Aalto-yliopisto
Kauppakorkeakoulu

Investigating the relationship of inward foreign direct investment and poverty in developing countries

Kansainvälinen liiketoiminta

Maisterin tutkinnon tutkielma

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2011

Johtamisen ja kansainvälisen liiketoiminnan laitos
Aalto-yliopisto
Kauppakorkeakoulu

AALTO UNIVERSITY SCHOOL OF ECONOMICS
Department of Marketing and Management
Master's Thesis

ABSTRACT
10.5.2010

INVESTIGATING THE RELATIONSHIP OF INWARD FOREIGN DIRECT INVESTMENT AND POVERTY IN DEVELOPING COUNTRIES

Poverty is one of the most discussed issues in the global arena and FDI has been suggested to be an important ingredient in poverty reduction. Although many countries have integrated more into the world economy, there are still over a billion people living in absolutely poverty and the situation is not improving. This has raised some suspicions on the validity of the current global policies in poverty reduction.

This study examines the relationship between Foreign Direct Investment and poverty, and look at how Nicaragua has done compared to other developing countries. The theoretical part of the study is based on the most recent literature from the areas of International Business and Development Economics. The literature review consists of studies regarding Foreign Direct Investment, economic growth and poverty. The empirical research is conducted as a quantitative cross country study by using linear regression modelling. The comparison between developing countries and Nicaragua is done by using the created regression models.

The results show that higher levels of FDI were associated with lower levels of relative poverty, measured by the national poverty lines. However, absolute poverty and the more multifaceted Human Poverty Index did not have a statistically significant relationship with the measured FDI stocks. These findings highlight the importance clearly justifying the use of a poverty measure, as different legitimate measures of poverty led to different results. Although a devastating civil war was fought in Nicaragua, it has managed to allure reasonable amounts of FDI and steadily decrease the amount of people living in poverty. Nicaragua has also managed to reduce poverty accordance to the FDI inflows it has received compared to other developing countries, albeit the civil war.

Key words: Foreign Direct Investment, poverty, economic growth, Development Economics, Nicaragua

AALTO-YLIOPISTON KAUPPAKORKEAKOULU
TIIVISTELMÄ

Markkinoinnin ja johtamisen laitos 10.5.2011
Pro gradu -tutkielma

TUTKIMUS SUORIEN ULKOMAISTEN INVESTOINTIEN JA KÖYYYDEN VÄLISESTÄ SUHTEESTA KEHITYSMAISSA

Köyhyys on yksi keskustelluimmista aiheista kansainvälisellä areenalla, ja suoria ulkomaisia investointeja on pidetty tärkeimpänä työkaluna köyhyyden vähentämisessä. Vaikka monet maat ovet integroituneet tiiviimmin maailmantalouteen, maailmassa on silti yli miljardi ihmistä, jotka elävät absoluuttisen köyhyysrajan alapuolella, eikä tilanne näytä kohenevan lähitulevaisuudessa. Tämä herättää joitakin epäilyjä siitä, kuinka valideja ovat tämän hetken linjaukset köyhyyden vähentämisessä.

Tämä tutkimus tarkastelee köyhyyden ja suorien ulkomaisten investointien välistä suhdetta, ja kuinka Nicaragua on onnistunut köyhyyden vähentämisessä muihin kehitysmaihin verrattuna. Tutkimuksen teoreettinen osuus koostuu tuoreimmista tutkimuksista kehitysmaatutkimuksen sekä kansainvälisen liiketoiminnan alueilta. Kirjallisuuskatsauksessa käsitellään tutkimuksia jotka liittyvät suoriin ulkomaisiin investointeihin, talouskasvuun, köyhyyteen sekä erityisesti köyhyyttä vähentävään talouskasvuun. Empiirinen tutkimusosa koostuu useita kehitysmaita kattavasta kvantitatiivisesta tutkimuksesta, jossa välineenä käytetään lineaarista regressiota. Nicaraguan suhdetta muihin kehitysmaihin tutkittiin näitä regressio-malleja hyväksikäyttäen.

Tutkimustulokset osoittavat, että suorien ulkomaisten investointien kasvu liittyy läheisesti suhteellisen köyhyyden alenemiseen. Toisaalta absoluuttisella köyhyydellä sekä inhimillisen köyhyyden indeksillä mitattuna, suorilla ulkomaisilla investoinneilla ei ollut tilastollisesti merkittävää suhdetta köyhyyteen. Nämä tulokset korostavat köyhyysmittarin valinnan merkitystä, koska eri mittareilla mitattuna tulokset vaihtelivat merkittävästi. Vaikka Nicaraguassa on sodittu pitkä sisällissota, ovat he onnistuneet köyhyyden vähentämisessä suhteessa saamiinsa suoriin ulkomaisiin investointeihin yhtä hyvin kuin keskimäärin muut kehitysmaat.

Avainsanat: Suorat ulkomaiset investoinnit, köyhyys, talouskasvu, kehitysmaatutkimus, Nicaragua

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ABBREVIATIONS

ASEAN	Association of Southeast Asian Nations
CIS	Commonwealth of Independent States
FAO	Food and Agriculture Organization of the United Nations
FDI	Foreign Direct Investment
GDI	Gender-related Development Index
GDP	Gross Domestic Product
GEM	Gender Empowerment Measure
GIC	Growth Incidence Curve
HDI	Human Development Index
HIPC	Heavily Indebted Poor Country
HPI	Human Poverty Index
IFI	International Financial Institution
ILO	International Labour Organization
IMF	International Monetary Fund
IB	International Business
LDC	Least Developed Country
MDG	Millennium Development Goal
MPI	Multidimensional Poverty Index
ODA	Official Development Aid
OECD	Organisation for Economic Co-operation and Development
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
VIF	Variance-Inflation Factor

1. INTRODUCTION

1.1 Background

In our time, the issue of poverty is one of the most discussed topics in the global arena. For the first time in history the reduction of extreme poverty has a tangible global scale goal, as it became one of the eight United Nations (UN) Millennium Development Goals (MDGs), promising to halve extreme poverty by 2015. The current economic situation has not helped the cause. According to the UN Food and Agriculture Organisation (FAO), the current world wide economic crisis pushed over a billion people into hunger (FAO, 2009). As we get closer to 2015, governments and international organisations still have a lot to do before these objectives can be reached).

In 1989, the Washington Consensus of the International Financial Institutions (IFIs), laid out new guidelines for poorer countries to catch up with the developed world. The consensus was led by such institutions as the International Monetary Fund (IMF) and the World Bank. They introduced a list of ten recommendations, including such items as; trade liberalization, tighter fiscal policy, the privatization of government enterprises and the liberalization of inward Foreign Direct Investment (FDI). These policies were meant to reduce the involvement of governments and increase the reliance on the private sector. Many developing countries have adopted at least some of these neoliberal policies with debatable results.

Not everyone has agreed with the guidelines of the Washington Consensus. Stiglitz (1998) and Rodrik (2002) offer different sets of policies as an antithesis to the Washington consensus. Rodrik (2006) states that the neoliberal policies have not had success, but they are still being followed mostly because of ideological reasons, contrary to empirical evidence. The International Labour Organization's (ILO) stated in their World of Work Report (2008), that the gap between rich and poor countries, as well as the gap inside many countries, is expanding. Still many defend the modern pattern of economic integration, for example Dollar and Kraay (2002) claim that modern globalization has decreased inequality between and inside countries, as well as

reduced global poverty. They claim that the best way for a country to develop, and thus reduce poverty, is to open its economy and integrate into the world economic system (Dollar & Kraay 2002a, 2004; Zhang, 2006).

1.2 Research problem and gap

Since the Washington Consensus in 1989, many countries have integrated deeper into the world economic system, with less than satisfactory results. Still, no major shifts in policies have occurred. These contradictory results raise a question about the validity of the current majority view of FDI and poverty reduction. In recent years, there have been a growing number of studies made about the effects of FDI on economic growth and on poverty, with mixed results. Some of the studies indicate that there is a direct link between FDI and poverty reduction, while others completely deny the existence of such a relationship. Many of the studies also concentrate solely on the income indicators of poverty. Hence, this study uses three different poverty indicators, in order to get a wider view of poverty.

This study aims to gather new insights on the relationship of FDI and poverty reduction with a statistical cross country study of 60 developing countries. The study is conducted as a cross-disciplinary study connecting international business and development economics. Although these two disciplines are closely linked, they still offer different view points to the same problems. This study aims to critically evaluate earlier studies made in these fields of study and compare the situation in Nicaragua to other developing countries. Nicaragua was chosen as the example country, because it is the second poorest country in Latin America, after the earthquake stricken Haiti. Over 15 percent of Nicaraguans are living in extreme poverty and in 2005, 23 percent of the people were experiencing daily undernourishment (FAO, 2008). Nicaragua is also one of the eight long-term partner countries of Finland in bilateral development, which also makes it an interesting case from a Finnish perspective.

1.3 Research objective and questions

This thesis aims to critically evaluate the linkage between Foreign Direct Investment (FDI) and poverty. This will be done by evaluating the statistical relationships between FDI and poverty and by examining the situation of Nicaragua compared to other developing countries. This study is conducted in the areas of International Business and Development Economics.

The specific research questions are;

1. Is there a linkage between FDI inflows and poverty in developing countries?

2. How has FDI affected poverty in Nicaragua compared to other developing countries?

1.4 Definitions

Development

In development studies, development can be seen as a construct of three different dimensions. First, it can be seen as a goal or an ideal. Second, development can mean an empirical societal process. Third, it can be considered as an intervention, where a society is intentionally developed. (Koponen et al, 2007)

Developing countries

This study uses the term developing countries for non-western countries with high levels of poverty. There are also several other terms that are used widely as synonyms to developing countries, such as; poor countries, less developed countries (LDCs), underdeveloped countries, third world countries, the developing world, low-income countries and non-industrialized countries.

1.5 Structure of the study

This study is comprised into five chapters. The first chapter presents the background information of the thesis as well as the research questions. The second chapter examines earlier studies from the fields in question and the theoretical framework is presented at the end of the chapter. The third chapter explains the methodology of the study. The fourth chapter presents the data used in the analysis and the results of the analysis. The fifth and final chapter discusses the conclusions of the thesis, presenting the main findings, limitations and finally suggestions for further research.

1.6 Limitations

As the area of study is vast there are several limitations regarding the scope of the study. The literature review will only consist of studies directly linked to the research questions. The study will concentrate solely on FDI inflows, thus FDI outflows will not be discussed, as they are insignificant compared to the FDI inflows to developing countries. Development and the problems surrounding the meaningfulness of development will not be discussed in detail. More specific limitations concerning empirical research and findings will be discussed more thoroughly in the methodology chapter as well as the conclusions chapter.

The literature review of this study will be presented next.

2. LITERATURE REVIEW

In this section of the study, literature concerning Foreign Direct Investment, economic growth and poverty will be discussed. The literature review consists of key articles from these areas of study. Because of the vastness of the subjects in question, the literature review is only comprised from literature which is closely linked to the research questions. First, literature will be reviewed concerning FDI and the possible connection it has with economic growth in developing countries. Second, the linkage between economic growth and poverty reduction will be examined. Third, the discussion will move on to pro-poor growth, which will be proceeded by poverty and how it is measured. Finally, the theoretical framework of the thesis will be presented.

2.1 Foreign Direct Investment

Foreign Direct Investment refers to investments, which are meant to be lasting and are directed to enterprises located outside the economy of the investor. They usually include such investment types as wholly owned subsidiaries, joint ventures and mergers and acquisitions. FDI comprises of three different components equity capital, reinvested earnings and other capital, which mainly consists of intra-company loans. (UNCTAD, 2002)

According to the Organisation for Economic Co-operation and Development (OECD, 1996) description of FDI, the foreign investor must own at least 10% of ordinary shares or voting power of an enterprise, with a few exceptions. The investor has to own more than 10%, if it does not have an effective voice in management, and on the contrary, the investor can also own less, if still maintaining an effective voice in management. This is what separates Foreign Direct Investment from for example Foreign Portfolio Investment. In the case of FDI, the investor has intentions to exercise control over the enterprise. A broader definition of FDI was made by Dunning (2001), who stated that on top of financial assets, FDI also refers to intellectual capital and transfer of technology. Thus including technology, knowledge, capital and financial assets, which

are all moved abroad. Alfaro et al. (2009) add that FDI can also foster linkages to local firms. These linkages can be very beneficial to the host economy, if the country in question is able take advantage of them.

There are several suggested ways in which FDI effects host economies. For example, Dunning (1993) describes that FDI inflows can create employment opportunities in host countries, which can increase income for locals and improve the standard of living. Zhang suggests (2001a, 2001b) that inward FDI may enhance capital formation and bring special resources to host nations. These resources can be management know-how, established brand names, technology transfer and spillover effects. There has been some debate whether beneficial spillover effects do occur outside theoretical formulations. Görg & Greenaway (2004) conclude that empirical evidence about the benefits spillovers can be hard to find, but this might be due to concentration on wrong types of studies. Giroud and Scott-Kennel (2006) also note that studies on spillovers provide inconclusive results and there should be an emphasis in the future to study mechanisms by which spillovers occur.

2.1.1 FDI and economic growth in developing countries

According to many researchers, FDI inflows are seen as the main factor for economic growth in developing countries. This is stated at least in studies by Abdul Karim & Ahmad (2009), Klein & al. (2001), Görg & Greenaway (2004) and Zhang (2006). Correspondingly many researchers see economic growth as the main driver for poverty reduction. This linkage will be discussed more thoroughly in the next subchapter, and a more comprehensive description of the whole process is given in chapter 2.4 the theoretical framework.

These abovementioned researchers also acknowledge that there are other factors contributing to economic growth, but nevertheless they consider FDI being one of the most important ones. This is agreed also by Jalilian & Weiss (2002), who state in their research of countries from the Association of Southeast Asian Nations (ASEAN), that

in this region FDI flows were associated with higher rates of economic growth. However, it has to be noted that they do not claim a causal relationship, just that higher FDI inflows were associated with higher rates of economic growth. Abdul Karim & Ahmad (2009) share this view and also suggest in a more normative manner, that economies in the ASEAN area should try to increase the amount of inward FDI, in order sustain their path of economic growth. In many of these aforementioned studies, there is lack of deeper discussion on how the particular study defines poverty, or how has it ended up using the poverty measures it is using. As will be shown later in this study, poverty can be defined and measured in many different ways, thus it should be explained why the researchers have chosen these poverty measures.

There are also researchers who argue that the relationship between FDI and economic growth is not as universal and clear cut as it would seem. Blomström et al. (1994) find in their study of 78 countries, that poorer countries do not enjoy as much growth benefits from FDI as richer countries. According to De Mello (1999), the impact that FDI has on growth is dependent on the technological gap that is between what he calls leaders and followers. For the technological leaders, the substitutability of technology is easier than for the followers. Thus for the followers FDI may not be as important for cross-border knowledge transfers as previously thought. De Mello considers that this may be due to country specific factors, such as political risk, trade regimes and institutions.

In their study on the growth effects of FDI, Borensztein et al. (1998) state that FDI is an important vehicle for technological transfer from developed countries to developing countries. However, the effect of FDI on technology transfer and on economic growth depends on the human capital available in the host country. They suggest that the size of the educated workforce has to be over a given threshold before efficient technology transfer can occur and FDI have a greater growth effects than domestic capital. This is backed by similar results found by Wijeweera et al. (2010). They conclude that a nation cannot absorb new technology if they do not have adequate levels of educated and skilled workforce. They also note that FDI itself does not create efficiency gains and merely increasing the amount of FDI a country cannot increase its efficiency.

Wijeweera et al. (2010) also suggest that FDI is an engine of growth for developing countries, but that long-term benefits can be better realized if the host country is an open economy with high levels of trade liberalization. Basu et al. (2003), in their study of 23 developing countries and the connection between FDI, GDP and the liberalization level, come to similar conclusions. They found in their research, that long term foreign capital did not reach closed economies until they had attained some levels of economic growth. Basu et al. (2003) add that trade and financial restrictions do hinder the inflow of foreign capital.

