics, University of Porto, Master's Thesis. Feb. /2011, pp.36

reallocation of taxable income. High rates of indirect taxes reduce FDI only through the imposition of additional costs, but the magnitude of its impact is comparable to that of the income tax, which reflects, in part, the lack of credibility of indirect taxes' payments, Desai, Foley and Hines (2004).

Theoretical determinants of FDI and the external activity of multinational companies (MNEs). The argument about the way in which the Multinational Enterprises (MNEs) develop their activity, advantageous through the foreign direct investment, has been developed by John H. Dunning at the beginning of the 1970s, Pinto et al. (2010) and OECD (2007 no. 17). Eclectic paradigm "OLI" encompasses the three specific criteria that the MNEs should have to invest in another country and obtain a competitive advantage over domestic firms located in this country, which are owned or held by (⁶*Ownership*), Location and Internalization, Dunning (2000).

The advantages of Ownership consist of the MNEs assets or resources (trademarks, patents, know-how, production processes and management capacity) which allow the corporations to have added value and gain advantages in terms of profitability in foreign markets: *"Those relating to the possession of the bundle of scarce, unique and sustainable resources and capacities, which essentially reflect the higher technical efficiency of the particular firm relative to those of its competitors. These advantages are presumed to stem from, or create, add kind of barrier to entry to factor, or intermediary, product market by firm not possessing them."* Dunning (2000).

The second advantage (*Location*) reflects the way in which the spatial dimension of FDI may affect the competitiveness of the entities investor. The hypothesis of this advantage is related to the specific variables of the country that may have an impact on MNEs Dunning (1999). Foreign direct investment must confer location advantages, referring to the location of the foreign countries where the MNEs will operate taking into consideration the factors specific to this location (low cost of transactions, energy and labor costs, low tax burden, market size, the industrial policies of the government, level of knowledge, accessibility, geographical distance) and the factors that are related to its

⁶ Ownership, Location and Internalization, Dunning (1999), Dunning (2000)
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powers (capacity of the company to exploit its resources and assets) to get a comparative advantage, and make on-site production more profitable.

According to the author of this paradigm, Dunning (1999, 2000), the MNEs should also pay attention to traditional factors of location (cost of transport, levels of demand, cost of installation, and other related factors) and also consider transaction costs related to the distance, the economies of agglomerations, the dynamic externality, the accumulation of knowledge and interactive learning, mergers and acquisitions, innovation and technological standards of border space that are related to the investment's country of destination.

The advantage of Internalization indicates options for MNEs to internalize or outsource their operations. The operations of FDI are more profitable to the extent that the MNEs derive income from owned properties and they begin to develop a business activity internally, instead of licensing the right to do it to a technical service or through the franchise of a foreign firm.

The company will have a greater tendency to internalize their operations through the FDI; when exploiting the advantages of ownership this is an important factor in a given foreign country; Pinto et al. (2010), and it will invest in itself to foreign production, (Dunning 2000).

When MNEs have these three advantages (*Ownership, Location and Internalization*) in common, it allows them to carry out foreign direct investment. Dunning wants to explain that this advantage jointly plays a role on four categories that FDI could be related to; market seeking, resource seeking, efficiency seeking and strategic asset seeking. Wadhwa & Reddy (2011) find that all of these categories of FDI attraction have a significant impact on FDI inflows.

The advantages OLI reflect the characteristics and policies of a country or region's economy and the companies that invest in them, as well as the characteristics of the country or region in which these companies are looking to invest in, the industry and the nature of the activity of the added value in which the company is involved, and the

individual characteristics of investing companies, including their goals and strategies to pursue them Dunning (2000).

Table 1. Summary of Literature Review, studies on Taxation and FDI

Author	Countries Studied and Time Period	Empirical Evidence.
James R. Hines (1993)	United States 350 Observations(7 countries, 50 States),1987	Tax Rates has adverse and significant effects on FDI
Desai, Foley and Hines (2004)	United States 1982,1989,1994	Direct and Indirect Tax rates have adverse effects on FDI
Mooij and Ederveen (2003)	25 Empirical studies, 1984-2001	Tax Rates have adverse and significant effects on FDI
Djankov et al. (2010)	85 Countries, 2004	The evidence of relation between Statutory tax rate and FDI; large impact of that rate on investment
Manuel Pereira, (2011)	EU-15 (15 cross-sections), 1997-2007	Corporate income tax rate has adverse and significant effects on FDI, both short and long period
Babatunde and Shakirat adepeju (2012)	Nigeria, 1990 – 2010	Tax incentives positively affect FDI and have a significant effect. Statutory Corporate Tax Rate has a negative effect on FDI
Haberty and Wójcik (2014)	38 Countries, 2004	No evidence of relation between tax rates and FDI
Antonio Simoes at al (2014)	35 Empirical studies, 1997-2013	Most studies confirm that tax policies negatively affect the decision of the IDE
Tidiane Kinda (2014)	30 Sub-Saharan African (SSA) Countries ,2000-2006	Taxation does not significantly affect foreign firms' locations (FDI).

In the next step we will describe the main determinants of FDI and the research hypothesis proposed for this study.

CHAPTER III: THEORETICAL FRAMEWORK AND RESEARCH HYPOTHESIS

In this chapter, we will discuss the characteristics and advantages of foreign direct investment in the host country: its main determinants that are the theoretical basis of this study and the hypothesis of research, always focusing on small island developing states.

3.1 Foreign Direct Investment, characterization and advantages

Foreign direct investment has increasingly taken as the engine of economic growth in many economies, especially in the emerging and developing countries, and the guarantee of stability in developed countries. In terms of attracting foreign direct investment innovation benefits are enormous, as are new technologies, new management techniques, improving the performance and competence, increasing capital, creating employment opportunities, improving employees' working conditions and developing infrastructures in the host country, increasing purchasing power, increasing tax revenue and reducing the deficit of the balance of payments, and improving economic and social well-being (Wadhwa and Reddy S., 2011 and OECD, 2007 n. 17).

Summary of some advantages of FDI:

- *Innovation* - provides a number of benefits from gains from the more efficient use of the available resources, the effectiveness of the implementation of its tasks, improving the conditions of international competitiveness and internal improvements.
- *New Technologies and new management techniques* – allows the country to better use instruments of competitiveness by means of technical and human resources and to develop new techniques of information processing and management organization where decision-making is more efficient.

- *Capital Increase* - involves entry of funds in the country welcoming foreign direct investment that will allow the increase of internal assets.
- *Creation of employment opportunities* - new investment projects tend to create more employment, which consequently will provide a set of improvements to conditions of the population, since the increase in purchasing power, higher level of satisfaction, the well-being of employees and for the state improvements at the level of tax revenues and the level of macroeconomic performance.

Foreign direct investment has advantages over other types of capital flows, and it can be seen in three aspects (Albulescu et al., 2010):

1. Increases the general soundness of the financial system of the host country.
2. Reduces the sensitivity to host cycles of credit in the country.⁷
3. Is a factor of stability during a period of crisis

Foreign Direct Investment is defined as an action in which the foreign investor (individual or a business entity) applies all or part of their capital in an economy in which the resident company is different from that of the direct investor abroad, through a single transaction or several subsequent transactions between foreign subsidiaries, both embedded and non-embedded, in that this will exert a significant influence over the management of a long period in enterprise resident in another economy.

According to UNCTAD (2007), foreign direct investment (FDI) is defined as an investment that involves a long-term relationship and that reflects a lasting interest and control by a resident entity in one economy (foreign investor direct or parent company) in an enterprise resident in an economy other than that of the foreign direct investor (FDI of the subsidiary company or of foreign subsidiary).

⁷ "The ability to manage credit risk, together with stronger capitalization, access to market or parent funding and diversification of the parent's risks, Trends to make foreign banks less sensitive to both home and host country business cycles" (Abulescu, Claudiu et Al. 2010).

The OECD definition of FDI is more careful, describing minimal participation levels of the foreign firm in the branch, this participation being 10% of the ordinary shares or voting power in the company. On the other hand, even such a participation is less than 10 %, as long as it has significant influence (active voice in management), able to influence the management of a company.⁸

We can see that there are three components of classification by UNCTAD (2007), which are: the social capital, reinvested earnings and intra-company loans.

- The social capital⁹ represents the capital that the foreign direct investor uses to purchase shares of a company in a country that is not their own.
- The reinvested profits are the parties' remuneration of the invested capital (by percentage of participation) in the company that are not assigned to investors in forms of dividends by subsidiaries and that are reinvested in the company.
- Intra-Company loans or loan operations for intra-company, referring to loans of short and long term performed between parent Company (direct investor) and the subsidiary undertaking.

⁸ According the OECD, the direct investment enterprise is an incorporated or unincorporated enterprise in which a single foreign investor either owns 10 per cent or more of the ordinary shares or voting power of an enterprise (fairly slight it can be proven that the 10 per cent ownership does not allow the investor an effective voice in the management) or owns less than 10 per cent of the ordinary shares or voting power of an enterprise, yet still maintains an effective voice in management. An effective voice in management only implies that direct investors are able to influence the management of an enterprise and does not imply that they have absolute control. The most important characteristic of FDI, which distinguishes it from foreign portfolio investment, is that it is undertaken with the intention of exercising control over an enterprise. (Source UNCTAD 2007 pp. 245-250)

⁹It is the part of the net worth of a company or entity from investment in the form of Shares (if corporation) or quotas (if it is a limited company) performed in the company by the owners or shareholders, which covers not only the parties invested by the shareholders, but also the profits obtained by the company and that, by decision of the shareholders or owners, are incorporated in the capital.

3.2 Determinants of Foreign Direct Investment in SIDS

Foreign Direct Investment is not verified by using a single, independent factor, but by using multiple factors. The conclusions of recent researchers about the main determinants of foreign direct investment, Akimbobola & Saibu (2014) and UNCTAD (2014) reflected on a group of those determinants.

Tax

In countries where FDI represents a significant fraction of Gross Domestic Product and where the survival of the economy depends on this percentage, the growth in tax revenue by taxation of FDI represents a very significant fraction in total tax revenue, Anwar Shar & Joel B. Slemrod (1991). There is a considerable difference in tax rates between the Small Island States of Asia, Africa and the Caribbean. Borg (2006) concluded that these countries depend once more on revenue from taxes on international trade. FDI can increase the tax revenue of a country; however, the concern resides in tax policies in attracting foreign investors. The sensitivity of FDI to tax varies depending on the conditions of the country, the tax policies of the companies and the period of time in analysis. As Mooij & Ederveen (2003) state, it depends mainly on the conditions of the host country, the investment policies established there, types of industry, and commercial activity covered.

One of the comments found in the study of the "Pwc, *Paying Taxes 2014*" ¹⁰ is that in recent times, while some countries drop their corporate income tax rate to improve its investment climate, others increase these rates to bring the deficits in public finances. This happens especially between large and small countries. Countries a large market tend to increase their tax rates while the small size of market is related to dropping tax rates to

¹⁰"An interpretation of these trends is that the global financial downturn has had a significant impact on tax systems around the world. The policies, which governments are choosing to implement to address the issues, have become much more diverse. Add market economies are choosing to continue to reduce their rates to contribute to an economic environment which attracts investment and encourages growth, while others have started to reverse this to address the need for additional revenue streams to help fund public sector projects or to reduce public sector deficits" PWC Paying Taxes 2014.

attract more investment, validating the conclusion drawn by previous investigations, Hines (2005) and Andreas, Haufler (2006).

A survey to taxpayers carried out a study on payment of tax: 82% of the taxpayers were of the opinion that one of the main goals of the current government's policy is to increase the tax revenue, but 60% think that governments also have responsibility over the use of the tax system to encourage investment.¹¹

Therefore, for the member states to encourage foreign investors and successfully attract the FDI, it is necessary to adopt policies that neutralize the tax distortions. Some of these policies are replaced by tax Conventions to avoid International Double Taxation of profits of persons (individual or collective) that is accomplished through a constant exchange of information available in tax administrations of partner countries in bilateral tax treaties. In addition to eliminating the barriers to FDI, this facilitates international trade and investment, strengthens bilateral relations, provides security and protects the countries by preventing tax evasion.

