



The Allocation of Capital: Why Capital Does Not Flow from Developed Countries to Developing

Master thesis in International Public Management and Policy
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This thesis outlines an alternative theoretical framework based on the work of R. Lucas (1990), who discovered that capital does not flow from rich to poor countries as it was framed by neoclassical theory. Because of the opposition of his discovery to neoclassical theory's explanation of capital flows and their allocation at international level, this theoretical inconsistency is called "Lucas' paradox". Later, during the past three decades academics emphasized different factors as the main reason of capital inflows into developed countries in order to explain this phenomenon, and most of the produced explanations were limited to the data from the twentieth century. The main aim of this thesis, therefore, is to examine previous research in this field and to identify the factors explaining capital inflows in past few years. The key aspect of the thesis is capital flows, which is understood as the savings-investment difference and foreign direct investment. Based on a literature review, seven independent variables were chosen to examine their relationship with capital inflows. Multiple regression analysis covers data sample consisting of one hundred thirty countries, and show that both institutional quality and economic policies have significant effect on attracting capital. In a nutshell, countries with low corruption, high legal order and quality of democracy, low inflation and high political stability receive more capital inflows.

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LIST OF ABBREVIATIONS

- BOP** – Balance of Payments
CAB – Current Account Balance
CPI – Corruption Perception Index
DB – Doing Business
FA – Capital and Financial Account
FDI – Foreign Direct Investment
FPI – Foreign Portfolio Investment
GCI – Global Competitiveness Index
GDP – Gross Domestic Product
ICRG – International Country Risk Guide
IMF – International Monetary Fund
IP – Investor Protection
NFA – Net Foreign Assets
ODA – Official Development Aid
OECD – Organisation for Economic Co-operation and Development
PS – Political Stability
ROL – Rule of Law
SPSS – Statistical Package for the Social Sciences
US – the United States of America
UN – the United Nations
VAA – Voice and Accountability
WBD – World Bank Database
WDI – World Development Indicator
WGI – Worldwide Governance Indicators

Chapter 1: INTRODUCTION

Capital was and is the most important element of the economy in every state in the world. According to the Oxford Dictionary (2014) capital is defined as “wealth in the form of money or other assets owned by a person or organization or available for a purpose such as starting a company or investing”. Closely related to the accumulation of wealth in the modern economy, capital in this thesis is defined as a financial capital, which does not relate to the human, natural or any other non-financial types of capital. At the macroeconomic level capital is wealth generated primarily from international trade between states, and flows from one country to another to invest for future benefits. It is also clear that trade is closely related to production, in which capital plays an important role. Thus, production was the central aspect of all economic theories. This leads to classical and neoclassical growth theories, which focus on the ratio between labour and capital generating the growth of productivity. The main difference between classical and neoclassical theories is a role of technology, which was considered as stable variable in former theory, while the latter gives the same importance for technology as for capital and labour. Later attempts of neoclassical theory focused on the value of the marginal revenue productivity aiming to find the ideal ratio between the number of workers and wages to maximize capital. As a result, according to the neoclassical prediction capital should flow from developed countries to developing countries, or in other words “rich” countries invest in “poor” economies to generate their wealth, because they have cheaper labour resources.

Despite the value and truth offered by neoclassical theory regarding maximizing profit and marginal productivity, Lucas (1990) compared the marginal productivity of the United States (US) and India in 1988 and faced a paradox. According to the neoclassic model the marginal product of capital in India should be about 58 times that of the US, which means that all capital should flow from America to India. However, at that time the situation was opposite and capital flew to the US. Therefore, he questions the validity of the assumption that gives rise to these differences in the marginal product of capital, and argued that capital is not flowing from developed countries to developing. Lucas considers capital as an investment good, which should flow from wealthy countries to poor countries, if world capital markets were free and complete. However, he pointed out that in real life capital does not flow to poor states because they have less developed human capital, they constantly repay their interest payments to wealthy states for their investment (and not vice versa because poor states cannot invest in rich countries due to the lack of capital), and that

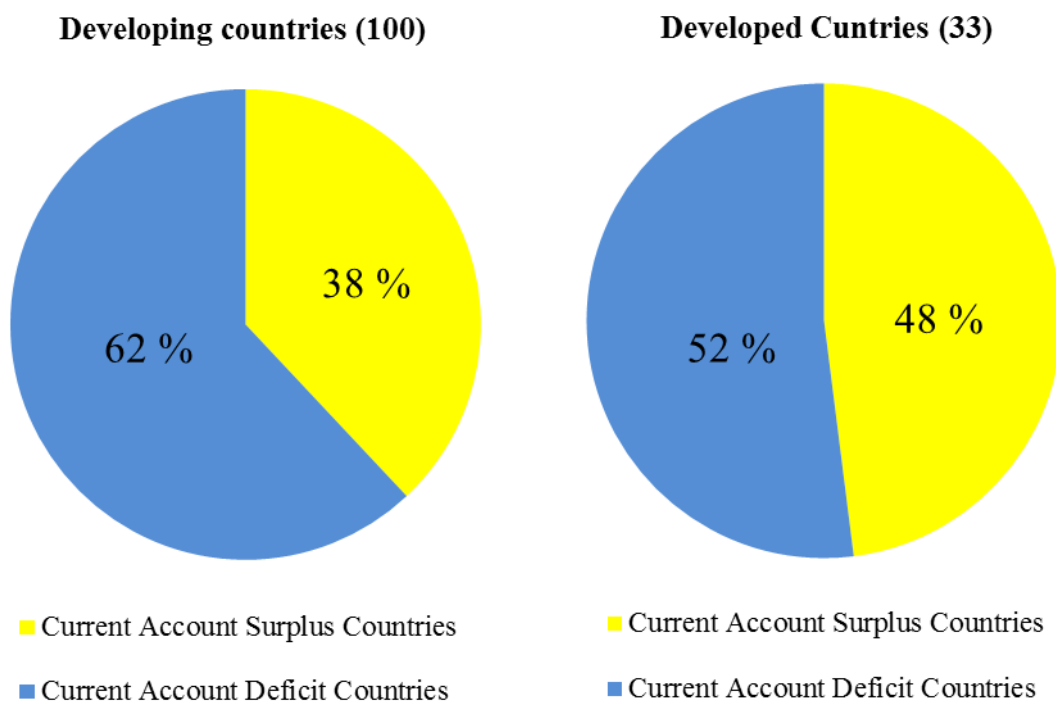
developing countries have heavy private taxation. This inconsistency within the theory is called the “Lucas paradox” or “the paradox of uphill flow”.

Lucas’ influential discovery significantly shifted the attention of academics to capital flow, and they tried to find a possible explanation for this phenomenon. Prasad, Rajan and Subramanian (2007) also agreed that capital flows “uphill” – from non-industrial countries to advanced countries; however, they affirm that it is not a new phenomenon, because the same patterns were found in the 1980s. Moreover, they compare the current account balance (CAB) with economic growth where they conclude that there is a positive correlation between these indicators for developing economies, while non-industrial countries relying on foreign investment do not grow faster than those that do not rely on foreign investment. Nevertheless, later Rajan tried to explain this phenomenon by the underdevelopment of institutions in developing countries, where foreign capital cannot be invested because of weak governmental protection of property rights. This was explained better in the research of Alfaro, Kalemli-Ozcan and Volosovych (2003), who conclude that the quality of institutions determined the capital flow, or in other words institutions, such as secured property rights and non-corrupted governments, attract foreign capital. In their opinion government stability, bureaucratic quality, non-corruption, and law are the main variables which explain the lack of capital in developing countries by their low degree of development. They also assert that government policies also can explain the flow, because high taxes and inflation decrease the return to capital. Therefore, government has tools to control the capital inflows. This, in their opinion, explains the uphill direction of capital flows.

Despite the convincing arguments mentioned above it is important to test the direction of capital flows in recent years. Lucas in his work primarily focused on investment between countries, while Rajan analyzed capital flows based on CAB and foreign direct investment (FDI). The former indicator shows surplus or deficit of current accounts of states, where surplus means that a country is a net creditor for other countries and provide resources to deficit countries. Therefore, current account surplus countries provide capital to finance the deficit of other current account deficit countries. Thus, deficit countries can be seen as local markets financed by foreign investment. In this case it is reasonable to compare surplus and deficit countries to identify the direction of capital flows. However, it is also important to analyze the main reason for surplus or deficit to understand whether it is caused by international trade or by net primary income based mainly on investment. Figure 1 shows that in 2005 most developing countries had CAB deficit (62%), the same patterns emerged

for most developed countries (52% of developed countries had CAB deficit¹). This figure presents that the majority of developing² countries had current account deficit in 2005.

Figure 1 - The ratio of countries with current account deficit or surplus in 2005



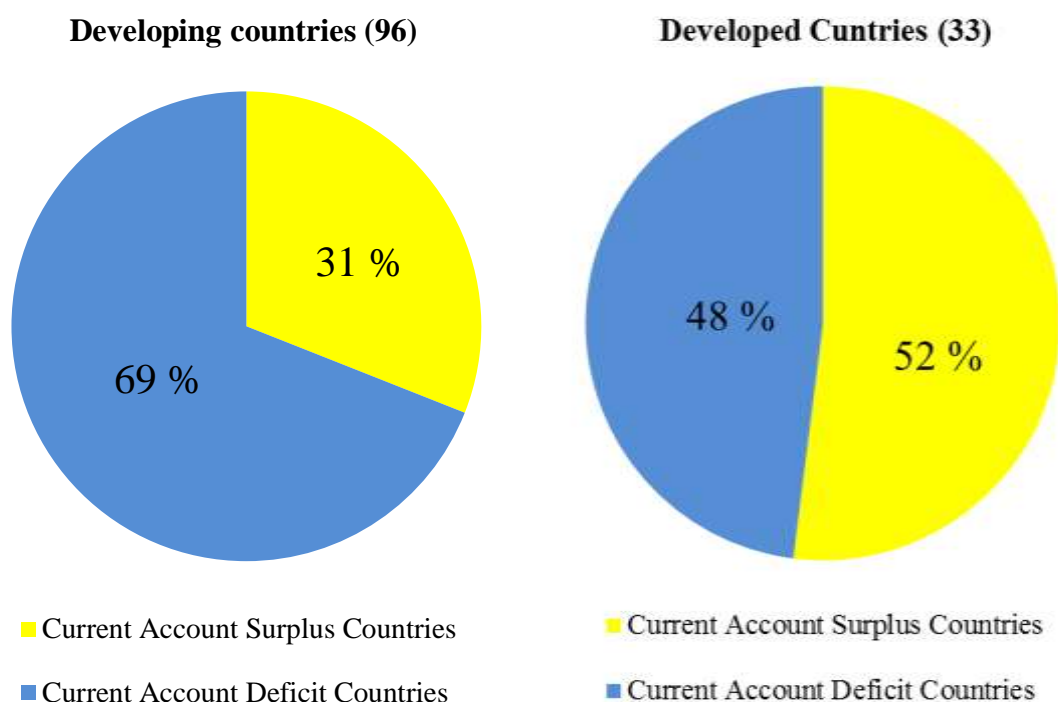
Source: The World Bank (2014, c)

It is also important to look at the most recent data to identify possible changes. Figure 2 presents the ratio of developed and developing countries according to their current account surplus or deficit in 2012, where it is clearly seen that most developing countries again had current account deficit and the number of countries with a deficit even increased (69%) comparing with 2005. The situation with developed countries is quite opposite and the number of surplus countries is increased, reaching 52% in 2012. According to these figures capital flow from developed countries to developing; nevertheless, it is also important to look at FDI flows for the same period of time.

¹ According to World Bank “current account balance is the sum of net exports of goods and services, net primary income, and net secondary income” (2014, a). Chapter 3 provides detailed information about country selection used for the analysis.

² For this Chapter information gathered for 214 countries, and 48 least developed countries were included at the beginning. However, for the 22 least developed countries data is not provided, and the other 22 states have a high ratio of official development aid to imports of goods, services and primary income more than 10% (this is done because least developed countries’ current account can be negative due to large amounts of received foreign aid), therefore they were excluded. The rest of the least developed states (6 out of 48) are included as developing countries. For the 48 developing countries data is not provided. As a result for 2005 133 (out of 214) countries’ results are presented in Figure 1.

Figure 2 – The ratio of countries with current account deficit or surplus in 2012³



Source: The World Bank (2014, c)

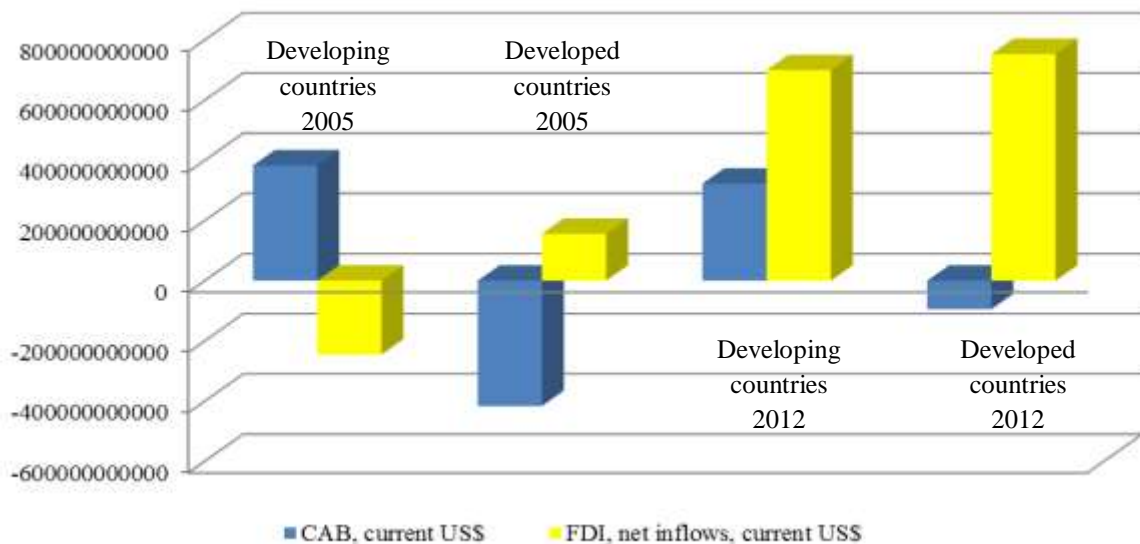
FDI, net inflows, measure foreign investment made by companies to buy not less than 10% of voting stock of other foreign company⁴. Bearing in mind that Lucas primarily focused on investment, it is important to look at this indicator, because CAB also covers trade balance, incomes and current transfers. The latter consists of donations, aid, official assistance and remittances, which does not show the clear picture of capital flow with investment purposes. Figure 3 shows the amount of FDI inflows in current US dollars, and Appendix 1 shows a full list of countries with exact amount of FDI in 2012 by classifying them according to the International Monetary Fund’s “World Economic Outlook: Hopes, Realities, Risks”, which groups countries as developed and developing. Although previous figures show that most developing countries were running a current account deficit, the total amount of CAB is positive and equal to 383 billion US\$ in 2005 and 322 billion US\$ in 2012. In contrast, developed countries’ CAB is negative for both years and equals to -416

³ There are fewer countries covered for 2012, because an extra 4 countries data is not available compared with 2005. As a result the number of developing countries decreased to 96 (from 100 in 2005).

⁴ Foreign direct investment are the net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments. This series shows net inflows (new investment inflows less disinvestment) in the reporting economy from foreign investors (The World Bank, 2014, b).

and -94 billion of US\$, respectively. Therefore, figure 3 clearly shows that in the aggregate developing countries can also be net exporters of capital, while developed countries can be net importers of capital.

Figure 3 – Current account balance and Foreign direct investment in comparison



Source: The World Bank (2014, c)

FDI net inflows are negative for developing countries (-245 billion US\$) and positive for developed states (155 billion US\$) in 2005, which means that developing countries export FDI to developed states. This situation slightly changed in 2012, but still 33 developed countries received more FDI (752 billion US\$) than 96 developing states (699 billion US\$). According to Appendix 1 China, the USA, Brazil, Hong Kong, Singapore, Australia, the United Kingdom, Russian Federation, Canada and Ireland are top leaders in attracting FDI, where five out of ten are developed and the rest are developing states. Top FDI exporters are Belgium, Slovenia, and Aruba. In general, in 2005 and 2012 developed countries received more FDI compared with developing countries.

Purpose of the study

Previous attempts to explain the Lucas paradox offer different answers, which do not agree with each other. Most of these studies were limited to analyze the data from the 1980s and 1990s, and only little attention was paid to the first years of the XXI century. Moreover, authors classified countries in a different way and disagreed on the main cause of capital inflows of developed states. As a result, it is still unclear which factor determines the uphill direction of capital flow. Thus, the aim of the thesis is to analyze all previous explanations

of the “uphill paradox” to identify the variable with the most explanatory power for the period from 2005 to 2012. Although it is not feasible to cover all alternative studies in one work, this thesis focuses on the examination of the relationship between institutional quality and capital inflows by taking into account the most relevant alternative variables affecting capital flows.

Research questions

Having confirmed that in the aggregate capital flows from developing countries to developed, it is important to understand the reason for the allocation of capital in the world and determine the research question, which is as following:

Why does capital still flow from developing countries to developed countries from 2005 to 2012?

In order to answer the research question, this thesis aims to address the following sub-questions:

- 1) What is capital flow and what can be the possible cause of capital inflows?*
- 2) Which factors, in a period from 2005 to 2012, influence the uphill capital flow, and provide an explanation of the uphill direction of capital flows?*

Although originally Lucas had conducted qualitative research on the US and India, to answer the research and sub-questions this study is conducted by a quantitative research design. This increases the reliability and validity of the results of the study, which means that findings can be generalized and applied to the whole population. The first sub-question is covered in a literature review, while the second question is addressed in Chapter 5, which focuses on the analysis of the whole sample, and then two separate components (developed and developing countries) in 2005, 2009 and 2012 in order to empirically investigate the “uphill phenomenon”. Finally, most correlated variables which have the closest relationship with capital inflows within developing and developed countries are presented in the last Chapter of this thesis. For this purpose most empirical information is derived from World Bank and International Monetary Fund (IMF) databases.

Organization of the thesis

This part of the thesis has provided the background to the study of capital flow and placed the research question within the context of previous research in this field conducted from the 1990s. The rest of the thesis is structured as follows:

Chapter 2 provides a literature review the study by reviewing current literature on capital flows, their composition and allocation in the world among advanced and developing states. It also covers the first sub-research question by looking deeper at previous attempts aimed to explain the movement of capital in the international arena, which is based mainly on Lucas' research.

Chapter 3 frames a statement of the theoretical assumption, which will be tested in the empirical part of this thesis. Moreover, this Chapter identifies dependent and independent variables and expected relationship between them.

Chapter 4 explains the methodology for conducting the research, operationalization of chosen variables and methods of data collection. This section also discusses the types of research design suitable for the study, and concludes that quantitative research design is more appropriate. Moreover, this Chapter defines methods used to collect and analyze data.

Chapter 5 presents the results of data analysis for 2005, 2009 and 2012 on capital flows and factors considered as a possible cause of capital inflows. This analysis is based on the comparison of three groups of countries (general sample, developed and developing countries separately), and focuses on the second sub-research question.

Chapter 6 discusses the results and summarizes the research findings. Moreover, this Chapter indicates some of the implications of the findings of this study, which leads to the end.

Chapter 7 is a Conclusion, where the limitations of the research and suggestions for further studies in this field are considered. The answers for the research and sub-questions are also presented at the end of the thesis.

Significance of the study

The results derived from the analytical part of this thesis will be very important in both theoretical and social terms for several reasons:

In theoretical terms, it can be seen that theories, which focus on international capital flows, and their allocation and movement between countries, are still controversial and more research should be done to increase empirical knowledge about the “uphill” phenomena.