In the aforementioned study of Wijeweera et al. (2010), they also propose that a high level of corruption has a negative impact on economic growth. However, according to Al-Sadig (2009), while corruption can discourage foreign investors from investing to a certain country, foreign investors seemed to value the institutional quality of the country more than the corruption level. The author stresses however, that this should not be taken as an indication that corruption is not an important factor for foreign investors, but rather that the quality of institutions is. It has to be noted, that accurately estimating corruption levels in a given country is very difficult, hence they should always be studied with at least some level of scepticism.

In examining financial markets and economic growth, Alfaro et al. (2004), also suggest that FDI has an important role in enabling economic growth. However, they also point out that the development level of the local financial market plays a big role in the fact, can the country realize the positive effects. Along similar lines, Alfaro & Charlton (2007) propose that certain quality factors of FDI increase it's effect on economic growth. In the study, they look at quality between different sectors and differentiate FDI according to the average skill intensity and reliance on external capital of the sector in question. However, they add that such a quality unit is hard to create and effectively use in calculations. Hence, the quality unit is a sum of many country and project characteristics, which makes every case unique and thus impossible to duplicate.

In their study of developing countries, Herzer et al. (2007), challenge the widespread belief of FDI contributing to economic growth. They claim that in the vast majority of

developing countries FDI does not have a long or a short-term effect on economic growth. They also point out, that there are weaknesses in the empirical literature about the growth inducing effects of FDI. They do not believe that the positive connection between FDI and economic growth is as clear as generally believed. Firstly, they argue that this is due to FDI's share of GDP being too small to have a significant growth effect. Secondly, there are many growth-limiting effects of FDI, which vary from country to country.

As shown in this chapter, there is a lot of variation between researchers about the effects of FDI on economic growth. They vary from FDI being the most important factor, to FDI not having an effect at all. However, most researchers declare that there is a positive connection between FDI and economic growth, but there are other factors which determine how the positive effects can be realized. The next subchapter will examine literature concerning the linkage between economic growth and poverty reduction in developing countries.

2.1.2 Economic growth and poverty reduction in developing countries

As described in Subchapter 2.1.1, many researchers see FDI as a key ingredient for economic growth in developing countries and economic growth as the key driver for poverty reduction. Abdul Karim & Ahmad (2009) see FDI as a key ingredient for poverty reduction in Malaysia and in other developing countries of the region. They argue that FDI will increase the production of goods and thus reduce poverty. Zhang (2006) is on similar lines in his study of China. He argues that FDI is the most important factor for economic growth and economic growth a key factor for poverty reduction. He adds that FDI has desirable features, which affect the quality of growth and assist in poverty reduction. Both of the studies take a normative approach and urge their governments to use FDI as the main source of poverty reduction. The OECD (2006) suggest that economic growth is usually the main factor for reducing income

poverty and rapid growth rates should be sustained over a long time period to ensure that many poor people the possibility to escape poverty.

Maybe the most influential study concerning economic growth and poverty is by Dollar and Kraay (2002b) titled "Growth is good for the poor". They study the mean income and income distribution of the poorest 20 percent in 137 countries from years 1950 to 1999. They are in favour of such policies as; fiscal discipline, openness to trade and macroeconomic stability, which are associated with higher average incomes across the board. They also find little evidence that social security and democratic institutions influence positively to the average income of the poor. However, their main conclusion is that growth increases average income for all regardless of their income level. The study by Dollar and Kraay has also raised some criticism, for example by Aman et al. (2006), who claim that there are multiple deficiencies in the study. The main points of their critique are: the theoretical foundations and assumptions are not derived from any theoretical models, correlation is not evidence of causality, the way poverty is defined is questionable and there are multiple shortcomings in the regression models.

Kalwij & Verschoor (2007) also studied the effects of income distribution has on poverty reduction. The regional study included 58 developing countries. Unlike Dollar and Kraay, they suggest that economic growth itself is not enough for poverty reduction. In many regions the impact of income inequality differences and Gini elasticities of poverty are significant. In Eastern Europe and in Asia the combined effect was calculated to be much larger than economic growth alone. Thus, in some regions the focus should be on income inequality rather than economic growth.

In his research, Donaldson (2008) examined the same data as Dollar & Kraay (2002b) did in their study. Donaldson concentrated on the exceptional cases found from this data. He argues that although sometimes economic growth was linked with poverty reduction, in other cases it did not affect poverty. However, there were even some cases when it made conditions worse. Hence, economic growth did not prove to be advantageous to the poor in all of the cases. Similarly, Ravallion (2001) in his study

suggests that countries should be examined individually, on the micro level, which would provide policy makers with better information. When all countries are clumped together, decisions are made based on means rather than the individual values of each case.

In his study of the growth elasticity of poverty, Adams Jr. (2004) used data from 60 developing countries. He argues that economic growth does decrease poverty, measured by a one US dollar per day poverty line, but the extent of poverty reduction depends on how we define economic growth. When calculating economic growth with changes in the survey mean income, in other words consumption, there is a high negative correlation. Instead when using GDP per capita as measure of growth, the statistical relationship is much weaker. This would indicate that GDP per capita rates are poor indicators of poverty incidence and rising GDP per capita numbers are not reliable indicators of poverty reduction.

Loayza & Raddatz (2010) propose that the amount of economic growth is important for poverty reduction as well as the use of unskilled labour. They suggest that poverty reduction is greater in sectors that are labour intensive, compared to their size and required unskilled labour. They came to the conclusion that agriculture is the most poverty reducing sector, second being construction and third manufacturing. The researchers state that the use of unskilled labour is one of the main the reasons why countries that are experiencing an oil or a mining boom, and have low growth in other sectors, do not achieve high levels of poverty reduction.

However, there have been studies which have resulted in different conclusions. Ferreira et al. (2010) found, in his studies of Brazil, that the growth in the service sector resulted in most reduction in poverty compared to other sectors. The decline in poverty was much slower with similar growth rates in the agriculture and industry sectors. The different conclusions between Loayza & Raddatz (2010) and Ferreira et al. (2010) can be, at least partly explained by the difference in the subjects of study. Loyaza and Raddatz used 51 countries in their study and Ferreira et al. concentrated solely on

Brazil. The reason could be that Brazil's agriculture sector has several unique qualities, which prohibit it from being an effective source in poverty reduction. Brazil's agriculture sector is dominated by big farms and corporations, which do not leave much room for small farmers. The people who work in the agriculture sector as paid workforce are often poorly paid and the enforcement of labour laws can be insufficient. Ferreira also states, that in the case of Brazil from years 1985 to 2004, economic growth had only little influence in the poverty reduction of that era. In the case of Brazil, most of the poverty reduction came trough taming hyperinflation and from the expansion of different social security programs.

2.2 Pro poor growth

In current academic literature, there is no consensus of the definition of pro-poor growth. In its simplest terms, pro poor growth can mean economic growth that is especially advantageous to the poor (Essama-Nssah, 2005). Kakwani (2000) proposes that growth is pro-poor if the simultaneous income distribution change itself reduces poverty. Klasen (2008) categorizes this as the relative definition of pro-poor growth. In the relative definition, the income growth rate of the poor has to exceed the growth rate of the wealthy and inequality between poor and non-poor has to decrease.

Klasen (2008) divides the absolute definition of pro-poor growth into two subcategories. He calls them "strong absolute" and "weak absolute" pro-poor growth. In "strong absolute" growth, absolute income gain of the poor is bigger than the average income gain or the income gain of the rich. This makes it very hard to accomplish, but the definition has gained some proponents who argue that while on relative terms income inequality may be decreasing, on absolute terms it is increasing. "Weak absolute" pro-poor growth can be simply defined as growth where the growth rate of the poor is greater than zero. The main argument for usage of this definition is, that in the end all that matters is high income growth of the poor, not how much the income of the rich has grown.

Kraay (2006) finds the relative definition of pro-poor growth to be too narrow, and wants to include all growth where the poverty measure of interest falls, into the definition. Similar suggestions are made by Ravallion & Chen (2003), who also apply it with the Watts index, creating the Growth Incidence Curve (GIC), which gives the rates of growth by quantiles of the distribution of income. Klasen (2008) calls this the Ravallion-Chen measure of pro-poor growth and suggests that it is useful to measure the rate of pro-poor growth. However, there is also much support to use a relative definition of the state of pro-poor growth. He also adds that the debate about the correct definition has concentrated too much on only income indicators of poverty (MDG1) rather than on the other non-monetary measures.

Grosse et al. (2008) are on similar terms and note that in the context of MDGs, an improvement in the income indicators of poverty does not guarantee improvements in other development goals. In their research, they try to enhance the development of non-income indicators of pro-poor growth. They extend the usage of the GIC by applying it to different non-income indicators. By using Bolivia as an example, they discovered that enhancements in non-income dimensions of poverty were focused on the people who were originally poor by those indicators. Hence, the enhancements were not focused so much on the originally income poor. In other words people who are poor by income measures might not be the same people who are poor by non-income indicators. In their view, policy makers should use the strong absolute sense of pro-poor growth to ensure that non-income MDGs are met as well.

Son & Kakwani (2008) define pro-poor growth as growth where the poor benefit more than the non-poor. In their study of 80 low and middle income countries, they also developed a new indicator to determine whether growth is pro-poor or anti-poor. This indicator measures the gains or losses in growth rates, which would have resulted through variation in the distribution of income or consumption. In the time period of 1984-2001, they argue that growth has generally not been favourable to the poor. Son & Kakwani also tested a few variables to determine their whether they affected growth

patterns. They found that low inflation rates had a significant relationship with pro-poor growth, but with the other variables (share of agriculture in GDP, openness to trade and the rule of law), the relationship was insignificant. In their empirical study of Burkina Faso, Günther & Grimm (2007) come to similar conclusions. Hence, they suggest that in the future inflation should be taken into consideration in calculations of pro-poor growth.

When shaping the factors which determine the rate of poverty reduction of pro-poor growth, there seems to be a more of a consensus. Klasen (2008) suggests that the rate, which absolute poverty reduces, depends on the rate of average income growth, the initial level of inequality and the changes in the level of inequality. A slightly different approach is made by Kraay (2006), who also acknowledges three potential sources of pro-poor economic growth: 1) A high growth rate of average incomes 2) A high sensitivity of poverty to growth in average incomes 3) A poverty reducing pattern in growth in relative incomes. Both authors find the high growth rate of average incomes to be the most important factor to determine the rate of poverty reduction.

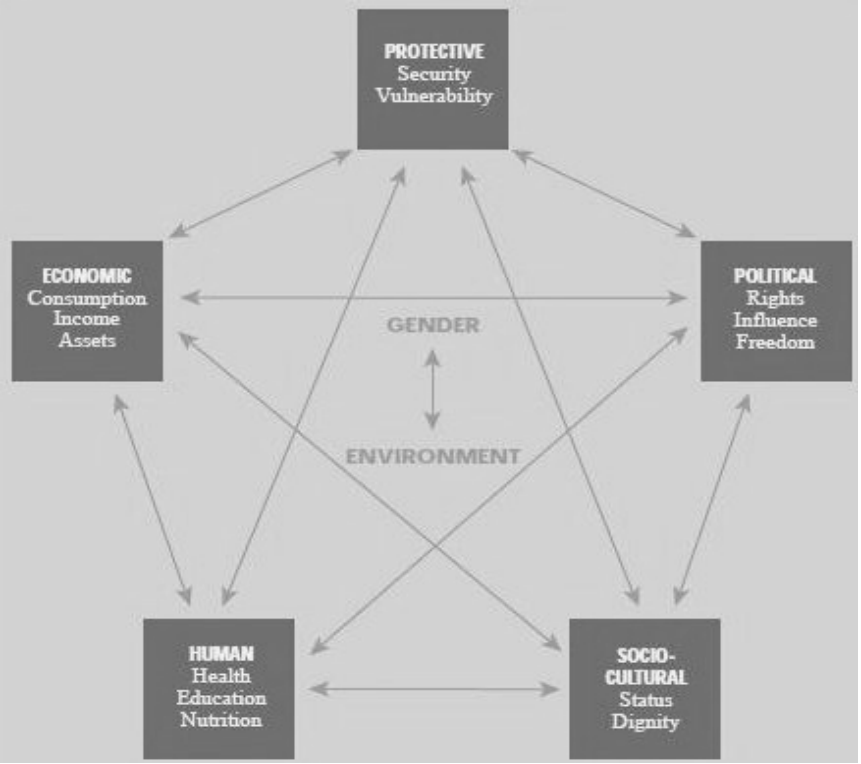
2.3 Poverty

There are various ways of defining and measuring poverty. In most definitions, being poor is considered to be more than just not having adequate income. The UN World Summit for Social Development (1995) described someone living in poverty, as being in severe deprivation of human needs, this including food, safe drinking water, sanitation, health, shelter, education and information. In their long description, they also add that poverty occurs in all countries, as mass poverty in developing countries and pockets of poverty in developed countries. The World Bank's World Development Report (2001) is on similar lines with their description of poverty. They depict that the poor are lacking fundamental freedoms for action. Poor people do not have adequate food or shelter, health services or education. They are easily ill treated by institutions of the society and cannot influence key decisions, which affect their lives. They are also vulnerable to diseases, economic dislocation and natural disasters.

It is important to make a differentiation between the two main subcategories of poverty absolute and relative poverty. Definitions of poverty made above mostly describe absolute poverty, which for the most part occurs in developing countries. Relative poverty refers to poverty found mostly in developed countries. According to Besharov & Call (2009), almost all the citizens in the western world live above the line of absolute poverty. In their view, this has happened because of the rise in earnings levels and in government income transfers. They see relative poverty in developed countries being equal to "income inequality". The European Union (2004) defines relative poverty as someone not having enough income and resources to have an acceptable standard of living in the context of the society, which they live in.

The OECD (2001) describes poverty with five different core dimensions, which are demonstrated in figure 1, which shows the interactive dimensions of poverty.

Figure 1. Interactive Dimensions of poverty



Source: OECD (2001, p.39)

The different capabilities that are portrayed in figure 1 are;

Human capabilities Based on wealth, education, clean water, nutrition and shelter.

Economic capabilities - Meaning the ability to earn income, have assets and to consume.

Political capabilities - These capabilities include human rights, for example political freedom and safety from the violence by authorities.

Socio-cultural capabilities –This refers to the ability to participate in society as a valued member.

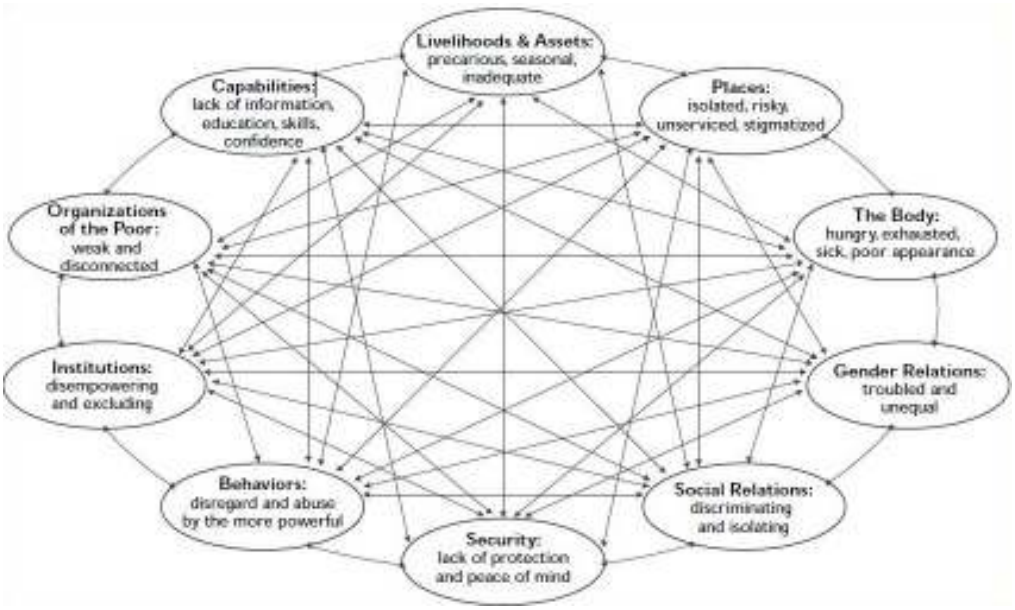
Protective capabilities - The ability to withstand economic and external shocks, such as food insecurity, crime, war and illness.