The tax credit scheme and the system of exemption are normally two mechanisms that countries choose to eliminate the double taxation of income earned abroad by domestic residents. The system of the tax credit depends on the tax rules of the country of origin. The income taxed in the country of origin is deferred in excess of tax paid in this country, i.e., the value to be deducted may not exceed the tax paid abroad (in a country where there is a convention to eliminate the double taxation).

According to Slemrod (1990 pp. 79 - 122), to avoid double taxation, the countries allow their residents (individuals and legal entities) to credit paid taxes for foreigners against the tax due on income from abroad.

The exemption system is based on withholding tax on income (interest, dividends, royalty); thus the income subject to withholding tax in the country of origin shall be exempted from taxation when they are transferred to parent company. Slemrod (1990) says that when the capital's exporting country has a system of tax exemption, the

¹¹ PAYING TAXES 2015 (PWC).

FDI's level of taxation is equal to the tax rate charged by the host country of investment and when the capital's exporting country has a tax credit scheme the purpose of taxation of profits is verified through the tax system of the country of origin.

Pereira (2011) argues that the tax burden effectively supported by a multinational company is not supported only in the country of origin of taxable income, but also in the country where the parent company is located; and that the effect of tax rates on FDI should be examined in each pair of countries (effective bilateral tax rate).

When the effect of the tax burden on investment is analyzed in a looming unilateral (in the country of destination of the investment), any increase in the tax rate in the country of destination will act as a discouragement to investment. But, if seen in a looming of effective bilateral tax rate, this increase may serve as an incentive to investment as it will create a negative impact on the competitiveness of domestic firms, in comparison to multinational enterprises (Pereira 2011).

The most important role of any tax system is to increase the tax revenue and allocate it as most equitably as possible according to the needs of the state. The tax incentives are the most frequently used instruments by the majority of tax systems to attract more investment; thus allowing these investments to provide for the State.

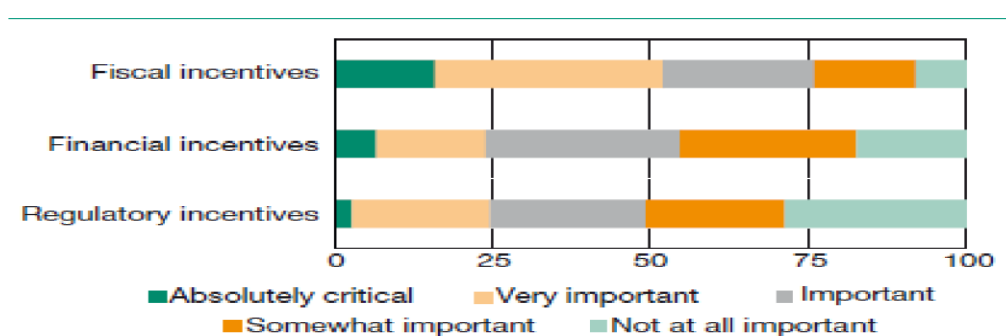
Reduction of “*corporate tax rate*” and the “*tax exemption*” are the main tax incentives completed in studies of the effects of tax incentives on FDI. As concluded on several studies in tax and FDI, Jankov et al. (2010), Dermirhan & Masca (2008), Pereira (2011) and Haberly & Wójcik (2014), corporate income tax rate has an adverse impact in FDI (this approach will be the base for the development of the hypothesis research (H1) in the methodology chapter, assuming that the tax rate has an adverse effect on FDI).

The tax incentives are considered increments for incentives for FDI. But, according to UNCTAD (2000) investors select the country destination of FDI first by its fundamental determinants (market size, access to raw materials, skilled labor,...) and only then do they pay attention to tax incentives (reduction of the profit tax, tax exemptions, tax rules that allow the accelerated depreciation, transport losses, policies of reinvestment of profits) to the FDI. Investment expenditure reacts positively to tax incentives since it increases the

amount of profit after tax of new investments and the stock of existing capital (Clark 2002).

Nevertheless, in accordance to the studies of UNCTAD (2014), tax incentives are the most important incentives when attracting foreign direct investment (figure 1.) especially in developing and transition countries.

Figure 1. Importance of investment incentives in a country's overall strategy to attract and benefit from FDI (per cent)



Source: UNCTAD (2014)

The tax rate is one element that cannot be seen in isolation when attracting FDI, because it cannot compensate for bad infrastructures, the lack of availability of resources, limited access to markets nor other conditions that affect the good environment for investment (OECD 2008). Different types of taxes also affect FDI – Hines & Desai (2003) found that not only are the direct taxes the ones that affect the behavior of FDI, but also the indirect taxes are of high importance for foreign investors, since it affects their assets and their production: *"Energy taxes, payroll taxes and non-profit-related business taxes are increasingly under the spotlight by investors and policy makers"* (Hines & Desai, 2003).

In OECD (2008), Mooij, Ederveen (2004), Asiedu (2004), Julio et al. (2013), Akimbobola, & Saibu (2014), showed in their studies that there are also some other determinants of FDI (Natural Resources, infrastructure, size of market, government policies, institutional and political instability).

Market Size

In the theory of international trade, the term "*market size*" is related to the power of the market – for example, the index is calculated in terms of real GDP of the countries (Srinivasan 1985). But Demirhan & Masca (2008) use the *proxy* real growth of GDP per capita as a measure of the market size, arguing that the absolute value of GDP or GDP per capita does not affect the FDI. Wadhwa & Reddy (2011) used real GDP and Pereira (2011) used GDP per capita as a measure of market size and both found a positive and significant relationship between it and FDI. This approach will be the support for the development of the hypothesis research (H2 and H3) in the methodology chapter.

The disadvantages that small island countries present because of transport costs due to its geographical location reflect their real income (Srinivasan, 1984). According to the author, the causes of economic stagnation in some of these small economies cannot be assigned only to their size or other similar exogenous characteristics.

The size of a country is also considered in some studies by population, Zhang and Markusen (1997) Abulescu, Claudiu et Al. (2010). In addition to being insular, their economy is affected by the reduced population, which has a negative effect on their economies' development. The majority of SIDS show deficits in their balance of trade, especially those who are poor in resources, including natural ones.

The extension of the model with the countries of different size shows that the small countries tend to grant more tax preferences of the larger ones, in addition to having tax rates lower effective (Haufler 2006).

Small markets imply limits to economic activities, causing some countries to not being able to achieve the minimum efficient production in scale. Since this is taken into question, it implies producing with much too high unit costs and being dependent, trade wise: "*small size agents translate into high dependence on trade is the development of add activities, both on imports - is the supply of raw material and intermediary products, and online export- is sale of the output*" (UNCTAD 2014).

This leads us to believe that a greater market size may be correlated to a higher likelihood of developing their economic activity and their internal influence, thus attracting more FDI. Of course that is based on other factors such as the costs of transportation, infrastructures, available labor and internal regulations. Nevertheless, the SIDS have a very large area of sea that can be leveraged for the development of their economies, a concept that recently has been called “The oceans economy” (UNCTAD 2012, The Ocean Economy).

According to this study, the ocean provides several utilities critical to the sustainability and preservation of human life; providing various patterns of resources such as food and minerals, generating oxygen, absorbing greenhouse gases and minimizing the effects of climate change, serving as road transport for human and trade of goods.

Although they are subject to the risk of climate change, several efforts have been made in favor of SIDS in order to obtain greater benefits in terms of available maritime resources (Third International Conference on SIDS in Samoa 2014)¹².

Degree of Openness

The structural characteristics of the SIDS’s economies and their limitations and weaknesses compared to other economies make attracting foreign investment and achieving a level of sustainable development challenging. Opening up to the outside world must be seen as crucial to attract new investors.

A greater degree of openness will easily attract foreign investors. This conclusion is supported in some studies – Dutty & Ray (2009), Djankov et al. (2010) Babatunde & Adepeju (2012) and Pereira (2011). If a country wishes to reach a reasonable degree of openness, it will have to synchronize some factors such as political stability, good

¹² In the competition inquiry of that conference, we can see one of the outcomes about Oceans and seas ‘54. *Recognizing that small island developing States have large maritime areas and have shown notable leadership in the conservation and sustainable use of those areas and their resources, we support their efforts to develop and implement strategies for the conservation and sustainable use of those areas and resource. We also support their efforts to preserve their valuable underwater cultural heritage*”, (Third International Conference on Small Island Developing States, Apia, 1-4 September 2014).

governance and the development of human resources. These conditions will help attracting FDI, Júlio et al (2013).

A scale economy's development is limited to the small island states due to the size of its market and to the infrastructure's low level of development (Airport, Port, roads, energy, public administration, telecommunication, training, farm and research, production and storage). The need to affect resources in the construction of infrastructures such as ports, airports and roads is enormous, since the development of trade with the outside world is made through these means.

These vulnerability make them dependent on external assistance by international institutions, even those who have natural resources. This is because they still depend on imports to a great extent in order to maintain the livelihood of the population, since the revenue generated from exportations is insufficient to cover the costs associated with the importation.

The best indicator to measure the degree of openness in a country is the sum of the imports and exports of goods and services on the GDP in percentage, according to most studies. A high degree of openness facilitates obtaining resources from abroad to develop the domestic economy. This approach will be the support for the development of the research hypothesis (H4).

Espírito Santo (2013) opinioned that the SIDS should adopt some strategies to increase the degree of openness, such as increased cooperation, aggressive diplomacy based on goals and plans of development, good governance and a permanent straightforward, internal and external dialogue.

The diversification of the economy is a strategy to be followed in a country where the development of scale economies is an obstacle.

The opening up to the outside world can also be achieved through the increase of exportations as well as the services sector, where each country has comparative advantages (financial services offshore, insurance companies, shipping service, service

information and data services, teaching and learning), (Espirito Santo 2013) and must rely on economic cooperation with more developed markets or close areas.

Natural Resources

One of the determinants of foreign direct investment which has great importance for investors is the availability of natural resources in a country or region (Dutty & Ray (2009). It is clear that they will also be aware of other factors, such as tax policies, regulations, purchasing power, the size of the market and factors of economic and social nature.

In SIDS there are several countries with a wide range of natural resources. That is the case of Papua New Guinea and Trinidad and Tobago (oil, gas...), Mauritius and Seychelles (Tourism and Financial services), Cabo-Verde and Sao Tome e Principe (Tourism, fisheries, agriculture).

The availability of natural resources is one determinant of FDI in developing countries (Nigeria) – according to Babatunde & Adepeju (2012), availability of natural resources attracts more FDI. We take this as support for the development of the hypothesis research (H5) in the methodology chapter.

One of the natural resources that most of these countries have in abundance is the maritime feature (production and exportation of fish). The exportation of fish in SIDS reached 1.75 Billion USD in 2012, being approximately 7% of the total export total of SIDS (UNCTAD 2014)¹³.

Despite this advantage in maritime territory, the infrastructures' weakness implies high-energy costs of production. However, there is in this area an opportunity to new investors,

¹³UNCTAD 2014" The Oceans Economy: Opportunities and Challenges for Small Island Developing States"

as the SIDS should adopt incentive policies to investment and consumption, such as lowering tariffs, and establishing partnerships with the potential producers in this area.

Sustainable tourism is the goal of many SIDS, given its contribution to national income, increases in reserves of foreign currency and attraction of new investments. The countries that are highly dependent on tourism and on the services related to it should pay attention to the interconnection with the maritime ecosystem while preserving the ecological integrity of oceans and watercourses.

Infrastructures

The available infrastructures' good quality in a country is a decisive factor when attracting FDI. It is the priority basis of the overall development of the business – the good quality of ports, roads, airports, telecommunications, energy, water, schools, health care system; a set of factors that facilitates business and is able to attract foreign direct investment (Moreira 2009). Good quality infrastructures have a strong, positive relationship with the FDI. According to Asiedu (2004), infrastructures' good quality is a determinant that promotes FDI in Africa. When a country is poor in financial resources, it will have some difficulties in investing in basic, business-sustainable infrastructures to attract foreign investors. Ensuring a minimum quality of infrastructures is done through public investment programs or in partnership with private investors.

The Small Island Developing States have an enormous necessity to affect resources in the construction of infrastructures such as ports, airports and roads since the development of trade with the outside world passes through these means.