Academic articles mostly focus on the empirical data from the 1980s and 1990s, but only a few of them analyze capital flows after 2000. The empirical results of the thesis will lead to theoretical refinement and the inconsistencies within the theory (previous explanations) could be reformulated for a more relevant theory at the end of this study.

In societal terms, the results of this research will make the connection between the level of development of countries and the capital inflows more clear, which may affect future decision-making processes in the public and private sectors regarding investment. It is also important to understand the outcome of governmental monetary and taxation policies, the level of corruption, and the quality of institutions, because people can question the leak of capital instead of absorbing it at the domestic level, or the enormous amount of foreign capital inflows from abroad. All this misunderstanding at the public and private level can potentially lead to a change in relationship among actors involved in this process.

The introduction of the thesis has presented the background to the research which is described in the following chapters. It has also examined the allocation of capital in the world, provided arguments confirming the direction of capital from developing countries to developed states, and outlined the purpose and design of this research. The following Chapter presents the literature review for the study.

Chapter 2: LITERATURE REVIEW

The purpose of this chapter is to contextualize the study by focusing on international capital flows, their composition and possible explanations of the uphill direction of capital flows among countries. The first part of Chapter 2 “Capital and Its Composition” focuses on neoclassical theory on capital, other theories about international capital flows and their composition. The second part reviews literature regarding theoretical explanation of international cross-border capital flows, Lucas’ paradox and alternative explanations about the uphill direction of capital movement, and the next part aims to examine previous empirical studies focused on the explanation of Lucas’ paradox.

Capital and Its Composition

Starting from early economic theories capital has been seen as an important factor of production next to labour resources (Ahmad, 1991, p. 7). The process of production is determined by the annual addition to the capital stock by constant returns to scale and the amount saved. For instance, if a company spent 80 dollars on producing a product and then sold it for 100, it means that this company earned 20 dollars, which can be invested in the future. By investing these 20 dollars this company can earn more capital. This leads to the ratio of savings to output, which explains the rate of the growth of capital. The next essential step is to profitably invest all savings (Swan, 1956, p. 334-336). In this case, it is important to mention that interest rates and wages play a significant role in creating competition between companies as well as the marginal productivity of capital and labour. The latter, for instance, increases or decreases returns to scale, which depends on the amount of capital paid for labour resources. That is why it is worth identifying the marginal product of capital before investing capital.

Despite different factors affecting capital accumulation, the investment of capital leads to capital flows. A simple version of this movement can be seen within a company, when money is invested for research and development or for other purposes, on a large scale capital moves within/across countries through trade, taxation, etc. However, at the macroeconomic level, the government is not the only actor, private (individual) investors, as well as companies, also participate and invest in other companies by buying their stocks, bonds and funds. This process of the movement of capital can be described as capital mobility. As a result, capital flows can be divided in two major groups: capital flows within

a country (domestic capital flows), and capital flows between countries, or simply international capital flows.

The composition of international capital flows, as identified by Kirabayeva and Razin (2010), can be distinguished as following:

1. Foreign direct investment (FDI);
2. Foreign portfolio investment (FPI);
3. Foreign debt.

The definition of FDI was already given in the Introduction of the thesis. Although the first two types of capital flows are similar, FPI does not have involvement in the management of a company and it is not limited by the percentage of a company's stock, while FDI only focuses on investment for 10 or more percent of a company's voting stock (according to WB definition on p. 6 of the thesis). Therefore, the comparison of these two types of investment shows that FDI has more benefits (because of the direct control of management). Moreover, FDI has the potential to be effectively allocated at the domestic level, while FPI has not.

The third type of capital flow consists of bank loans and bonds, which are more volatile compared to FDI and FPI. Bank loans can be characterized by the movement of capital from commercial banks to other financial institutions and individuals to accumulate more capital by specifying interest rates and the date of payment. As a result this process shows the reallocation of capital for some period of time. Bonds are also a type of capital flows, which can be considered as a loan issued by governments or companies in order to attract capital for long/short-term period(s). Governments issue long-term bonds to finance their expenditure, while companies issue bonds for shorter periods of time. Although bonds and stocks are both securities, bonds usually have fixed dates of interest payments for particular a predetermined time period and can be sold in secondary markets, while FDI or FPI usually does not require fixed interest rates, because it depends on the profitability of a company and shareholders' decision. Moreover, the price of stocks (for FDI and FPI) can vary according to the performance of a company and their reputation, while bonds cannot necessarily be sold at higher price than their initial price and interests because in the end the bondholder will receive the exact amount of capital which he has invested with interest. In addition, stocks purchased by FDI and FPI do not have fixed dates of expiration; therefore, they can be listed in financial markets. As a result, bondholders have a creditor stake (high priority in case of bankruptcy), and stockholders have an equity stake.

Tanaka (2006, p. 150) claims that the difference between bank loans and bonds lies in monitoring: bank loans are based on private monitoring and banks keep information private, while bonds are based on public monitoring by credit rating agencies. This leads to less information asymmetry for bonds by providing information for creditors and other involved parties. Another difference between these two types of debt is the number of creditors and information about them. Bank loans are usually financed by few creditors who are easily identifiable, whereas bonds are financed by the large number of unknown or anonymous creditors.

Williamson (2000) categorizes capital inflows according to the legal form of the contract, and he emphasizes following three types of capital flows:

1. Grants;
2. Loans;
3. Equity stakes with control (FDI), or without control (FPI).

Grants and loans have the lowest return to capital, and this can be explained by the purpose of lending, which is mostly related to development (usually in the form of grants or concessional loans). FDI can be characterized in the complete opposite way, because estimates show that its return is equal to approximately 12.4% in 2000, while the market value of the return is considerably higher (ibid). This type of capital flow is also regarded as the most stable. Albuquerque (2002) claims that FDI is less volatile compared with other types of capital flows⁵, and FDI flows more to developing countries rather than developed states. In contrast, return to FPI is variable: one can argue that risky investment in portfolio equity should be higher because the owner cannot control a company, while dividends tend to be low. It also depends on a country, because this assumption is valid for countries with macroeconomic problems, which worsen the situation for the invested company. On the other hand, the value of shares also plays an important role for investors, who can sell their shares later at a profit. All movement of capital flows are recorded for both the private and public sectors.

At the macroeconomic level operations or monetary transactions of a country related to foreign capital flows are recorded at Balance of Payments (BOP), where transactions are marked as a debit or a credit. BOP has two main separate categories: the current account,

⁵ 89 percent of 111 countries for the period 1975-1997 show that FDI's the median coefficient of variation is 0.77, while other non-FDI flows are equal to 7.11. This shows that FDI variation is less than other types of international financial flows. Lipsey (1999) also found that FDI is more stable, he argues that FDI is more stable for developing countries rather than developed countries, because FDI's volatility is about 0.59 and 0.88 respectively.

and the financial account (FA). In theory, the BOP should be equal to zero; however, in real life it is impossible and BOP (as well as CAB and FA) has a surplus or a deficit. The composition of CAB is calculated according to following formula:

$$CAB = Ex - Im + NI + NCT,$$

where:

Ex – export,

Im – import,

NI – net income,

NCT – net current transfers.

CAB shows flows of goods, services, primary income and secondary income between nonresidents and residents (IMF, 2009, p. 8). When a country imports more than it exports, it can be assumed that in the future this country will increase its productivity and will export more. With capital flows there is the same pattern: a CAB deficit country raises investment from abroad to finance its deficit, which increases obligations by the local economy. Foreign investment, in return, has positive effect on local economy and increases production for this economy in the future. As a result, by increasing production and export this country can reverse its current account deficit into surplus. In general, CAB shows the gap between savings and investment for the economy.

The financial account (FA) measures all monetary transactions between a country and the rest of the world. Although FDI and FPI were discussed earlier, it is important to mention that investment income of these shares are recorded under “Income” section of CAB (IMF, 2009, p. 130), while Reserves recorded in FA can be defined as:

“... external assets that are readily available to and controlled by monetary authorities for meeting balance of payments financing needs, for intervention in exchange markets to affect the currency exchange rate, and for other related purposes (such as maintaining confidence in the currency and the economy, and serving as a basis for foreign borrowing)”.

The difference of reserves from other elements of CAB in the absence of double entry principle, it just shows changes in reserves under the central banks’ authority. BOP also indicates changes in reserves, and its deficit implies that the amount of a country’s reserves is decreased, and vice versa. BOP surplus occurs when CAB and FAB have surpluses, and

deficit occurs when both balances have deficits. Normally, surplus in CAB is neutralized by the deficit of FAB, or the surplus of FAB is balanced by the deficit in CAB (see Table 1 for the relationship between current and financial accounts).

In order to analyze capital flows it is preferable to look at CAB or at types of investments recorded in FA separately, because FA also includes gold, currency and other types of reserves not directly related to capital flows. CAB shows the relationship between savings and investment, which determines current account surplus or deficit. Countries with surplus save more than invest, and, therefore, have more capital to invest in future. In contrast, deficit countries invest more than they save, and have to cover their deficit by foreign capital.

Table 1 – The relationship between Current and Financial accounts

		Current account	
		surplus	deficit
Financial account	surplus	BOP surplus	BOP is balanced*
	deficit	BOP is balanced*	BOP deficit

*Without taking into account changes in reserve assets

Source: adopted from Grabbe (1996, p. 435-438)

Factors Affecting the Allocation of International Capital Flows

One of the earliest studies aiming to look deeper at the factors affecting the movement of international capital flows was McKinnon (1973, p. 2), who develops the idea of national differences among countries by claiming that political structure, colonial experience, and resources explain the differences between countries and their development. In his opinion countries which successfully developed their economies paid attention to their banking and monetary systems as a whole. He also emphasizes the role of inflation in developing countries, because foreign investors can be attracted by high rate of interests in developing countries, which actually decreases by high real inflation in these states.

Moreover, he asserts that import restriction and support of exporters also play a significant role in restricting import to decrease the amount of foreign currency. Thus, these actions show how government can control its domestic financial market by using different policies and tools.

In contrast, Lucas (1990) sketches his assumption based on capital labour relation in two countries holding other factors constant and concludes:

“If production per worker differs between these two countries, it must be because they have different levels of capital per worker Then the Law of Diminishing Returns implies that the marginal product of capital is higher in the less productive economy. If so, then if trade in capital good is free and competitive, new investment will occur only in the poorer economy, and this will continue to be true until capital-labor ratios, and hence wages and capital returns, are equalized.” (ibid, p. 92)

Lucas focused on the marginal product of capital in India and the US, which was equal to (15)^{1.5} for India or 58 times that of the marginal product of capital of the US⁶ (Lucas, 1990, p. 92). This arithmetic made it clear that there was something wrong with neoclassical prediction, but at that time he could not answer the question what exactly is wrong and what kind of alternative prediction can explain this. In his opinion there are four possible explanations:

- 1) *Differences in Human Capital*. Human capital is not the same in analyzed countries. That is why Lucas assumes that this can be one possible explanation. In his calculation he compares effective labour input per person as equal in both countries, and he admits that this is not correct. Therefore he tried to correct this by using Krueger’s (1968) study on human capital; however, the data, which were analyzed by Krueger, are from the 1950s. Thus, more attention should be paid to address this inequality of human capital. He justifies his choice by stating that during the following 25 years human capital (education, age and sector) has not changed much. As a result, the productivity of 1 worker of the US is equal to the productivity of 5 workers from India. This leads to the correction of the marginal product of capital, which was equal to 58, and now considering the differences in human capital is equal to 5 times, not 58.

⁶ The calculation of the marginal product of capital is based on the following formulas: 1) $r = ABx^{B-1}$ in terms of capital per worker where x is capital per worker and B is average capital shares; 2) $r = BA^{1/B}y^{(B-1)/B}$ in terms of production per workers.

- 2) *External Benefits of Human Capital* – internal effect multiplies the productivity of a worker, which in this case affects relative rates of return on capital⁷. Taking into account studies of Krueger and Denison the prediction rate of return capital ratio between two analyzed countries becomes equal to 1.04, which illuminates return differentials. Nevertheless, it should also be noticed that the calculation made by Lucas does not pay attention to differences in knowledge within a country. Therefore, Lucas argues that this difference between India and the US can be decreased by comparing the knowledge of labour in these countries.
- 3) *Capital Market Imperfections* – is the third possible explanation offered by Lucas. In his opinion, poor countries acquire capital from advanced economies and later interest payments and repatriated profit flow back from poor countries to developed states. However, there is a risk that poor economies will not comply with their obligations and can terminate their relations with investors. If this happens, rich countries will not lend capital anymore. This imperfection is called “political risk”. It is also interesting that prior to 1945 most poor economies borrowed capital from European states, which somehow had to decrease the differences in ratio of capital to effective labour by investing in these countries. In practice there is still a gap between rich and poor countries.
- 4) *Imperial Power and Monopoly Control* – assuming that empires have control over trade in their colonies and that their colonies do not have capital of their own, capital per worker would be chosen by their empires and the whole income will be repatriated back to empires. Moreover, imperialist monopoly holds the power over wages in their colonies and can keep levels very low and retain capital flow. As a result, the return on capital should be about 2.5 times the return in the Europe⁸. Nevertheless, he rejects this answer because this situation is not applicable for the period after 1945.

In general, Lucas did not answer his central question and offered only alternative thoughts, such as heavy taxation in developing countries, or the imposition of restriction on capital inflows. He also claims that the labour market was not mobile prior to the 1990s; however, it is not the case in the XXI century, because nowadays it is easier to move abroad

⁷ Taking into account external effect, the comparison of the US productivity by E. Denison (1962) and Krueger’s estimation on human capital, the marginal productivity of capital is equal to $r = BA^{1/B} y^{(B-1)/B} h^{y/B}$, where h is external effect, y is production function ($y = Ax^B h^y$, where x is capital per effective worker), and A is the level of technology (Lucas, 1990, p. 93).

⁸ He uses Cobb-Douglas formula again, and return capital is calculated according to following formula: $r = B^2 b^B = Bf'(x)$ (Lucas, 1990, p. 95).

than in the past. Nevertheless, Lucas pointed out that political risk is an important factor, which limits capital inflows.

Tornell and Velasco (1992) find Lucas' alternative explanation regarding public institutions as more suitable, according to which the low property rights of poor countries do not give interest groups access to domestic capital stocks. That is why the investment of poor countries' citizens mostly flows to rich countries to have private access by keeping their capital in commercial banks or tends to buy governmental bonds, which has lower political risk compared with their domestic situation. As an explanation of possible capital outflows in developed countries they emphasize the role of low rate of return at domestic level compared with developing states, which could be more attractive. This explains the role of macroeconomic policies (taxing, monetary and exchange policies, etc.) in capital allocation.

Qureshi et al (2011) document the fact that capital control and prudential policies can help enhance economic stability, especially when foreign capital inflows decrease and capital flows out a country. This idea was further developed by Burda and Wyplosz (2013, p. 266), who state that international financial flows depend on interest rates and nominal exchange rates. These indicators create the interest rate parity condition which is a consequence of competition in trade. In theory, even small differences in the parity condition should be the cause of large debt creating capital flows to take advantage of investment opportunities at an international level. Typically, investors tend to compare domestic interest rates with rates in other countries and then decide whether it is more profitable to invest in other countries or not. Usually low interest rates are good for borrowing and high interest rates are good for investing, this is the main assumption which shows what interests investors at macroeconomic level. However, if a low interest country always borrows, this demand will increase interest rates, while the situation will be the opposite in countries with a high interest rate because capital flows into foreign financial markets, if a country's economy is big enough and can influence the rest of the world (ibid, p. 267). This process explains the high attention of investors to the whole world to find a good opportunity to invest. However, Burda and Wyplosz ignore other factors which can affect investors' behavior.

There is also another assumption related to small economies, which states that interest rates in these countries change for reasons unrelated to national conditions. These interest rates are constant unless some external shocks occur. As a result, capital can be fully mobile and move from one country to another. However, it is also important to clarify

whether all countries want to attract foreign capital or not, because countries have tools to restrict their financial accounts by declaring their currencies as inconvertible, or a limitation of foreign transactions. According to Burda and Wyplosz (2013, p. 268) these restrictions of capital control were widely used until the mid-1970s. They affirm that most developing countries still have some restrictions over capital, while developed countries abandoned restrictions three decades ago. This situation can imply that interest rates parity does not work in real life, because investors and traders cannot access restricted foreign markets due to capital control. All these restrictions directly depend on the policy of central banks. In other words, there are floating or fixed exchange rates, or their various other types, devaluations, revaluations, and other forms of interventions made by central bank affecting international capital flows.

Recent Empirical Studies on Cross Border Capital Flows

Lucas' ideas were the basis for following studies, which tried to find the reason of uphill direction of capital flows. There are different explanations and studies aim to analyze the movement of capital since the 1990s and one of the earliest explanations was offered by Wei (2000), who in his study broadens the horizon of previous studies by examining the relationship between corruption and international direct investment. Mainly, his work based on two assumptions, which he tests: government officials misallocate capital by their relatives and friends, and foreign creditors are not confident about developing economies. As a result, even small negative changes in corruptness of developing countries give negative expectations for creditors. Wei's (2000, p. 337) findings based on 49 countries for the period of time 1994-1996 show that during this period 70% of all FDI outflows were accounted for by the US, Japan, the UK, Germany, France, and Hong Kong, which had more than half of all FDI inflows of China. His findings conclude that corruption in capital absorbing countries affects both the level and the composition of capital flows, in other words corruption reduces FDI inflows and governmental policies aimed to attract foreign capital are just an attempt to repair the omission. Two years later his collaboration with Wu (2002) further develops the study by looking deeper in to the relationship between corruption⁹ and the composition of capital flows, particularly FDI. They conclude that corruption decreases FDI inflows in capital importing countries and tilt the composition of capital inflows more towards the loans from commercial banks. Thus, scarce FDI inflows

⁹ In their work corruption is identified as the situation where legal entities or private citizens bribe public servants or officials in order to interact and obtain permits, licenses, loans, etc (Wei and Wu, 2002, p. 462).

can be replaced by bank loans from commercial banks. This can be explained by the exploitation of FDI by corrupt government and the protection of commercial bank loans by developed countries, more precisely by IMF and G7. Moreover, they argue that corruption can be a cause of financial crisis because of weak domestic supervision of financial system.

Another work aiming to analyze capital flows at international level is written by Lipsey et al. (1999), and focuses on the role of FDI in total international investment flows. In their opinion the US was the major source for FDI outflows in the 1970s, with growing importance of Europe and Japan until the 1990s. Moreover, they argue that Hong Kong was the major investor for China in the 1990s, when the US stopped being net direct investor and turned into importer of investment from other countries. However, they also argue that during the last period of the XX century Latin America and East-Asia were also absorbers of FDI. Europe is also seen as recipient of direct investment, while only Japan was constant supplier. They also think that political imposition of protection and avoidance of trade frictions¹⁰, and low-price labour resources (especially in Mexico and China) can be a possible explanation for capital flows. However, Mody and Murshid (2005) disagree with Lipsey et al, and argue that capital flows in the 1990s were mostly driven by diversification motive. Furthermore, they state that states with better policies had success in importing foreign capital inflows, which was partially possible by increasing the marginal product of new investment and discouraging capital outflows by improving domestic policies.

Unlike previous authors Lane and Milesi-Ferretti's (2001) research aims to analyze long-term capital movements, particularly net foreign assets (NFA)¹¹ imbalances. The aim of their measurement by NFA is to identify small and large creditor- and debtor-countries. The division between developed and developing countries is based on the separation of the most developed set of countries (long-standing members of Organisation for Economic Co-operation and Development (OECD) from the rest. Thus, the analysis of two samples shows that output per capita, public debt, and demographic variables have significant positive influence on inflows of international assets trade inflows. They present that according to the results of cross-sectional variation public debt and demographic variables almost equal and

¹⁰ They claim that since the early 1980s inflows of FDI in the US triggered by threat of protection in different industries (and partially by tight monetary policy of the US, recession and strong dollar). Thus foreign countries were partially motivated by "avoiding trade friction". Later, according to presented evidence they state that inflows of FDI had an impact on the reduction of tariffs and trade barriers (Lipsey et al., 1999, 346).