In figure 1, poverty is also linked with gender issues and the environment. According to the OECD (2001), poverty is not gender neutral and usually it affects women more profoundly than men. Inside households women and girls tend to get a smaller portion of the consumption and public services, as well as have higher illiteracy rates. They are also more likely to be excluded from their communities. Women can also be burdened with imposed tasks that take away from their time which could be used to enhance their position. The main concern for poor people concerning the environment is environmental degradation. It affects people's access to natural resources, which they usually depend on. It can also affect people's vulnerability to environmental health risks.

In rural areas the main concerns are land degradation, declining fish stocks, deforestation, polluted water and indoor air. This is due to the fact that poor people lack the opportunity to use the land in a sustainable way. Poor people in urban areas often live near contaminated areas, and have overcrowded and unsanitary lodgings. Poorly and too closely built settlements are also vulnerable to landslides and fire. Both rural and urban poor are susceptible to natural disasters such as hurricanes and droughts. The severity of natural disasters is likely to rise in the future due to global climate change. (Ibid, 2001)

A similar figure to the dimensions of poverty is presented by Narayan et al (2000), who give a description of the powerlessness of the poor. They have based their figure on analyses made of poor people's own experiences. In a similar way it shows the linkages between the different dimensions of poverty.

Figure 2. Powerlessness and illbeing of the poor



Source: Narayan et al. (2000, p 249)

The powerlessness of the poor chart is divided into several interlinked categories. The categories present the different areas of life where the powerlessness of the poor are recognized. These categories are;

Livelihoods and assets – precarious, seasonal, inadequate

Places – isolated, risky, unserviced, stigmatized

The Body – hungry, exhausted, sick, poor appearance

Gender relations – troubled and unequal

Social relations – discriminating and isolating

Security – lack of protection and peace of mind

Behaviours – disregard and abuse by the more powerfull

Institution – disempowering and excluding

Organizations of the poor – weak and disconnected

Capabilities – lack of information, education, skills, confidence

As can be observed from the chart, also in the eyes of the poor the connectednesses of the different aspects of poverty are multidimensional. Hence, people living in poverty also see their own situation as being due to many different aspects, rather than just not having adequate income. The OECD (2001) similarly acknowledges the powerlessness of the poor and suggests that certain measures could be taken to empower them.

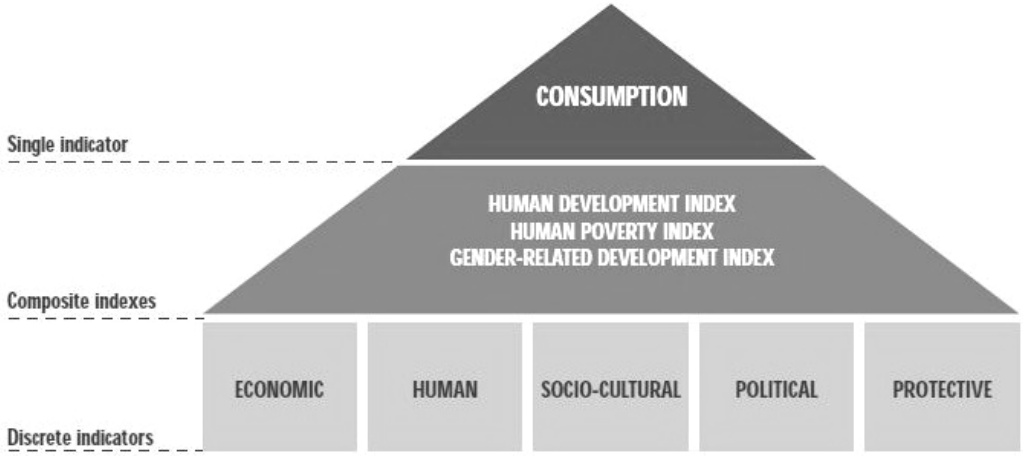
> 1) Strengthening popular participation in formulating and implementing policy and in assessing impact.
>
> 2) Promoting democratic and accountable governance and transparency.
>
> 3) Promoting human rights and the rights of marginalised groups.
>
> 4) Increasing the scope for civil society interaction and freedom of association.
>
> 5) Supporting a free press.
>
> 6) Reinforcing the rule of law and the impartial administration of justice.
>
> 7) Promoting decent work conditions.
>
> 8) Giving the poor more voice and control over the type, quality and delivery of services they receive.

Source: OECD (2001, p.19)

2.3.1 Measuring poverty

As can be seen from the descriptions made in the previous subchapter, poverty is a highly complex and multifaceted issue. Similar complexities are encountered when measuring poverty. Figure 3 shows the three different aggregation levels that are used to measure poverty. The three levels are: single indicator, composite indexes and discrete indicators.

Figure 3. Different aggregation levels of measuring poverty



Source: Organisation for Economic Co-operation and Development (2001, p 42)

A single indicator can be, for example a national poverty line used for determining the percentage of a country's population living in relative poverty. These poverty lines are adjusted according to the development level of each country. One of the poverty related targets of the Millennium Development Goals is measured with a single indicator. This global 1.25 US Dollar per day poverty line is meant to give an estimate about the amount of people living in absolute poverty.

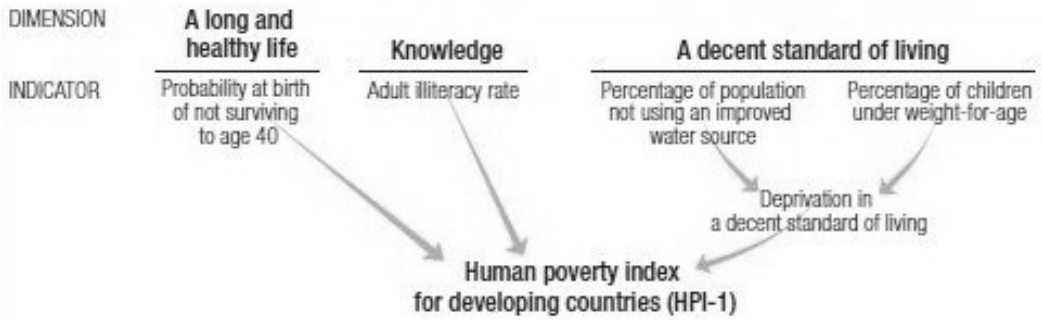
Unlike single indicators, composite indexes offer a possibility to measure multiple indicators simultaneously. They are used by the United Nations Development Programme (UNDP) to measure poverty, development and gender-related issues. In the Human Development report of 2009, the UNDP used the following indexes The Human Development Index (HDI), Human Poverty Index-1 (HPI-1, for developing countries), Human Poverty Index-2 (HPI-2, for selected OECD countries), Gender-related Development Index (GDI), and Gender Empowerment Measure (GEM). The United Nations (2010) announced in July 2010 that UNDP together with Oxford University have launched a new poverty index called the Multidimensional Poverty Index (MPI).

It is said to offer a fuller and a more multidimensional view of acute poverty and it is expected to be used extensively in the future.

In the bottom section of figure 3 are the discrete indicators of measuring poverty. The discrete indicators are usually more qualitative and multidimensional in nature, which makes them harder to quantify and standardise. Hence, they have to be used on a case-to-case basis and moulded for each case individually. The measured indicators are usually closer to the local community level, rather than the country level. This makes these indicators easier to use in planning and monitoring of different kinds of projects, which are typically implemented in the community level. (OECD, 2001)

From the next figure (Figure 4), we can see how the Human Poverty Index-1 is constructed. In the upper section we can see the dimensions that are measured a long and healthy life, knowledge and a decent standard of living.

Figure 4. The Human Poverty Index-1 (HPI- 1 for Developing countries)



Source: UNDP (2009, p 208)

In figure 4, the indicators are measures meant to reflect the dimension in question. The dimension A long and healthy life is measured by using the probability at birth not surviving to age 40 as the indicator. The indicator for knowledge is the adult illiteracy rate. The indicator for a decent standard of living is a bit more complex. It combines the percentage of population not using an improved water source with the percentage of children under weight-for-age. Together they form the measured indicator, deprivation

in a decent standard of living. All of these indicators together form the Human Poverty Index-1, which offers a broader measure of poverty compared to a single indicator. The Human Poverty Index is measured as a percentage, which is calculated as a combination of all the indicators. The smaller the percentage is, the better the country is doing according to the index. Countries are also compared against each other. The country with the lowest percentage is placed in first position and the rest follow in the order of their percentage figures. The Human Poverty Index-1 will be used in this study as one of the poverty measures.

2.3.2 Challenges measuring poverty

There are multiple ways of defining and measuring poverty, also many challenges arise when these measures are used. Maxwell (1999) has listed several of the biggest challenges faced when measuring different dimensions of poverty. These same issues are still being debated and provide insight of the complexities of measuring poverty.

Individual vs. household measures

In many places resources are not divided equally inside the household. For example, the males of the household may consume most of the family's resources.

Only private consumption vs. private consumption + publicly provided goods

Poverty can be defined in terms of consumption to smooth out short term income changes. Publicly provided goods such as healthcare and income transfers from the government are also consumed by people, but they vary between countries. Thus, it is debatable should they be included in consumption measures of poverty.

Monetary vs. monetary plus non monetary aspects

Using just monetary metrics does not take into consideration, for example autonomy, self esteem and participation in decision making.

Snapshot vs. timeline

Many poverty assessments are done as a snapshot of the current situation, not taking into consideration the history and seasonal changes of poverty.

Actual vs. potential poverty

Many groups are highly vulnerable to poverty, for example due to extreme weather phenomena. Many analysts include these people among poor people, although their current income may be adequate.

Stock vs. flow measures of poverty

Instead of measuring received income, measures of the stock resources a household controls, could be used. This stock could be physical and monetary assets or social capital.

Output vs. input measures

Poverty measured as lack of sufficient income captures an input of someone's capability and functioning, rather than a measure of actual well-being.

Objective vs. subjective perceptions of poverty

Understanding the local context and perceptions are key issues in some communities. For example, domestic violence and the dependency on traditional structures can mean living in poverty for some, although they measure above the poverty line in income measures.

According to Klasen (2008), it has been unfortunate that in the debate on poverty, the focus has been too much only on the income dimension of poverty. The global poverty line of one US Dollar (now 1.25 dollars per day) has had a lot of visibility in the media and is used by many researchers. However, it only reveals one dimension of poverty leaving less attention for other dimension.

Next, the study's theoretical framework will be presented. The framework is constructed according to the studies discussed in the literature review.

2.4 Theoretical Framework

The theoretical framework is constructed based on earlier research discussed in the literature review. It is comprised from studies concerning mainly Foreign Direct Investment, economic growth and poverty. As these subjects are very broad, the framework is confined specifically to items which are in the scope of this study.

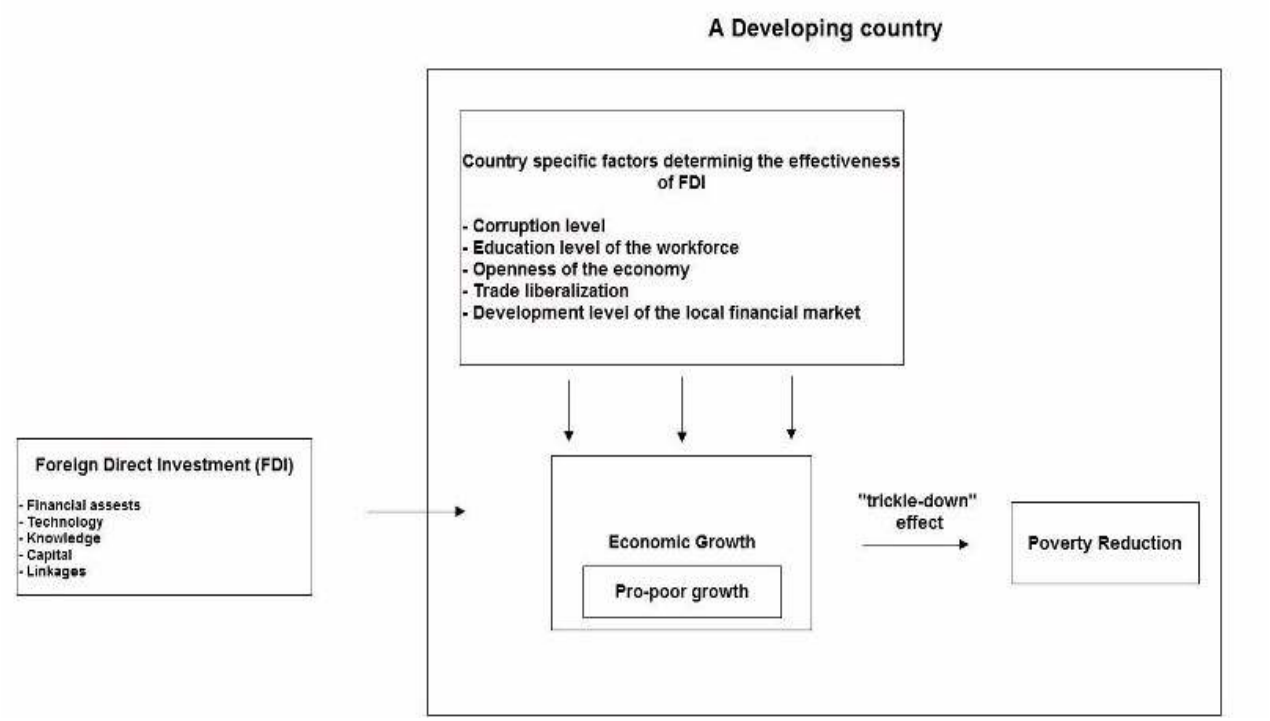
Many researchers argued that FDI was the key ingredient to achieving economic growth as well as poverty reduction. However, there were also studies suggesting that certain criteria would have to be met before FDI would have an effect on economic growth. These country specific factors included level of education, corruption, openness of the economy and trade liberalization, and the development level of the local financial market. Alfaro & Charlton (2007) also suggest that there is a certain quality factor of FDI, which they measure with average skill intensity and the sector's reliance on external capital. These quality factors supposedly influence the growth effects of FDI. However, they add that the quality factor can be very difficult to measure and it has to be carefully examined case by case. On the other end of the spectrum, Herzer et al. (2007) claim that in most cases there is no positive connection between FDI and economic growth.

The theoretical framework presents the possible outcome where FDI has a positive impact on economic growth and thus on poverty reduction. This hypothesis is then later tested with empirical research. One of the main issues when building the theoretical framework was the method how poverty reduction occurs. Most of the researchers do not clearly identify the cause of poverty reduction, but rather try to show a statistical relationship between FDI inflows and either reduction in poverty or economic growth. It can be noticed that the underlying assumption is that economic growth automatically causes poverty reduction. In the framework this is described as the "trickle down" effect, where the benefits of economic growth and overall development eventually benefit the poorest segment of the country. In the case of pro-poor growth, economic growth is likely to be more beneficial to the poor, depending on the definition we give to pro-poor growth. As this study is interested mainly in the relationship between FDI

and poverty reduction, other possible contributing factors, such as Official Development Aid (ODA) and remittances, are left to less attention.

A large portion of the earlier research done in this area of study, either does not clearly define, or has a one-dimensional view of poverty. As explained in the literature review, the term poverty can have various meanings. To increase the clarity of the framework, the term poverty reduction represents all the diverse meanings of poverty. However, in the empirical research section of this research, this study tries to answer the research questions by also using alternative definitions of poverty.

Figure 5. The Theoretical Framework: Poverty reduction trough FDI and economic growth in developing countries



This chapter presented the literature review of this study. It included the most relevant literature from the fields of international business and development economics. In the end of the chapter, the theoretical framework of the study was presented. In the next chapter, the methodology of the thesis is explained in detail, as well as the limitations of the methodological choices.

3. RESEARCH METHODOLOGY

The methodology chapter covers the research methodology used in this study. First, the research approach and methods used are discussed, followed with data gathering and analysis. Then the procedures of variable selection and modelling are explained, and finally the most significant limitations of the empirical research are uncovered.