Development (Size) of the Financial Sector

The development of the financial sector is associated with higher economic growth and with attracting foreign direct investment. Dutta and Ray (2009) found this relationship in the studies of the countries of Africa by using the percentage of credit granted to the

private sector by domestic banking to GDP as a measure of the size of the financial sector. They concluded that there is a significant and positive relation.

But a recent study (Kinda, 2014) found adverse conclusions. According to this study, FDI reacts negatively to the growth of the financial sector. It argues that companies with high percentage of foreign capital (more than 50% of participation) are not pinning all their confidence in local financial systems for their financing needs as other companies do (national companies whose participation is less than 50%). In terms of access to finance, they have better conditions in external financing, in most cases being financed by the parent companies. However, they are less attracted by the growth of the domestic financial sector because of access limitations to financing in the host country, when deciding where to locate their investments. Those who benefit the most from the growth of the internal financial sector are domestic and foreign that are associated with local partners and whose participation is less than 50% of capital. This argument is supported in the development of the hypothesis research (H6) in the methodology chapter.

SIDS's financial sector is considered to be small and limited due to lack of resources and financial infrastructures (payment systems, regulations and supervision). The access to credit is very weak in a group of countries where the level of the informal sector and the costs of information are high.¹⁴

The lack of information about access to credit has been a hindrance in SIDS and is associated with high costs of processing such as the sharing of information between financial institutions about potential borrowers or even in case of failures. Creditors had the ability to recover assets that served as guarantees (UNCTAD 2009).

¹⁴ 80% of economic activity is centered on the informal sector (UNCTAD 2009)
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Macroeconomic and Political Stability

Srinivasan (2002) says that foreign investors prefer locating their subsidiaries in a country where the uncertainties of the market are low. When macroeconomic policies are not sustainable – the variation of the exchange rate is high, the inflation varies and presents two digits or when the countries have high budget deficits – the investment climate becomes very unattractive (Moreira 2009), making these countries weaker in competitive terms when compared to those that are more stable.

Stability creates favorable expectations for the investors regarding the business environment in a given market. However, there are uncontrollable factors in SIDS that destabilize their economy – vulnerability to external shocks, natural disasters, being price holders in international markets (an increase in the price of a given imported product does denigrate your local currency, the rate of exchange and therefore the balance of payments, having an impact on inflation). Babatunde and Shakirat Adepeju (2012) and Júlio et al. (2013) concluded that the macroeconomic stability has an effect in attracting FDI, but the definition of the variables that qualify macroeconomic stability is not the same for all authors. Djankov et al. (2010), Babatunde and Adepeju (2012) used the inflation and the exchange rates as a measure of macroeconomic stability and concluded that the first has a negative relation with the inflow of FDI. Regarding exchange rate, they did not find any significant relationship with FDI. Following Deborah L. Swenson (1993), the exchange rate influences the inflow of foreign direct investment. Studies on the effects of taxation in foreign direct investment in the US concluded that the depreciation of the domestic currency increases the incentive for foreign direct investment, because it makes the price of local assets and the cost of the currency lower. We support this argument in the development of the hypothesis research (H7) in the methodology chapter. Others emphasize the need for a good legal and bureaucratic environment (Júlio, et al., 2013).

The corruption is taken as a negative aspect of business development and attraction of FDI (Julio et al., 2013). A high index of corruption tends move investors abroad (DB 2013), so there is a need for corruption's control.

The control of corruption is taken as an indicator that measures the institutions' quality and aims to eliminate all forms of activity that benefits themselves (WB world Governance Indicator). The state's aim in this sense is to identify the elites of particular interest. The higher the level of corruption control in a country, the greater guarantees will foreign investors have regarding the fact that public power offers stability to invest in a particular site.

The investors are attentive to all situations of political crisis in a given country (social conflicts, government corruption, wars, violence). When the country is politically stable it is more likely to attract foreign investors. We support this argument in the development of the hypothesis research (H8) in the methodology chapter.

3.3 Research Hypothesis

The literature on taxation and FDI suggests that taxation is one of the main determinants of FDI for many countries (developed, developing and transition), but especially in the smaller sized countries, as demonstrated in studies of UNCTAD (2014). However, the tax rate's effect on the FDI is not verified in an independent manner, but in conjunction with other risk factors. We have developed the following research hypothesis:

- H1: *"In Small Island Developing States (SIDS), the corporate income tax rate has an inverse relationship in attracting FDI – Foreign Direct Investment".*
- H2: *"In Small Island Developing States (SIDS), the purchasing power has a direct relationship in attracting FDI – Foreign Direct Investment".*
- H3: *"In Small Island Developing States (SIDS), the market size has a direct relationship in attracting FDI – Foreign Direct Investment".*

- H4: *"In Small Island Developing States (SIDS), the degree of market openness has a direct relationship in attracting FDI – Foreign Direct Investment".*
- H5: *"In Small Island Developing States (SIDS), the availability of natural resources has a direct relationship in attracting FDI – Foreign Direct Investment"*
- H6: *"In Small Island Developing States (SIDS), access to finance has an inverse relationship in attracting FDI – Foreign Direct Investment".*
- H7: *"In Small Island Developing States (SIDS), macroeconomic stability has a direct relationship in attracting FDI – Foreign Direct Investment".*
- H8: *"In Small Island Developing States (SIDS), political stability has a direct relationship in attracting FDI – Foreign Direct Investment".*

The formulation of these hypothesis are based on previous studies' findings on the determinants of FDI and mainly on identifying the characteristics of countries that are part of the group of SIDS.

After this brief contextualization of traditional determinants that affect foreign direct investment, we will, in the next chapter, describe the justification of the methodology chosen for this study.

CHAPTER IV: METHODOLOGY

This study's main goal is to contribute to the literature on taxation and the FDI using appropriate methodologies to capture the impact of corporate income tax rates on foreign direct investment in Small Island Developing States (SIDS).

In this chapter, we will describe and develop the conceptual framework of our empirical analysis, as we are looking for evidence of distortions in taxation, which may impact on inflows of FDI in SIDS. According to Becker et al. (2006) the taxation may affect FDI in two ways – it can reduce the average income of an investment project, influencing the decisions of internationalization and localization of companies; and it can change the cost of the companies' capital, influencing the investment decision.

Our set of panel data does not capture the decision of internationalization and localization, but it does capture the inflows of FDI and its variation over time.

4.1. Variables

Dependent Variable. The dependent variable in this research is the Foreign Direct Investment (FDI), which is defined in the majority of studies as the quotient between the aggregate inflows of Foreign Direct Investment made by all countries in Small Island Developing States (SIDS) and the Gross Domestic Product of each one of these countries (SIDS).

Independent Variables. There are eight variables considered in this study as being influencers of the inflow of foreign direct investment in SIDS. In addition to the corporate income tax rate, we also have GDP per capita, GDP growth rate, degree of openness,

availability of natural resources, domestic credit provided by the financial sector (% of GDP), the exchange rate and political stability.

The independent variables used to explain the inflows of Foreign Direct Investment (dependent variable) are presented below in Table 2.

Table 2. Independent Variables (description and references)

Name	Measures	Reference
Corporate income tax rate (CTR)	Revenue from the tax on corporate income (national currency) on the Gross Domestic Product (national currency)	<i>Pereira (2011), Babatunde and Shakirat Adepeju (2012)</i>
Purchasing Power (GDPpc)	Gross domestic product per capita in American dollars.	Pereira (2011), Haberly & Wojcik (2014)
Market Size (MSIZE)	Gross Domestic Product (annual growth rate).	<i>Babatunde and Shakirat Adepeju (2012), Demirhan & Masca (2008), Haberly & Wojcik (2014)</i>
Natural Resources (NATRESH)	Total revenue from natural resources as a percentage of the Gross Domestic Product	<i>Babatunde and Shakirat Adepeju (2012)</i>
Degree of Openness (DO)	Quotient of the sum of imports and exports by Gross Domestic Product	<i>Pereira (2011), Babatunde and Shakirat Adepeju (2012)</i>

Macroeconomic Stability (EXRATE)	"The exchange rate is the price of one currency in terms of another. Official exchange rates and exchange rate arrangements are established by governments. Other exchange rates recognized by governments include market rates, which are determined largely by legal market forces, and for countries with multiple exchange arrangements, main rates, secondary rates, and tertiary rates." <i>(WB World Development Indicator)</i>	<i>WB World Development Indicator</i>
Financial Sector Size (FINANCE)	Domestic Credit provided by the financial sector as a proportion of GDP	<i>WB World Development Indicator</i>
Political Stability and Could Go Wrong of Violence/Terrorism: (POLIT. STABIL)	Political Stability and Could Go Wrong of Violence/Terrorism captures the likelihood of the government being destabilized or overthrown by unconstitutional or violent means, including politically motivated violence and terrorism. Estimates give the country's score on the aggregate indicator, in units of the standard normal distribution, i.e. ranging from approximately 2.5 to 2.5" <i>Worldwide Governance Indicator</i> "	<i>WB Worldwide Governance Indicator</i>

4.2 Data and Sample

The literature review has allowed us to identify what are the main sources of data and the different methods for the analysis of the study related to the impact of the tax rate on foreign direct investment.

The data were collected from the databases of the World Bank, "WORLDDATABANK", the Annual Reports of the "PriceWaterCooper" (PWC) about *Paying Taxes (World Bank Group's Doing Business Projects)* and UNCTAD from 2004-2013.

From these databases we get information on the 22 countries that make up the group of Small Island Developing States (SIDS 22).

From “*WB World Development Indicator*” was extracted data of inflows of foreign direct investment as a share of GDP (FDI/GDP), data on the revenue from the company’s income tax and the gross domestic product (both in local currencies). Then the effective tax rate paid by the companies was calculated by dividing the tax revenue by the GDP (CTR/GDP) and by analyzing the Gross Domestic Product per capita at current prices in dollars (GDPpc), the growth rate of GDP, total revenues from natural resources as a proportion of GDP (Dnatres), domestic credit provided by the financial sector in proportion of GDP, estimated political stability and the effective exchange rate, whose depreciation or appreciation is in terms of USD.

In Annual Reports of PWC we manually collected the data of corporate income tax’s nominal rate (Corporate Income Taxes Rate) from 2007 to 2014 due to non-availability of data for other years. UNCTADstat collected data on the imports of goods and services as a proportion of GDP, exports of goods and services as a proportion of GDP and the inflows of FDI in current prices expressed in dollars. The data on the degree of openness (DO) were calculated using the sum of the imports and exports of goods and services as a proportion of GDP.

In this study we consider as a set of small island states only 22 out of the 29 States (5 in Africa, 14 in Asia and Oceania and 10 in the Caribbean), having for a reference UNCTAD’s last report (2014). In this study, the small island states that are associated with a large metropolis or island regions that enjoy a high degree of autonomy (table 3.) are excluded. This is because they have a greater opportunity to increase foreign preference, to share and outsource costs, to reduce the effects of natural disasters, to reduce economic vulnerability and to provide better conditions for comparative advantages in their businesses, thus leading to a greater flow of Foreign Direct Investment.¹⁵

¹⁵ UNCTAD, "FDI in Small Island Developing States: Its Limitation and Potential" *Global Investment Trend Monitor* Ed.n 17 September 2014

Table 3. SIDS in Study

Africa SIDS	Cape Verde, São Tomé and Príncipe, Mauritius and Seychelles.
Asia and Oceania SIDS	Maldives, Timor-Leste, Fiji, Kiribati, Papua New Guinea, Tonga ,Samoa, Salomon Island. Sri. Lanka
Caribbean SIDS	Antigua and Barbuda, The Bahamas, Dominica, Grenada, Jamaica, Saint Kitts and Nevis, Saint Lucia, Saint Vicent and Grenadines, Trindade and Tobago

Source: UNCTAD (2014)

The sample consists of 22 SIDS countries in a period from 2004 to 2013 in a total of 220 observations. The choice of countries that are part of the group of Small Island Developing States (SIDS) is a result of the need to study a group of countries with characteristics as identical as possible, which allows us to obtain information from a more homogeneous sample.

Panel data. We aim to describe arguments supporting the use of the model with panel data in estimating the equation and the used econometric model.

The estimation of the equation explaining the FDI with panel data allows us to analyze the information through two dimensions, spatial and temporal. The spatial dimension component (*cross-section*) is composed of all the 22 countries of SIDS (*Small Island Developing States*), and the temporal dimension component (*time series*) is composed of observations over a period of 10 years from 2004 to 2013.