¹¹ The methodology of this study classifies external assets and liabilities in to 3 main categories: FDI, portfolio equity and debt instruments, including foreign exchange reserves, bank loans and trade credits (p. 4). Based on this they identify NFA as the sum of above mentioned categories. The data is derived from IMF and OECD and is called the international investment position. In short, this indicator covers current account, net official capital transfers and capital gains and losses on existing claims.

their explanatory power is low in the 1990s, while output per capita is the only significant variable for the period from 1990 to 1998. In the time-series dimension this situation is quite different: output per capita is not significant anymore, while public debt and demographics have considerable effect on NFA (ibid, p. 99). Moreover, they claim that rich countries have higher NFA positions.

A later attempt made by Alfaro, Kalemli-Ozcan and Volosovych (2003) aims to solve Lucas' paradox by combining all previous explanations and dividing them into two major groups: fundamentals and international capital market imperfections. The former category covers public policies, factors of production and institutions, while the latter focuses on sovereign risk and informational asymmetries. Alfaro, Kalemli-Ozcan and Volosovych (2003, p. 2) research is based on cross-country regression comparing 50 developed and developing states for the period from 1971 to 1998. Moreover they run the same regression with a smaller set of states for the period from 1918 to 1945 to test Lucas' assumption that the situation pre-1945 was different. As a result, their findings show that the pre-World War II period was driven more by production factors (particularly by the differences in human capital), while the last three decades of the XX century shaped international capital flows according to the institutional quality of states. In other words, countries with secured property rights, less corrupted public institutions and high human capital attract more foreign capital. They also claim that government policies related to taxation and inflation have an effect on international capital flows, because they lead to the differences in capital-labour ratios and can decrease the return to capital. These ideas remind Lucas' alternative explanations. Nevertheless, the main focus of their work was international capital market imperfections (informational asymmetry and sovereign risk), which leads to underinvestment, because investors simply do not know the real situation in countries they invest in. Thus, underinvestment caused by capital market imperfections leads to higher interest rates in capital importing states.

The Alfaro, Kalemli-Ozcan and Volosovych (2003, p. 7) study is based on the following variables: FDI net inflows, human capital, International Country Risk Guide's (ICRG) political safety variables¹², government stability, internal conflict, non-corruption, law and order. Their results also show that variables measuring institutional quality do not vary for developed countries, but has some changes for Asian and Latin American states.

¹² Particularly government stability, internal conflict, external conflict, no corruption, non-militarized politics, protection from religious tensions, law and order, protection from ethnic tensions, democratic accountability, and bureaucratic quality, p. 8.

International market imperfections were measured by so called distantness, the calculation of which is based on distances between capital cities and the weighted gross domestic product (GDP) of those countries. The results of their study conclude that institutional quality is the most important variable which explains Lucas paradox and shows that FDI flows to developed countries, while human capital has less correlation with capital inflows. GDP per capita has an indirect positive effect on capital flows, and other variables, such as inflation and capital control, have an insignificant effect on capital movement.

Interestingly, Reinhart and Rogoff (2004, p. 57) claim that there is no puzzle in uphill capital flows and capital does not flows from poor to rich. In their opinion, the problem is that capital flows to serial defaulter states, especially to their governments. For example, countries like Brazil or Turkey attract capital and increase their external debt, which leads to serial defaults syndrome. By comparison, they argue that developed countries try to decrease their external debt and, therefore, increase the strength of financial systems. In short, capital flows to countries which do not try to decrease their external debts. In contrast, Chinn and Ito (2007, p. 547) analyze global imbalances of CAB and conclude that developed countries mostly have deficit and developing countries, especially oil-exporting, have a high rate of savings. They argue that institutional quality and financial factors (financial and legal development) matter more for less developed countries than for developed states.

Rajan (2008) also compares current account surplus and deficit countries and finds that surplus countries (mostly developing) with high growth of GDP export significant amount of capital, while low growth states import significant amount of capital flows. However, by analyzing net FDI he concludes that capital inflows do not follow the growth in the most recent period from 2000 to 2004, while for the period from 1970 to 2000 most developing countries with high growth rate received most FDI (ibid, p. 7). Therefore, they attract more capital, but do not utilize it at a domestic level, which means that they export capital abroad. Therefore he also tries to explain Lucas' paradox by focusing on institutional underdevelopment and by having a less benign view of foreign capital¹³. Nevertheless, his main focus was the identification of the relations between capital inflows and growth, which

¹³ Foreign financing can have an effect on its inability to be absorbed in countries with weak financial development. He argues that large capital inflows can increase real wages, lead to an appreciation of the currency and the fall in the marginal product of investment. In addition, high domestic consumption which relied on foreign capital can fall on non-traded goods pushing their price up and consequently leading to currency overvaluation. When domestic savings are not enough, attracted foreign capital can depress the profitability of investment, which leads to overvaluation of currency (so called Dutch disease). Rajan (2008, p. 182) assumes that countries that heavily rely on capital inflows become uncompetitive on international trade.

was concluded that even if developing countries finance developed countries, it does not have a negative effect on their growth.

One of the recent works seeking general patterns in capital flows is made by the International Monetary Fund (IMF) in 2009 by Abiad, Leigh and Mody. In their opinion the difference between developed and developing countries is the development of institutions, which dissociates between savings and investment and leads to a transfer of capital to poor economies. As a result, these transfers accelerate income growth, which means that financial integration and high income become less attractive to foreign capital inflows. Kameli-Ozcan et. al. (2010) conduct another study aimed to find the answer to Lucas' puzzle. Their empirical part focuses on the US states to test the direction of the capital within the US, and claims that rich states grow slower than poorer states. According to their findings rich states are mostly net debtors, while poor states are net creditors, and capital flows from poor states to rich states. However, they think that this puzzle at an international level is due to frictions related to national borders. In addition, Forbes and Warnock (2012) expand the number of factors affecting capital flows and believe that capital flows can be affected by interest rates, liquidity of capital, global risks, growth, trade and financial linkages, geographical and domestic factors (global financial integration and financial development, fiscal policies and growth shocks). Among the aforementioned factors global risk has enormous effect on domestic and foreign investment and capital allocation, which explains capital inflows and outflows, and predicts sudden stops in capital movement (see Table 2 for short summary of aforementioned studies).

Summary

One of the early explanations of uphill phenomenon paid attention to the capital labour ratio and marginal capital productivity, which assumes that capital should flow to less developed states from most developed states because rates of return to capital is higher. Moreover, interest rates is also seen as the determinant of capital attraction (Swan (1956), Burda and Wyplosz (2013), Lucas (1990). Later attempts focused on the relationship between capital mobility and economic growth; however, in 1990 Lucas questioned the validity of neoclassical theory regarding its explanation of capital allocation.

In his study Lucas claims that capital does not flow from rich to poor countries and proposed several explanations, such as differences in human capital, capital market imperfections, imperial power and monopoly control over colonies. Moreover, he also

mentioned that other possible explanations can be derived from differences in taxation and political risk related to institutional differences between countries.

From 1990 onwards the attention of academia shifted towards Lucas' puzzle within neoclassical theory by producing a variety of alternative explanations of it. Some argue that capital is only partially mobile (*Reinhart and Rogoff (2004)*), while most of other authors considered institutional differences as the main reason of capital allocation (*Tornel and Velasco (1992)*), *Glenn Hubbard (1997)*, *Alfaro, Kalem-Ozcan and Volosovich (2003)*, *Abaid, Leigh and Mody (2009)*, *Mody and Murshid (2005)*.

Although most researchers agreed that public policies and institutions matter, they see different aspects of institutional quality as the main reason of capital movement from developing countries to developed states. Among possible explanations most referred are taxation and monetary policies (*Glenn Hubbard (1997)*), low property rights (*Tornell and Velasco (1992)*), *Abaid, Leigh and Mody (2009)*, high corruption (*Alfaro, Kalem-Ozcan and Volosovich (2003)*), *Ju and Wei (2007)*, high inflation and capital control (*Alfaro, Kalem-Ozcan and Volosovich (2003)*), *Burda and Wyplosz (2013)* and *Qureshi et al. (2011)*, political structure (*McKinnon (1973)*), the low quality of domestic financial and legal systems (*Chinn and Ito (2007)*), which prevents foreign capital inflows.

This inconsistency within produced explanation is not only related to institutional quality, it is also related to the measurement of capital inflows. While Lucas refers to investment without specifically focusing on the capital flows, most authors aim to examine FDI and its cross-border allocation. Other researchers claim that capital flows can be measured by CAB by comparing surpluses and deficits, combining commercial banks loans, and portfolio investment.

The gap in previous research is that they examine different countries (OECD, only the US, European states, developing and developed states) by focusing on FDI or CAB. Moreover, there is inconsistency in the findings because each study emphasizes different aspects of public policies and institutions affecting capital flows. In addition, only a few works analyze data derived from the beginning of the XXI century. This gap will be filled by this research and examination of developed and developing countries for the following years: 2005, 2009 and 2012, by including some previous explanations regarding institutions and public policies in order to identify the factor with the strongest explanatory power. These aspects of investigation are placed within a methodological framework.

Table 2 – Summary of studies on Capital flows in chronological order (2000-2013)

Author year of publication	Dependent variable(s)	Independent variable(s)	Countries covered	Method of analysis	Period of time covered	Outcome of study
Wei (2000)	bilateral FDI inflows and bank loans in million dollars (OECD database)	Corruption (GCR*, WDR*, CPI, GEICI**), FDI restrictions, FDI incentives (PWC reports), corporate tax rate, GDP per capita	49 developed and developing countries	cross-sectional design (regression)	1994-1996	corruption in capital absorbing countries affects both the level and the composition of capital, in other words corruption reduces FDI inflows
Lane and Milesi-Ferretti (2001)	net foreign assets as ratio of GDP	GDP per capita, the stock of public debt as a fraction of GDP, the shares of population <14, 14-65, and >65	66 developed and developing countries	hybrid design, industrial and developing countries separated, (correlation, regression)	1970-1998	public debt and demographic variables almost cannot explain capital flows in the 1990s, while GDP per capita is the only significant variable for the period from 1990 to 1998: rich countries have higher NFA positions. In the time-series dimension this situation is quite different: output per capita is not significant anymore, while public debt and demographics have significant effect on NFA
Wei and Wu (2002)	Net FDI inflows/GDP, bank lending/GDP	Corruption (CPI), corporate tax rate, FDI incentives, FDI restrictions, GDP per capita	103 developed and developing countries	cross-sectional design (regression) division into capital importing and exporting countries	1980-1996	corruption decreases FDI inflows in capital importing countries and tilt the composition of capital inflows more towards to the loans from commercial banks
Mody and Murshid (2005)	Total flows of FDI, PI, and loans divided by GDP	real interest rate, annual growth of GDP, financial integration (EAA***)	60 developing countries	cross-sectional design (regression)	1979-1999	states with better policies had success in importing FDI by increasing the marginal product of new investment
Chinn and Ito (2007)	Current account to GDP ratio	government budget balance, NFA, relative income, dependency ratio, financial deepening, volatility, average GDP growth, trade openness	19 developed and 70 developing countries	cross-sectional design (regression)	1971-2004	For the industrial and developing countries government budget balance play a significant role in the determination of CAB, and a 1% increase of budget balance leads to increase in CAB by 0.15%.

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Rajan (2008)	CAB, FDI to GDP ratio	nominal GDP, per capita GDP, currency overvaluation,	56 countries (countries received >10% aid of GDP are excluded)	cross-sectional design (correlation, nonparametric Lowess regression, surplus/deficit separation)	1970-2004	countries (mostly developing) with high growth of GDP export significant amount of capital, while low growth states import significant amount of capital flows. FDI inflows do not follow the growth in the recent period from 2000 to 2004, while for the period from 1970 to 2000 most developing countries with high growth rate receive most FDI
Kameli-Ozcan et al (2010)	net capital income flows	gross state product growth, output growth per capita, change in population, the growth of population	the US's states	cross-sectional design (regression)	1963-2000	rich states grow slower than poorer states, and rich states mostly net debtors, while poor states net creditors and capital flows from poor states to rich states.

* *Global Competitiveness Report and World Development Report*

** *German exporters' corruption Index*

*** *Exchange Agreements and Arrangements*

Chapter 3: THEORETICAL FRAMEWORK

This part of the thesis focuses on the theoretical assumptions, which will be tested in Chapter 5, and then frames the hypothesis and expected relationship between capital inflows and other affecting factors (variables), which are presented at the end of this Chapter.

A statement of theoretical assumption

As it was seen above (Chapter 2) capital flows can be associated with public policies and institutional quality. However, it is still unclear to what extent they affect capital inflows, and whether institutional quality have more explanatory power compared with public policies. In order to generate a theoretical assumption about the explanatory power of institutional quality and public policies, it is important to determine capital flows. In the thesis net FDI inflows, as well as CAB, both as a ratio of GDP, are chosen as dependent variables. The exclusion of portfolio investment is justified not only by the influence of foreign countries' financial markets, but also by the influence of domestic financial markets. Because in the markets of bank loans and government or private bonds, equity sellers and buyers compete with each other, capital inflows are mostly associated with interest rates for different types of bonds.

Having determined dependent variable, it is possible to generate a theoretical framework regarding capital flows. The main assumption is that institutional quality matters more than public policies in attracting capital inflows. Despite the lack of attention in previous explanations regarding the role of legal order, I assume that Rule of Law should influence investors and their decisions about investment most, because it gives investors the feeling of protection. The importance of legal order can be also emphasized by the fact that all other attempts to attract capital inflow can be jeopardized if law does not work. In addition, I assume that countries which protect investors' rights and create foreign investors-friendly environment should also receive significant amount of foreign capital compared with countries which do not protect their investors.

On the other hand, the political situation within the country, especially with high risk of instability, could be another possible explanation of the lack of FDI inflows because it is undesirable to manage the company in a politically unstable country. On the contrary, I assume that democracy does not play a significant role in attracting foreign capital inflows. However, taking into account that previous studies did not look at democracy as possible explanation, I expect that a positive relation between capital inflows and democracy might be

found. The reason for this the fact that developed countries tend to be more democratic compared with developing countries, and they also receive more capital inflows. At the same time, most developed countries have a current account deficit. Therefore, democracy and capital inflows should have a positive relation. To confirm this assumption it is also important to look at the relationship between capital flows and the level of democracy in developed countries as well as in developing countries.

Another possible explanation can be derived from the level of corruptness. I consider the low level of corruption as an advantage for investors and that its high level decreases capital inflows. Buying at least 10 % of stock in a company means that investors might face politicians or public servants who can possibly prevent the activity of this company or at least create some obstacles, because most profitable industries can be tightly tied to politicians and protected from the outside penetration into the already established system. Thus, a less corrupted country would probably not create considerable obstacles for foreign investors, while more corrupted countries would try to maximize the profitability of attached to politicians industries by exporting more goods outside of the country. As a result, this leads to the assumption that countries with CAB surplus tend to have higher rates of corruption due to the political involvement in the ownership of local companies, which respectively lowers the inflows of foreign direct investment. In contrast, countries with low corruption can attract more FDI.

Within public policies I assume that capital flows (particularly FDI inflows) follow economic growth because economic growth usually is attributed to technological improvements (innovation) and the growth of productivity. These processes require investment to develop further production. Thus, it is assumed that it might be closely related to foreign direct investment inflows. On the other hand, if a country decided to achieve high economic growth it can go into debt in order to boost economic growth in the future. Therefore, CAB deficit can be associated with high economic growth if a country used to borrow from abroad to support economic growth at a domestic level.

Another factor is inflation, which also can affect investors' decision as a matter of fact that invested capital will lose its value due to high inflation, and seemingly high profit would not worth investing in countries with high inflation. Moreover, the underdevelopment of monetary policies can lead to relatively high inflation. One would expect that high rates of inflation will mostly affect FDI inflows, but its explanatory power should be lower than the quality of institutions' explanatory power (see Figure 4 to find the relation between dependent and independent variables). At the same time, current account balance and inflation can have

a positive relationship on each other, because excessive amounts of money at a domestic level increases demand on goods and services, which leads to higher inflation. As a consequence current account deficit should be associated with low inflation.

Hypothesis

Legal order, Corruption, Democracy, Political stability, Economic growth, Inflation and Investor protection are the factors which possibly affect capital inflows; however, the first four are related to institutional quality and are expected to affect capital inflows more than the latter three factors. Therefore, I chose the following variables to test them in Chapter 5:

Dependent variables: CAB, FDI, both as share of GDP.

Independent variables: Institutions: Rule of Law and Control of Corruption.

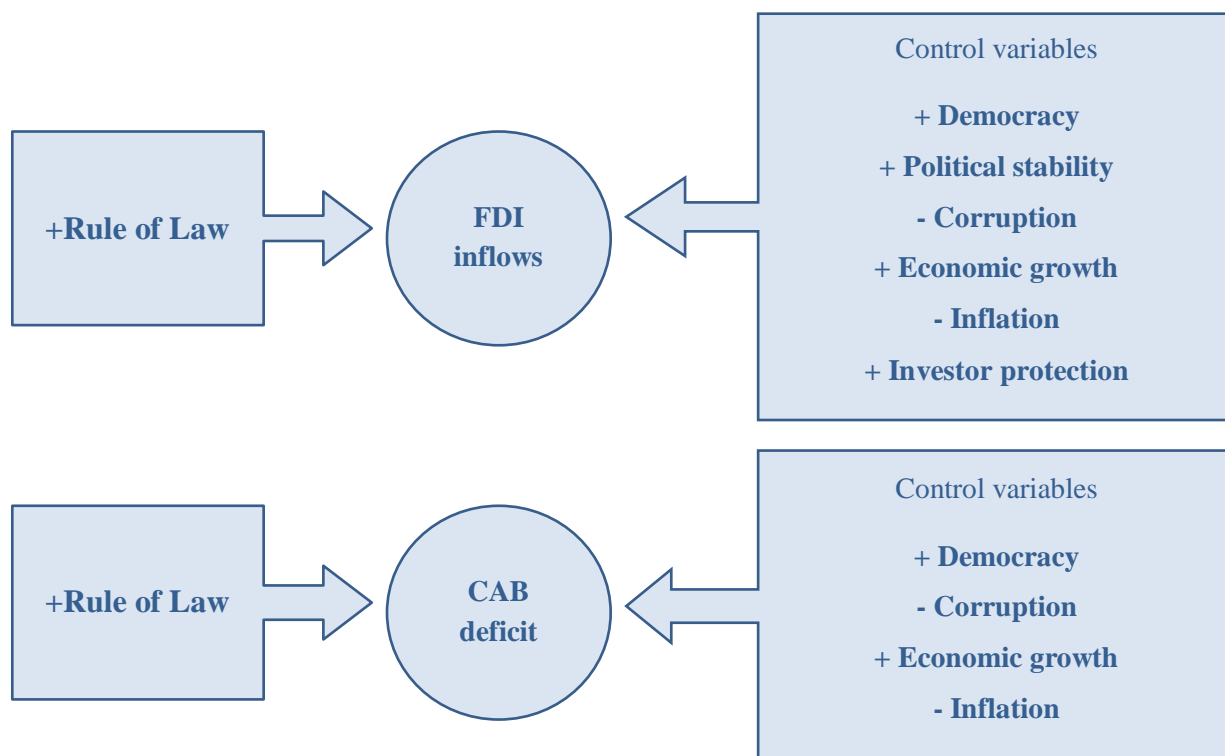
Control variables: Institution: Democracy, Political stability;

Policies: Economic growth, Inflation, Investor protection.