3.1 Research approach and method

There were two research questions presented in the beginning of the thesis: 1) Is there a linkage between FDI inflows and poverty in developing countries? and 2) How has FDI affected poverty in Nicaragua compared to other developing countries? To answer the research questions, this study takes an informative approach. With the empirical research this thesis tests the legitimacy of current theory of FDI and poverty reduction, which was presented in the literature review. As can be seen from the literature review, almost all of the earlier studies done regarding the relationship between FDI, growth and poverty have been done using quantitative methods. A quantitative approach was the chosen method for this study, as it provides the possibility to study large-scale data and possibly reveal new information about the relationships between the different variables. The research was conducted as a cross country study of 60 developing countries. The aim was to try to explain the changes in various poverty statistics between different countries by using multiple explanatory variables. In other words, how does the variation in FDI inflow stocks explain the variation in the chosen poverty measure? This type of a study will not pin point a cause and effect relationship between the different variables, but it will provide information about the possible statistical relationship between FDI and the different poverty measures.

3.2 Data gathering and analysis

A sample of 60 countries was chosen for this study, in order to make sure the results were statistically reliable and to increase the generalizability of the results (a complete list of countries in Appendix 1). The countries were chosen based on their position in the Human Development Index (HDI). As this study is also interested in the situation of Nicaragua, it was chosen as the reference country. Nicaragua was ranked 124th in the HDI rankings. From the countries which were listed according to their HDI rank, a total of 29 countries were chosen higher than Nicaragua and 30 lower. This was done to enhance the prediction for Nicaragua when it is compared to other developing countries. In addition, as the aim was to study different types of poverty, the chosen countries had to have at least some levels of absolute and relative poverty. Also some of the poverty statistics are measured differently for developed and developing countries, thus comparing them would not be fruitful. For example, The Human Poverty index by the UNDP is measured differently if the country is listed as a developing country.

All of the data used in this study was secondary data, gathered from various sources. The data was mostly gathered from the data banks of international organizations, such as the World Bank, the United Nations Development programme (UNDP) and the Millennium Development Goals Indicators database, which is operated by the United Nations statistics division. The U.S Central Intelligence (CIA) Agency's World Factbook was used for more general data, such as population, location and oil production. Transparency International was used as a source for the Corruption Perceptions Index. Although data was gathered from various sources, they were still fairly compatible with each other. Despite some dummy variables were used, most of the data was measureable on the interval scale. Hence, no major modifications had to be made. Also, all the dependent variables were percentages of population living in poverty, which made their comparison easier.

The base years for the 1.25 dollar per day and the national poverty lines was set at the year 2000. Hence, poverty figures used in the study are from years 2000 to 2008. Countries with older data were not included in that particular model. This was done as a

compromise of having a big enough sample size for the regression models and using up-to-date data which would ensure that their comparison would be meaningful. Issues concerning the validity and reliability of the empirical research will be discussed more closely later on in this chapter. Up-to-date data for the other variables were more readily available. The data used for the FDI stocks variable was counted as the sum of all inward FDI from years 1990 to 2009. All of the data analyses were made by using SPSS statistical analysis software.

3.3 Variables & Models

Three poverty indicators were chosen as dependent variables for three different regression models. As mentioned in the literature review, poverty can mean many different things and it can be measured in various ways. The dependent variables were chosen to represent different ways of defining and measuring poverty, and thus to gain more knowledge on the impact of FDI on these different poverty measurements. The dependent variables used in the three models were:

Model 1 *1.25 US dollar per day poverty line* – Represents the proportion of the people living in absolute poverty.

Model 2 *Population living under the national poverty line* – Represents the proportion of people living in relative poverty, each country having their own poverty line according to the general development level of the country.

Model 3 *Human Poverty Index Percentage* – Represents a more holistic view of poverty, thus including multiple indicators (HPI is explained more closely in chapter 2.2.1).

Inward FDI stock figures from 1990 - 2009 were used as the explanatory variable, to test their statistical utility in explaining the variation of the dependent variables. FDI stocks were chosen as the independent variable as they take into consideration a longer time period, rather than just a snapshot. The time period was chosen because FDI flows

only started growing extensively in the 1990s. Hence, earlier FDI flows into developing countries were too small compared to the size of the economies to have a significant impact.

The tested independent variable was *FDI stock*, which represents the total stock of inward FDI from years 1990 - 2009

Several control variables are also used to test their relationships with the dependent variables and their combined explanatory power. All of the control variables below were investigated for the three models, which are introduced later on in the research.

Control variables which were assessed for models 1, 2 and 3;

Population – Population in millions

Gini Index – Pro-poor growth could not be quantified for this research, hence the Gini index is used to represent the inequality of income distribution

Corruption Perception Index – Represents the perceived corruption level of public-sector corruption in a country (Transparency International, 2009)

Location in the Americas – A dummy variable representing countries located in North and South America and the Caribbean

Location in Asia – A dummy variable representing countries located in Asia

Location in Africa – A dummy variable representing countries located in Africa

Location in Oceania – A dummy variable representing countries located in Oceania

Oil production – Oil produced in a year (2009) in barrels

FDI & Mining – A dummy variable representing a large part of inward FDI going to the mining sector

When all relevant data was gathered, the final analysis of data was done by using linear regression analysis. Linear regression was chosen because it provides the possibility to

use multiple variables to explain the dependant variable, as well as assess the contribution of each variable (Malhotra & Birks, 2006). This also provided a possibility to answer the second research question, which was to examine more closely the situation in Nicaragua, compared to other developing countries. The linear regression equation can be expressed as:

$$Y = B_0 + B_1 * X_1 + \ldots + Bp * Xp + E$$

Y = dependent variable

b = the regression coefficients

X = explanatory variables

E = the error

The associated estimated model, based on the sample data is:

$$Y = b_0 + b_1 * X_1 + \ldots + bp * Xp$$

Y = dependent variable

b = the regression coefficients

X = explanatory variables

The situation of Nicaragua was then assessed with statistically significant models, which will be illustrated later in the study. Hence, if the models did not predict the outcome with reasonable statistical significance, there was no reason to conduct further studies with the model in question. As presented earlier, three different models were constructed and those models were used to assess how Nicaragua has done compared to other developing countries, concerning the relationship between FDI and poverty. The goal of this section of the study was not to do a thorough research of the reasons behind

the situation of Nicaragua, but mainly use it as an example country and help to determine the accuracy of the constructed models.

3.4 Limitations

Statistical analysis provides the tools to analyze large pools of data, which is why it was chosen as the research method for this study. However, there are also some limitations concerning statistical analysis. As mentioned earlier, the data analysis was done by using linear regression analysis. The main limitation with using regression analysis is that it will not provide evidence of a causal relationship between the dependent and the independent variables. Hence, although there might by a statistically relevant relationship between FDI and poverty reduction, it still does not prove that FDI is a cause of that reduction. Furthermore, the constructed models do not accurately describe reality, but offer a simplified version of it. Also, as the sample was picked from the HDI rankings it cannot be considered a random sample of developing countries. The sample left out developing countries which are at the top and bottom ends of the HDI rankings. Although the sample size was fairly large, the non-randomness of the sample might have some effects on the results.

The main difficulty concerning the overall validity of the research was the availability of usable data, and how that data could be used in the statistical analyses. As expressed earlier, the availability of up-to-date data was somewhat poor in some instances. However, at least some data had to be included in the study for the statistical analysis, thus the line had to be drawn somewhere. The age limit for the data was set on year 2000. It is an arbitrary limit, but it ensures that the figures reflect the current situation at least with some accuracy. Most of the data however, is more recent than year 2000. One thing to consider is that newer data simply does not exist. Thus, if one wants to research these countries, brand new data is not available.

The most prominent problem with data gathering was the availability of up-to-date data, especially for the 1.25 dollar per day and the national poverty lines. The most reliable results from this research would have been attained by using poverty figures available for every country and as close as possible to the present day. The reality is that most developing countries do not release or even produce poverty statistics regularly and there can be a gap of 5 to 10 years or even more.

When dealing with data coming from developing countries, the reliability of the data has to be considered. Many developing countries do not have adequate resources to carry out complex surveys that are needed to ensure the reliability of data. The political atmosphere may also have an effect on the results, as well as corruption. The results can be modified in favour of the people in power and some might be afraid to give accurate answers in fear of punishment. However, in this case as the researcher has no way of determining the reliability of the data, other than if it is derived from reliable sources such as the UN, the data has to be considered reliable.

This chapter explained the methodology of the thesis. It clarified the method of study and how the data was gathered and analyzed. The variables which were used in the regression analysis were presented. The chapter also stated the linear regression equation and limitations regarding the analysis. The next chapter will give a description of the gathered data and also show the results of the data analysis.

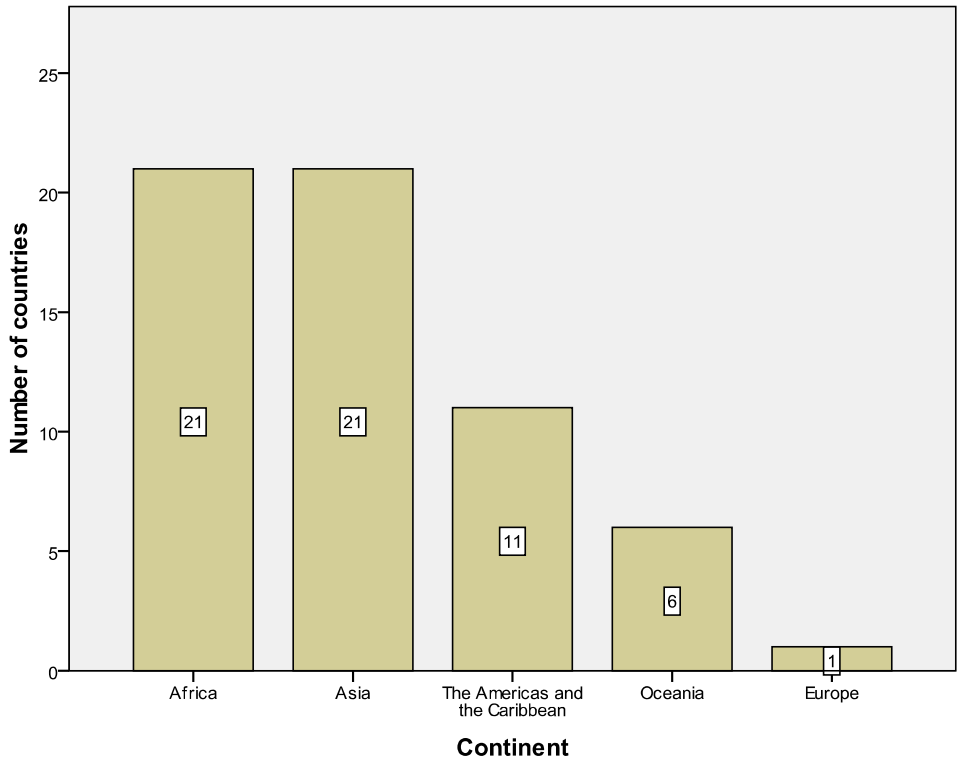
4. DATA DESCRIPTION AND ANALYSIS

The fourth chapter includes the empirical research of the study. First the data used in the study is described. Then the data analysis will be presented. The last part of the chapter will present a short description of Nicaragua and the comparison to other developing countries.

4.1 Description of data

As it was stated in the methodology chapter, there were a total of 60 countries included in the research. All of these countries are considered to be developing countries. Figure 6 displays how these countries are divided geographically among different continents. The Americas and the Caribbean include North and South America as well as The Caribbean States.

Figure 6. Countries located in different continents

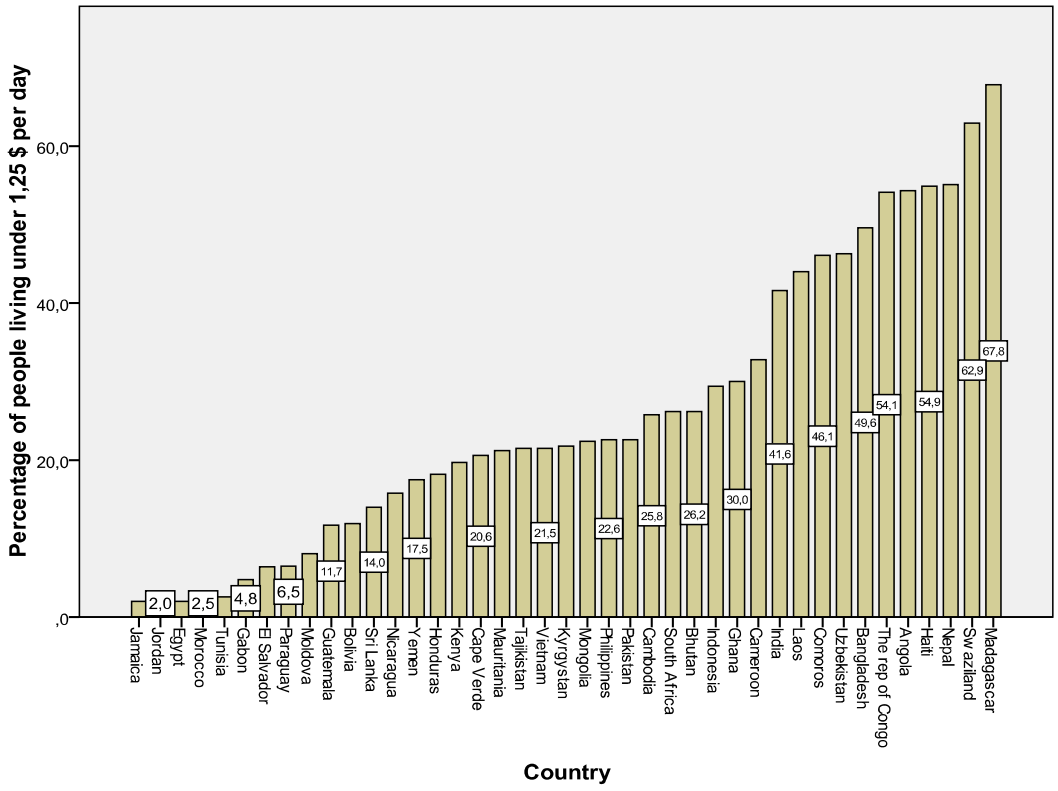


Over two thirds of the sample countries in the research are located in Africa and Asia. The eleven countries in the Americas and the Caribbean are divided quite equally between Central and South America and the Caribbean. The six countries from Oceania are all small island states located in the Pacific Ocean. The lone European country is Moldova, which is an old Soviet state located between Romania and Ukraine.

The poverty indicators

As mentioned in the methodology chapter, usable poverty data was not available for every country. Figure 7 presents all the countries whose data could be used to measure the percentage of people living under the 1.25 $ per day. This is often seen as the limit of absolute poverty, however not without opposing arguments, as can be read from chapter 2.3

Figure 7. The percentage of population living under 1.25 $ per day

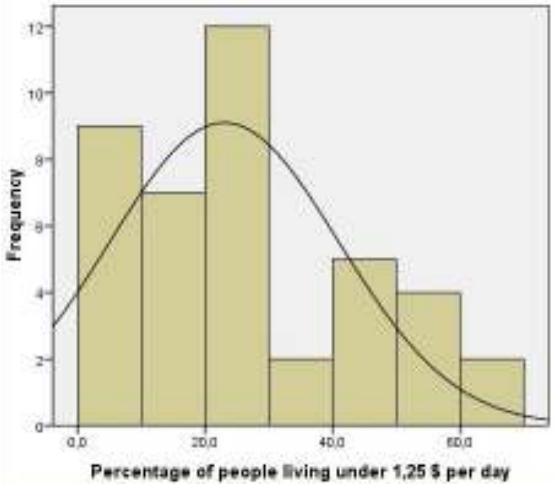


Data source: UNCTAD (2009)

There is a lot of variation among these countries, ranging from two percent for Jamaica, Egypt and Jordan to 67,8 percent for Madagascar. The Northern African countries are all situated in the low end of the spectrum, as vice versa Sub-Saharan African countries have the biggest percentages. Countries from the Americas and the Caribbean all have, except Haiti, relatively low percentages compared to the sample group. Descriptive statistics as well as a histogram with the normal curve are presented in figure 8.