As there are certain variables with missing observations, our panel is unbalanced; however, if there were no missing observations it would be a balanced one.

This methodology assists in the identification and use of the econometric model and allows greater control over the effects that may arise in terms of heterogeneity. It also is highly capable in reducing possible multicollinearity effects between the explanatory variables, allowing the econometric estimators to be more effective.

One of the biggest advantages of this method is that we can get more understandable results and a more detailed analysis that what we perceive by looking only at a cross-section or time series individually. It also allows us to control the dynamic effects that are not visible in cross-sections (Greene 2012).

4.3 Explanatory Model of FDI with Partial Adjustment

One of the ways to reduce both the number lagged terms in models with distributed lags and the problem of multicollinearity is by using a model with partial adjustment (Gujarati and Porter 2010).

The temporal lags helps explain some bureaucratic issues for investors to achieve the business, as delays in moments of execution of the work, time for the project's approval, discrepancy in terms of supply of capital goods, time to transfer technologies and hire and train workers (Pereira 2011).

One of the characteristics of the model with partial adjustment is that it replaces all lagged values of the explanatory variables for a single value of the lagged dependent variable. The model is called autoregressive because of the dependent variable's presence among the explanatory variables (with lagged terms). The big advantage of using this model is that it will help us to assess the impact, both in the short and long term, of an explanatory variable on the dependent variable (FDI).

More specifically, the model will capture the influence of all explanatory variables in foreign direct investment in the short as well as in the long term.

For this reason, the partial adjustment model to estimate is composed by two equations. According to Gujarati and Porter (2010) and Pereira (2011), the first one is:

$$FDI_{it}^* = \beta_0 + \beta_1 CTR_{it} + \beta_2 \ln(GDPpc_{it}) + \beta_3 MSIZE_{it} + \beta_4 DO_{it} + \beta_5 DNATRES_{it} + \beta_6 \ln(FINANCE_{it}) + \beta_7 \ln(EXCRATE_{it}) + \beta_8 POLITSTABIL_{it} + u_{it}$$

$$i = (1, 2, \dots, n); t = (1, 2, \dots, 10) \quad (1)$$

Where:

FDI_{it}^* ; Desired Foreign Direct Investment as a share of GDP in year t for country i.

FDI_{it} = Foreign Direct Investment carried out in proportion of GDP in year t to the country i,

CTR_{it} = corporate income tax revenue as a proportion of GDP in year t to the country i,

$GDPpc_{it}$ = Purchasing Power, Gross Domestic Product per capita in current USD in year t to the country i.

$MSIZE_{it}$ = Size of Market expressed in GDP in current USD in year t for country i.

DO_{it} = Market's degree of openness, measured by the sum (imports + exports) as a proportion of GDP; in year t to the country i

$DNATRES_{it}$ = Dummy (Availability of Natural Resources); it is equal to 1 if the income from natural resources is greater than 1 per cent of GDP and otherwise zero; in year t to the country i

$FINANCE_{it}$ = Development of the financial sector in terms of size (Domestic credit provided by the financial sector (% of GDP).); in year t to the country i

$EXCRATE_{it}$ = "Official exchange rates and exchange rate arrangements are established by governments, in year t to the country i

$POLIT\ STABIL_{it}$ = Noncombatants Stability and Could Go Wrong of Violence/Terrorism: in year t for country i.

u_{it} = Disturbance error.

As the desired level of FDI (1) is not directly observable, according to Gujarati and Porter (2010) there is a second equation that includes the possibility of partial adjustment.

$$FDI_{it} - FDI_{it-1} = \delta(FDI_{it}^* - FDI_{it-1}) \quad (0 < \delta < 1) \quad (2)$$

Where $FDI_{it}^* - FDI_{it-1}$ represents the desired variation in FDI and $FDI_{it} - FDI_{it-1}$ represents the current variation in FDI; δ is the adjustment factor, which captures the proportion of the desired investment that is realized (current variation of FDI).

If the adjustment coefficient (δ) is close to 1, it means that the variation actually observed is the exact same of the desired. The opposite situation, when the coefficient is close to zero, means that the short-term adjustment is small and the most significant consequences will be observed over the long term in the periods following.

Combining equation 1 and equation 2 results in the reduced form of the model (equation 3) of the two structural equations.

$$FDI_{it} = \beta_0 + \beta_1 CTR_{it} + \beta_2 \ln(GDPpc_{it}) + \beta_3 MSIZE_{it} + \beta_4 DO_{it} + \beta_5 DNATRES_{it} + \beta_6 \ln(FINANCE_{it}) + \beta_7 \ln(EXCRATE_{it}) + \beta_8 POLIT_STABIL_{it} + (1 - \delta) FDI_{it-1} + u_{it} \quad (3)$$

According to Gujarati and Porter (2010) and Pereira (2011), to the partial adjustment model (3.) must be added both the cross-section country effects and the specific temporal effects, resulting in the following equation (4.):¹⁶

$$FDI_{it} = \beta_0 + \beta_1 CTR_{it} + \beta_2 \ln(GDPpc_{it}) + \beta_3 MSIZE_{it} + \beta_4 DO_{it} + \beta_5 DNATRES_{it} + \beta_6 \ln(FINANCE_{it}) + \beta_7 \ln(EXCRATE_{it}) + \beta_8 POLIT_STABIL_{it} + (1 - \delta) FDI_{it-1} + \gamma_i + \gamma'_t + u_{it} \quad (4)$$

Where γ and γ' represent the cross-section and time-series effects, respectively – effects that are not described by variables but that influence FDI.

This final model makes it possible to estimate the equation and to draw conclusions regarding the proposed research hypothesis.

This model – the partial adjustment model with cross-section (countries) and time series (years) effects – captures the effects of the explanatory variables, namely the corporate income tax rate, on FDI, both in the short and long term, taking into account the countries' heterogeneity and temporal effects

Concerning the corporate income tax rate, its coefficient's expected sign (β_1) should be negative, meaning that the corporate income tax rate has an inverse relationship with foreign direct investment, validating both H1 and the theory of previous studies (Hartman (1984), Hines (1993, 2005), Hines & Desai (2003), Erdal Demirhan & Mahmut Masca (2008), Pereira (2011)).

¹⁶ See appendix 2

Before we proceed with the estimation of the model and its results' analysis, we will describe the SIDS's characteristics and the behavior of FDI in these countries from 2004 to 2013.

CHAPTER V: CHARACTERIZATION OF SMALL ISLAND DEVELOPING STATES (SIDS)

The Small Island developing States are a set of 52 small states recognized by the United Nations Conference on Environment and Development in June 1992. This resulted in the production of an Action Plan in order to help these countries achieve sustainable development called “The *Barbados Program of Action* ”.¹⁷

They are characterized as a set of countries with certain similar characteristics – small islands facing challenges related to sustainable development like population growth, vulnerable external shocks, high dependence on international trade, susceptibility to natural disasters and fragile environmental conditions.

SIDS face strong barriers to development such as high cost of transportation and energy, weak infrastructures and inability to develop scale economies due to their small size.

Its economic vulnerability to external shocks and natural disasters is higher than that verified for other countries (Aquides Santos, 2011). There are also other impediments to the internal development of these economies – they are not very diversified and present a low level of expertise and they support high operation costs due to the impossibility of development of scale economies.

It is not just for being small that these states face difficulties in their macroeconomic performance, but also because they are islands.

¹⁷ United Nation General Assembly "REPORT OF THE GLOBAL CONFERENCE ON THE SUSTAINABLE DEVELOPMENT OF SMALL ISLAND DEVELOPING STATES Bridgetown, Barbados, 25 April-6 May 1994 ”.

In the Declaration of Barbados: "Recognizing that the Global Conference on the Sustainable Development of Small Island Developing States translates Agenda 21 into specific policies, actions and measures to be taken at the national, regional and international levels to enable small island developing States to achieve sustainable development"

The difficulties of access (due to high transport costs) to these countries are enormous by overland routes; it can only be made by air or sea.

Now focusing on the business climate, it is influenced by a number of factors, some of them having already been referred, such as the size of the market and the population and the access to the islands. However, there are other important factors of political nature: corruption, inflation and political instability.

Compared to other countries that do not belong to SIDS, these countries are in disadvantages in terms of competitiveness at the level of supply of the market, production and distribution.

Although apparently these countries show some weaknesses, it is possible to transform them into potential opportunities for its development by betting on some specific niches of the market which are more attractive to Foreign Direct Investment such as retail, energy and telecommunications, as shown in the report of UNCTAD 2014¹⁸ on SIDS.

Foreign Direct Investment in Small Island Developing States. The behavior of the cash inflows in FDI in SIDS for the period of 2013 was reducing, having decreased by 16%, from approximately 6.6 billion USD (2012) to 5.7 billion USD (2013). Two years ago there had been a period of recovery of plummeting verified in 2009, due to the crisis that occurred internationally and that affected to a large extent the inflows of FDI in SIDS, considering their high vulnerability to external shocks.

¹⁸ " These constraints are reduced when low competitive pressure result in relatively high market shares for market-seeking FDI, mitigating the impact of the small size of the market and making add SIDS - in particular those with relatively high purchasing power - attractive niche destinations is specific services such the retailing, telecommunications, and energy. In the case of efficiency-seeking FDI, the development of information and communication technologies (ICT) has opened up opportunities in new areas that are not sensitive to transport costs, including call centers, data entry, and back offices (such the purchases, logistics, accounting, claims and payment processing), provided the skilled labor force and access to telecommunication and information networks are available ... " UNCTAD (2014).

The flows of FDI in SIDS fell 3 per cent in 2013, from 58 billion USD (2012) to 57 billion USD, affecting the percentage of participation (3.9 %) of SIDS in world FDI, when in 2012 (Table 4.) this same parameter was 4.4%. UNCTAD (2014).

Table 4. FDI flows by region, 2011-2013 (billions of dollars and per cent)

Region	FDI inflows			FDI outflows		
	2011	2012	2013	2011	2012	2013
World	1 700	1 330	1 452	1 712	1 347	1 411
Developed economies	880	517	566	1 216	853	857
European Union	490	216	246	585	238	250
North America	263	204	250	439	422	381
Developing economies	725	729	778	423	440	454
Africa	48	55	57	7	12	12
Asia	431	415	426	304	302	326
East and South-East Asia	333	334	347	270	274	293
South Asia	44	32	36	13	9	2
West Asia	53	48	44	22	19	31
Latin America and the Caribbean	244	256	292	111	124	115
Oceania	2	3	3	1	2	1
Transition economies	95	84	108	73	54	99
Structurally weak, vulnerable and small economies^a	58	58	57	12	10	9
LDCs	22	24	28	4	4	5
LLDCs	36	34	30	6	3	4
SIDS	6	7	6	2	2	1
Memorandum: percentage share in world FDI flows						
Developed economies	51.8	38.8	39.0	71.0	63.3	60.8
European Union	28.8	16.2	17.0	34.2	17.7	17.8
North America	15.5	15.3	17.2	25.6	31.4	27.0
Developing economies	42.6	54.8	53.6	24.7	32.7	32.2
Africa	2.8	4.1	3.9	0.4	0.9	0.9
Asia	25.3	31.2	29.4	17.8	22.4	23.1
East and South-East Asia	19.6	25.1	23.9	15.8	20.3	20.7
South Asia	2.6	2.4	2.4	0.8	0.7	0.2
West Asia	3.1	3.6	3.0	1.3	1.4	2.2
Latin America and the Caribbean	14.3	19.2	20.1	6.5	9.2	8.1
Oceania	0.1	0.2	0.2	0.1	0.1	0.1
Transition economies	5.6	6.3	7.4	4.3	4.0	7.0
Structurally weak, vulnerable and small economies^a	3.4	4.4	3.9	0.7	0.7	0.7
LDCs	1.3	1.8	1.9	0.3	0.3	0.3
LLDCs	2.1	2.5	2.0	0.4	0.2	0.3
SIDS	0.4	0.5	0.4	0.1	0.2	0.1

Source: World Investment Report (UNCTAD 2014)

Comparing the flows of FDI to SIDS in relative terms, they are smallest than other groups of countries', representing only 0.4 per cent (table 3) of the FDI world flows in 2001-2013. However, if we compare in proportion of the size of its economy, they are fairly high – almost three times the world average and twice the average in developed countries and countries in transition (UNCTAD, 2014).