Based on this, the following hypothesis will be tested:

The higher institutional quality (particularly high Rule of law and Low Corruption) of a country, the more capital flows (FDI, CAB deficit) it receives.

Figure 4 – The relationship between Dependent and Independent variables



Note: dependent and independent (control) variables have relationships between each other:

“-“ means negative relation between dependent and control variable, while “+” means positive relation (for instance: -Corruption, FDI inflows = lower corruption leads to more FDI inflows).

The relationship between independent and dependent variables unlikely to be opposite (when dependent variable affects independent variables), because capital flows themselves cannot improve legal order, or decrease the corruption, or simply make a country more democratic. It is obvious that countries tend to improve their institutional quality and public policies in order to attract to capital flows from abroad.

Chapter 4: CONCEPTUAL FRAMEWORK AND METHODOLOGY

This chapter presents research design used in the thesis, operationalization of dependent and independent variables, and information about country selection and their classification, and reliability and validity of the study. Moreover, it provides further details of the methodology and fieldwork undertaken to collect data to analyze the research questions outlined in the Introduction of the thesis.

Research design

This part of the thesis can be conceived as a bridge between Chapter 2 and Chapter 4, because it focuses on research design explaining how formulated theory is going to be tested and analyzed. Basically, this research design is *outcome-centric* and aims to assess potential and alternative explanations by taking into account many independent variables (X), and trying to account for variance in the dependent variable (Y). It also can be seen from the research question, which is Y-oriented and based on a large number of cases (large N design), and focuses on developing and developed countries as cases. This also increases the validity of causal interference by increasing the number of cases and observations. The large N design corresponds to the large number of cases, in this case countries. Gschwend and Schimmelfenning (2007) state that according to the typology of research design a large number of observations and outcome-centric causal interference leads to *quantitative comparative analysis*.

It is also an observational study analyzing some degree of variability on the independent variables between countries, and the variation of the dependent variable as well. Therefore *it is not an experimental study*; because it does not have control over independent variables, which occur naturally (especially when the cases are countries and some independent variables such as corruption or rule of law are complex). As it is known that there are two major types of observational studies: cross-sectional and time-series observational studies (Kellstedt and Whitten, 2007, p. 88). The former design focuses on the variation between spatial units (countries in this case) for a single time unit (one year), while the latter on the variation within one spatial unit over multiple time units (period of time). It could be possible to conduct an analysis based on hybrid research design or pooled cross-sectional time-series research design, however, indicators assessing the institutional quality do not vary much over the chosen time period. Therefore, the most appropriate design is cross-sectional research design. This means that countries as spatial units will be analyzed in a single time

unit. All variables will be analyzed over three years, 2005, 2009, and 2012. This choice is not random, having the following logic behind it:

2005 – is the year which has not been frequently analyzed by previous studies, even when analyzed the research had focused on only a limited number of independent variables;

2009 – is the year when most countries were affected by the financial crisis. This choice is made to avoid criticism of neglecting possible crisis interference on capital flows;

2012 – is the year when countries could already deal with the consequences of the financial crisis and to some extent their economies were recovered.

One can also argue that it would be better to conduct this study based on the period from 2005 to 2012; however, experimental data collection has shown that there is no significant variation in variables between 2005-2007 or 2010-2012. Therefore, for variables related to policies average value of indicators is used.

Kellstedt and Whitten (2007, p. 87) claim that observational studies face four hurdles. First hurdle is the connection between independent and dependent variables, where dependent variables can affect independent variable too. This was explained in Chapter 3 by framing assumptions and discussing the relationship between variables. Furthermore, Chapter 3 also explains why it is unlikely that dependent variable can affect independent variables. The second hurdle focuses on the possibility that Y can be cause of X, which is not applicable for this study, because increasing capital inflows cannot directly influence the quality of public institutions and policies. Nevertheless, one can argue that there is low possibility that capital inflows can lead to moral hazard in the public sector. In fact, it does not change the effect of independent variables on dependent variable. Third hurdle covers covariance of X and Y, which will be addressed in Chapter 4 and presented in the following Chapter 5 of the thesis. Finally, the last hurdle is focuses on other interfering factors between X and Y, which are addressed by adding six control variables. This hurdle also will be addressed in the final Chapter 4 and the Conclusion of the thesis, where other possible interfering factors will be discussed.

In order to access the relationship between independent and dependent variables statistical procedures should be carried out. This is made by using the IBM Statistical Package for the Social Sciences (SPSS) Statistics. After a short description of collected data regression analysis is conducted to predict the outcome variable from several predictor variables (multiple regression). This is based on the following general equation: $\text{outcome} = \text{model} + \text{error}$, or

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \dots + \beta_n X_n + \epsilon_n;$$

Where,

Y – is the value of dependent variable;

β_0 – Constant;

β_n – is the coefficient for X_n ;

X_n – is the independent variable that is explaining the variance in Y ;

ϵ_n – is the difference between the predicted and the observed value of Y for n -th variable (Field, 2009, 199).

There are various methods of predictor (independent variable) selection; however, most popular methods are forced entry, stepwise, forward and backward. The former method forces all predictors simultaneously, while the second one based on mathematical criterion arranges the order predictors are entered into the model, and searches for the independent variables that predicts best the dependent variable. The difference between forward and backward is that backward method is opposite of the forward, and the program places all variables together and then based on the results of t-test and their comparison against a removal criterion. When the variable meets the removal criterion the program excludes it from the model and the same procedure applies again for the rest of the chosen independent variables. This means that forward method is more likely to include errors related to missing variables which in fact predict the capital flows, than the backward method. Therefore, the stepwise method is used for regression analysis of the thesis. In cases where the stepwise method does not show any model with required statistical significance, the backwards method is used.

Although some difficulties can arise during regression analysis when there are more than five independent variables, in the thesis they were minimized by the following procedures. First of all, the number of cases selected is more than minimal requirements (130 instead of 90, which is derived from the requirement for 30 observations for the first independent variable and additional 10 for each added independent variable – in sum 60 for this research). However, Field (2009, p. 222) argues that there is not one universal formula which can help to identify exact minimal number of required cases. He suggests to use the following formula $R = k/(N-1)$, where k is the number of predictors (independent variables). As a result, R is equal to 0.05 ($7/130-1$), which is acceptable (should be as close as possible to 0). Moreover, he also suggest other formulas which help to identify minimal number of cases,

such as $N = 50 + 8k$, or $N = 104 + k$. According to these formulas the required minimal numbers of cases are 106 and 111 respectively. These numbers are lower than the chosen sample, and 130 cases do not contradict with suggested methods of the identification of minimal number of cases. In addition, data splitting is also carried out during the analysis to avoid highly correlated variables (multicollinearity¹⁴) from the same analysis.

It is also possible that some cases compared with others will be more influential over the parameters of this model. Therefore, the results of analysis will be tested for stability across the sample and possible bias by few influential cases. This is possible by using Cook's distance measurement of the overall influence of one case on the model, which should not exceed 1 (ibid, p. 217). In case of detection cases with a value of more than 1, they will be deleted from the model and the remaining cases will be tested again.

Independent and Dependent Variables

In order to measure the phenomenon of interest it is plausible to clarify what do concepts, built at the end of Chapter 3, mean in the thesis. In order to do so this part of Chapter 4 explains how concepts, such as capital flows, rule of law, political stability, democracy, investors protection, inflation, economic growth, and corruption, are going to be operationalized and measured.

Dependent variable (Y):

International capital flows.

As it was mentioned in Chapter 2, international capital flows can be measured by CAB and FDI. CAB shows the difference between savings and investment. Countries with current account surplus save more than invest, and therefore, have more capital which can be invested in countries with current account deficit. However, CAB does not show exactly which type of investment is dominating or can be determined by institutional quality. Therefore, the analysis of net FDI inflows is also important. The flows of capital at the international level are usually measured in net amounts, which is the difference between capital outflows and inflows (Lipsey et al., 1999, p. 308). It is also less complicated compared with separate analysis of capital outflows and inflows. On the other hand, lack of data on gross capital outflows makes it more difficult to analyze outflows separately. In addition, the size of the economy is also

¹⁴ Multicollinearity is the situation when two or more of the independent variables are significantly correlated to each other. Usually it can be seen in the correlation coefficient matrix if all the independent variables show the correlation of 0.75 or higher.

important, because the same amount of CAB or net FDI inflows can be very significant for small economies and very small for bigger economies. Thus, CAB and net FDI inflows are taken as a share of GDP from the World Development Indicators. As a result, in the thesis net FDI inflows as a ratio of GDP, as well as CAB, are chosen for dependent variable. The exclusion of portfolio investment is justified by the influence of not only foreign countries' financial markets, but also domestic financial markets¹⁵. The situation with direct investment is different because FDI does not enter general financial markets. Mostly it differs from firm to firm and depends on investors' will towards higher return even if the risk is also high. Thus, the methods of analysis described in the section above are carried out for these two dependent variables separately and compared in the last Chapter of the thesis.

Independent variables (X):

Rule of Law;
Democracy;
Political stability;
Corruption;
Economic Growth;
Inflation;
Investor Protection.

World Governance Indicators (WGI)¹⁶ measures "Rule of Law" and score 215 countries on a scale from -2.5 to 2.5. "Rule of Law" focuses on the extent to which agents have confidences in the rules of society, the quality of contract enforcement, property rights, the police, courts, as well as the likelihood of violence and crime. Other sources aimed at assessing Rule of law cannot be used due to the limited coverage of countries. For instance, The Rule of Law (ROL) index of The World Justice Project starts from 2010 and covers also only 35 countries. The same index prepared by Center for Financial Stability (2014) covers 144 countries, but only for the period 2012-2013.

Democracy is measured by "Voice and Accountability" of WGI too. The "Voice and Accountability" (VAA) variable measures the ability of citizens to participate in selecting government, as well as freedom of expression, association and media. It would be also

¹⁵ The perfect example can be the demand of the UK for French corporate bonds and the demand of France for the UK's corporate bonds, which the price of corporate bonds depends on the demand of the other country: both bonds can be equally decreased in favor of their own countries or vice versa (Lipsey et al., 1999, 309).

¹⁶ World Governance Indicators is a dataset summarizing the views of a large number of enterprise, general population, expert respondents in developing and developed countries. Moreover, this dataset is gathered from think tanks, survey institutions, non-governmental institutions, private firms and international organization.

possible to include the Bertelsmann Transformation Index, which relates to the status of democracy, if it covers more than 119 countries and developed countries are included. The third variable “Political Stability” is also derived from the WGI and measures the likelihood of government instability or overthrow by violent or unconstitutional means, including terrorism and politically motivated violence.

The “Corruption” variable could be measured by the Bribe Payers Index, which focuses on bribes paid by international companies to public officials. However, it covers only 30 leading exporting countries, which is not applicable for this research. Therefore, the “Corruption” variable is derived from the Corruption Perception Index (CPI)¹⁷, which examines the perceptions of corruption based on 13 different sources of corruption-related data ranking countries from 0 to 10 (where 10 means very low and insignificant level of corruption, while 5 or below 5 considered as highly corrupted country).

“Economic Growth” and “Inflation” variables are gathered from the WDI, which is based on the information provided by World Bank national accounts data, OECD National Accounts data, IMF, and International Financial Statistics. The “Economic Growth” variable is measured by annual growth of GDP and represents the change in percent of the sums of value added by all producers within the territory of a country¹⁸ in a given year. Due to the relative stability of institutional quality variables, this variable will be measured by the average value of annual growth of GDP for the last three years including measuring year (for example for 2005 following years are used: 2003, 2004, 2005). The “Inflation” variable is measured by the consumer price index and reflects annual change in percent of the cost to the average consumer of acquiring a basket of goods and services by using the Lapeyres formula for the calculation (WBD, 2014). Inflation alike the Economic growth variable, is measured by average value of consumer price index for the last three years, including measuring year.

The “Strength of Investor Protection” variable is based on Doing Business (The World Bank Group), particularly on the section “Protecting Investors”, which measures the strength of minority shareholders protecting against misuse of corporate assets by directors for their personal gains (The World Bank Group, 2014). “Strength of Investor Protection” (IP) is the

¹⁷ Corruption Perception Index is the index surveyed by International Transparency for 163 countries scores according to the scale from 0 to 10. Countries which scored less than 5 indicate high level of corruption.

¹⁸ It is the added value of the gross output of producers less than the value of intermediate goods and services consumed in production, before accounting for consumption of fixed capital in production (WBD, 2014): “Growth rates of GDP and its components are calculated using the least squares method and constant price data in the local currency. Constant price U.S. dollar series are used to calculate regional and income group growth rates. Local currency series are converted to constant U.S. dollars using an exchange rate in the common reference year”.

average of three indicators covered under the “Protecting Investors” section, particularly Extent of Disclosure, Extent of Director Liability, and Ease of Shareholders suits, which is measured on a scale from 0 to 10, where 10 is maximal value of investor protection. Therefore, this variable covers all three aspects of protecting investors and used in the analysis of the thesis.

There are also some sources ignored in this research, such as the Global Competitiveness Index (GCI), and the Opacity Index. Although GCI¹⁹ (World Economic Forum, 2014) also focuses on institutional quality, macroeconomic environment, countries’ technology and supporting infrastructure, the use of this source can mislead the research during analysis, because it would not be clear which particular aspect explains the position of a country in ranking and separate analysis would be needed for each case. Therefore, the GCI is not as advantageous as the WGI. The reason for excluding the Opacity Index is the fact that it focuses on legal protection for business, macroeconomic policies, corruption and governance regulations, but it provides data only for 35 countries (PricewaterhouseCoopers, 2014). Kaufman Group also analyses the risks associated with unclear legal systems, regulations, economic policies, corporate-governance standards and corruption only in 48 countries (The Economist, 2004). As a result, these indexes cannot be used for the chosen sample.

Based on independent and dependent variables, the prediction regression model is as following:

$$ICF = \beta_0 + \beta_1 RoL + \beta_2 CPI + \beta_3 D + \beta_4 PS + \beta_5 EG + \beta_6 I + \beta_7 IP + \epsilon_n;$$

where:

ICF – dependent variable international capital flows measured by CAB and FDI as share of GDP;

RoL – independent variable Rule of Law;

CPI – independent variable Corruption measured by CPI;

D – independent variable Democracy measured by Voice and Accountability indicator;

PS – independent variable Political stability;

EG – independent variable Economic Growth measured by average annual growth of GDP for 3 years;

¹⁹ GCI covers 125 countries and financed by private companies and participation fees for annual meetings of World Economic Forum.

I – independent variable Inflation measured by average consumer price index for 3 years;

IP – independent variable Investor protection measured by DB report’s “Strength of Investor Protection” indicator;

\mathcal{E}_n – the difference between the predicted and the observed value of ICF for measured independent variable.

The research for this study is derived from the following major sources: World Bank Database (WBD), IMF, Transparency International, Doing Business (DB), United Nations (UN) and Worldwide Governance Indicators – Table 3.

Table 3 – Dependent and Independent variables, indicators and their sources

Dependent variable	Indicators	Source
International capital flows	CAB/GDP, in % FDI/GDP, in %	World Development Indicators World Development Indicators
Independent variables	Indicators	Source
Rule of Law;	Rule of law	World Governance Indicators
Democracy;	Voice and Accountability	World Governance Indicators
Political stability;	Political Stability	World Governance Indicators
Corruption;	Corruption Perception Index	Transparency International
Economic Growth;	GDP annual growth in %	World Development Indicators
Inflation;	Inflation, consumer price index, in %	World Development Indicators
Investor Protection.	Strength of Investor Protection	Doing Business Report

Country selection and their classification

Country selection is based on the list of countries available on the World Bank website, precisely 214. This list of countries was the basis for data collection from above mentioned sources. As a result, after the data collection there were only 150 countries with available data for the dependent variables to analyze, the other 64 countries’ data was not included (see Table 4). Most of the least developed countries were also excluded. The reason for the exclusion of the least developed countries is the fact that 22 out of 48 countries do not have data on CAB and FDI as share of GDP. Moreover, countries that received 10% or more official development aid (ODA) of their imports of goods, services and primary income in 2012 were also excluded because it shows the dependence of a country on foreign aid. As a result, only 6 countries out of 48 least developed countries are included in the sample. Thus,

130 countries were left to analyze (see full list of countries in Appendix 2 and 3). Although aid affects more CAB than FDI, a country relying on aid possibly will not attract FDI. On the other hand, taking into account that the results of both dependent variables will be compared at the end of Chapter 4, it is preferable to have same-sized sample. In contrary, the aim of the thesis is to analyze the relationship between developed and developing countries. Thus, adding more least developed countries could lead to results that will not be valid for answering the research question.

Table 4 – Country selection

The number of countries						
UN list, total	Developed	Developing		Least developed		
		total	no data*	total	no data*	10% or more ODA
214	33	133	42	48	22	20
Selected	33	91	-	6	-	-
Total selected	130					

**these countries were excluded because there are no data available for dependent variables*

It is also important to distinguish between developed and developing countries to answer the research question. In this case the composition of geographic regions and grouping of countries according to their economic development offered by the UN is not applicable, because it has only a clear list of the least developed countries, while developing (Asia, Africa, South and central America, etc.) and developed countries (Europe, North America, etc.) are grouped by region, which makes it difficult to classify countries, especially in Europe (for countries such as Ukraine or Belarus, which are not developed). IMF (2013, p. 48) has clear division of developed and developing countries in Europe, therefore, the IMF's "World Economic Outlook" (2013) classification is used to group countries into two major groups: developed and developing. Moreover, the IMF's classification focuses more on general development, it is not limited only by economic development. As a result, 33 countries are considered as developed and 91 countries are grouped as developing states. Moreover, the 6 selected least developed countries (Angola, Bangladesh, Cambodia, Lesotho, Sudan and Zambia) are also considered by the IMF as developing countries (ibid, p. 142), therefore, these countries are grouped as developing. As a result, the group of developing countries consists of 97 states.

Reliability and Validity

In order to test the generated at the end of Chapter 3 theory, it is necessary to evaluate the evidence from the real world by measuring the concepts in the most precise way possible. Therefore, it is important to ensure the high reliability and validity of measurement of variables.

The fact that chosen sources of independent and dependent variables produce data for each year repeatedly and produce identical results, which can be easily compared, increases the reliability of the data collected for analysis. Moreover, for the avoidance of errors or mechanical mistakes during data collection all results collected and checked twice with the original source for each independent and dependent variables. However, over-time variation of variables for the chosen years (2005, 2009, 2012) should not be confused and considered as unreliable, because these changes can be the cause of improvement within the public sector in chosen areas or vice versa. Nevertheless, it should be also noticed that there is not many sources that can be compared for their reliability and be chosen for the measurement variables due to the inapplicability or limitation of the scope of presented data.

There are several ways to measure the validity of the measurement itself, such as face validity and content validity. The former way shows that independent and dependent variables measure what they are supposed to measure according to measure according expectations. The measurement of corruption is quite limited due to the difficulty in obtaining data because this field usually tends not to be publicly discussed and hidden from the general population. Nevertheless the CPI measures the level of corruptness according to reports of population and organization in selected countries, which makes it valid because individuals facing bribery at a domestic level know the situation better than non-resident organization. WGI are also based on survey and expert assessment of countries, and incorporate data for previous years, which also increases the validity of measurement.

Doing Business reports are based on official information forwarded by the governments of analyzed countries; however, it does not mean that it is easier to falsify the data because primarily all measurement based on laws and policies, which are verified by Doing Business. Economic growth is measured as annual growth of gross domestic product, and not by GDP per capita. For the measurement of inflation the choice is made in favor of inflation measured by consumer price, which reflects the average change in the cost of goods and services. GDP deflator, in contrast, measures changes in prices included in GDP by ignoring other goods and services which are not produced within a country. Therefore,

consumer price index is more valid for the measurement of inflation. It is also worth mentioning that quantitative research design has higher external validity compared with qualitative research design, which makes it possible to generalize findings for the whole population and identify general trends. To make sure that the relationship is between capital flows and institutional quality and that it is not caused by another variable, 6 control variables were chosen (Corruption, Democracy, Political stability, Economic Growth, Inflation, Investor Protection).