Figure 8. Descriptive statistics and histogram of 1.25 $ per day poverty line

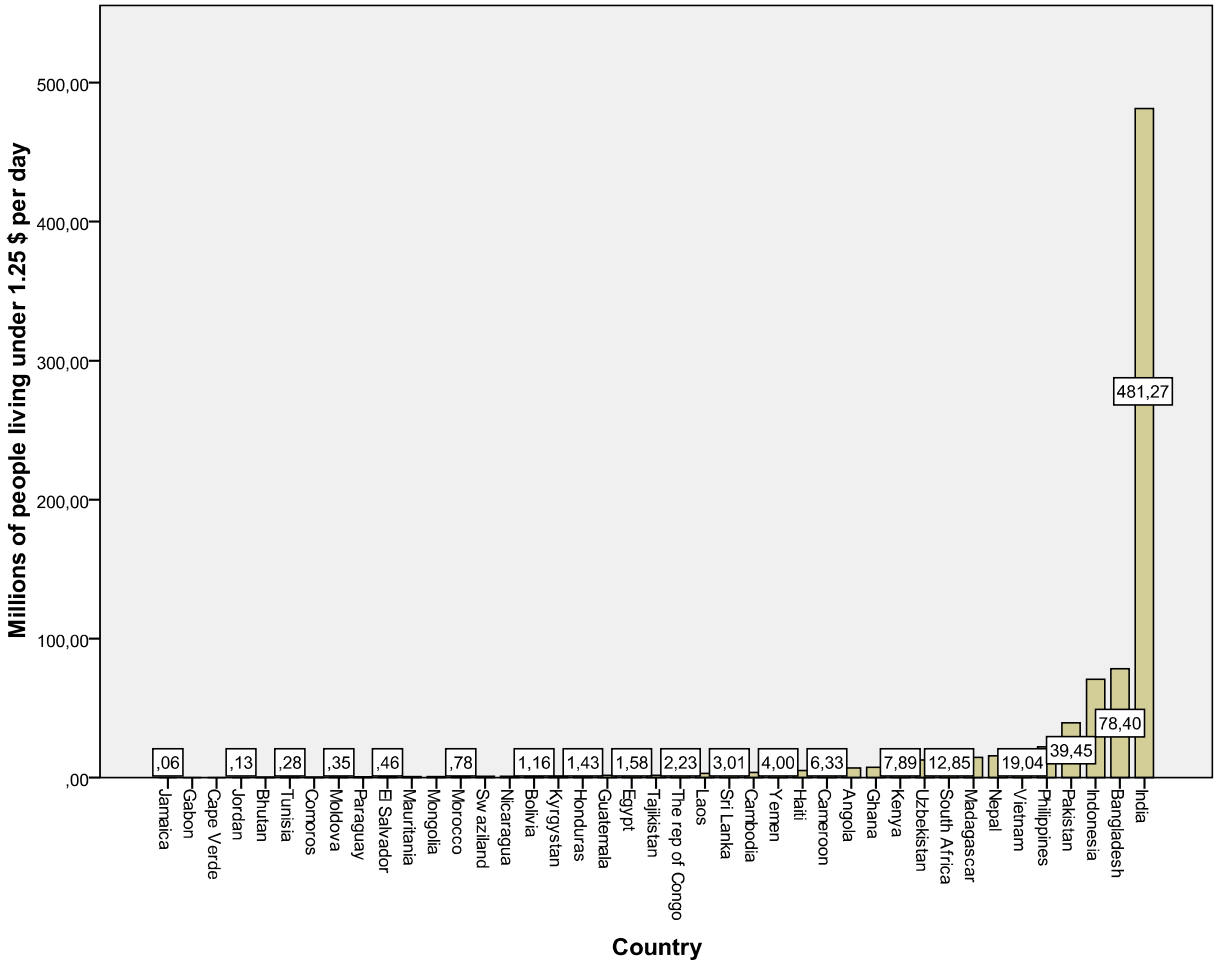
N	41
Mean	26,024
Median	21,800
Std. Deviation	18,5259



From the 60 sample countries, 41 countries had poverty figures which were used in this study. The mean percentage was 26,024 and the median 21,8. The standard deviation was 18,5259. The histogram presents the frequencies of the data points fitted with the normal curve.

On top of percentage of people living under 1.25 $ per day, it is also beneficial to look at the situation in absolute terms. This presents the headcount of poverty and shows where most of the people which are living under the absolute poverty line are located. It gives a completely different picture from the previous figure and offers a differing view point where absolute poverty is located.

Figure 9. The number of people living under 1.25 $ per day in millions

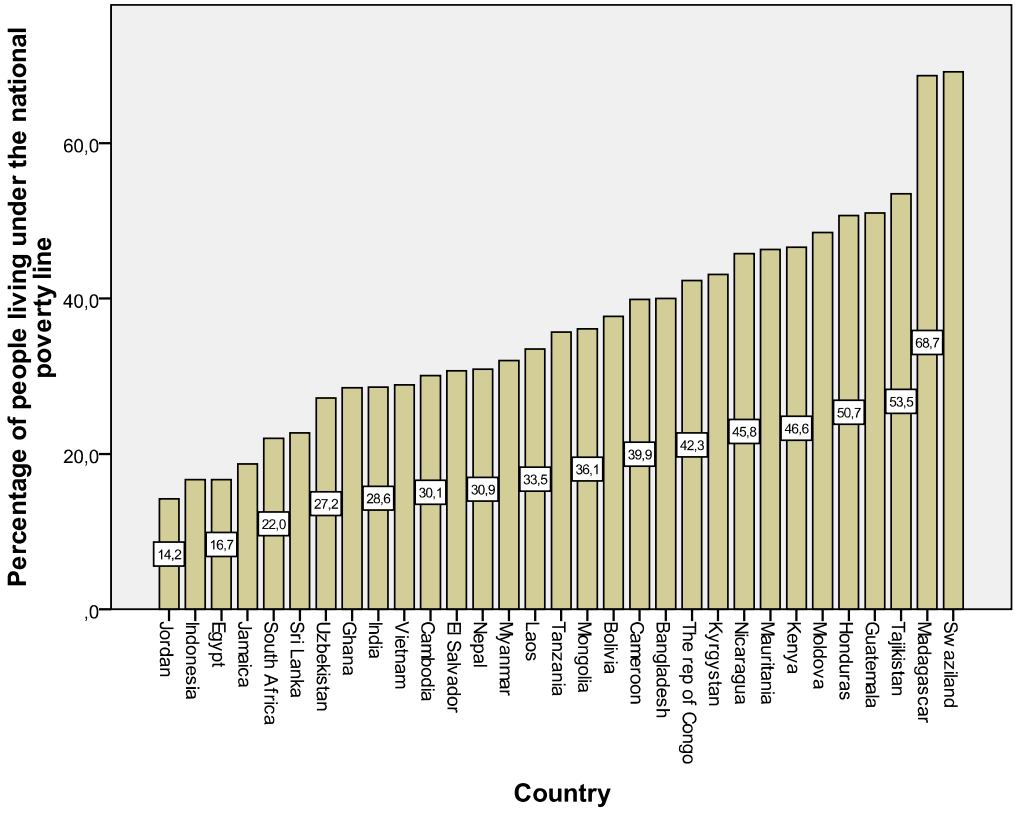


Data source: UNCTAD (2009)

The first observation is the towering bar of India. In India there are almost 500 million people living in absolute poverty. This is more than all the other sample countries have combined. This of course has to do with India's extremely large population (1156,9 million) The seven countries that have the highest number of poor people are all located in Asia and they also have large populations. Looking at figure 9 also solidifies the difficulties in poverty measurement as situations change radically when observed from different viewpoints.

When the poverty line is moved from 1.25 $ per day to the national poverty line, in most cases this means moving from absolute to relative poverty. In the poorest countries, where income levels are low, absolute and relative poverty can mean the same thing. However, in most countries the national poverty line is set higher than 1.25$ per day, depending on the development level of the country. Differences between relative and absolute poverty are more closely explained in chapter 2.3

Figure 10. The percentage of people living under the national poverty line



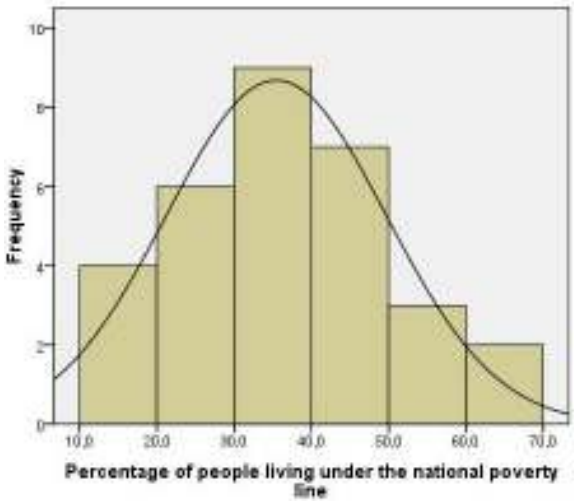
Data source: UNCTAD (2010)

Jordan is again in the low end of the scale with 14,2 percent and Swaziland has the highest percentage with 69,2 percent of the population living under the national poverty line. It has to be remembered when examining the results of the national poverty figures, that every country in the world has people living in relative poverty. As

explained in earlier chapters, relative income poverty is related to income distribution within the country.

Figure 11. Descriptive statistics and histogram of national poverty lines

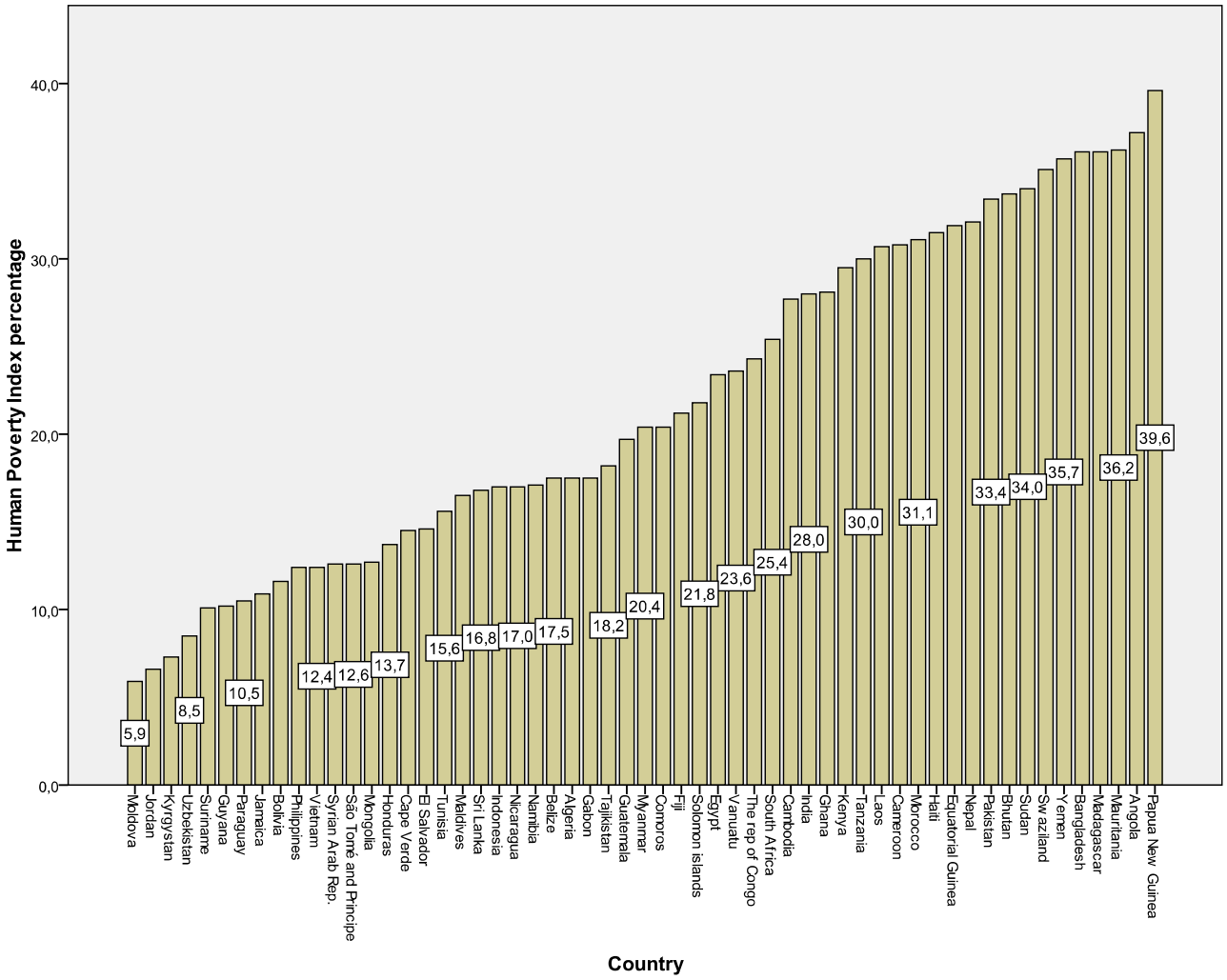
N	31
Mean	36,661
Median	35,700
Std. Deviation	13,8357



From the 60 sample countries, 31 countries had usable poverty figures in this category. The mean percentage was 36,661 and the median 35,7. The standard deviation was 13,8357. The histogram presents the frequencies of the data points fitted with the normal curve.

The third selected measure for poverty was the Human Poverty Index, which is measured as a percentage and is a combination of three dimensions. These dimensions are a long and healthy life, knowledge and a decent standard of living (the dimensions are explained in more detail in chapter 2.3). The lower the percentage, the better the situation is concerning poverty. The index gives a broader view of poverty than just using income, but on the other hand, the percentage itself does not provide a lot of information. Hence, the percentage should be used to compare countries to each other.

Figure 12. The Human Poverty Index percentage

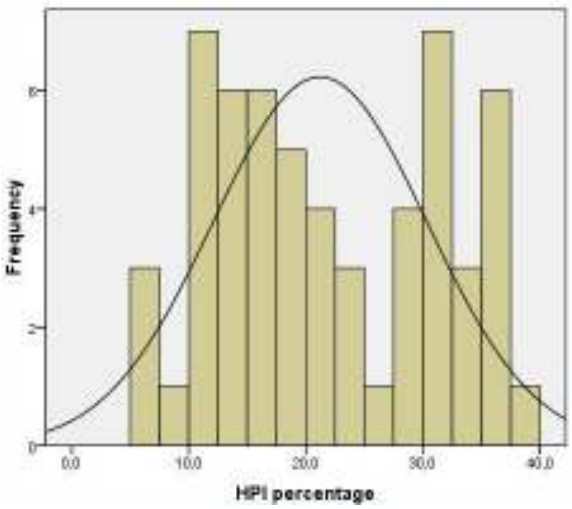


Data source: UNCTAD (2010)

Figure 12 illustrates the data of the HPI percentage. The largest percentage is held by Papua New Guinea, whose population still lives mostly in traditional societies. Sub-Saharan Africa is well presented in the high end of the poverty index, as well as some Asian states like Bangladesh, Yemen, Bhutan and Nepal. Most of the Latin American countries are in lower half of the scale and the former Soviet states having some of the lowest percentages. The small island states of Oceania are mostly located in the middle of the sample.

Figure 13. Descriptive statistics and histogram of The Human Poverty Index percentage

N	57
Mean	21,868
Median	20,400
Std. Deviation	9,5505

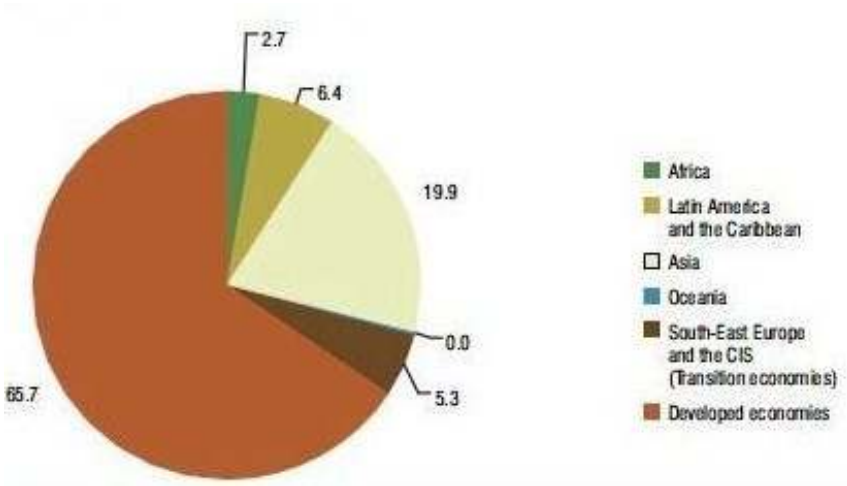


57 countries had usable poverty figures in this category. Only the data for Turkmenistan, Tonga and Samoa was not available. The mean was 21,868 and the median 20,4. The standard deviation was 9,5505. The histogram presents the frequencies of the data points fitted with the normal curve.