One of the arguments that justify the behavior of the flows of FDI to SIDS when compared to other groups of countries is related to tax benefits offered to foreign investors.

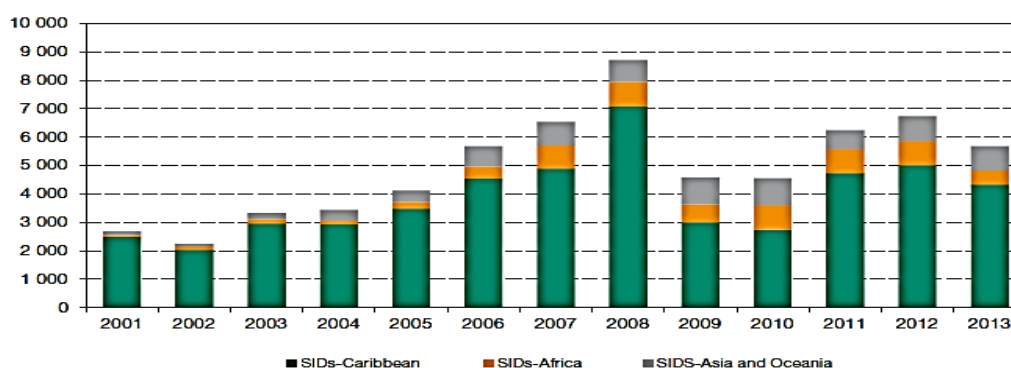
In regional terms (figure 2), the flow of FDI in SIDS decreased for all sub-regions (Africa, Latin America, Asia and Oceania). However, there are sub-regions where the downward

trend was more pronounced: in Sub-Saharan Africa, where there was a drop of 41 per cent (499 million dollars), although it is the region where there is a lower number of SIDS. It shows that these countries have a higher rate of vulnerability in terms of fluctuations of FDI. The next sub-region that has experienced significant drops in flow of FDI is formed by the countries of Latin America, where the decline was 14 per cent (4.3 billion). In SIDS in Asia and Oceania the fall was of 3 per cent (853 million).

The weaknesses of these countries are recognized by international communities and efforts have been made to correct them, by encouraging external funding through the Official Development Assistance (ODA) and the flows of private capital, as well as other consignments of capital (UNCTAD, 2014).¹⁹

According to UNCTAD (2014), the global economic crisis slowed the growth of FDI to SIDS. It showed an average growth of 6.3 billion USD from 2005 to 2008, which was more than double compared to the period of 2001 to 2004. The growth of FDI came to grow 47% (4.6 billion) from 2009 to 2011, that growth being interrupted in 2013.

Figure 2. FDI flows into SIDS by sub region, 2001-2013 (millions of dollars)



Source: UNCTAD (2014)

The sub-regions that attract FDI are Latin America and the Caribbean – 78% of the flows of FDI to SIDS are concentrated in this region during the period of 2001 to 2013. It is

¹⁹ The capital flows as the FDI, portfolios and flows of bank loans.
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easy to understand that these countries are in a geostrategic position (close to large market of North America), which gives them a comparative advantage towards other sub-regions.

SIDS of the sub-region of Africa registered a growth of flows of FDI in 20% (2005-2008) and 29% (2009-2013), the latter being the period of greatest growth in the last 10 years. In the sub-region of Asia and Oceania, Papua New Guinea and East-Timor are the countries that attract most of the FDI inflows, due to its potential in natural resources (extractive industry). The same happens with other countries: Mauritius has great potential for attracting FDI in the services sector (finance, hotels and restaurants, construction and navigation) and Jamaica is the country that most attracts investors in the primary sectors, industries and services (Table 5).

According to the UNCTAD, from 2003 to 2013 foreign investors have announced through the 'greenfield *project*' an investment amount that is about 57% of the total FDI²⁰ made by these investors. Their main destinations were Papua New Guinea, Trinidad and Tobago, Timor and Fiji.

Sao Tome and Principe belong to the Top 10 of SIDS that most attracted FDI over the past 11 years (2003-2013) in the Greenfield project, with a cumulative total of 512 million USD. There was predominance for the manufacturing and services sectors, in a country where the tourist potential is recognized. However, the weak infrastructures has attracted little foreign investors. Despite this, it is known that the recently discovered hydrocarbons (forecast to start operating in 2015) in this country can attract large MNEs and boost domestic development.

We can conclude that although SIDS present some disadvantages (size, structure, vulnerabilities and poor infrastructures), they are also equipped with resources (natural and human capital) and a vast majority of them is located in a strategic position, good to access large markets, which is an investor's requirement.

²⁰ UNCTAD (2014), a project in which a foreign investor establishes a new subsidiary in a country through a greenfield investment, which will be through the establishment of a new production unit, acquisition of new fixed assets, goods and services, labor, in the host country.

Others have economies based on agriculture, fishing and services or are powerful in tourism, which is also interesting for foreign investment. If the tourist potential is well exploited, not causing environmental damage, it can boost the development of other sectors (agriculture, fisheries and services).

Table 5. SIDS: Announced Greenfield FDI projects by sector in total and in top 10 destination countries, 2003-2013 (total capital expenditures in millions of dollars)

	Papua New Guinea	Trinidad and Tobago	Maldives	Timor- Leste	Mauritius	Jamaica	Fiji	Bahamas	Seychelles	Sao Tomé and Príncipe	Others	Total
Primary	8 070	3 091	0	1 000	0	0	792	0	0	0	228	13 181
Mining, quarrying and petroleum	8 070	3 091	0	1 000	0	0	792	0	0	0	228	13 181
Secondary	7 155	3 865	78	4 010	203	687	59	142	102	351	248	16 900
Coke, petroleum products and nuclear fuel	6 650	791	0	4 000	1	0	0	0	0	0	0	11 442
Metal and metal products	228	404	0	0	2	384	0	0	0	0	0	1 019
Chemicals and chemical products	0	2 435	0	0	3	10	0	0	0	0	80	2 527
Food, beverages and tobacco	214	92	0	10	0	258	46	0	59	0	129	808
Other manufacturing	63	143	78	0	197	35	13	142	43	351	39	1 104
Tertiary	1 113	301	5 683	116	4 344	3 147	551	1 079	695	161	2 337	19 527
Hotels and restaurants	0	0	3 153	0	362	504	206	128	476	0	1 171	5 999
Construction	0	0	1 997	0	2 445	1 350	0	0	0	0	0	5 792
Transport, storage and communications	70	23	326	116	362	1 027	70	837	186	150	446	3 613
Finance	162	111	208	0	164	96	248	34	19	11	241	1 295
Electric, gas and water distribution	775	0	0	0	0	0	0	0	0	0	340	1 115
Business activities	48	55	0	0	774	43	27	55	14	0	77	1 094
Other tertiary	59	111	0	0	237	126	0	24	0	0	63	619
Total	16 338	7 256	5 762	5 126	4 547	3 834	1 403	1 220	797	512	2 813	49 608

Source: UNCTAD, based on information from the Financial Times Ltd., fDi Markets (www.fdimarkets.com).

Source: UNCTAD (2014)

The majority of SIDS, like Sao Tome and Principe, remain vulnerable to external shocks with a growth rate of 4% per annum (2013). Efforts have been made by the authorities to ensure fiscal prudence. The economy of Sao Tome and Principe (STP) is dominated by the services sector (54% of GDP), agriculture (20% of GDP) and industry (13% of GDP). In terms of employment, the labor is intensive and almost 70% of the population depends on agriculture. The trade has a weight of 24% of the GDP but could be superior if the

government manages to control the high weight of informal trade. The high dependence on external financing for the State budgets (95% in the form of donations and external funding) makes the country more vulnerable. The trade balance is highly deficient (-35.5% of GDP in 2013), the cocoa being the main export product with 1.6% of GDP.

The foreign direct investment has been assumed to be the main factor in the development of STP and the biggest opportunities are in the sector of construction, transport and retail. Portugal and Angola have been the main sources of FDI in sectors of tourism and trade. The global financial crisis and the social unrest in North Africa boycotted several projects of planned investments, meaning that the weak infrastructures (ports, airports and roads) and the sectors of tourism, industry, services, education and health need special attention.

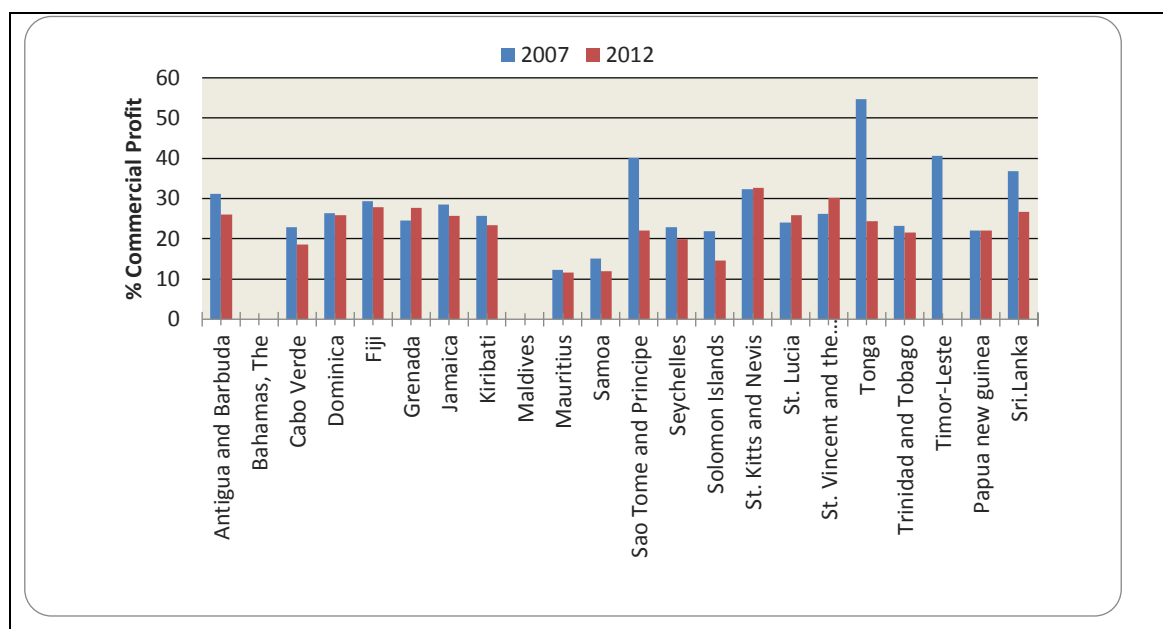
Sao Tome and Principe has been promoting the development of a number of institutional and structural reforms to make the business environment more attractive and improve the quality of the institutions, namely from tax and customs reforms, such as changes in tax base and decentralization of tax services. The launch of the software SYDONIA (2013) in the customs department makes it possible to: *(i) harmonize policies and procedures; (ii) reduce cost of transport on the import and export of goods; (iii) improve the coordination between ministries; and (iv) provide incentives for exports*, IMF (2013). It will also improve the transparency and the modernization of the customs department.

The money spent on the State budget will be managed and executed by managing public finances. SAFE was launched in 2013 and allows the creation of a single window that makes it possible for the creation of business to be done in less than 4 days. Anchoring the national currency (STD) to the Euro (from the fixed rate) in 2010 allowed for a greater control of the Central Bank of Sao Tomé and Príncipe (CBSTP) on the financial soundness of the banking sector. The launch in 2013 of the Central Credit Risk was important as it allows people to regulate and ensure financial stability.

STP has access to large markets (EU and USA) – In the EU through the treaty of preferential “Everting BUT Arms (EBA)”; in the USA by the law of growth and opportunity for Africa -AGOA (Africa Growth and opportunities Act).

The majority of the countries from the group of SIDS has adopted policies to reduce its nominal corporate income tax rate, as we can see in figure 3.