Chapter 5: ANALYSIS

This Chapter focuses on the analysis of the study and starts from the summary statistics for all variables for 2005, 2009 and 2012. The next part of this Chapter focuses on the results of multiple regression analysis for two dependent variables separately. Basically, explanatory analysis is divided into three parts: general sample, developed and developing countries. Each of these groups presents the results for all analyzed years (2005, 2009, 2012). The last part of this Chapter presents a brief summary of findings.

Descriptive analysis

To start the analysis it is important to look at the data collected to be confident of the resulting outcomes later. This can be done by looking at table 5, which shows the number of cases, minimum and maximum values of dependent and independent variables, their mean and standard deviation. The values of dependent variables show that there is a big gap between minimum (-27.6%) and maximum (37.2%) of CAB/GDP variable. For developed countries this variation is much lower, while developed countries have exactly the same values as general sample. The FDI/GDP variable has smaller difference between maximum and minimum, -17.3% and 24.5% respectively. The minimal value of this variable is the same as the minimal value of a developing country, while maximum value belongs to a developed country. Table 5 also shows that developing countries have higher inflation (54.9%) compared with developed countries (6.3%). However, annual GDP growth shows that developing countries grow faster (maximum 16.5%) compared with developed countries (maximum 7.7%). The same pattern can be found in corruption, which shows that developed countries are less corrupted, while some developing countries have extremely high level of corruption (the higher score, the lower corruption). Other indicators are measured according to the interval from -2.5 to 2.5 (Rule of Law, Political stability and Voice and Accountability), and also show that developed countries are more politically stable, democratic and governed by law.

In 2009 the difference between countries' CAB/GDP increased (maximum 32% and minimum -30.9%, see table 6). The variation between maximal and minimal values of developing countries is quite big, while variation between developed countries is much smaller (-11.6% and 17.7% respectively). In contrast, the FDI/GDP dependent variable has quite a different pattern, and maximum (40.4%) and minimum (-3.7%) values belong to

developed countries; however, there is insignificant difference compared with developing countries (maximum 37.3%, minimum -2.4%).

Table 5 – Descriptive statistics of dependent and independent variables in 2005

Variable	N	Minimum	Maximum	Mean	Std. Deviation
General sample					
Current Account Balance as share of Gross Domestic Product, in %	130	-27,6	37,2	-1,213	10,5843
Foreign Direct Investment, net inflows, as ratio of Gross Domestic Product, in %	130	-17,3	24,5	-2,552	5,9706
Inflation, consumer price, % (average for 2003-2005)	124	-1,2	54,9	5,602	6,8796
Corruption Perception Index, score	130	1,0	9,7	4,418	2,2796
Strength of Investor Protection Index	130	2,3	9,7	5,252	1,4448
Gross Domestic Product, annual growth, % (average for 2003-2005)	129	0,10	16,50	5,2333	3,04339
Rule of Law Score	130	-1,77	1,97	0,1503	0,98209
Political Stability Score	129	-2,72	1,59	0,0368	0,94451
Voice and Accountability Score	130	-1,77	1,77	0,1808	0,92908
Developed countries					
Current Account Balance as share of Gross Domestic Product, in %	33	-16,3	21,4	,464	8,4265
Foreign Direct Investment, net inflows, as ratio of Gross Domestic Product, in %	33	-16,2	24,5	1,512	8,8270
Inflation, consumer price, % (average for 2003-2005)	33	-0,7	6,3	2,109	1,2812
Corruption Perception Index, score	33	4,3	9,7	7,509	1,6805
Strength of Investor Protection Index	33	3,3	9,7	6,061	1,7302
Gross Domestic Product, annual growth, % (average for 2003-2005)	33	0,50	7,70	3,3061	1,81055
Rule of Law Score	33	0,47	1,97	1,4076	0,45508
Political Stability Score	33	-1,29	1,59	0,8312	0,56101
Voice and Accountability Score	33	0,01	1,77	1,2530	0,40131
Developing countries					
Current Account Balance as share of Gross Domestic Product, in %	97	-27,6	37,2	-1,784	11,2059
Foreign Direct Investment, net inflows, as ratio of Gross Domestic Product, in %	97	-17,3	6,1	-3,934	3,7845
Inflation, consumer price, % (average for 2003-2005)	91	-1,2	54,9	6,868	7,6161
Corruption Perception Index, score	97	1,0	7,3	3,367	1,2810
Strength of Investor Protection Index	97	2,3	8,7	4,977	1,2272
Gross Domestic Product, annual growth, % (average for 2003-2005)	96	0,10	16,50	5,8958	3,10510
Rule of Law Score	97	-1,77	1,33	-0,2774	0,70625
Political Stability Score	96	-2,72	1,32	-0,2363	0,89521
Voice and Accountability Score	97	-1,77	1,24	-0,1839	0,75935

Average annual GDP growth in 2009 has negative values. Minimal (-4.1%) and maximal (15.1%) values of this variable belong to developing countries. This shows that developing countries grow faster than developed countries; however, some of both groups' economies did not grow and even declined. This can be a cause of the financial crisis beginning in 2007, which has affected most economies in the world over the following years. Other variables are almost the same as in 2005.

Table 7 presents summary statistics of data for 2012. In this year the difference between maximal and minimal values of CAB/GDP significantly increased and reached 43.2% and -32.7% respectively. These values belong to developing countries, while values of developed countries vary from -6.9% to 18.6%. The same pattern emerges in 2012 for the FDI/GDP variable (maximum 50.6%, minimum -6.0%). As in previous years maximal value belong to developed countries, which shows that some developed countries receive more FDI inflows. Although in 2009 maximal inflation rate significantly dropped from 54.9% to 27.1%, in 2012 this independent variable's maximum value reached 40.1%. Average annual growth of GDP from 2010 to 2012 also varies from country to country (maximum 19.8%, minimum -6.1%). In general, developing countries grow faster than developed countries in all three years. Although most other variables have the same values as in previous years, it should be noticed that the difference between developed and developing countries for the Investor protection variable diminished compared with data for 2005 and 2009.

Before starting the regression analysis the collected data should be tested for normal distribution. According to the central limited theorem big samples' distribution tend to be normal regardless the shape of collected data (Field, 2009, p. 166); however, to be confident about normal distribution it is important to look at data's normality. As Mukherjee, White and Wuyts (1998, p. 148) notice regression tends to work best when all analyzed variables are similarly shaped.

A normal distribution check shows that the following variables are not normally distributed: FDI/GDP, Corruption, Inflation and Political Stability (general sample). Therefore these variables were transformed to convert a range of unimodal distributions. Additionally, for the other developed/developing groups' not normally distributed variables, such as Rule of Law, Voice and Accountability, and annual growth of GDP, were also transformed (see Appendix 5, which presents graphs for each variable for general sample, and for detailed description about transformation power for each variable). Although some dependent and independent variables' graphs look not normally distributed (not bell-shaped), normality check shows that they are normally distributed (all values are within required

limits: Z-score for skewness between -1 and 1, for kurtosis between -1.96 and 1.96 for not transformed variables). Other variables were not transformed.

Table 6 - Descriptive statistics of dependent and independent variables in 2009

Variables	N	Minimum	Maximum	Mean	Std. Deviation
General sample					
Current Account Balance as share of Gross Domestic Product, in %	130	-30,9	32,0	-2,834	9,5914
Foreign Direct Investment, net inflows, as ratio of Gross Domestic Product, in %	130	-3,7	40,4	5,005	6,4433
Inflation, consumer price, % (average for 2007-2009)	130	0,0	27,1	6,354	4,6156
Corruption Perception Index, score	130	1,5	9,4	4,519	2,1713
Strength of Investor Protection Index	130	2,0	9,6	5,619	1,4649
Gross Domestic Product, annual growth, % (average for 2007-2009)	130	-4,10	15,10	2,9869	3,12780
Rule of Law Score	130	-1,77	1,97	0,1614	0,96884
Political Stability Score	130	-2,65	1,43	0,0053	0,90105
Voice and Accountability Score	130	-1,78	1,59	0,1948	0,89644
Developed countries					
Current Account Balance as share of Gross Domestic Product, in %	33	-11,6	17,7	0,261	6,8294
Foreign Direct Investment, net inflows, as ratio of Gross Domestic Product, in %	33	-3,7	40,4	5,645	9,0975
Inflation, consumer price, % (average for 2007-2009)	33	0,0	9,9	2,552	1,6177
Corruption Perception Index, score	33	3,8	9,4	7,327	1,6183
Strength of Investor Protection Index	33	3,0	9,6	6,355	1,5918
Gross Domestic Product, annual growth, % (average for 2007-2009)	33	-3,60	4,20	0,5242	1,72609
Rule of Law Score	33	0,35	1,97	1,4297	0,45036
Political Stability Score	33	-1,62	1,43	0,7342	0,60877
Voice and Accountability Score	33	-0,24	1,59	1,1721	0,39163
Developing countries					
Current Account Balance as share of Gross Domestic Product, in %	97	-30,9	32,0	-3,887	10,1813
Foreign Direct Investment, net inflows, as ratio of Gross Domestic Product, in %	97	-2,4	37,3	4,788	5,2924
Inflation, consumer price, % (average for 2007-2009)	97	0,0	27,1	7,647	4,5928
Corruption Perception Index, score	97	1,5	7,5	3,564	1,3527
Strength of Investor Protection Index	97	2,0	8,6	5,369	1,3379
Gross Domestic Product, annual growth, % (average for 2007-2009)	97	-4,10	15,10	3,8247	3,05924
Rule of Law Score	97	-1,77	1,27	-0,2701	0,67277
Political Stability Score	97	-2,65	1,13	-0,2427	0,85010
Voice and Accountability Score	97	-1,78	1,23	-0,1376	0,76729

Table 7 - Descriptive statistics of dependent and independent variables in 2012

Variables	N	Minimum	Maximum	Mean	Std. Deviation
General sample					
Current Account Balance as share of Gross Domestic Product, in %	130	-32,7	43,2	-2,282	11,5015
Foreign Direct Investment, net inflows, as ratio of Gross Domestic Product, in %	130	-6,0	50,6	4,769	6,9473
Inflation, consumer price, % (average for 2010-2012)	130	-0,3	40,1	5,098	4,8369
Corruption Perception Index, score	130	1,3	9,0	4,759	1,9547
Strength of Investor Protection Index	129	2,0	9,7	5,618	1,4627
Gross Domestic Product, annual growth, % (average for 2010-2012)	129	-6,10	19,80	3,6465	3,24295
Rule of Law Score	130	-1,69	1,95	0,1767	0,95849
Political Stability Score\	130	-2,68	1,40	0,0482	0,90445
Voice and Accountability Score	130	-1,80	1,75	0,1928	0,89557
Developed countries					
Current Account Balance as share of Gross Domestic Product, in %	33	-6,9	18,6	1,558	5,6916
Foreign Direct Investment, net inflows, as ratio of Gross Domestic Product, in %	33	-0,5	50,6	5,752	10,3291
Inflation, consumer price, % (average for 2010-2012)	33	-0,3	4,9	2,464	1,0307
Corruption Perception Index, score	33	3,6	9,0	7,142	1,4701
Strength of Investor Protection Index	33	3,0	9,7	6,364	1,6070
Gross Domestic Product, annual growth, % (average for 2010-2012)	32	-6,10	7,10	1,7094	2,26721
Rule of Law Score	33	0,36	1,95	1,4191	0,46570
Political Stability Score	33	-1,07	1,40	0,8336	0,52934
Voice and Accountability Score	33	0,08	1,75	1,2027	0,39742
Developing countries					
Current Account Balance as share of Gross Domestic Product, in %	97	-32,7	43,2	-3,588	12,6558
Foreign Direct Investment, net inflows, as ratio of Gross Domestic Product, in %	97	-6,0	43,3	4,435	5,3710
Inflation, consumer price, % (average for 2010-2012)	97	0,0	40,1	5,994	5,2809
Corruption Perception Index, score	97	1,3	7,2	3,948	1,3406
Strength of Investor Protection Index	96	2,0	8,7	5,361	1,3241
Gross Domestic Product, annual growth, % (average for 2010-2012)	97	-3,40	19,80	4,2856	3,27093
Rule of Law Score	97	-1,69	1,37	-0,2460	0,67165
Political Stability Score	97	-2,68	1,21	-0,2190	0,84949
Voice and Accountability Score	97	-1,80	1,19	-0,1508	0,74510

Having discussed general trends in 2005, 2009 and 2012 of dependent and independent variables, it is important to look at the correlation between variables before analyzing data to

avoid multicollinearity. Appendixes 6-8 show the correlation between variables by dividing data as general sample, developed and developing countries for each analyzed year. It is clearly seen that CPI highly correlates with Rule of Law, which highly correlated with Political Stability and Voice and accountability. CAB/GDP mostly correlates with CPI, Rule of Law and Voice and accountability, while FDI/GDP mostly correlates with Political stability, Rule of Law and Investor protection (see table 8 for the summary of highly correlated variables). However, these correlation coefficients cannot predict whether capital flows is caused by particular independent variable. Therefore, the following part of this chapter analyzes all variables through multiple regression analysis, which models the relationship between dependent and independent variables.

Table 8 – The summary of three highest correlations between dependent and independent variables

Dependent variable CAB/GDP								
2005			2009			2012		
General sample	Developed countries	Developing countries	General sample	Developed countries	Developing countries	General sample	Developed countries	Developing countries
GDP (0,287)	INF (-0,611)	GDP (0,405)	CPI (0,190)	CPI (0,494)	PS (-0,221)	GDP (0,235)	RoL (0,361)	VaA (-0,401)
VaA (-0,211)	RoL (0,396)	VaA (-0,399)	RoL (0,135)	RoL (0,349)	VaA (-0,219)	RoL (0,175)	PS (0,358)	GDP (0,344)
CPI (0,113)	CPI (0,389)	PS (-0,193)	INF (-0,103)	INF (-0,258)	GDP (0,163)	CPI (0,136)	GDP (0,350)	PS (-0,148)
Dependent variable FDI/GDP								
2005			2009			2012		
General sample	Developed countries	Developing countries	General sample	Developed countries	Developing countries	General sample	Developed countries	Developing countries
CPI (0,359)	VaA (0,479)	PS (-0,348)	PS (0,252)	PS (0,255)	PS (0,285)	PS (0,216)	INF (0,254)	PS (0,240)
RoL (0,292)	RoL (0,440)	VaA (-0,330)	RoL (0,143)	RoL (0,168)	IP (0,188)	IP (0,166)	PS (0,220)	IP (0,198)
VaA (0,224)	CPI (0,370)	INF (0,287)	IP (0,135)	CPI (0,153)	RoL (0,167)	GDP (0,140)	GDP (0,218)	GDP (0,193)

Note: CPI – Corruption Perception Index, GDP – annual growth of GDP
INF – Inflation, IP – Strength of Investor Protection,
PS – Political stability, RoL – Rule of Law, VaA – Voice and Accountability.

Explanatory analysis (General sample)

Field (2009, p. 224) states multiollinearity occurs when correlation coefficient exceeds 0.8 in value. In this case, as it was shown in the previous section of the Chapter, Rule of law

will be analyzed separately, because it highly correlates with three other control variables (CPI, Political stability and Voice and Accountability). The exclusion of this variable will prevent multicollinearity. Using CAB, as share of GDP, as a dependent variable, the regression was run and reported in table 9.

Table 9 – Model summary of multiple regression (unstandardized coefficients) – general sample, 2005, 2009 and 2012 (dependent variable CAB/GDP)

Variable	2005				2009		2012		
	(1)	(2)	(3)	(4)	(1)	(2)	(1)	(2)	(3)
ROL	-0.182 (1.168)				1.823 (1.255)		0.962*** (0.311)		
GDP growth	-4.549** (1.410)	-4.609*** (1.351)	-3.441** (1.425)	-3.189** (1.355)	-0.471 (0.314)		-3.076*** (1.058)	-0.779** (0.319)	-0.625** (0.325)
Inflation	-6.013** (2.732)	-6.031** (2.352)	-8.203*** (2.451)	-4.673* (2.513)	-0.843 (1.716)			-7.147*** (2.018)	-6.336*** (1.991)
VAA			2.558** (1.085)	5.755*** (1.342)		2.498** (0.811)		3.079 (1.329)**	5.160*** (1.697)
CPI				-9.166*** (2.465)		-11.798*** (3.155)			-18.109* (10.067)
<i>N</i>	124	124	124	124	130	130	129	129	129
<i>F</i>	4.790***	7.245***	7.120***	9.378***	1.192	7.102***	7.162**	6.521***	5.975***
<i>Adjusted R</i> ²	0.09	0.09	0.13	0.21	0.04	0.10	0.09	0.13	0.14

Notes: Standard errors are given in parentheses below each unstandardized coefficients.

*significant at 10% level, **significant at 5% level, ***significant at 1% level

Looking at the F-values and adjusted R^2 it is clearly seen that for 2005 model 4 accounts for 21% of the variation in dependent variable with the highest ratio of the improvement in prediction that results from the model-fitting (9.378). Within the model annual GDP growth, CPI and VAA have high statistical significance and the expected relationship with dependent variables. In contrary, in my own expectations GDP growth has the opposite relationship with the dependent variable. This means that for the general sample CAB deficit can be associated with low corruption and economic growth and high level of democracy.

In 2009 there are only two models presented because only model 2 has significant results, while other possible models have insignificant results and they do not improve predictability. Therefore, model 2 is the best model out of all possible variants, where CPI and VAA variables have relatively high significance, which means that low corruption and high democracy can be associated with current account deficit. This relationship between dependent and above mentioned independent variables is as expected in Chapter 2.

The results of regression analysis for 2012 with CAB as share of GDP as dependent variable show that among the first three models, model 1 accounts for high predictability of

dependent variable and accounts for 9% of variation in CAB. Both independent variables (GDP annual growth and ROL) are statistically significant; however, 1% change in GDP annual growth can be associated with 3% change in GAB/GDP. Although Rule of Law has predicted a relationship with the dependent variable, GDP annual growth does not have this expected sign, which means CAB deficit countries grow slow. On the other hand, model 3 has the highest adjusted R^2 value, which means that it accounts for 14 percent change in dependent variable. There are three statistically significant contributors in this model: VAA, GDP annual growth and Inflation. In general, all predictors have expected relationship with dependent variable except GDP annual growth, which is the only one control variable presented in all models. To sum up, regression models for the three years show that there are different variables (CPI, VAA, GDP annual growth, ROL) that can be associated as a predictor variable.