Global Foreign Direct Investment Figures

To have a good perception of the FDI inflow figures in general, next the global FDI inflows are presented. They are then followed by FDI inflows from the sample countries. Over the last few decades FDI inflows have risen in both developing and developed countries. Still there are enormous differences between regions, as can be seen in Figure 14.

Figure 14. FDI inflows in 2006 by region – in percents



Source: UNCTAD (2008, p 29)

As Figure 11 shows, in 2006 developed economies received 65,7 percent and Asia 19,9 percent of total FDI inflows. Africa (2,7%), Latin America and the Caribbean (6,4%), Oceania (0,0%) and South-East Europe and the CIS (5,3%), share the remaining 14,4 percent. Africa, Latin America and the Caribbean and the developed economies have each roughly the same amount of people, which indicates how heavily FDI inflows are weighted towards developed economies. Asia attracts one fifth of the inflows, but it also holds four times more people than regions mentioned above.

The total amount of FDI inflows measured in 2006 were 1.306 trillion US$, descending a bit from the peak year of 2000. From Table 1 we can see how FDI inflows have changed over time in different regions.

Table 1. FDI inflows – in millions of U.S. dollars

Region	1970	1980	1990	2000	2005	2006
World	**13,418**	**55,262**	**201,594**	**1,411,366**	**945,795**	**1,305,852**
Developing economies excluding China	*3,854*	*7,607*	*32,405*	*215,373*	*241,910*	*309,602*
Least developed countries	*154*	*536*	*579*	*4,026*	*7,326*	*9,375*
Developing economies	**3,854**	**7,664**	**35,892**	**256,088**	**314,316**	**379,070**
Africa	**1,266**	**400**	**2,806**	**9,685**	**29,648**	**35,544**
North Africa [1]	436	152	1,116	3,456	13,528	23,324
Other Africa [2]	830	248	1,690	6,229	16,120	12,221
Other Africa [2] excluding South Africa	*497*	*258*	*1,768*	*5,341*	*9,869*	*12,544*
Latin America [3] and the Caribbean	**1,599**	**6,483**	**9,748**	**97,803**	**75,541**	**83,753**
Asia	**854**	**663**	**22,642**	**148,333**	**208,744**	**259,434**
West Asia [4]	147	-3,247	456	3,509	41,554	59,902
South, East and South-East Asia [5]	706	3,909	22,187	144,824	167,190	199,531
East Asia	178	950	8,791	116,625	116,253	125,774
South Asia [6]	68	203	575	4,658	9,866	22,274
South-East Asia	460	2,756	12,821	23,540	41,071	51,483
Oceania	**136**	**118**	**696**	**268**	**383**	**339**
Economies in transition	**–**	**24**	**75**	**9,040**	**41,169**	**69,283**
Commonwealth of Independent States (CIS)	–	–	4	5,335	26,045	42,934
South-East Europe [7]	–	24	71	3,705	15,123	26,348
Developed economies	**9,564**	**47,575**	**165,627**	**1,146,238**	**590,311**	**857,499**
Europe	**5,226**	**21,578**	**97,044**	**721,931**	**494,980**	**566,389**
European Union (25)	5,158	21,494	90,499	695,277	486,409	530,976
Other developed Europe [8]	68	84	6,545	26,655	8,571	35,414
North America [9]	**3,083**	**22,725**	**56,004**	**380,802**	**129,947**	**244,435**
Other developed countries [10]	**1,255**	**3,271**	**12,579**	**43,504**	**-34,616**	**46,675**

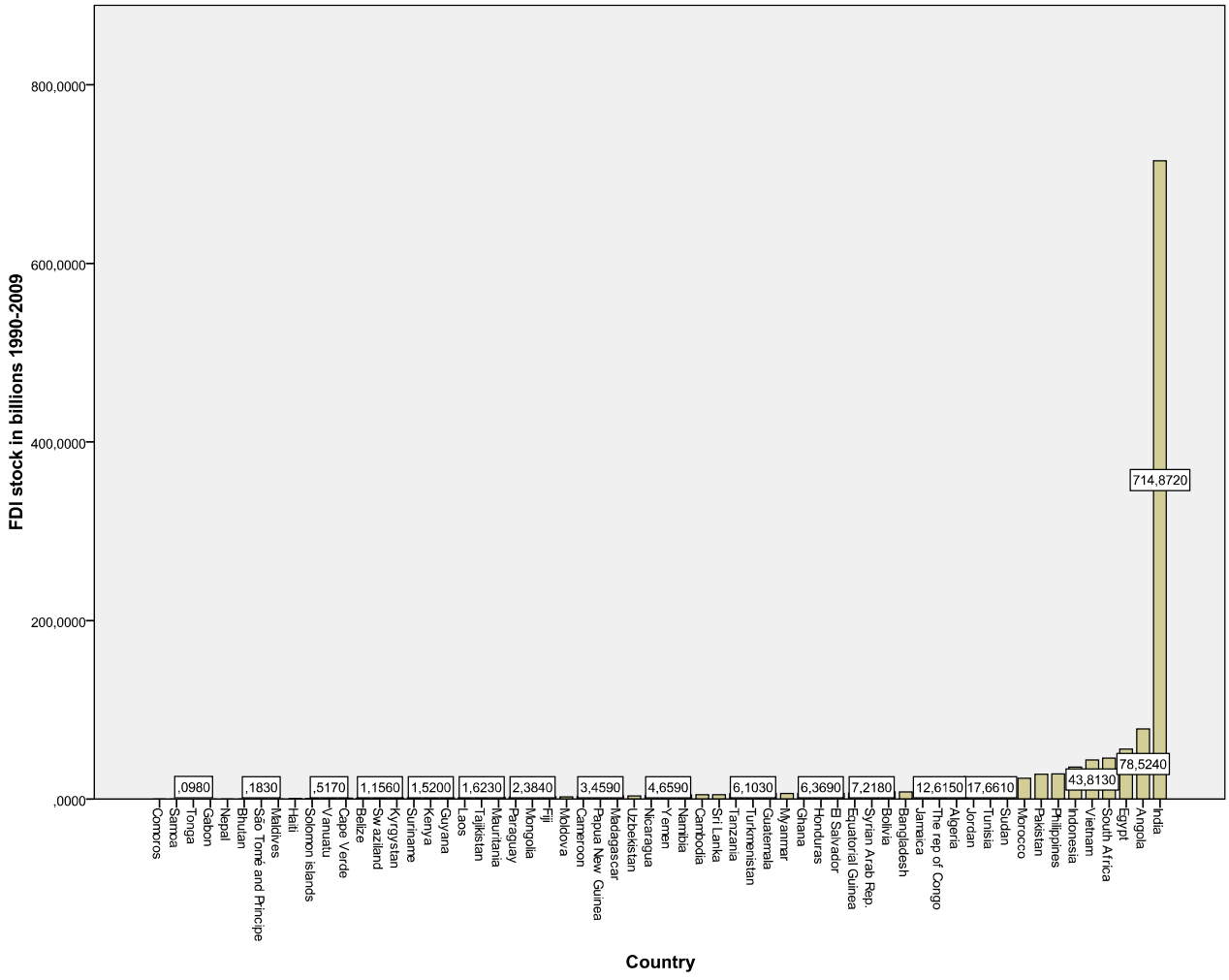
Source: UNCTAD (2008, p 29)

As we can see from Table 1, the major growth of FDI inflows happened between years 1990 and 2000. Asia and the transition economies are the only regions where inflows have not diminished after the peak of 2000. In Asia's case this is mainly due to the attractiveness of China. In the case of the transition economies, the collapse of the Soviet Union opened doors for foreign investors for those markets. Developing economies have steadily grown their portion of total FDI inflows, but they are still a long way from the developed economies. Inflows into the Least Developed Countries (LDCs) still remain very small, despite steady growth. The global pattern in FDI flows has been the movement away from natural resources and manufacturing, towards services. In 2005, the service sector represented 61% of total FDI flows, although there have been signs that extractive industries in resource-rich countries have rebounded (UNCTAD, 2008).

FDI inflows in sample countries

As can be seen from the global FDI statistics, FDI inflows have risen sharply in the last two decades. For this reason, the FDI stock of the sample countries was measured from years 1990 – 2009.

Figure 15. FDI inward stock 1990 - 2009 in billions of dollars



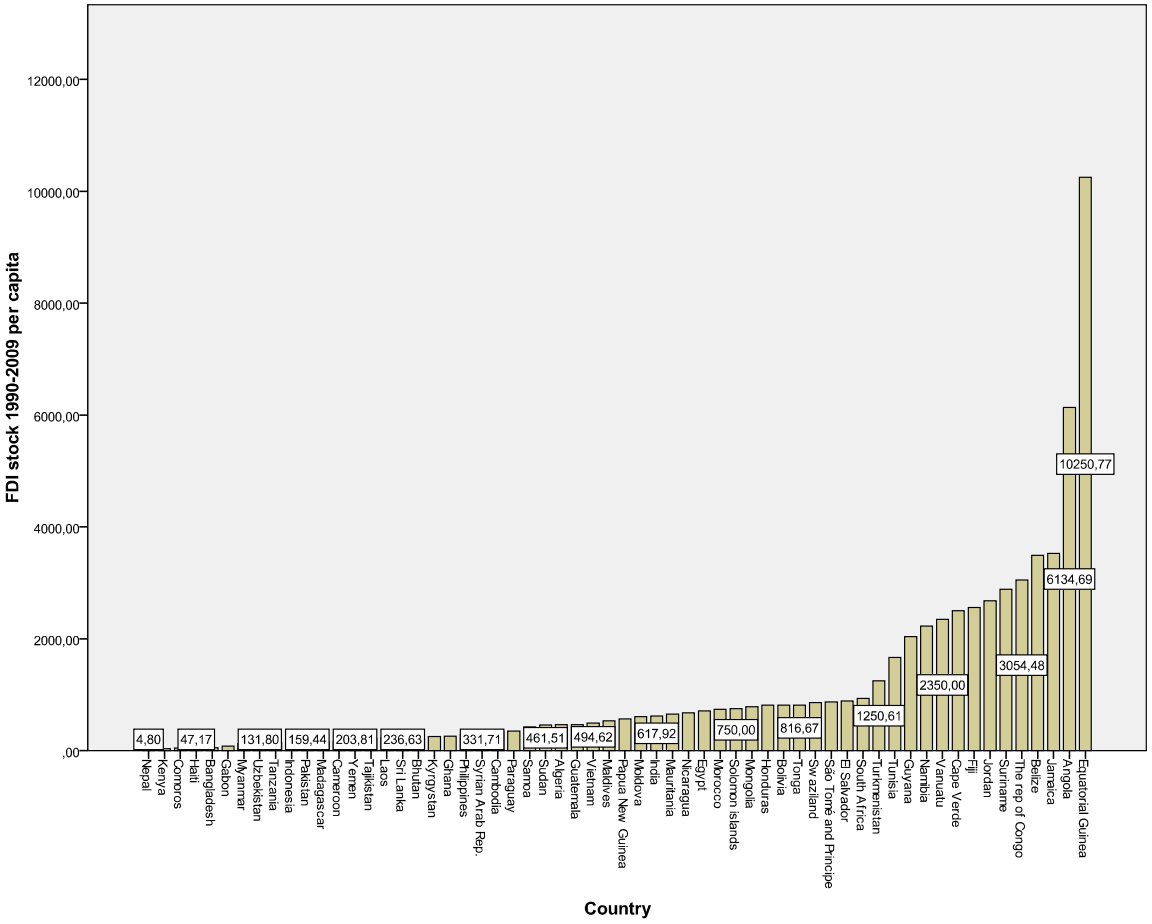
Data source: UNCTAD (2010)

From the sample countries India has received clearly the most inward FDI in years 1990 to 2009 (714,872 billions of dollars). Most of the countries have received less than 10 billion in the same time period. The closest to India are Angola, Egypt and South

Africa, but they do not break the 100 billion mark. Small island states have the smallest FDI figures as well as Asia's small states Nepal and Bhutan.

Although the research of this study is based on the FDI stocks of each country, the per capita figures are presented as well. However, FDI per capita will not be used as a variable. It is constructive to see how the FDI figures differ when they are calculated per capita. On average countries with bigger populations tend to receive bigger inflows of Foreign Direct Investment, thus it makes sense to look at relative figures as well.

Figure 16. FDI stock 1990 – 2009 per capita in million of dollars



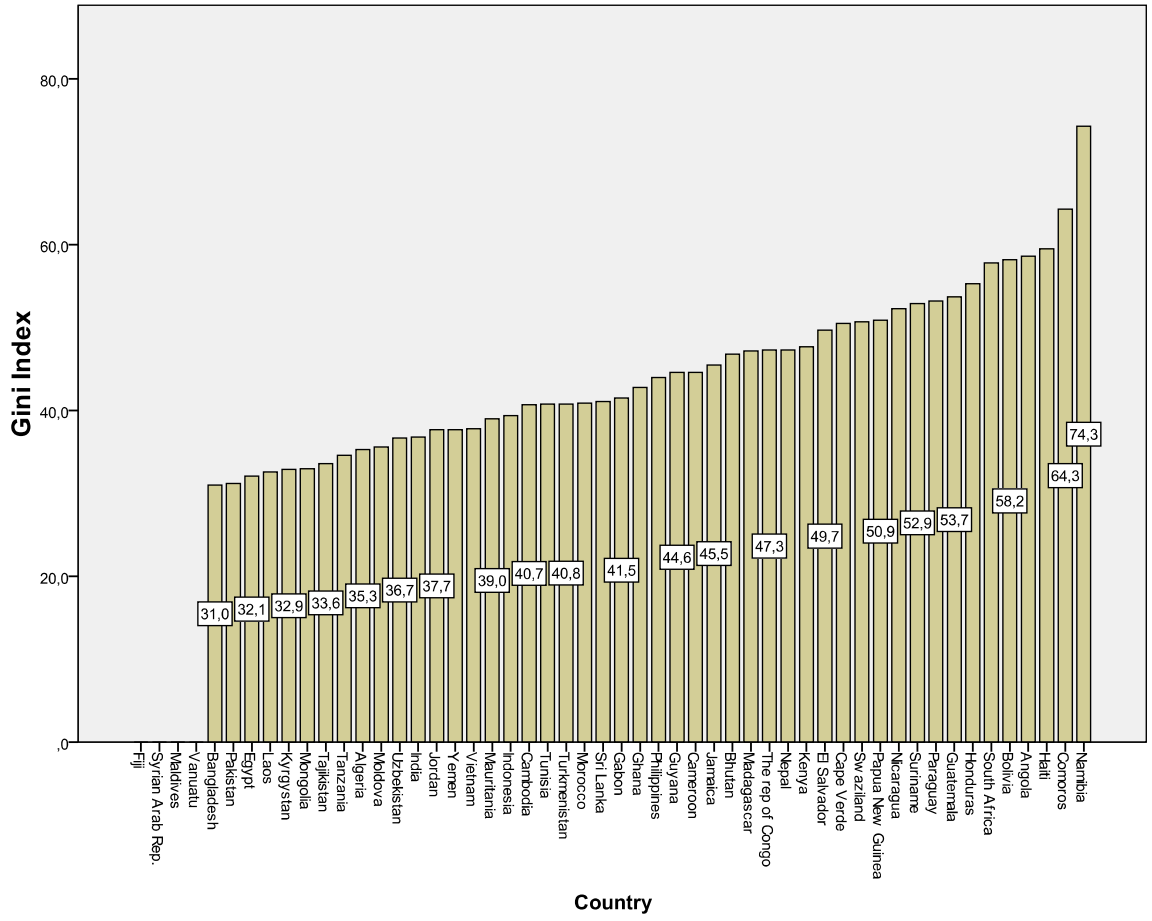
Data source: UNCTAD (2010)

Figure 16 indicates that the two countries which have received the most FDI stock per capita are Equatorial Guinea and Angola. Angola also received the second largest inflows in absolute terms. Both Equatorial Guinea's and Angola's FDI inflows are mainly due to abundant oil reserves, which are of interest to many foreign oil companies. India had by far the biggest FDI stock in absolute terms, but is in the middle of the sample countries in relative terms. Many Asian countries, especially in South East Asia have received low levels of FDI inflows compared to their population.