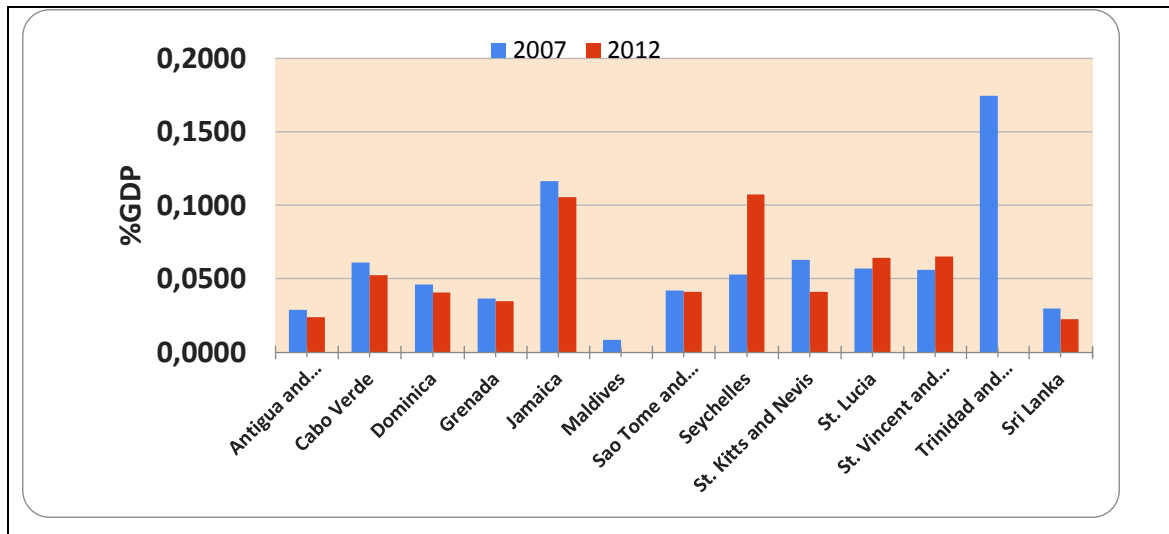
Figure 3. Nominal tax rate on societies' income, SIDS-22, 2007-2012



Source: PRICEWATERCOOPER (PWC), *Paying Taxes Report*

These policies do not necessarily mean measures to increase tax revenues, since as we can see in figure 4 the weight of tax revenue from the income's tax in proportion of GDP fell.

Figure 4. Revenue from the tax on corporate income, SIDS-13, 2007-2012



Source: World Development Indicators and own elaboration

With the exception of Seychelles, Santa Lucia and St. Vincent and Grenadines, from 2007 to 2012 the corporate income tax revenue for these countries has decreased.

In the next chapter we will discuss the results of the estimated model and see if it is according to our preceding hypothesis research.

CHAPTER VI: RESULTS AND DISCUSSION

This research's results were obtained through the use of panel data, which includes annual time series from 2004 to 2013 and the set of 22 countries that are part of the SIDS group (Small Island Developing States). The procedure was based on a partial adjustment model (equation 4), performed by the Method of Generalized Last Squares. The errors auto-correlation between time periods and heteroscedasticity due to the different countries present in the sample were taken into consideration through the consistent estimation of White (for the variances and covariance of the coefficients' estimators).

Excluding the data with missing observations, the sample set was reduced to 110 observations, composed by 16 cross-sections (countries) with annual data, from 2005 to 2012.

EvIEWS 8.0 software has been used for the model's estimation (equation 4) and the main results are presented in Table 7.

Descriptive statistics of the variables. We begin by analyzing some descriptive statistics, present in Table 6. On average, the proportion of FDI in GDP is 10.31 % for the set of all countries in the sample corresponding to all of the years (2004-2013) in analysis, with maximum values of (43.13 %) and minimum (0.16 %). There are certain differences in the countries under study. We can analyze these behaviors using the coefficient of variation, 0.7156.

The average CTR is 5.7 %, i.e. the tax's rate on the companies' income is represented by the ratio of the revenue from the income of companies' tax and the Gross Domestic Product. Its amplitude goes from a maximum of 21% to a minimum of 0,005 %, showing that tax policies adopted by countries (SIDS) are different from each other.

Table 6. Descriptive statistics

Common Sample									
Sample: 2004 2013									
	FDI	CTR	PIBPC	MSIZE	DO	DNATRES	FINANCE	EXCRATE	POLIT_STABIL
Mean	0.10308	0.05687	7063.997	3.27035	1.03186	0.23577	0.67981	1100.680	0.47301
Median	0.08588	0.05070	6338.900	3.25014	0.89809	0.00000	0.61430	5.500000	0.75496
Maximum	0.43138	0.21138	21395.28	19.58558	2.23064	1.00000	1.27853	19068.40	1.41374
Minimum	0.00162	0.00005	734.0354	-12.03602	0.49149	0.00000	0.04372	1.690970	-1.80103
Std. Dev.	0.07378	0.03962	4320.839	5.07191	0.37499	0.42622	0.29495	3940.110	0.65747
Skewness	1.28477	1.66233	0.678625	0.14542	1.65013	1.24495	0.16730	3.539760	-1.37533
Kurtosis	5.43337	6.54057	2.874193	3.63593	5.30991	2.54989	2.09919	14.10210	4.66549
Std.Dev/Mean	0.71575	0.69671	0.611671	1.55088	0.36341	1.80775	0.43388	3.579710	1.38999
Jarque-Bera	64.18497	120.89355	9.522013	2.50607	83.16573	32.81106	4.73250	888.5532	52.99259
Probability	0.00000	0.00000	0.008557	0.28564	0.00000	0.00000	0.09383	0.000000	0.00000
Sum	12.67922	6.99543	868871.6	402.252	126.919	29.00000	83.6161	135384.0	58.17966
Sum Sq. Dev.	0.66414	0.19155	2.28E+09	3138.36	17.15540	22.16260	10.6136	1.90E+09	52.73719
Observations	123	123	123	123	123	123	123	123	123

Source: Eviews²¹

The explanatory variable GDPpc is the Gross Domestic Product *per capita* and reflects the purchasing power. This variable has a mean of 7063,998 USD with an amplitude that varies from 21,395 USD maximum to 734.03 USD minimum. The coefficient of variation is (0.61) – table 6.

The GDP growth rate (MSIZE) reflects the market size; this variable has a mean of 3.27% with an amplitude that varies from -12% minimum to 19.58% maximum. It is the variable with the third greatest variability in the sample, its coefficient of variation being (1.55).

The average value of the Degree of Openness (DO) is 1.03, with a range that varies from 0.49 to 2.23. Its coefficient of variation is 0.3652.

The income from natural resources (DNATRES) is a dummy variable that displays an average of 22 %, showing that there are only a few countries in the sample whose revenue from natural resources has some weight in the GDP.

²¹ Complete result of estimated model in annex

The average size of the financial sector (FINANCE) measured by Domestic credit provided by the financial sector (% of GDP) is 0.68 in SIDS, with maximum values of 1.27 and minimum of 0,043; its coefficient of variation being 0.43.

Two other explanatory variables that demonstrate the macroeconomic (EXCRATE) and political (POLIT STABIL) stability have average values of 1100,680 and 0.47, respectively.

EXCRATE shows maximum values of 19068.40 and minimum of 1.69. The POLIT STABIL presents amplitudes of 1.41 and -1.80; the best and worst levels of stability are between (2.5) to 2.5.

Econometric model results. From the estimated econometric model (Table7.), we can clearly conclude that the variables Corporate Tax Rate (CTR), Market Size (MSIZE), Degree of Openness (DO) and Size of the Financial Sector (LogFINANCE) are statistically significant at a 5% level (P-Value), whereas Purchasing Power (LogGDPpc) and the indicator of Macroeconomic Stability (effective exchange rate, (EXRATE)) are statistically significant only at 10%. On the other hand, Political Stability (POLIT STABIL) and Availability of Natural Resources (DNATRES) are not statistically significant, not even at 10%.

The explanatory variables used in the model, when considered together, are able to explain 92.44% of the total variation of the foreign direct investment (measured R^2), showing a good explanatory model of FDI, confirmed by the global significance test (p-value of the F-statistic that is below the significance level of 0.01).

Notes that Corporate Tax Rate (CTR) shows statistically significant effect and negative in Foreign Direct Investment and shows that it is the factor that determines the FDI with major relevance which is consistent with Pereira (2011) and Jdankov at al (2010) , Babatunde & Adepeju(2012) and Haberty & Wójcik(2014).

An increase in the rate of corporate income tax by 10 percentage points drops the proportion of Foreign Direct Investment on GDP in 3.5 percentage points to the short

term, but in the long term, this effect is 4.7 percentage points. These results indicate that the decisions of tax policies of Small Island Developing States (SIDS) in terms of corporate income tax rate has an impact immediately on weight of direct foreign investment both in the short term and the long term in GDP and this effect grows throughout the year until it reaches the total impact of 4.7 by 10 percentage points of the increase in the tax rate.

The purchasing power measure by log (GDPpc) is statistically significant and positive, with direct effect of 0,037. The increase of 1 per cent in per capita GDP increases the weight of FDI on GDP in 0,037 percentage point in short-term and being the effect of long-term of 0,049 . In SIDS where the per capita GDP has greater value and higher growth tends to attract larger inflows of FDI.

The market size growth (MSIZE), when increases by 1 percentage point attracts the direct investment abroad and short-term investment that increase the weight on GDP in approximately 0,13 percentage points and in the long term this effect adds to 0,17 . The result is consistent with most studies and especially the recent Murthy & Brasin (2014) and Júlio et al. (2013). Showing that foreign investors are aware of the levels of economic growth of various economies, having this effect an important role when compared to other determinants.

The short-term increase in the degree of openness (DO), with 1 percentage point of GDP, increases the proportion of FDI in GDP by 8 percentage points and in the long term this effect increases to 10,7 percentage points. We can consider that the internationalization of the economy has its immediate effect on GDP, and growing over the term and the need of SIDS to develop agreements and measures of expansion and greater openness to the outside world as has been referenced in the majority of studies on tax and FDI, Djankov et al (2010), Albulescu (2010), Murthy & Brasin (2014).

The availability of natural resources (DNATRES) is not statistically significant, and neither is the political stability (POLIT STABIL) .

The percentage of domestic credit provided by the financial sector's coefficient's result in proportion of GDP (FINANCE) is statistically significant and negative. This result

contrasts with the conclusions of Albulescu (2010), who found a positive relationship between the loans and FDI, but is according to Kinda (2014). The results show that the increase in 1% of domestic credit provided by the financial sector (% of GDP) reduces the FDI by 0.02077 percentage points in the short term. The total effect comes to 0.028 percentage points. This suggests that the growth of the financial sector benefits from the national companies in order to have more financial resources to finance their economic activities, and that foreign investors have an alternative to external financing (through their partners) to cover their financing needs when they invest abroad. Investors are less attracted by the domestic financial sector due to the limitations imposed in the host country related to the need to finance and to the location decision of FDI (Kinda 2014).

The effective exchange rate of the national currency against the USD shows a coefficient which is both statistically significant and positive – Asiedu (2004) and Edmiston, Mudd & Valey (2003). The estimated value is 0,042 in the short-term and 0,053 in the long-term. The local currency's depreciation attracts investors abroad, making foreign currency more valuable in that economy and allowing investors abroad with less capital to acquire more local investment assets.

Table 7. FDI adjustment partial model with panel data

Variable	Short Term effect	$\frac{\beta}{(1-\delta)}$ Long Term Effect	t-Statistic	Prob.
C	-0.453620	-0.453620	-2.258553	0.0267
CTR	-0.351688	-0.470000	-2.061525	0.0426
LOG(PIBPC)	0.036828	0.049000	1.940453	0.0559
MSIZE	0.001266	0.001685	2.155268	0.0342
DO	0.080286	0.106490	3.302107	0.0014
LOG(FINANCE)	-0.020777	0.027657	-2.151347	0.0345
LOG(EXCRATE)	0.042307	0.053000	1.943571	0.0556
FDI(-1)	0.248722			
(Period fixed effect)				
2005	0.018948			
2006	0.041390			
2007	0.047336			
2008	0.045004			
2009	0.021752			
2010	0.009233			
2011	-0.009021			
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.924414	Mean dependent var	0.175230	
Adjusted R-squared	0.894374	S.D. dependent var	0.163757	
S.E. of regression	0.039271	Sum squared resid	0.120293	
F-statistic	30.77231	Durbin-Watson stat	2.085195	
Prob(F-statistic)	0.000000			

Source: Eviews²²

The inclusion of long-term impact is very important because it shows that the effects of changes in the independent variables are not fully apparent in the short term. The remaining consequences show a complete convergence over the years.