Table 10 – Model summary of multiple regression (unstandardized coefficients) – general sample 2005, 2009, 2012 (dependent variable FDI/GDP)

Variable	2005		2009		2012	
	(1)	(2)	(1)	(2)	(1)	(2)
Rule of Law	2.258*** (0.633)					
GDP annual growth			0.011 (0.007)	0.018** (0.008)	0.012** (0.006)	0.011* (0.006)
Political Stability		-0.360*** (0.197)		0.021*** (0.007)	0.014*** (0.005)	0.012** (0.005)
Investor Protection		-0.659* (0.383)	0.023 (0.015)			0.017 (0.012)
Corruption Perception Index		6.627*** (1.417)				
Voice and accountability						
Inflation	2.153 (1.595)					
<i>N</i>	124	124	130	130	129	129
<i>F</i>	6.596***	8.226***	2.091	5.454***	4.874***	3.943***
<i>Adjusted R²</i>	0.10	0.17	0.01	0.08	0.07	0.09

Notes: Standard errors are given in parentheses below each unstandardized coefficients.
*significant at 10% level, **significant at 5% level, ***significant at 1% level

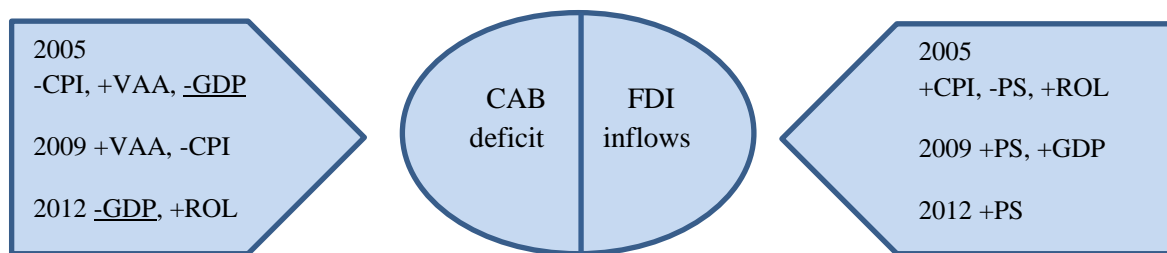
Table 10 presents results of multiple regression analysis with FDI as share of GDP, as dependent variable for 2005, 2009 and 2012. In general there are only two models presented for each analyzed year because skipped models are statistically insignificant (unstandardized coefficients and *F* values) and do not improve the predictability of the outcome. In 2005 model 2 shows high predictability and accounts for 17% change in dependent variable. Only CPI and PS variables have significant contribution to the model 2. Interestingly, the PS

variable shows unexpected relations with the dependent variable in 2005. Although model 1 has less predictability compared with model 2, it should be also noticed that in model 1 ROL variable itself can be associated with changes in the dependent variable, and the relationship between ROL and FDI/GDP is positive as expected.

In 2009 only model 2 shows significant results, where it is can be seen that PS is the most significantly contributing variable in model 2; however, GDP annual growth also has significant contribution to the model (both relations are positive as predicted). In 2012 model 1 predicts change in dependent variable better than model 2. As in 2009, in 2012 PS is the variable which accounts for 1.4% change in the dependent variable and has the expected relation with it. Nevertheless, for the general sample the values of R^2 are very low, which indicated that more than 90% change in FDI/GDP is associated with other factors.

To sum up, increase in the FDI/GDP dependent variable can be associated with lower corruption in 2005, and higher political stability in 2009 and 2012 (see graph 5, variable with unexpected relationship is underlined). In general, for general sample institutions predict more capital inflows than policies.

Figure 5 – Independent variables most affecting dependent variable for general sample in 2005, 2009 and 2012



Explanatory analysis (Developed countries)

This part of Chapter 4 focuses on regression analysis of the developed countries group. Although some may argue that the number of countries is small for both dependent variables (because of the classification of countries as developed), as it was mentioned in Chapter 4 (p. 33) the first independent variable requires 30 observations. Taking into account that for most models the number of observations is equal to 33, it is possible to run the regression analysis with one independent variable. However, bearing in mind that presenting models only with one independent variable would duplicate correlations illustrated in Appendices 6, 7 and 8, additional independent variables were added in order to clarify the relationship of dependent

and independent variables. Nevertheless, most models presented below have only one statistically significant variable for both dependent variables, which means that highly correlated independent variables are still statistically significant even after adding additional independent variables in the models.

Table 11 shows 6 models for the CAB/GDP dependent variable for 2005, 2009 and 2012. The regression results for 2005 show that model 1 predicts changes in dependent variable better, where the Inflation variable has high statistical significance. In general, both models show almost the same predictability, where only Inflation is statistically significant and has expected positive relation with dependent variable.

Table 11 – Model summary of multiple regression (unstandardized coefficients) – developed countries 2005, 2009, 2012 (dependent variable CAB/GDP)

Variable	2005		2009		2012	
	(1)	(2)	(1)	(2)	(1)	(2)
Rule of Law	0.094 (0.079)		0.090* (0.047)		0.015*** (0.005)	
GDP annual growth	-0.166 (0.652)					-0.051 (0.036)
Corruption Perception Index		-0.589 (0.786)		-0.378*** (0.086)		
Voice and accountability				0.049*** (0.018)	0.013* (0.007)	
Inflation	-20.374*** (5.345)	-20.812*** (5.541)	-3.350 (3.078)			
<i>N</i>	33	33	33	33	32	32
<i>F</i>	11.816***	11.078***	2.831**	9.881***	3.105**	3.473**
<i>Adjusted R²</i>	0.38	0.38	0.16	0.36	0.25	0.19

Notes: Standard errors are given in parentheses below each unstandardized coefficients.
*significant at 10% level, **significant at 5% level, ***significant at 1% level

In 2009 model 2 predicts the dependent variable more accurately and accounts for 36% change in it. Within model 2 only Inflation has significant contribution to the model. In 2009 model 2 also accounts for 36% change in CAB/GDP, where CPI and VAA contribute most. All variables have the expected sign. In 2012 both models have their advantages; however, only ROL has significant contribution to the model 1 with expected positive relationship with dependent variable.

Table 12 presents the results of multiple regression analysis with FDI/GDP as the dependent variable for the developed countries group. In model 1 for 2005 only ROL has a significant effect on the dependent variables, which can be associated with high net FDI inflows as share of GDP. This model also predicts dependent variable better than model 2. Other models are skipped due to the insignificant predictability and contribution.

Unfortunately, in 2009 all variables were not statistically significant, neither were quantitatively large. Appendix 7 also shows that independent variables do not have significant correlations with both dependent variables. This can be caused by the small number of observations which cannot be increased due to the development of countries. As a result, only one model was presented for 2009, which is also not statistically significant. In 2012, model 2 predicts the outcome better than model 1; however, model 1 accounts for 23% change in dependent variable. Only developed countries with low Inflation can be associated with high FDI/GDP. This means that 1 percent decrease of inflation can be related to 0.48 percent increase of dependent variable in 2012.

Table 12 – Model summary of multiple regression (unstandardized coefficients) – developed countries 2005, 2009, 2012 (dependent variable FDI/GDP)

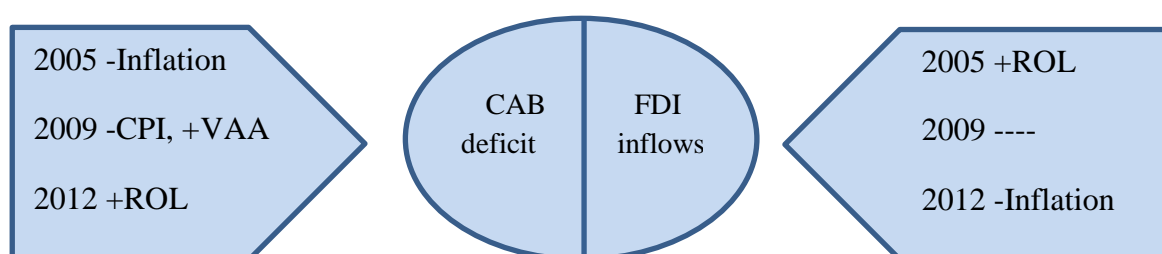
Variable	2005		2009	2012	
	(1)	(2)	(1)	(1)	(2)
Rule of Law	0.030*** (0.009)			0.023** (0.010)	
Political Stability			0.002 (0.002)		0.014 (0.009)
Investor Protection	0.167* (0.085)	0.082 (0.085)			
Voice and accountability		-0.010*** (0.003)	0.001 (0.001)	0.023* (0.014)	
Inflation					-0.485** (0.194)
<i>N</i>	33	33	33	32	32
<i>F</i>	6.278***	5.783***	1.310	2.988*	3.473**
<i>Adjusted R</i> ²	0.25	0.22	0.08	0.23	0.19

Notes: Standard errors are given in parentheses below each unstandardized coefficients.

*significant at 10% level, **significant at 5% level, ***significant at 1% level

To conclude this part of Chapter 4, it is possible to state that ROL, CPI, VAA and Inflation are indicators which can be related to change of both dependent variables in 2005 and 2012 (see graph 6 below). The relationship between dependent and independent variables as expected.

Figure 6 – Independent variables most affecting dependent variable for developed countries category in 2005, 2009 and 2012



Explanatory analysis (Developing countries)

The last part of Chapter 4 aims to analyze the relationship between dependent and independent variables for the developing countries group. Table 13 illustrates the results of multiple regression analysis for 2005, 2009 and 2012 with first dependent variable (CAB/GDP).

In 2005 only two models are presented because other models do not contribute to the predictability of the model. Moreover, control variables are statistically insignificant. Model 1 accounts for 24% of change in dependent variable, which is lower than model 2; however, its predictability exceeds the predictability of model 1. Nevertheless, in both 2005 and 2009 VAA variable accounts for most change in dependent variable, which means that one unit decrease of VAA index can be related to 0.5 increase of CAB/GDP in 2005, and almost 4% in 2009. Simply more democratic countries tend to have more CAB deficit. Another variable in 2005, which is less significant, compared with VAA, is annual growth of GDP. A 1 percent increase of annual GDP growth can be associated with 0.4 percent increase of CAB/GDP (expected relation). ROL and CPI do not significantly contribute to any model in 2005 and 2009.

Table 13 – Model summary of multiple regression (unstandardized coefficients) – developing countries 2005 and 2009 (dependent variable CAB/GDP)

Variable	2005		2009		2012			
	(1)	(2)	(1)	(2)	(1)	(2)	(3)	(4)
Rule of Law					-7.334*** (2.181)	-6.779*** (2.123)		
GDP annual growth	-0.425** (0.166)	-0.407** (0.167)		-0.339 (0.365)		-5.779*** (2.123)	-6.460*** (2.264)	-6.526*** (2.221)
CPI		-1.273 (1.074)	-14.740 (11.524)	-15.675 (11.586)				
VAA	0.483*** (0.130)	0.551*** (0.142)	3.941** (1.555)	2.104 (1.704)	10.897*** (1.949)	9.953*** (1.921)	6.124*** (1.573)	7.306*** (1.637)
Inflation								-4.877** (2.262)
<i>N</i>	91	91	97	97	96	96	96	96
<i>F</i>	13.242***	9.338***	3.214**	2.427**	2.741**	13.476***	13.757***	11.080***
<i>Adjusted R</i> ²	0.24	0.25	0.04	0.04	0.22	0.28	0.19	0.22

Notes: Standard errors are given in parentheses below each unstandardized coefficients.
*significant at 10% level, **significant at 5% level, ***significant at 1% level

Results, for 2012, show that all models are statistically significant; however, model 2 and model 3 account for more predictability and change in dependent variable. In both models VAA and GDP annual growth variables have most statistically and quantitatively significant values. In model 2 and 1 ROL also plays an important role in predicting CAB/GDP. Taking

into account that model 3 is a better predictor in 2012, it is possible to state that one unit decrease in VAA variable can be associated with almost 6% increase of CAB/GDP. Nevertheless, in model 4 Inflation also shows a significant effect on the dependent variable. All predictors in four models show expected relationship with dependent variables except GDP annual growth and ROL, which means that higher CAB deficit can be associated with lower economic growth and lower legal order.

Table 14 shows the results of multiple regression with the dependent variable FDI/GDP for 2005, 2009 and 2012. Although for general sample and developed countries groups ROL and VAA, PS variables were highly correlated with each other, for the developing countries group these variables do not have a correlation coefficient exceeding 0.8 (see Appendix 8). Therefore, it is possible to use these variables together as it was done for model 1 in 2005. However, model 2 explains change in FDI better than model 1 and accounts for 15% variation. The most significant contributors to this model are Political stability, Inflation, and VAA variables, which explain change in the dependent variable. However, it is not only in 2005, other models of 2009 and 2012 also show that Political stability was the most statistically significant variable explaining changes in FDI/GDP. Moreover, in 2009 GDP annual growth also contributes to the model 1. In general, for the developing countries group all significant variables have the expected relation with the dependent variable. Interestingly, CPI does not have a significant effect in each of the analyzed years.

Table 14- Model summary of multiple regression (unstandardized coefficients) – developing countries 2005, 2009 and 2012 (dependent variable FDI/GDP)

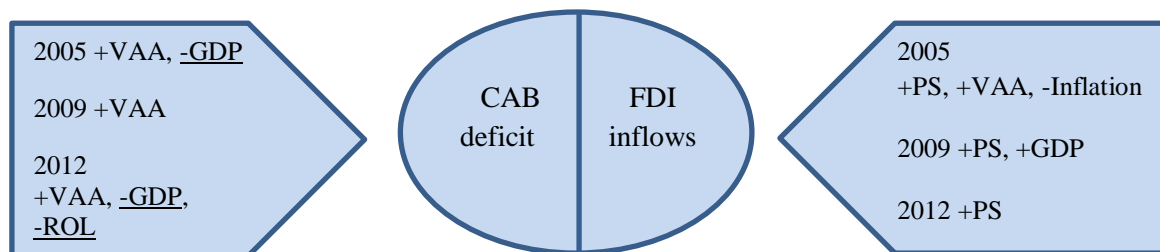
Variable	2005		2009		2012	
	(1)	(2)	(1)	(2)	(1)	(2)
Rule of Law	1.798*					
	(1.025)					
GDP annual growth			0.030**	0.029*		0.025
			(0.015)	(0.015)		(0.035)
Political Stability	1.583**	1.278***	0.048***	0.046***	0.050**	0.051**
	(0.691)	(0.446)	(0.015)	(0.015)	(0.021)	(0.021)
Investor Protection				0.053	0.023*	0.021
				(0.033)	(0.013)	(0.013)
Voice and accountability	1.444**					
	(0.691)					
Inflation	-1.478**	-1.143*				
	(0.677)	(0.654)				
<i>N</i>	91	91	97	97	96	96
<i>F</i>	5.289***	7.663***	6.065***	4.962***	4.715**	3.300**
<i>Adjusted R²</i>	0.20	0.15	0.11	0.14	0.09	0.10

Notes: Standard errors are given in parentheses below each unstandardized coefficients.

*significant at 10% level, **significant at 5% level, ***significant at 1% level

Figure 7 presents a summary of the most significant variables affecting both dependent variables (variable with unexpected relationship is underlined). In summarizing the results of regression analysis for the developing countries group it can be noticed that institutions, as well as policies, explain change in dependent variables (particularly VAA and PS).

Figure 7 – Independent variables most affecting dependent variable for developing countries category in 2005, 2009 and 2012



Chapter 6: DISCUSSION OF FINDINGS

The first part of this Chapter focuses on an overview of the significant findings of the study, their consideration in the light of existing research studies, and explanation of the outcome derived from the analysis.

A consideration of the significant findings in the light of existing research studies

In Chapter 2 the assumption is made on the relationship between dependent and independent variables, according to which more capital inflows (FDI inflows and CAB deficit) were associated with high legal order, low corruption, low inflation, high economic growth and high quality democracy. Moreover, it was also assumed that more FDI inflows can be determined by high political stability and investor protection. As it can be seen in the previous Chapter, the results show that institutions, as well as policies, predict change in capital inflows; however, institutions do not explain capital inflows more than policies. Contrary to my expectations policies, particularly annual growth of GDP and Inflation have high explanatory power and in eight cases out of eighteen significantly explain change in capital inflows(see table 15 below).

Table 15 - Most significant variables affecting dependent variable divided by categories and year of analysis

2005	2009	2012
General sample*		
-CPI, +VAA, <u>-GDP</u>	+VAA, -CPI	<u>-GDP</u> , +ROL
Developed countries*		
-Inflation	-CPI, +VAA	+ROL
Developing countries*		
+VAA, <u>-GDP</u>	+VAA	+VAA, <u>-GDP</u> , <u>-ROL</u>
General sample**		
+CPI, -PS, +ROL	+PS, +GDP	+PS
Developed countries**		
+ROL	-	-Inflation
Developing countries**		
+PS, +VAA, -Inflation	+PS, +GDP	+PS

Note: * dependent variable is CAB/GDP, ** dependent variable is FDI/GDP

The half of the statistically significant models is explained by ROL and CPI. However, these variables do not explain changes in capital inflows more than policies as it was expected. This means that policies, particularly GDP annual growth and Inflation, also affect capital inflows. Although I did not expect to find significant connection between both dependent variables and democracy, CAB/GDP was mostly associated with the VAA variable in all three analyzed years. The FDI/GDP dependent variable was mostly explained by high political stability. It is also should be noticed that all relations between dependent and independent variables have the anticipated signs, except annual GDP growth (for all cases where dependent variable is CAB/GDP) and ROL (only in 2012 for developing countries group with CAB/GDP as dependent variable). This means that current account deficit does not necessarily lead to high economic growth as it was assumed. Legal order in 2012 for developing countries, current account surplus can be associated with high legal order while in 2005 and 2009 ROL did not have influence on current account balance.

Developed countries possibly attract FDI capital flows by having high legal order and low inflation rates, while CAB/GDP deficit is associated with low Inflation and corruption, high quality of democracy and high Rule of law. In contrast, developing countries attract more FDI inflows by having a stable political situation, high quality of democracy, and low inflation, while CAB/GDP deficit can be associated with high development of democracy, lower quality of legal order, and low economic growth. In a nutshell, the FDI/GDP dependent variable has the expected relationship with all independent variables, while CAB/GDP has unexpected effect of Rule of law and GDP annual growth.

Looking at general sample it is clearly seen that countries with relatively low corruption, high legal order, high democratic development and low economic growth tend to receive more capital inflows. In 2005, 2009 and 2012 net FDI inflows can be associated with political stability in capital inflows recipient countries. In Chapter 2 it was assumed that CAB surplus countries could have higher corruption, this assumption was confirmed because in 2005 and 2012 corruption has a negative relationship with CAB deficit. Moreover, the variable measuring democracy also shows expected relationship with this dependent variable for the developing countries group and has statistically significant explanation power (for CAB deficit).

In order to be able to answer the research question, it is important to look closely at the results of multiple regression run for developed countries. The high value of the CAB/GDP dependent variable can be associated with low Inflation in 2005, low corruption, high level of democracy in 2009, and high legal order in 2012. In contrast, the net FDI inflows/GDP

dependent variable can be related to high legal order in 2005, and low Inflation in 2012. This means that net FDI inflows tend to be allocated in developed countries with high Rule of Law and low Inflation. Possible explanation for the role of Rule of law can be derived from theoretical explanation of Tornell and Velasco (1992), who emphasize the role of low property right preventing access to capital in developing countries. Therefore, relatively high development of the legal system in developed countries can be an advantage in attracting capital inflows.

Although Wei (2000) finds that high corruption reduces net FDI inflows, the results presented in Chapter 4 suggest that high corruption lead to high net FDI inflow/GDP only in 2005 and only for the general sample. Developed and developing countries analyzed separately do not show significant effect of corruption on net FDI inflows. However, high corruption can be associated with CAB surplus. The result of this study shows that low level of corruptness can be associated with quantitatively large and CAB/GDP deficit in 2005, 2009, and 2012. Although Alfaro, Kameli-Ozcan and Volosovych (2003) conclude that institutions play a more important role in explaining uphill capital flows, the results of the general sample show that institutional quality do not matter more than policies.

According to Rajan (2008) countries with low economic growth tend to import a significant amount of foreign capital. Contrary to my assumption the results indicate that annual growth of GDP has a much greater effect on the dependent variable (CAB/GDP) in 2005, and 2012, which complements Rajan's results. He also claims that net FDI inflows from 2000 to 2004 did not follow economic growth; however, the results of the study show an opposite pattern in relationship between FDI inflows and economic growth (economic growth had considerable influence on net FDI inflows even after 2004).