The Gini coefficient

The Gini Index presents the income disparities within the sample countries. A zero in the Gini Index indicates perfect income equality, meaning that everyone's income is the same. The index number 100 indicates that one person receives all the income. Hence, a bigger Gini coefficient number indicates a less equal income distribution. Figure 17 shows that there is a lot of variation in the Gini Index figures. The first four countries (Fiji, Syria, Maldives and Vanuatu) did not have available data. The Index numbers vary from 31,0 of Bangladesh to 74.3 of Namibia, which has by far the biggest Gini index number and thus has the biggest income differences.

Figure 17. The Gini Index by country



Source: UNCTAD (2010)

4.2 Data analysis and interpretation

Three different models were built to test the statistical relationship between FDI and poverty. Various control variables were assessed and some included in the final models to create the best available model. The models were tested for significance with the t-test and F-test. The t-test is used to assess the significance levels of individual coefficients, testing for the null hypothesis of the regression coefficient being zero

against the two-sided alternative. The F-test tests the significance of the regression model as a whole. If the observed significance level is less than 0.05 then the model is considered to be a significantly better predictor than expected by chance. Thus the null hypothesis of Y having no linear relationship to the independent variables can be rejected. The R^2 value of the models was used to determine the best combination of variables, which explains the variance of the dependent variable.

The models were also tested for multicollinearity, which refers to predictor variables having too much correlation. Multicollinearity can be detected with the tolerance indicator and variance-inflation factor (VIF). As a rule of thumb the tolerance indicator should be over 0.20 to indicate that there is no multicollinearity. With the variance-inflation factor, the value should be under 4. (Garson, 2010)

Robustness checks of the models were also made based on the scatter plots of residuals analyses. These residual analyses included regression standardized predicted value, regression standardized residual and partial regression plots. These scatter plots were used to visually detect, for example, strength of the relationship between two variables and possible outliers.

Model 1. The 1.25 $ per day poverty line

As mentioned in the methodology chapter, the 1.25 dollar per day poverty line was chosen as a dependent variable for one of the models to represent absolute poverty. From table 2, the model summary, we are able to see the model with and without the FDI variable. The FDI variable is FDI stocks in billions from years 1990 – 2009. The other predictor variables chosen for this model are; the Gini Index, Corruption perception index and country located in Americas. With the FDI stocks variable the R square (R^2) of the model is 0,453, thus explaining 45,3 percent of the variation in the dependent variable. When the FDI variable is taken out the R^2 decreases only a little to 0,431. The adjusted R^2 takes into consideration the number of predictor variables and it decreases even less from 0,390 to 0,384.

Table 2 The model summary of 1.25 dollar poverty line

Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change
1	,673[a]	,453	,390	14,5160	,453
2	,657[b]	,431	,384	14,5903	-,021

a. Predictors: (Constant), Gini index , FDI stock in billions, CPI 1-10, Country located in the Americas

b. Predictors: (Constant), Gini index , CPI 1-10, Country located in the Americas

c. Dependent Variable: Percentage of people living under 1,25 $ per day

The coefficient table (Table 3) displays the coefficients of the two possible models. The first model includes the FDI variable. The t-test shows that the coefficient associated with the FDI variable is not significant at the 5 percent level. With the small R^2 change and the t-test result, it has to be concluded that the independent variable FDI stocks is not significantly explaining the variance of the dependent variable, marginal to the control variables.

Table 3. The coefficients of the 1.25 dollar poverty line

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	2,991	13,916		,215	,831		
	FDI stock in billions	-,158	,135	-,150	-1,170	,250	,947	1,056
	Country located in the Americas	-29,268	6,979	-,638	-4,194	,000	,676	1,479
	CPI 1-10	-8,731	2,491	-,447	-3,504	,001	,961	1,041
	Gini index	1,243	,313	,596	3,977	,000	,696	1,436
2	(Constant)	2,843	13,986		,203	,840		
	Country located in the Americas	-27,427	6,834	-,598	-4,013	,000	,712	1,404
	CPI 1-10	-8,769	2,504	-,449	-3,502	,001	,961	1,041
	Gini index	1,197	,312	,574	3,841	,000	,707	1,413

a. Dependent Variable: Percentage of people living under 1,25 $ per day

The final model thus includes the dummy variable for country located in Americas, Corruption perception index (CPI) and the Gini index. All of the coefficients are

significant with at least 95 percent confidence and the F-test shows that the model is significant with at least 95 percent confidence (F-test results not shown in the table). The VIF figures indicate that there is no problem with multicollinearity in the model. The Country located in Americas and the CPI variables have a negative relationship with the dependent variable. Thus, Countries in the Americas have on average a lower percentage of people living under the absolute poverty line and the more perceived corruption the country has, the more people it has living under the same poverty line. The Gini index has a positive relationship with the dependent variable, suggesting that more unequal income distribution is associated with larger numbers of people living in absolute poverty, measured by the 1.25 dollar per day poverty line.

The final prediction equation for this model is;

Percentage of people living under 1.25 dollar per day (Y) =

*2,843+ (-27,427*country in the Americas) + (-8,769*CPI) +1,197*Gini*

Model 2. The National poverty line

The national poverty line was used as the dependent variable for Model 2. The model summary (table 4) illustrates the model with the final variables. The final variables for the model were FDI stock in billions from 1990 - 2009 and country located in Asia. The One outlier (India) was taken out from the model, because it had too much impact on the results. The R^2 of the final model is 0,416 (41,6 percent).

Table 4. The model summary of the national poverty line

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,645[a]	,416	,372	11,0820

a. Predictors: (Constant), Country located in Asia, FDI stock in billions

b. Dependent Variable: Percentage of people living under the national poverty line

The coefficients table (Table 5) shows that the relationship between FDI stock and the dependent variable is negative, thus a bigger FDI stock would indicate a smaller percentage of people living in under the national poverty line.

Table 5. The coefficient table for the national poverty line

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	46,671	3,081		15,150	,000		
	FDI stock in billions	-,519	,141	-,543	-3,690	,001	1,000	1,000
	Country located in Asia	-9,954	4,084	-,359	-2,437	,022	1,000	1,000

a. Dependent Variable: Percentage of people living under the national poverty line

All of the coefficients are significant with at least 95 percent confidence and the F-test shows that the model is significant with at least 95 percent confidence (f-test results not shown in the table). The VIF figures show no signs of multicollinearity in the model.

The final prediction equation for this model is;

Percentage of people living under the national poverty line (Y) =

*46,671+ (-0,519)*FDI stock in billions+ (-9,954)*Country located in Asia*

Model 3. Human Poverty Index percentage

The Human Poverty Index percentage was used as the dependent variable for the third model. In the model summary (Table 6) the model is presented with (Model 1) and without (model 2) the FDI stock in billions variable.

Table 6. Human Poverty Index model summary

Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics: R Square Change
1	,485[a]	,235	,176	8,6681	,235
2	,474[b]	,224	,180	8,6460	-,011

a. Predictors: (Constant), Country located in Africa, FDI stock in billions, Country located in Oceania, Country located in Asia

b. Predictors: (Constant), Country located in Africa, Country located in Oceania, Country located in Asia

c. Dependent Variable: HPI percentage

The other predictor variables include country located in Africa, country located in Oceania and country located in Asia. The FDI stock variable is included in the first model having an R^2 of 0,235 (23,5 percent). In the second model the variable is excluded and the R^2 decreases only 0,011. The adjusted R^2 increases to 0,180. In table 7, the coefficients for the Human Poverty Index percentage model are presented.

Table 7. The coefficient table for the Human Poverty Index

Coefficients[a]

Model		Unstandardized Coefficients: B	Unstandardized Coefficients: Std. Error	Standardized Coefficients: Beta	t	Sig.	Collinearity Statistics: Tolerance	Collinearity Statistics: VIF
1	(Constant)	14,389	2,503		5,749	,000		
	FDI stock in billions	,011	,012	,106	,855	,397	,964	1,037
	Country located in Asia	6,064	3,207	,306	1,891	,064	,563	1,777
	Country located in Oceania	12,143	5,005	,328	2,426	,019	,807	1,240
	Country located in Africa	11,566	3,139	,589	3,684	,001	,575	1,740
2	(Constant)	14,433	2,496		5,783	,000		
	Country located in Asia	6,507	3,157	,328	2,061	,044	,578	1,731
	Country located in Oceania	12,117	4,992	,327	2,427	,019	,807	1,240
	Country located in Africa	11,676	3,129	,595	3,732	,000	,576	1,737

a. Dependent Variable: HPI percentage

The t-test shows that the coefficient associated with the FDI variable is not significant at the 5 percent level. With the small R^2 change and the t-test result, it has to be concluded that the independent variable FDI stocks is not significantly explaining the variance of the dependent variable, marginal to the control variables.

The final prediction equation for this model is;

*Human Poverty Index percentage (Y) = 14,433 + 6,507*country located in Asia + 12,117*Country located in Oceania + 11,676*country located in Africa*

Interpretation of the results

The statistical relationship between FDI and poverty was tested with three different models. FDI stocks from years 1990 – 2009 were used as the independent variable to uncover the possible effects of FDI to poverty reduction. According to the first model, there is no statistical relationship between the 1.25 dollar per day poverty line and FDI stocks. This would suggest FDI inflows do not have a significant role in determining the percentage of people living in absolute poverty in developing countries, marginal to the other variables in the model.

In the second model, there was a statistical relationship detected between FDI stocks and the national poverty lines. As described earlier, the R^2 of the model was 0,416, which indicates a fairly strong relationship between the variables. Hence, this suggests that there is a relationship between FDI stocks and the number of people living under the national poverty line in developing countries.

The third model implies that there is no statistical relationship between the Human Poverty Index and FDI stocks, marginal to the other variables in the model. The Human Poverty Index percentage is measured with multiple indicators, which some are not monetary measures. In all of the models location variables were used in the final prediction equations, although they varied from model to model. The first model also suggests that there could be a relationship between absolute poverty and income inequality. Hence, the more unequal the income distribution is, the more people are living in absolute poverty. As only the second model was statistically significant with

the FDI stocks variable, it will be the only model used to test how Nicaragua has done in poverty reduction compared to other developing countries.

Next a short introduction of Nicaragua and its economy will be presented. Then Nicaragua will be compared to other developing countries as described in the methodology chapter.

4.3 Description of Nicaragua and comparison to other developing countries

Introduction

Nicaragua is an old Spanish colony located in the heart of Central America. It is the largest Central American county, with an area of 130,370 square kilometers. There are over five million inhabitants in Nicaragua, but it has the lowest population density in Central America. Most of the eastern part of the country is covered by forest, central and north by highlands and the western part is dominated by a string of mostly inactive volcanoes. Most of the people and the largest cities are situated in the western side of the country, near the largest lake in Central America, Lake Nicaragua. This part of Central America is very susceptible to hurricanes. (Central Intelligence Agency, 2010).

Figure 18. Map of Nicaragua

Source: Worldatlas (2010)

A civil war was fought in Nicaragua trough most of the 1980s, between the leftist Sandinista party and the U.S backed Contra fighters from neighbouring countries. The civil war and hurricane Mitch in 1998, which left over 500000 Nicaraguans homeless, made a devastating impact on people's lives. The political situation has calmed since the civil war, but Nicaragua is still the second poorest country in the western hemisphere, after Haiti.

Development and the economy

From Table 8, we can see some indications of the overall development level of Nicaragua, compared to other countries. In the 2009 UNDP's Human Development Report, Nicaragua was placed in the medium human development category and was ranked 124th in the Human Development Index out of 182 countries.

Table 8. Nicaragua's Human Development Index figures (HDI) 2007

HDI value	Life expectancy at birth (years)	Adult literacy rate (% ages 15 and above)	Combined gross enrolment ratio (%)	GDP per capita (PPP US$)
1. Norway (0.971)	1. Japan (82.7)	1. Georgia (100.0)	1. Australia (114.2)	1. Liechtenstein (85,382)
122. Guatemala (0.704)	72. China (72.9)	98. Swaziland (79.6)	96. Kuwait (72.6)	128. India (2,753)
123. Egypt (0.703)	73. Colombia (72.7)	99. Vanuatu (78.1)	97. Paraguay (72.1)	129. Viet Nam (2,600)
124. Nicaragua (0.699)	**74. Nicaragua (72.7)**	**100. Nicaragua (78.0)**	**98. Nicaragua (72.1)**	**130. Nicaragua (2,570)**
125. Botswana (0.694)	75. Saudi Arabia (72.7)	101. Tunisia (77.7)	99. Bahamas (71.8)	131. Moldova (2,551)
126. Vanuatu (0.693)	76. Romania (72.5)	102. Solomon Islands (76.6)	100. Moldova (71.6)	132. Pakistan (2,496)
182. Niger (0.340)	176. Afghanistan (43.6)	151. Mali (26.2)	177. Djibouti (25.5)	181. Congo (Democratic Republic of the) (298)

Source: UNDP (2009)

As can be seen from table 8, Nicaraguans have a high life expectancy (72,7 years) compared to their rather low level of GDP per capita (2570 US$). The adult literacy rate (78%) and the combined Gross Enrollment Ratio (72,1%), which measures the percentage of potential students that have enrolled in schools, are also at higher levels than could be expected from Nicaragua's HDI rank.

In Table 9, the most important indicators of the Nicaraguan economy are presented. Most of the indicators have risen substantially from 2000 to 2008, but signs from the

financial crisis of 2008 can also be seen from these indicators, as growth of many indicators took a step backward.

Table 9. Economic indicators of Nicaragua

Economic indicators	2000	2008	2009
Gross domestic product (US$ millions)	3,938.1	6,247.5	6,149.1
Per capita GDP (US$)	772.5	1,102.1	1,070.8
Real GDP growth (%)	4.1	2.8	(1.5)
Inflation (%)	9.9	13.8	0.9
Manufacturing sector output (US$ millions)	1,799.8	3,482.8	3,233.7
Agricultural sector output (US$ millions) 1/	1,098.6	1,694.1	1,643.5
Exports of goods (US$ millions)	880.6	2,537.6	2,386.8
Sea cargo (´000 tons)	2,215.5	2,786.9	2,831.5
Money supply (M1A) (US$ millions)	n.d	883.1	1,046.1
Gross international reserves (US$ millions)	496.7	1,140.8	1,573.1
Domestic public debt (US$ millions) 2/	954.1	1,088.6	1,169.6
External public debt (US$ millions)	6,659.9	3,511.5	3,660.9

1/ : Cattle, forestry and fishing included.
2/ : Includes Government and Central Bank debt with private sector.

Source: Central Bank of Nicaragua (2010, p.2)

For a developing country the growth of real GDP growth has remained relatively low throughout the 21st century. Nicaragua is defined by the IMF as a Heavily Indebted Poor Country (HIPC) and it has received debt relief in recent years from the IMF (International Monetary Fund, 2005). Nicaragua can still be defined as an agricultural society, although other industries have been growing in recent years, such as tourism. According to the Central Bank of Nicaragua (2010), about half of the workforce works in services, a little over quarter in agriculture and the rest in manufacturing. In 2009 the unemployment rate rose to 8,2 percent, which was over two percent more than the previous year. The global unemployment rate in 2009 was 6,6 which rose from 2007 due to the global financial crisis (ILO, 2010) .