The coefficient of partial adjustment is 0.75, leading us to believe that 75% of the desired FDI is fulfilled in the considered period; i.e., 3/4 of the desired FDI. The average effect is achieved in 0.33 years.

This research reinforces the existence of a strong negative relationship between the rate of corporate income tax and the foreign direct investment, as concluded by the majority

²² Complete result of estimated model in annex

of studies. The countries' sample is to be noted, as the Small Island Developing States present characteristics and an economic structure different from those showed in other countries.

Table 8. – Validation of the research hypothesis

Variables	Expected sign	Estimated coefficients	Statistical Significance (P-Value)
CTR	-	-0.351688	0.0426 **
LOG(GDPpc)	+	0.036828	0.0559 *
MSIZE	+	0.001266	0.0342 **
DO	+	0.080286	0.0014 ***
DNATRES	+	0.003314	0.6002
LOG(FINANCE)	-	-0.020777	0.0345 **
LOG(EXCRATE)	+	0.042307	0.0556 *
POLIT_STABIL	+	0.004188	0.7648
FDI(-1)	+	0.248722	0.0001 ***
* significant at 10%; ** significant at 5%; *** significant at 1%			

The same happens with the other traditional determinants (Table 8.): market size (MSIZE), purchasing power (GDP per capita), degree of openness (DO), credit provided to the private sector by domestic banking in proportion of GDP, the exchange rate (EXRATE) – these are statistically significant and follow predicted signs. All research hypothesis were validated in our results, except the availability of natural resources (DNATRES) and political stability (POLIT STABIL), that are not statistically significant and thus do not confirm other investigations' conclusions, demanding new research.

Through the analysis of individual effects "*Cross Section Fixed Effect*" (Table 6.) for FDI in 16 countries of SIDS, we find that the effect is positive in eight countries and negative

in another eight countries (due to the adopted method, the sum of all of these coefficients adds up to zero).

Table 9: Cross-section fixed effects by country

COUNTRY	Fixed Effect
Antigua e Barbuda	0.067247
Cape-Verde	-0.058278
Dominica	0.040968
Fiji	0.095638
Grenada	0.087768
Jamaica	-0.079835
Mauritius	-0.079384
Maldives	-0.087052
Samoa	0.035346
S.Tome and P.	-0.159383
Seychelles	-0.036970
St.Kitty and N.	0.121933
St.Lucia	0.092463
St. Vicent and G.	0.122577
Trind. And Tob	-0.029709
Sri. Lanka	-0.097512

Additionally, the variation of the FDI's effect is greater in countries such as St. Kitty and Nevis (0.1219) and Saint Vincent and Grenadines (0.1225), while it is smaller in São Tomé e Príncipe (-0.1593) and Sri Lanka (-0.097512), due to these countries' structural characteristics. In other words, the impact of any change in international trade is more accentuated in those countries, showing that these are more vulnerable to external shocks than the others in sample.

CHAPTER VII: CONCLUSION

This thesis aims to study the impact of the tax rate on foreign direct investment both in the short term and long-term in the 22 Small Island Developing States, using annual data covering the period from 2004 to 2013.

The FDI has a great weight regarding the development of most economies and, in particular, in SIDS at multiple levels (improving infrastructures, reducing unemployment, importing technologies, increasing the tax revenue growth of the domestic economy, etc.). The needs of these countries when aiming to attract flow of foreign capital are critical, especially due to the limitations imposed by their structure (being small islands, causing the impossibility of scale economies, leading to vulnerability to external shocks and dependence on external trade, etc.).

There are several factors that influence FDI in SIDS. This work focuses on some of these factors and in particular the corporate income tax rate as well as other variables such as GDP per capita, market size, degree of openness, availability of natural resources, growth of the financial sector, macroeconomic and political stability.

The data was obtained through the databases of the World Bank, the annual reports of PWC and UNCTAD for a sample consisting of 22 small countries and islands in the years 2004-2013.

The method used in this work is a partial adjustment model of Gujarati and Porter (2010), used by Pereira (2011). We use White's test when referring to the annual temporal effects and heteroscedasticity. The model was estimated by the method Generalized Least Square (GLS) with annual fixed effects.

We can conclude that the majority of explanatory variables and their coefficients is significant at the 1%, 5% and 10% significance levels – except in case of the availability

of natural resources and political stability, whose coefficients are not significant (even at the 10% significance level). The estimated coefficients show the expected signs.

One of the major contributions of our conclusion is that the corporate tax rate is a very important determinant of foreign direct investment in SIDS. Corporate tax rate adversely affects the FDI, as expected. An increase in the rate of corporate income tax in 10 percentage points drops the proportion of Foreign Direct Investment on GDP in 3.5 percentage points in the short term; however, in the long term, this effect changes to 4.7 percentage points – thus proving that small countries should lower their tax rates to attract a greater inflow of FDI.

Our results also confirm that another important determinant of FDI in these countries is the degree of openness, showing the need for these countries to promote cooperation with the closer economic blocs and where higher capital flows move to.

The growth of the financial sector has a negative effect on the FDI's inflows to the SIDS. Foreign investors who hold large amounts of capital are not attracted to the growth of the local financial sector, because they can find a better financial condition in external markets. The growth of the financial sector is beneficial to the local company.

SIDS in general depend on FDI inflows to maintain or increase economic growth. For this reason, it is up to governments to adopt appropriate policies for attracting FDI, mainly through establishing fiscal policies and encouraging a greater openness of the economy to the outside world.

These studies conclude that other determinants of FDI are GDP per capita, market size and macroeconomic stability.

In short, this study's essential research question is validated: corporate income tax rate significantly and negatively influences foreign direct investment in SIDS.

Limitations and suggestions for further research. The limitations found in this work mainly concern the lack of comprehensive data on some countries and the fact that the

sample had to be reduced. The normal result was altered by a certain period (2008-2009), who made inflows of FDI vary.

For further research it is suggested for more complete data to be used and for the used sample to be more widely spread, with new variables, in a more regular period of time.

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Appendix 1 - Explanatory model of FDI with partial adjustment

The determinants of FDI_{it}^* - Equation (A1) long-term:

$$FDI_{it}^* = \beta_0 + \beta_1 CTR_{it} + \beta_2 \ln(GDPpc_{it}) + \beta_3 MSIZE_{it} + \beta_4 DO_{it} + \beta_5 DNATRES_{it} + \beta_6 \ln(FINANCE_{it}) + \beta_7 \ln(EXCRATE_{it}) + \beta_8 POLIT STABIL_{it} + u_{it}$$

$$i = (1, 2, \dots, n); t = (1, 2, \dots, 10)$$

Equation (A2) that includes the mechanism of partial adjustment;

$$FDI_{it} - FDI_{it-1} = \delta(FDI_{it}^* - FDI_{it-1}) \quad (0 < \delta < 1)$$

Isolating $\delta(FDI_{it}^*)$ in equation (A2) is obtained.

$$\delta FDI_{it}^* = FDI_{it} - FDI_{it-1} + \delta FDI_{it-1} \Leftrightarrow \delta FDI_{it}^* = FDI_{it} - (1 - \delta) FDI_{it-1}$$

Substituting δFDI_{it}^* in equation recently obtained, from the equation (A1), by the same expression obtained from equation (A2) results in:

$$FDI_{it} - (1 - \delta) FDI_{it-1} = \delta \beta_0 + \delta \beta_1 CTR_{it} + \delta \beta_2 \ln(GDPpc_{it}) + \delta \beta_3 MSIZE_{it} + \delta \beta_4 DO_{it} + \delta \beta_5 DNATRES_{it} + \delta \beta_6 \ln(FINANCE_{it}) + \delta \beta_7 \ln(EXCRATE_{it}) + \delta \beta_8 POLIT STABIL_{it} + \delta u_{it}$$

$$\Leftrightarrow FDI_{it} = \delta \beta_0 + \delta \beta_1 CTR_{it} + \delta \beta_2 \ln(GDPpc_{it}) + \delta \beta_3 MSIZE_{it} + \delta \beta_4 DO_{it} + \delta \beta_5 DNATRES_{it} + \delta \beta_6 \ln(FINANCE_{it}) + \delta \beta_7 \ln(EXCRATE_{it}) + \delta \beta_8 POLIT STABIL_{it} + (1 - \delta) FDI_{it-1} + \delta u_{it}$$

The model to estimate is the equation (A3):

$$FDI_{it} = \delta \beta_0 + \delta \beta_1 CTR_{it} + \delta \beta_2 \ln(GDPpc_{it}) + \delta \beta_3 MSIZE_{it} + \delta \beta_4 DO_{it} + \delta \beta_5 DNATRES_{it} + \delta \beta_6 \ln(FINANCE_{it}) + \delta \beta_7 \ln(EXCRATE_{it}) + \delta \beta_8 POLIT STABIL_{it} + (1 - \delta) FDI_{it-1} + \delta u_{it}$$

This expression is incorporated into all of the parameters for the estimation of the model. The end phase of a period of explanatory variable is expressed in right-hand side of the equation and the respective coefficient $(1 - \delta)$, which contains the complement to 1 of the adjustment coefficient (δ) .

Due to the existence of the explanatory variable offset in the model as a dependent variable, the model is called auto- regressive.

Equation (A3) is the same as equation (4) in its theoretical foundation. The short-term effects are directly given by the coefficient β in equation (4). Long-term effects depend on the coefficients β and δ , given by $\beta / (1-\delta)$ in equation (4),

$$\frac{\beta_1}{1 - \delta} , \frac{\beta_2}{1 - \delta} , \frac{\beta_3}{1 - \delta} , \frac{\beta_4}{1 - \delta} , \frac{\beta_5}{1 - \delta} , \frac{\beta_6}{1 - \delta} , \frac{\beta_7}{1 - \delta} , \frac{\beta_8}{1 - \delta}$$

Appendix 2 –Regression results

Result of the explanatory model of FDI, with panel data estimated by Eviews 8.

Dependent Variable: FDI				
Method: Panel EGLS (Cross-section weights)				
Sample (adjusted): 2005 2012				
Periods included: 8 after adjustments				
Cross-sections included: 16				
Total panel (unbalanced) observations: 110				
Linear estimation after one-step weighting matrix				
White period standard errors & covariance (no d.f. correction)				
Estimated coefficient covariance matrix with reduced rank				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.453620	0.200845	-2.258553	0.0267
CTR	-0.351688	0.170596	-2.061525	0.0426
LOG(PIBPC)	0.036828	0.018979	1.940453	0.0559
MSIZE	0.001266	0.000587	2.155268	0.0342
DO	0.080286	0.024314	3.302107	0.0014
DNATRES	0.003314	0.006298	0.526274	0.6002
LOG(FINANCE)	-0.020777	0.009658	-2.151347	0.0345
LOG(EXCRATE)	0.042307	0.021768	1.943571	0.0556
POLIT_STABIL	0.004188	0.013949	0.300219	0.7648
FDI(-1)	0.248722	0.060873	4.085917	0.0001
YEAR=2005	0.018948	0.015289	1.239293	0.2190
YEAR=2006	0.041390	0.015992	2.588190	0.0115
YEAR=2007	0.047336	0.012562	3.768134	0.0003
YEAR=2008	0.045004	0.008665	5.193947	0.0000
YEAR=2009	0.021752	0.006620	3.285873	0.0015
YEAR=2010	0.009233	0.007884	1.171094	0.2451
YEAR=2011	-0.009021	0.007333	-1.230250	0.2223
Effects Specification				
Cross-section fixed (dummy variables)				
Weighted Statistics				
R-squared	0.924414	Mean dependent var	0.175230	
Adjusted R-squared	0.894374	S.D. dependent var	0.163757	
S.E. of regression	0.039271	Sum squared resid	0.120293	
F-statistic	30.77231	Durbin-Watson stat	2.085195	
Prob(F-statistic)	0.000000			
Unweighted Statistics				
R-squared	0.735714	Mean dependent var	0.106598	
Sum squared resid	0.168521	Durbin-Watson stat	2.531165	