In addition, it is also important to mention that Chinn and Ito's (2007) findings stating that institutions explains more than policies were not confirmed by the results of the research, because according to the result policies are as important as institutions in explaining capital inflows in the XXI century.

Chapter 7: CONCLUSION

Capital and its allocation is one of the most popular sectors of economic theory and practice. There are a lot of academic works that were completed in order to generate the most relevant explanations regarding capital inflows. Nevertheless, there is no one formula or theory which could explain the direction of capital inflows at the international level. Moreover, researchers tend to have different opinions and sometimes do not agree with each other. One of the recent phenomena in this field was brought by the work of Robert Lucas named “Why Doesn't Capital Flow from Rich to Poor Countries?”, which criticized neoclassical theory’s ability to explain capital flows. After the publication of this article in 1990 many studies have been conducted in order to find the most relevant explanation for uphill capital flows. Although different theories and empirical studies were generated, most authors did not agree with each other and emphasized different aspects of institutional quality and public policies. The period of time covered by previous studies was also limited, most researchers analyzed the last three decades of the XX century, and only a few of them covered years within the current millennium. Therefore, the main aim of writing the thesis was to analyze previous explanations and to identify the most relevant factor affecting capital inflows in recent years. In order to achieve the aim the research question (*Why does capital still flow from developing countries to developed countries from 2005 to 2012?*) and following sub-questions were determined: What is capital flow and what can be the possible cause of capital inflows? Which factors, in a period from 2005 to 2012, influence the uphill capital flow, and provide an explanation of the uphill direction of capital flows?

Based on the review of previous studies rule of law, the level of corruption, the quality of democracy, political stability, economic growth, inflation and investor protection were chosen as independent variables for quantitative research. Current account balance and foreign direct investment as share of gross domestic product are considered as dependent variables. The main assumption was that high legal order and low corruption could be the factors that explain capital inflows most. As a result of conducted analysis, it is possible to answer the research question. The general sample shows that high development of democracy (in 2005 and 2009), low corruption (in 2005 and 2009), low economic growth (in 2005 and 2012) and high legal order (only in 2012) are the main factors which can be associated with a quantitatively large CAB/GDP deficit, while a large amount of net FDI inflows as share of GDP is associated with political stability (in all analyzed years), high corruption (only in 2005), high legal order (only in 2005), and high economic growth (only in 2009).

Capital inflows (FDI) in developing countries can be mostly attracted by political stability in all analyzed years, economic growth in 2009, high legal order and low inflation in 2005. On the other hand, CAB deficit can be associated with the high development of democracy in all analyzed years, low economic growth in 2005 and 2012, and low legal order in 2012. Although a positive relationship between economic growth and CAB deficit was expected, results show this as the only variable not having the expected sign.

Developed countries have a high amount of net FDI inflows due to high rule of law (2005) and relatively low inflation (2012). Both of these factors also affect CAB/GDP, however, in this case high inflation (2005) and high legal order (2012) can be associated with CAB deficit. Moreover, low corruption and high quality of democracy also has significant effect on CAB deficit in 2009. Unfortunately, for the net FDI inflows the chosen control variables did not show significant influence in 2009. Perhaps, alternative control variables should be added in order to find the explanation of FDI inflows in 2009. In general, the main assumption about the role of high institutional quality has been confirmed for all three categories of countries (general sample, developed and developing countries); however, it does not prevail over policies, as it was expected, because economic growth and inflation still influence capital inflows in the XXI century. In conclusion, low corruption, high legal order, high quality of democracy, economic growth and low inflation affect capital inflows, both current account balance and foreign direct investment. Taking into consideration that most developed and developing countries were covered and analyzed, these results can be generalized for the whole population.

Limitations of the study and recommendations for further research

Despite convincing evidence that aforementioned factors affect capital inflows in the chosen period of time, there are some limitations which can affect the results of this study. First of all, these limitations related to the number of chosen countries. Although 130 countries were selected to run the analysis, 42 developing countries do not provide information about their economic indicators. Moreover, most of these countries were not covered by indexes aiming to assess institutional quality. On the other hand, there is some confusion regarding the classification of countries according to their development. A simple example is the difference between the United Nation's and International Monetary Fund's classifications, which disagree with each other. In addition, taking into account that some countries have been rapidly developing over the past two decades, they were classified

according to their current development, while in previous research they were classified as less developed (for instance China and India). Second of all, there are other types of foreign investment, such as portfolio investment, grants, bank loans, which could be also analyzed to make the direction of capital flows and the reason of investment more clear. This was not possible for this research due to the unavailability of information.

More research should be done in order to have the full picture about capital inflows. Based on this study more attention should be paid to public policies aiming to restrict or liberalize international capital flows. As it can be noticed, governments have tools to regulate financial markets, including the banking sector, which plays an important role in the allocation of foreign capital. Perhaps, it would be better to analyze countries separately to reach an individual approach by taking into account the differences between countries. It is also clearly seen that only a few countries receive enormous amounts of foreign direct investment inflows; therefore, academic research should focus on these particular countries.

Finally, I assume that the type of ownership also plays a significant role in determining the direction of capital flows. If companies, especially those involved in activities related to natural resources, are owned by foreign companies or governments, it is possible that revenue of these companies will be repatriated, which creates uphill direction of capital flows from developing to developed countries. Furthermore, most contracts in this field are signed for a long term period, which can be the reason of capital outflows from non-industrial countries. This can be caused by the lack of capital and/or professional labour resources at the domestic level of developing countries. Perhaps, attention also should be paid to the profitability of each sector of the economy, because I believe that the following quote of Walter Bagehot (1873) has some truth in it: “Political economists say that capital sets towards the most profitable trades, and that it rapidly leaves the less profitable non-paying trades”.

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APPENDICES

Appendix 1a: Current Account Balance and net Foreign Direct Investment inflows in 2012 (current US\$ in billions) – Developed states

Nº	Country	CAB	FDI
1	Australia	-57	56
2	Austria	6	4
3	Belgium	-9	-1
4	Canada	-62	43
5	Cyprus	-1	1
6	Czech Republic	-4	10
7	Denmark	18	1
8	Estonia	-0,4	1
9	Finland	-3	4
10	France	-57	28
11	Germany	240	27
12	Greece	-6	1
13	Hong Kong SAR, China	6	74
14	Iceland	-0.7	1
15	Ireland	9	40
16	Israel	0.8	9

Nº	Country	CAB	FDI
17	Italy	-8	6
18	Japan	60	2
19	Korea, Rep.	43	4
20	Luxembourg	3	27
21	Malta	0.1	0.5
22	Netherlands	72	6
23	New Zealand	-6	2
24	Norway	72	22
25	Portugal	-4	13
26	Singapore	51	56
27	Slovak Republic	2	1
28	Slovenia	1	-0.2
29	Spain	-15	36
30	Sweden	31	4
31	Switzerland	53	2
32	United Kingdom	-92	45
33	United States	-440	203

Appendix 2b: Current Account Surplus/Deficit and net Foreign Direct Investment inflows in 2012 (current US\$ in billions) – Developing states

Nº	Country	CAB	FDI
1	Albania	-1	1
2	Algeria	12	1
3	Argentina	0.02	12
4	Armenia	-1	0.4
5	Aruba	0.1	-0.1
6	Azerbaijan	14	5
7	Bahamas, The	-1	0.3
8	Bahrain	2	0.8
9	Belarus	-1	1
10	Belize	-0.2	0.1
11	Bermuda	0.7	0.1
12	Bolivia	2	1
13	Bosnia and Herzegovina	-1	0.3
14	Botswana	-1	0.2
15	Brazil	-54	76
16	Bulgaria	-0.7	2

Nº	Country	CAB	FDI
17	Cameroon	-0.9	0.5
18	Cabo Verde	-0.2	0.07
19	Chile	-9	30
20	China	193	253
21	Colombia	-12	15
22	Congo, Rep.	0.6	2
23	Costa Rica	-2	2
24	Cote d'Ivoire	0.4	0.4
25	Croatia	-0.1	1
26	Dominica	-0.01	0.01
27	Dominican Republic	-4	3
28	Ecuador	-0.1	0.5
29	Egypt, Arab Rep.	-6	2
30	El Salvador	-1	0.4
31	Fiji	-0.05	0.2
32	Georgia	-1	0.8

33	Ghana	-4	3
34	Grenada	-0.2	0.03
35	Guatemala	-1	1
36	Guyana	-0.3	0.2
37	Honduras	-1	1
38	Hungary	1	9
39	India	-91	23
40	Indonesia	-24	19
41	Iraq	29	3
42	Jamaica	-1	0.2
43	Jordan	-5	1
44	Kazakhstan	7	15
45	Kenya	-4	0.2
46	Kosovo	-0.4	0.2
47	Kuwait	79	1
48	Kyrgyz Republic	-1	0.3
49	Latvia	-0.7	1
50	Lebanon	-1	3
51	Lithuania	-0.09	0.5
52	Macao SAR, China	18	4
53	Macedonia, FYR	-0.3	0.2
54	Malaysia	18	9
55	Maldives	-0.6	0.2
56	Mauritius	-1	0.3
57	Mexico	-14	15
58	Moldova	-0.4	0.1
59	Mongolia	-3	4
60	Montenegro	-0.7	0.6
61	Morocco	-9	2
62	Namibia	-0.1	0.3
63	Nicaragua	-1	0.8
64	Nigeria	20	7
65	Oman	8	1

66	Pakistan	-2	0,8
67	Panama	-3	3
68	Papua New Guinea	-0.06	0.02
69	Paraguay	0.1	0.3
70	Peru	-6	12
71	Philippines	7	2
72	Poland	-18	6
73	Qatar	61	0,3
74	Romania	-7	2
75	Russian Federation	72	50
76	Samoa	-0.03	0.02
77	Saudi Arabia	164	12
78	Serbia	-4	0,3
79	Seychelles	-0.2	0.01
80	South Africa	-20	4
81	Sri Lanka	-4	0.8
82	St. Kitts and Nevis	-0.07	0.1
83	St. Lucia	-0.1	0.1
84	St. Vincent and the Grenadines	-0.2	0.1
85	Suriname	0.2	0.06
86	Swaziland	0.1	0.08
87	Syrian Arab Republic	-0.3	2
88	Tajikistan	-0.2	0.1
89	Thailand	-1	10
90	Tonga	-0.09	0.008
91	Tunisia	-3	1
92	Turkey	-48	12
93	Ukraine	-14	7
94	Uruguay	-2	2
95	Venezuela, RB	11	2
96	Vietnam	9	8

Appendix 2: The list of Developing Countries Chosen for Analysis

Albania	Belize	Chile	Ecuador	Honduras
Algeria	Bermuda	China	Egypt, Arab Rep.	Hungary
Argentina	Bolivia	Colombia	El Salvador	India
Armenia	Bosnia and Herzegovina	Congo, Rep.	Fiji	Indonesia
Aruba	Botswana	Costa Rica	Georgia	Iraq
Azerbaijan	Brazil	Cote d'Ivoire	Ghana	Jamaica
Bahamas, The	Bulgaria	Croatia	Grenada	Jordan
Bahrain	Cameroon	Dominica	Guatemala	Kazakhstan
Belarus	Cabo Verde	Dominican Republic	Guyana	Kenya

Kosovo	Mexico	Papua New Guinea	Seychelles	Thailand
Kuwait	Moldova	Paraguay	South Africa	Tonga
Kyrgyz Republic	Mongolia	Peru	Sri Lanka	Tunisia
Latvia	Montenegro	Philippines	St. Kitts and Nevis	Turkey
Lebanon	Morocco	Poland	St. Lucia	Ukraine
Lithuania	Namibia	Qatar	St. Vincent and the Grenadines	Uruguay
Macao SAR, China	Nicaragua	Romania	Suriname	Venezuela, RB
Macedonia, FYR	Nigeria	Russian Federation	Swaziland	Vietnam
Malaysia	Oman	Samoa	Syrian Arab Republic	
Maldives	Pakistan	Saudi Arabia	Tajikistan	
Mauritius	Panama	Serbia		

Appendix 3: The list of Developed Countries Chosen for Analysis

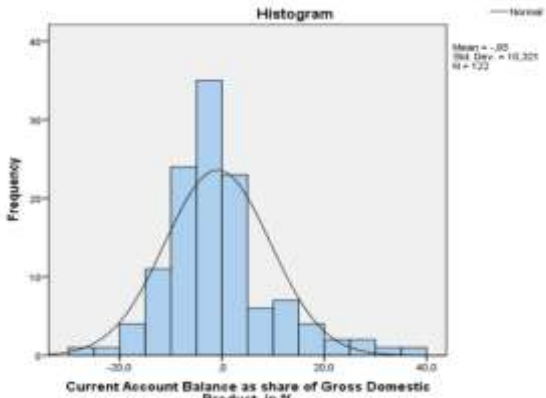
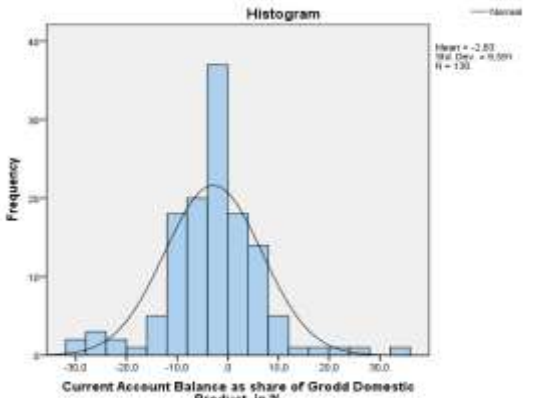
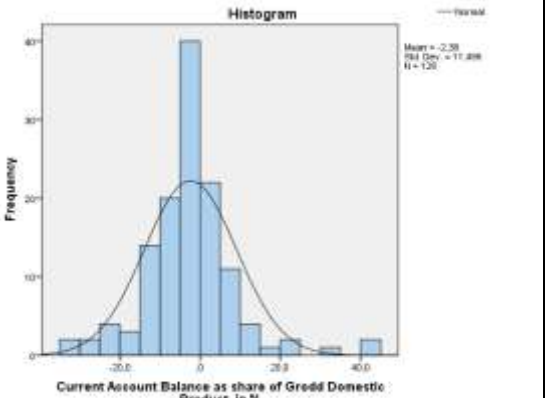
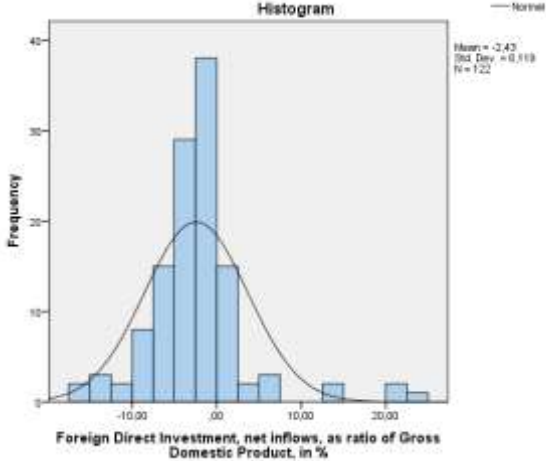
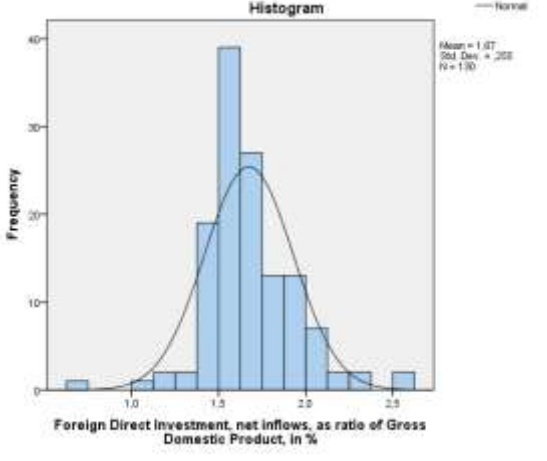
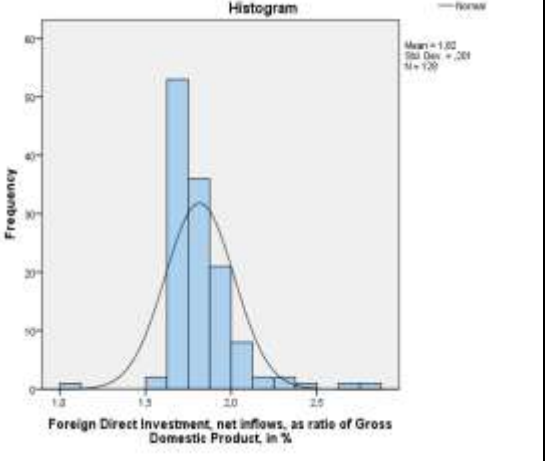
Australia	France	Japan	Slovak Republic
Austria	Germany	Korea, Rep.	Slovenia
Belgium	Greece	Luxembourg	Spain
Canada	Hong Kong SAR, China	Malta	Sweden
Cyprus	Iceland	Netherlands	Switzerland
Czech Republic	Ireland	New Zealand	United Kingdom
Denmark	Israel	Norway	United States
Estonia	Italy	Portugal	
Finland		Singapore	