On top of debt relief, Nicaragua is also a recipient of Official Development Aid (ODA). Between the years 2006 and 2008 Nicaragua received an average of 772 million U.S. dollars of ODA per year, which is about 12 percent of the GDP. The aid Nicaragua receives is divided somewhat equally among different sectors, such as programme

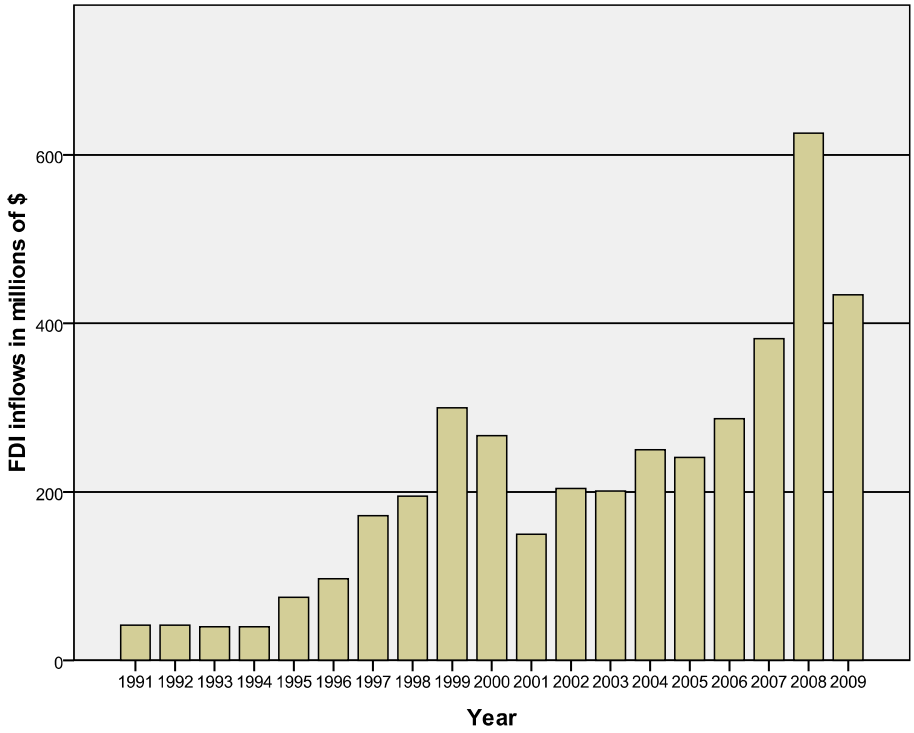
assistance, health and population, and production. As mentioned in the beginning of the study, Nicaragua is also a long term partner country of Finland in bilateral development. Many Nicaraguans are also heavily dependent on remittances from abroad, which in 2007 were approximately 740 million U.S. dollars, almost equaling ODA. (OECD, 2010).

Exports are an important part of the Nicaraguan economy. Currently Nicaragua has a trade deficit, exports amounting to 2386 million and imports to 3927 million dollars. All the major export items, excluding gold, are agricultural products, such as coffee, meat and dairy products. The two biggest export destinations are all the other Central American countries combined and The U.S. Consumer goods are the biggest category of imports, amounting to one third of total imports. The second largest import category is intermediate goods, mainly for industry.

FDI in Nicaragua

From the 1990s there has been a growing trend in inward FDI to Nicaragua. However, inflows flattened in the early part of the 2000s, but grew rapidly before the global financial crisis in 2008. Because of the civil war, FDI inflows were from very small to nonexistent up to 1991. From table 16, we can see the fluctuations in the amounts of inward FDI to Nicaragua

Figure 19. FDI inflows to Nicaragua in 1991 – 2009 in millions of US $



Data source: UNCTAD (2010)

As mentioned, the table shows an average growth of FDI inflows, although they have dipped in 2000, 2001 and 2009. From the next table (Table 10) we are able to see to which sectors the FDI inflows have been directed. The data is from years 2000, 2008 and 2009.

Table 10. Foreign Direct Investment by sector (millions of dollars)

Sectors	2000	2008	2009
Total	**266.5**	**626.1**	**434.2**
Mines	4.4	39.0	12.0
Fishing	7.9	0.0	0.0
Manufacturing	68.0	129.6	69.8
Energy	115.0	214.6	222.4
Commerce and services	57.0	46.2	32.0
Comunications	3.1	196.7	61.6
Others	11.1	0.0	36.4

Source: Central Bank of Nicaragua (2010, p.15)

The energy sector has received most of the FDI inflows every year in question. The inflows to the energy sector have almost doubled from 115 million dollars in 2000 to 222,4 million in 2009. Communications and the manufacturing sector are the next biggest sectors in FDI inflows.

Nicaragua compared to other developing countries

The second research question of this study was to find out how has FDI affected poverty in Nicaragua, compared to other developing countries. From the three models constructed in the empirical part of this study, only in the second model was FDI a statistically significant predictor variable in explaining the variation of the dependent variable. Thus, predictions were made with the prediction equation of the second model, which has the national poverty line as the dependent variable.

The predictor variables of model number two were FDI stock in billions and country located in Asia. The prediction equation was;

Percentage of people living under the national poverty line (Y) =

*46,671+ (-0,519)*FDI stock in billions+ (-9,954)* Country located in Asia*

By inserting Nicaragua's FDI stock from years 1990 – 2009 to the equation, it can be calculated how Nicaragua has been doing compared to other developing countries. In other words, how does the amount of FDI stock and the percentage of people living under the national poverty line compare to the figures of other sample countries. The model explains 41.6 percent of the variance of the dependent variable, thus it could be considered as a good predictor.

Nicaragua's FDI stock from years 1990 – 2009 was 4,046 billion U.S dollars and Nicaragua is not located in Asia, thus the second coefficient will be multiplied by zero. The prediction for Nicaragua's percentage of people living under the national poverty line is;

$$Y = 46,671 + (-0,519) * 4,046 + (-9,954) * 0$$

$$Y = 44,57$$

The model predicts that 44,57 percent of Nicaragua's population is living under the national poverty line. According to the UNDP, the actual percentage of the population living under the national poverty line is 45 percent. Hence, in the case of Nicaragua the model is a very good predictor of the percentage of people living in relative poverty. The predicted percentage is very close to the original percentage only missing by 1,23 percent. The results would indicate that Nicaragua is an average country out of the sample countries, in terms of how FDI has affected to the percentage of people living in relative poverty.

The result would indicate that Nicaragua has been able to reduce its poverty in accordance to the FDI inflows it has received, but has not done especially well or especially poorly when compared to the other sample countries. However, it has to be

remembered that in the start of the 1990s, Nicaragua was just getting over a decade of civil war. Thus, when this is taken into consideration, it could be noted that Nicaragua has done quite well because the starting point for Nicaragua was disadvantageous.

It was presented in table 10 that the biggest FDI inflows to Nicaragua in the 21st century by sector were energy, communications and manufacturing. As presented in the literature review by Loayza & Raddatz (2010), agriculture, construction and manufacturing are the most beneficial sectors for economic growth and thus to poverty reduction. As can be seen from Table 9, the agriculture sector is still one the largest sectors in Nicaragua, but it hardly receives any inward FDI. Like in many developing countries, also in Nicaragua poverty is more prominent in rural areas where agriculture is the main source of livelihood. The manufacturing sector is the largest sector in Nicaragua, when measured in output, and could be one factor why poverty levels have declined since the 1990s. However, the energy sector, which receives the largest amount of FDI inflows, is not considered to be very efficient in poverty reduction, at least according to Loayza and Raddatz (2010), because it is not very labour intensive and does not require a large amount of unskilled labour.

This chapter presented the data and the results of the analysis for the three regression models as well as for Nicaragua's comparison to other developing countries. The next and final chapter will discuss the conclusions of the thesis based on all of the earlier chapters.

5. CONCLUSIONS

This chapter will present the conclusions of the study. First, in the summary section a short synopsis of the whole study will be presented. This will be followed by main findings and limitations. Finally, suggestions for further research and theoretical contribution are reviewed.

5.1 Summary

Poverty has been one of the most discussed topics in the global arena in the 21st century. Many researchers who are proponents of global integration state that FDI is one of the most important factors in creating economic growth and poverty reduction. However, there are also those who do not find similar clear-cut connections between poverty reduction and FDI. In recent decades, global FDI flows have increased substantially, but still there are over a billion people living in absolute poverty and many more living in relative poverty. Hence, this casts at least some doubt on whether FDI is as important to poverty reduction as many researchers claim it to be.

The purpose of this study was to examine the relationship between Foreign Direct Investment and poverty reduction, as well as compare the situation of Nicaragua to other developing countries. The literature review was comprised with literature concerning Foreign Direct Investment and its effects on economic growth and poverty reduction in developing countries. The literature review also discussed studies regarding poverty as well as pro-poor growth. In the last section of the literature review the theoretical framework of the thesis was presented. The theoretical framework is based on the studies presented in the literature review, and it shows how poverty reduction occurs according to earlier studies, which find a positive connection between FDI and poverty reduction.

The empirical research of this study was done as a quantitative cross country study of 60 developing countries. The countries were selected based on their position in the

Human Development Index and because they are inhabited by people who are living in absolute and relative poverty. Databases of international organizations were used to collect the data used in the research, which was then analyzed using linear regression modelling. Three models were constructed using three different poverty measures and FDI stocks were used as independent variables. Many control variables were used to test their significance in the models. After a brief summary of Nicaragua, it was then compared to other developing countries by using the only model (the second model), in which FDI stocks were a statistically significant explanatory variable.

5.2 Main findings

The results of this study do not widely support the argument, which claims that FDI is a key component in poverty reduction. In the three models constructed for this study, only the second model (national poverty lines) seemed to reflect a negative statistical relationship between poverty and inward FDI stocks. This would indicate that across many developing countries, the amount of FDI the country has received over time is not a good indicator of the percentage of people who are living in poverty, measured by the 1.25 $ per day poverty line and the Human Poverty Index. Thus, the answer for the first research question would be that there is a linkage between FDI and poverty, but only when specific poverty measures are used. This study highlights the importance of clearly defining and justifying the use of a poverty measure. Different definitions of poverty, which were all legitimate definitions, led to varying results.

The relationship between FDI stocks and the national poverty lines was fairly strong in the second model. It was also a good predictor of the percentage of people living under the poverty line in the case of Nicaragua. The prediction error from the original statistic was less than two percentage points. Hence, Nicaragua seems to have been able to reduce its poverty accordance to the FDI inflows it has received. The sample countries were gathered “around” Nicaragua from the Human Development Index, thus the results are not entirely unexpected. However, the Human Development Index is an

indicator of development not poverty. Nicaragua's starting point, regarding poverty levels, was a lot lower than many of the other countries in the sample. In 1990, Nicaragua was just recovering from ten years of civil war, which could indicate that it has done better than most of the other developing countries to reduce poverty.

The findings of this study imply that developing countries should try to find various ways to reduce poverty. In the first model smaller income differences were associated with a smaller percentage of people living in absolute poverty. This does not prove causation between inequality and poverty, but it could be considered as a possible tool for poverty reduction in the future. One observation from the results of the study is that the location variables were included in all of the three models. However, the statistically significant location variables were different in every model. According to the 1.25 day poverty line model, if the country was located in the Americas it was associated with lower percentages of people living absolute poverty. In the national poverty line model, if the country was located in Asia it was associated with lower levels of relative poverty. In the HPI percentage model, Asia, Oceania and Africa were all associated with lower percentages of HPI.

The results were not in agreement with some of the studies presented in the literature review. Abdul Karim & Ahmad (2009) and Zhang (2006) claimed that FDI is a key ingredient in poverty reduction, which is not corroborated by this study. However, it must be noted that while these studies made such general claims, they used completely different samples from this study. Most of the studies in the literature review did not directly study the relationship between FDI and poverty, but either the relationship between FDI and economic growth or between economic growth and poverty. Thus, most of those studies are not mentioned here. In the first constructed model (1.25 dollar per day) higher perceived corruption was associated with higher poverty level. Hence, it would be on similar lines with results of Wijeweera et al. (2010), although, they studied the impact of corruption on economic growth instead of FDI. However, this finding cannot be considered as evidence for corruption being a cause for higher poverty percentages. The theoretical framework should be revised according to the results of

this study. The poverty reduction item should be replaced by reduction in relative poverty.

5.3 Limitations

As mentioned in earlier chapters, one of the limitations in using linear regression analysis is that it does not provide evidence of a causal relationship. Although a statistical relationship was found in the second model, it is not clear-cut evidence that FDI stocks are the cause for the lower percentage of people living under the national poverty line. However, the statistical relationship is a good indicator that such a relationship might exist. It was explained already in the methodology chapter, that there was a lack of usable data. This limits the generalizability of the results. Firstly, because it limits the amount of cases which could be used, and secondly the poverty indicators show the level at a specific moment in time, rather than the rate they have changed over a period of time. Hence, the sample countries did not have the same starting point regarding the poverty levels, thus their comparison is not the ideal way conduct the analysis. However, because of the unavailability of data, the change in poverty figures between 1990 and 2009 would have been impossible to include in the study. Also, almost twenty years should be enough time for FDI to influence poverty levels, if it indeed it is, as many researchers claim, one of the most important tools for poverty reduction. More general issues regarding limitations were discussed in the end of the first and third chapter.

There are also limitations concerning the analysis made of Nicaragua, many of them already stated in the limitations section of the methodology chapter. The analysis was not meant to be a thorough case study of Nicaragua, but a statistical analysis of the relationship between FDI and poverty compared to other developing countries. The analysis is also limited by the fact that only in the second model FDI stocks were a statistically significant predictor variable. Thus, for the second research question it would have been unfruitful to use the other two models.

Although the resources for writing this thesis are limited, it would have been better to use a larger amount of data to make the results more generalizable. Also, due to limited resources, the quality factor of FDI was not developed sufficiently. Hence, the study lacked a clear variable to what kind of sectors inward FDI was directed. This limited the ways how the results of the models could be analyzed. The quality variable in this study only differentiated FDI if it was directed to either oil or mining.

5.4 Suggestions for further research and theoretical contribution

There are several directions that further research should be directed. As new data comes available in the future, the relationship between FDI and poverty should be studied deeper. The literature review presented inconsistencies in the results of previous studies. Hence, decisive conclusions cannot be made based on the current theoretical evidence. Also, it has to be noted that in the future, researchers should be more specific in the way they use poverty in their research. To say poverty levels have declined or increased can be subjective, depending on the way poverty is defined in the research in question. Earlier research should be re-evaluated using various poverty measures, in order to indentify more specifically the relationships between economic growth, FDI and poverty.

The results of the first model suggested that high income inequality was associated with higher percentages of absolute poverty. This association should be studied further in the future. Reducing income inequality could be used as a tool for reducing poverty, if evidence on causality can be detected. The quality component of FDI will present interesting possibilities for research in the future. When data concerning FDI will become more specific, the quality component can developed further. This would mean taking into consideration with more detail the sectors which FDI inflows are directed. Although some quality factors were studied in this research, they were not examined to the same extent as Alfaro & Charlton (2007). Their research would be a good starting point to further studies.

The theoretical contribution of this study concentrates on the importance of defining poverty. It was mentioned in the literature review that many researchers do not accurately justify their use of a certain poverty measure. Many researchers use simple and easily quantifiable measures to represent poverty. These measures do not adequately describe the complexities surrounding poverty and can create a bias towards income based poverty measures. Non-monetary measures of poverty should also be incorporated more in poverty studies, as they are as much a part of poverty as monetary measures. This also allows for hand picking poverty measures which give the wanted results. Although there have been strong claims by some researchers about the relationship between FDI and poverty, it has to be concluded that there is still not enough solid empirical evidence to make definite conclusions. There maybe a lot of theoretical evidence to support the positive effects of FDI on poverty, but they have not yet materialized in practice.

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APPENDIX 1

List of the countries used in the empirical research.

Algeria
Angola
Bangladesh
Belize
Bhutan
Bolivia
Cambodia
Cameroon
Cape Verde
Comoros
Egypt
El Salvador
Equatorial Guinea
Fiji
Gabon
Ghana
Guatemala
Guyana
Haiti
Honduras
India
Indonesia
Jamaica
Jordan
Kenya
Kyrgyzstan
Laos
Madagascar
Maldives
Mauritania
Moldova
Mongolia
Morocco
Myanmar
Namibia
Nepal
Nicaragua
Pakistan
Papua New Guinea
Paraguay
Philippines
Samoa
São Tomé and Principe
Solomon Islands
South Africa
Sri Lanka
Sudan
Suriname
Swaziland
Syrian Arab Rep.
Tajikistan
Tanzania
The rep. of Congo
Tonga
Tunisia
Turkmenistan
Uzbekistan
Vanuatu
Vietnam
Yemen