Appendix 3 – Descriptive statistics: tables and figures

Table 10- Descriptive statistics of FDI net inflow in proportion of GDP in SIDS-22 by year

YEAR	Mean	Median	Max	Min.	Std. Dev.
2004	0.054035	0.049213	0.125842	0.002176	0.038831
2005	0.062857	0.055494	0.221545	0.001324	0.056383
2006	0.100463	0.072690	0.316101	0.002104	0.087995
2007	0.110955	0.095567	0.262326	0.009374	0.082724
2008	0.117782	0.102478	0.431381	-0.010530	0.097534
2009	0.081503	0.070549	0.200308	0.001331	0.060816
2010	0.085846	0.074096	0.349038	-0.043515	0.090080
2011	0.066729	0.054795	0.166401	-0.024999	0.053880
2012	0.064977	0.054818	0.166452	-0.004075	0.050481
2013	0.063165	0.043641	0.178662	0.001192	0.049286

Table 11- Descriptive statistics of CTR- Proportion of corporate income tax revenue in GDP by year

YEAR	Mean	Median	Max	Min.	Std. Dev.
2004	0.051393	0.048700	0.112987	0.003530	0.033153
2005	0.058133	0.055340	0.158305	0.005172	0.038177
2006	0.062892	0.052134	0.209654	0.005479	0.049137
2007	0.059446	0.052793	0.174439	0.008562	0.042733
2008	0.064626	0.055432	0.211383	0.009945	0.051465
2009	0.062402	0.056195	0.162849	0.009672	0.039475
2010	0.057011	0.048205	0.175849	4.81E-05	0.041703
2011	0.049479	0.044055	0.115735	4.80E-05	0.031273
2012	0.050893	0.041876	0.107277	4.95E-05	0.029930

Table 12- Descriptive statistics of GDP per capita (US dollars) in SIDS-22 by year

YEAR	Mean	Median	Max	Min.	Std. Dev.
2004	5381.569	3862.063	22005.00	660.1900	5136.529
2005	5526.428	3922.660	23416.90	481.9093	5529.181
2006	6016.920	4395.306	23733.81	499.5478	5852.360
2007	6530.064	4908.810	24321.07	463.4389	6190.020
2008	7046.111	5573.014	23674.14	550.4775	6485.606
2009	6344.605	5349.880	22060.92	672.3620	5518.340
2010	6538.342	5574.368	21941.87	779.6743	5456.528
2011	6944.477	5765.765	21649.82	875.8366	5562.574
2012	7050.404	5853.803	22096.46	1002.328	5559.835
2013	7402.442	5887.823	22312.08	1105.349	5905.526

Table 13 - Descriptive statistics of MSIZE: Gross Domestic Product growth rate in SIDS-22 by year

YEAR	Mean	Median	Max	Min.	Std. Dev.
2004	4.197149	4.576674	12.48107	-2.850454	3.541834
2005	3.723855	3.775892	13.27306	-8.675001	4.530169
2006	5.368285	5.384014	19.58558	-5.714286	6.335192
2007	5.463802	6.087796	15.17069	-4.137536	4.532428
2008	4.042399	3.439941	14.19940	-2.323937	4.354445
2009	-1.114447	-1.328221	12.96296	-12.03602	5.222539
2010	2.194471	1.502846	9.367681	-7.142991	4.313545
2011	3.976433	2.811603	14.66809	-1.793436	4.300623
2012	2.261711	1.496784	8.087543	-1.597608	2.747251
2013	2.318796	2.423208	7.250907	-1.139067	2.254464

Table 14 - Descriptive statistics of DO – Degree of Openness: import and export of goods and services in proportion of GDP in SIDS-22 by year

YEAR	Mean	Median	Max	Min.	Std. Dev.
2004	0.960260	0.930237	1.424038	0.299852	0.252854
2005	1.005672	0.932515	1.787291	0.400292	0.312363
2006	1.031166	1.004407	1.843096	0.418238	0.311238
2007	1.064629	1.009906	2.230641	0.535359	0.386407
2008	1.094646	1.035511	2.139262	0.633690	0.392290
2009	0.982934	0.871916	2.173053	0.491491	0.362748
2010	1.008244	0.894690	1.940793	0.530616	0.330501
2011	1.065677	1.020824	2.135084	0.606634	0.379125
2012	1.064086	0.960752	2.235966	0.593323	0.406730
2013	0.974130	0.962907	1.640274	0.544737	0.271158

Table 15 - Descriptive statistics of EXCRATE- official effective exchange rate in SIDS-22 by year

YEAR	Mean	Median	Max	Min.	Std. Dev.
2004	465.5624	2.740362	9902.324	1.000000	2107.928
2005	495.4546	2.705168	10557.97	1.000000	2247.680
2006	581.7851	2.739647	12448.64	1.000000	2650.665
2007	631.3859	2.700000	13536.76	1.000000	2882.611
2008	683.8450	2.700000	14695.20	1.000000	3129.618
2009	754.1989	2.715389	16208.45	1.000000	3451.906
2010	858.2060	2.700000	18498.60	1.000000	3940.169
2011	817.9925	2.700000	17622.94	0.969463	3753.567
2012	885.0249	2.700000	19068.42	0.965801	4061.466
2013	857.3450	2.700000	18449.95	1.000000	3929.528

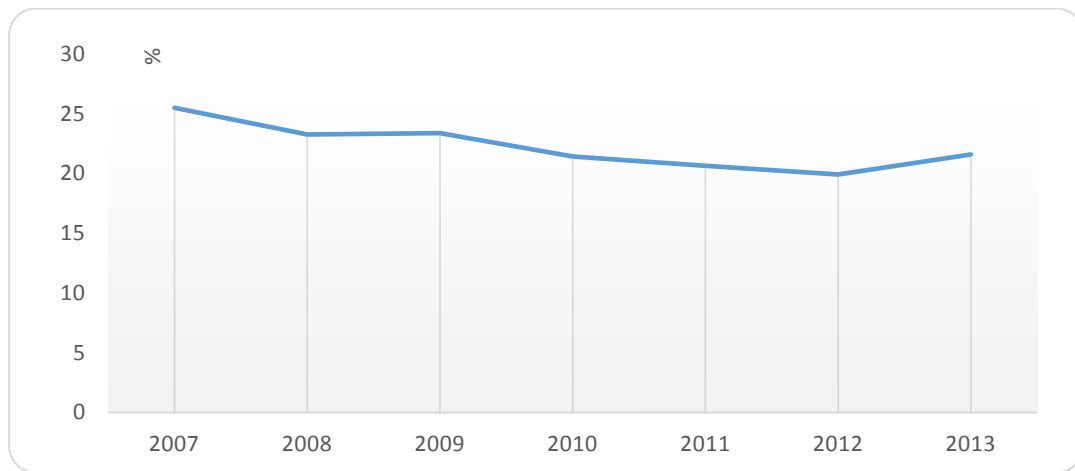
Table 16- Descriptive statistics of FINANCE- percentage of credit contracted to the private sector by domestic banking to GDP in SIDS-22 by year

YEAR	Mean	Median	Max	Min.	Std. Dev.
2004	0.549276	0.522609	1.078759	-0.211241	0.335560
2005	0.578000	0.551154	1.133904	-0.092463	0.343936
2006	0.605186	0.566879	1.199721	-0.211318	0.349031
2007	0.600380	0.546329	1.217710	0.061068	0.319407
2008	0.616314	0.600263	1.279662	-0.183082	0.377127
2009	0.656888	0.600549	1.401195	-0.125493	0.378358
2010	0.659106	0.513488	1.322953	-0.236998	0.394302
2011	0.638450	0.551147	1.196475	-0.249186	0.396263
2012	0.626193	0.581222	1.227012	-0.536353	0.429571
2013	0.665840	0.601484	1.230824	0.203102	0.333053

Table 17 - Descriptive statistics of POLIT STABIL- political stability and absence of violence/terrorism in SIDS-22 by year

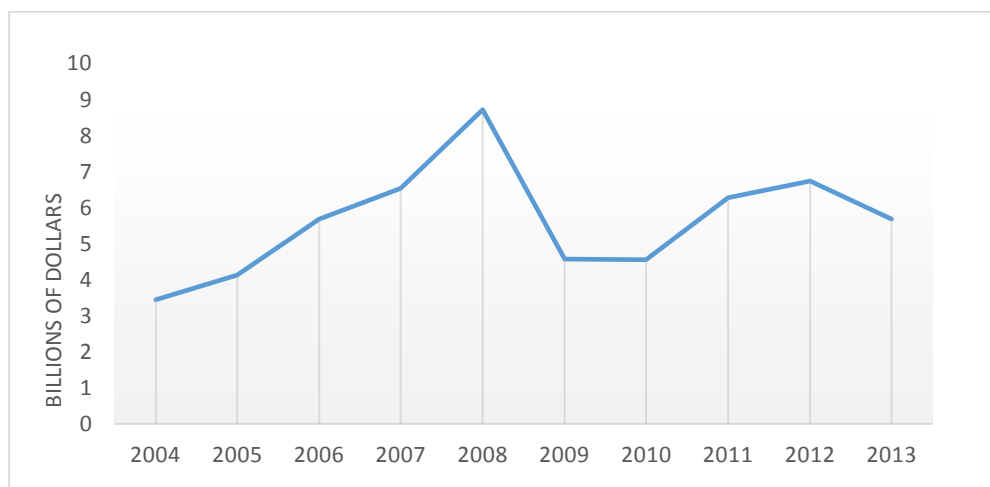
YEAR	Mean	Median	Max	Min.	Std. Dev.
2004	0.587987	0.867786	1.413739	-1.058547	0.676983
2005	0.510739	0.807889	1.416850	-1.192719	0.743181
2006	0.421088	0.767830	1.402006	-1.426467	0.791859
2007	0.330404	0.522442	1.384581	-1.736995	0.754321
2008	0.334354	0.537397	1.377572	-1.801031	0.750355
2009	0.311405	0.505117	1.436047	-1.347331	0.691657
2010	0.409811	0.659711	1.480474	-0.923110	0.665170
2011	0.479222	0.798657	1.339578	-0.782988	0.648129
2012	0.492372	0.769221	1.324758	-0.705925	0.615890
2013	0.534639	0.837685	1.323056	-0.606286	0.581007

Figure 5 - Average Corporate Income Tax Rate in SIDS-22, 2007-2013



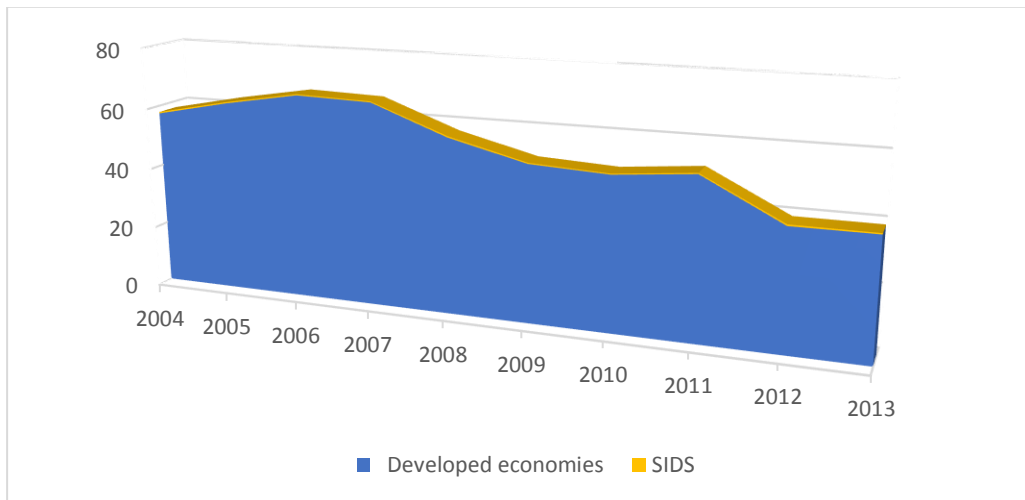
Source: Doing Business annual *Paying Tax* Report

Figure 6-.FDI inflow for Small Island Developing States, 2004-2013 (billions of US dollars)



Source: UNCTAD and own elaboration

Figure 7. Weight of FDI in SIDS and developed economies in the total FDI inflow in the world



Source: UNCTAD and own elaboration