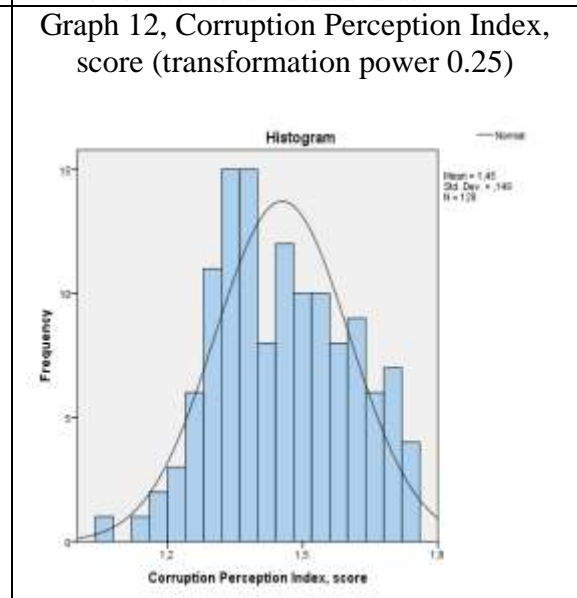
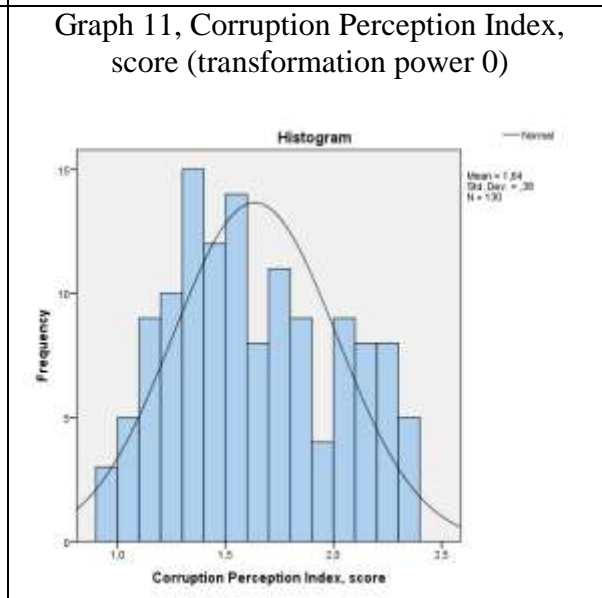
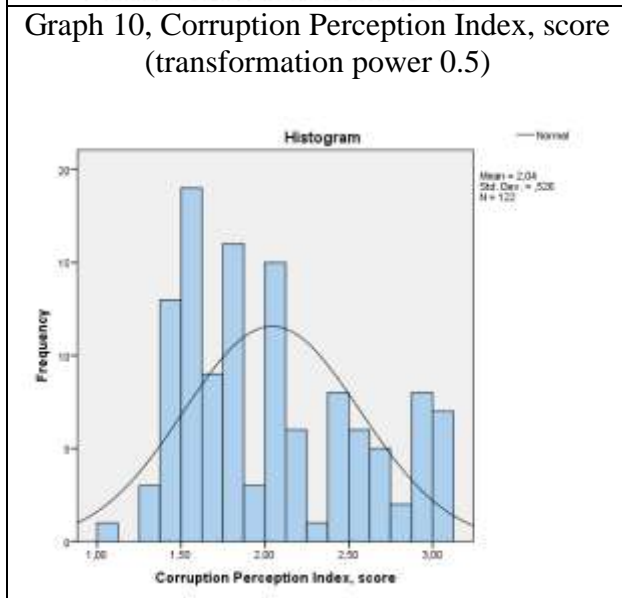
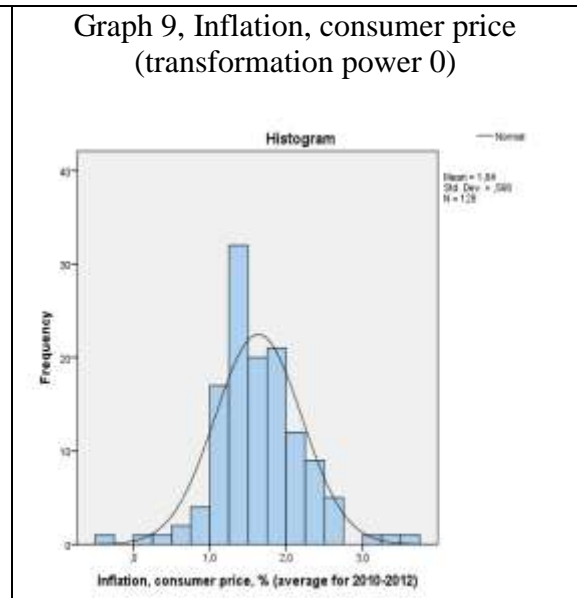
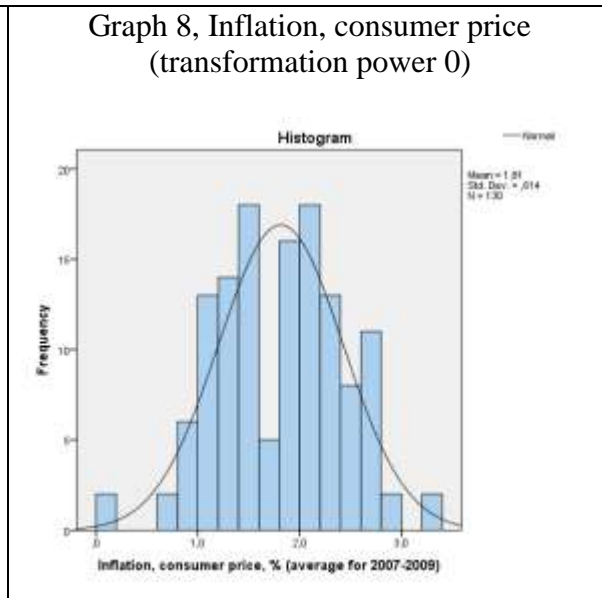
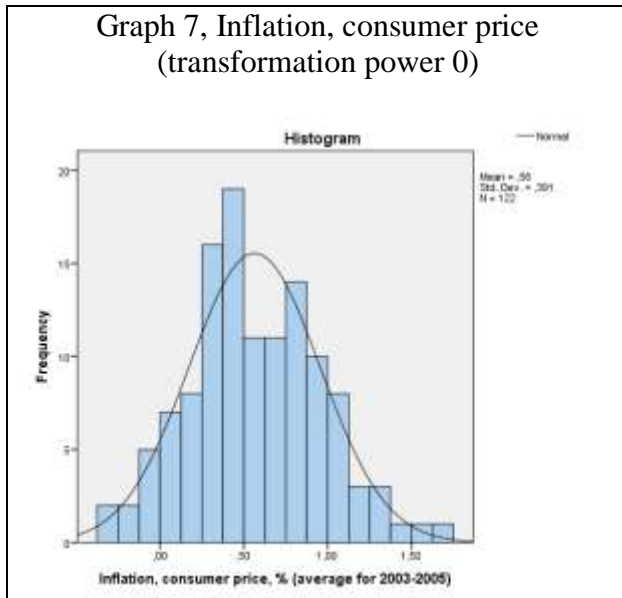
Appendix 4: The list of least developed countries and their Official development aid received in 2012

Country	Net ODA received, %*	Country	Net ODA received, %*
Afghanistan	57	Malawi	44
Angola	0	Mozambique	17
Bangladesh	5	Nepal	11
Bhutan	12	Rwanda	34
Burundi	56	Sao Tome and Principe	34
Cambodia	8	Sierra Leone	16
Djibouti	21	Solomon Islands	40
Ethiopia	23	Sudan	8
Gambia, The	30	Tanzania	22
Guinea	10	Timor-Leste	17
Haiti	33	Uganda	20
Lao PDR	11	Vanuatu	21
Lesotho	9	Zambia	9

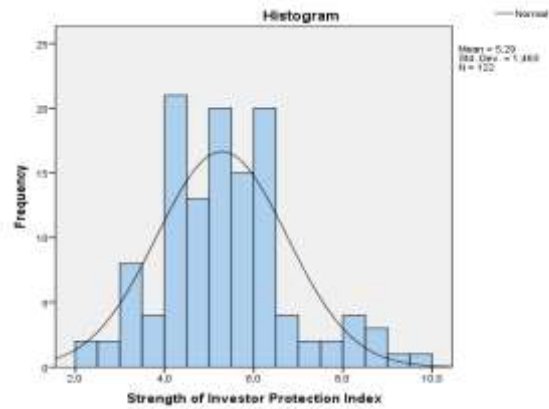
*this indicator shows net ODA as percentage of imports of goods, services and primary income in 2012

Appendix 5: The distribution of dependent and independent variables, 2005

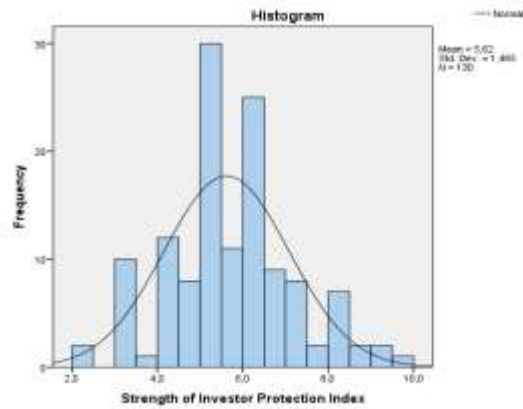
2005	2009	2012
General sample		
<p align="center">Graph 1, Current account balance as share of Gross Domestic Product</p> 	<p align="center">Graph 2, Current account balance as share of Gross Domestic Product</p> 	<p align="center">Graph 3, Current account balance as share of Gross Domestic Product</p> 
<p align="center">Graph 4, Foreign Direct Investment, net inflows, as share of Gross Domestic Product</p> 	<p align="center">Graph 5, Foreign Direct Investment, net inflows, as share of Gross Domestic Product (transformation power 0.25)</p> 	<p align="center">Graph 6, Foreign Direct Investment, net inflows, as share of Gross Domestic Product (transformation power 0.25)</p> 



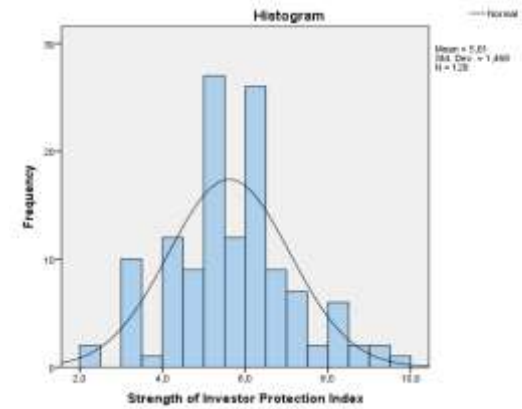
Graph 13, Strength of Investor Protection, score



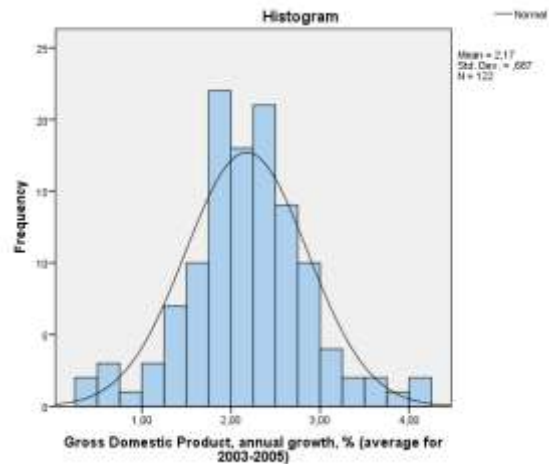
Graph 14, Strength of Investor Protection, score



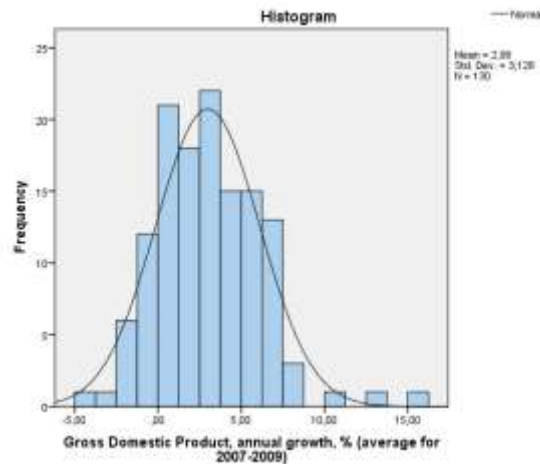
Graph 15, Strength of Investor Protection, score



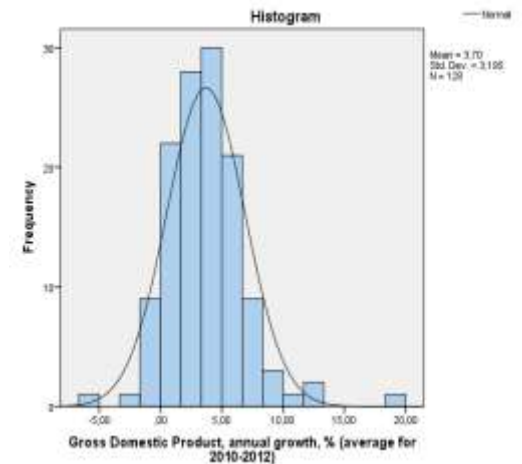
Graph 16, Annual growth of Gross Domestic Product (transformation power 0.5)



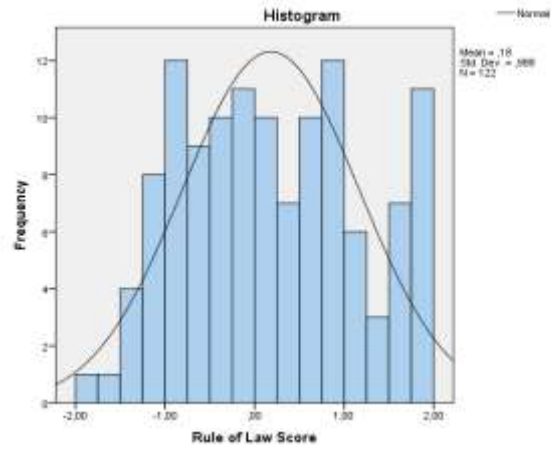
Graph 17, Annual growth of Gross Domestic Product



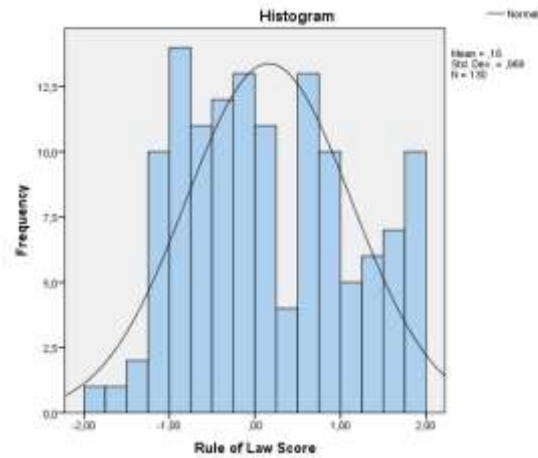
Graph 18, Annual growth of Gross Domestic Product



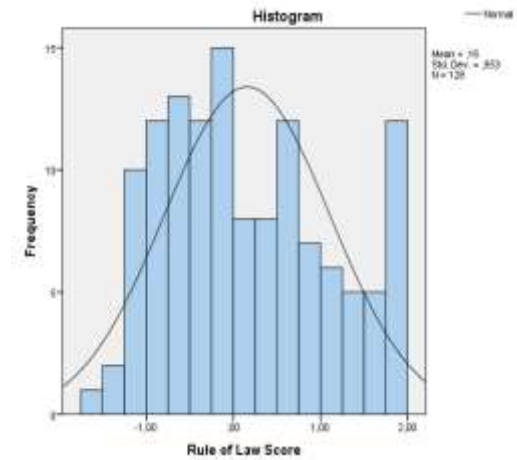
Graph 19, Rule of Law, score



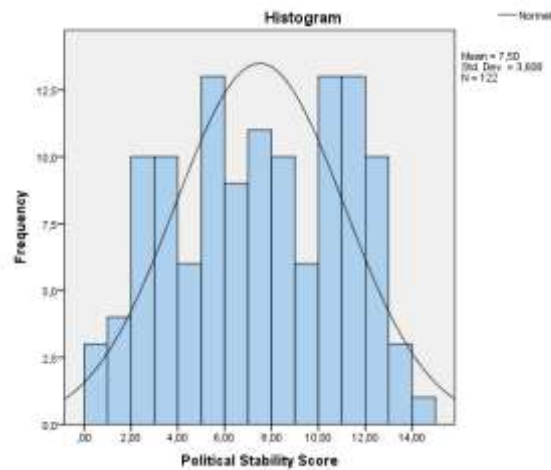
Graph 20, Rule of Law, score



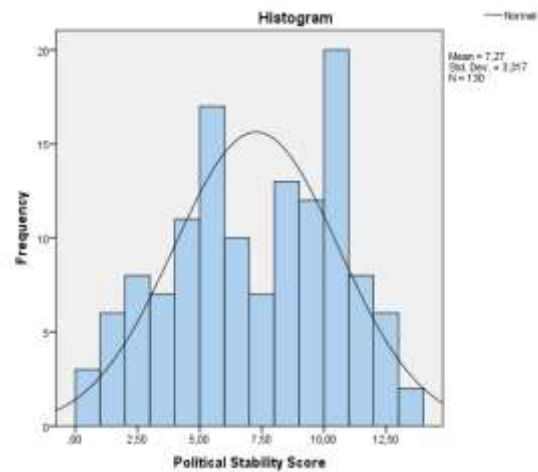
Graph 21, Rule of Law, score



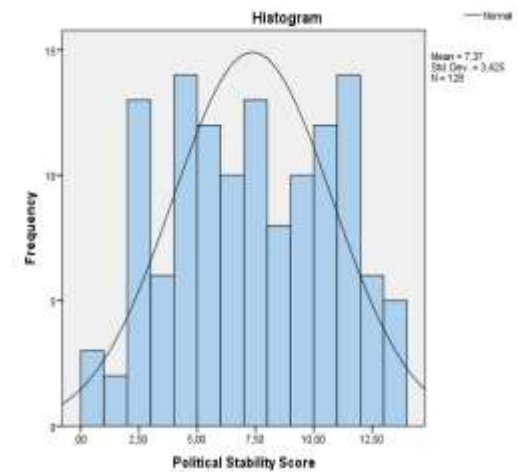
Graph 22, Political Stability, score
(transformation power 1.75)



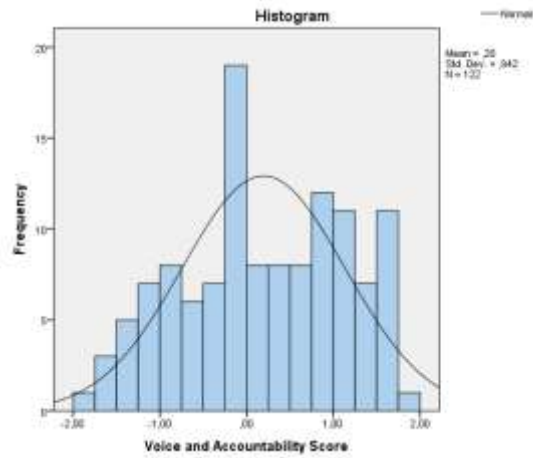
Graph 23, Political Stability, score
(transformation power 1.75)



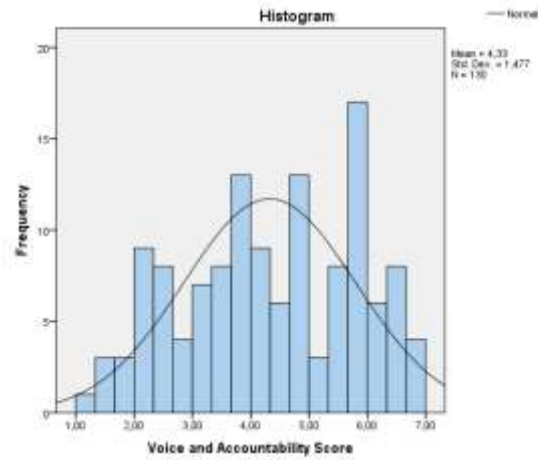
Graph 24, Political Stability, score
(transformation power 1.75)



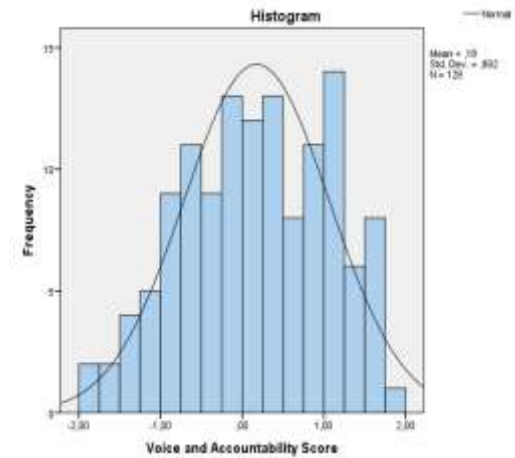
Graph 25, Voice and Accountability, score



Graph 26, Voice and Accountability, score



Graph 27, Voice and Accountability, score



Appendix 6: Correlation (Pearson) between independent and dependent variables (2005)

General sample									
Variables	1a	1b	2	3	4	5	6	7	8
CAB as share of GDP, in % (1a)	1.000								
FDI as share of GDP, in % (1b)		1.000							
Inflation, consumer price, % (2)	-0.030	-0.009	1.000						
Corruption Perception Index (3)	0.113	0.359	-0.469	1.000					
Strength of Investor Protection (4)	0.067	0.013	-0.220	0.404	1.000				
GDP, annual growth, % (5)	0.287	-0.180	0.306	-0.324	-0.077	1.000			
Rule of Law Score (6)	0.007	0.292	-0.532	0.871	0.399	-0.354	1.000		
Political Stability Score (7)	-0.078	0.110	-0.395	0.669	0.256	-0.261	0.807	1.000	
Voice and Accountability (8)	-0.211	0.224	-0.403	0.722	0.367	-0.446	0.838	0.706	1.000
Developed countries									
CAB as share of GDP, in % (1a)	1.000								
FDI as share of GDP, in % (1b)		1.000							
Inflation, consumer price, % (2)	-0.611	0.025	1.000						
Corruption Perception Index (3)	0.389	0.370	-0.472	1.000					
Strength of Investor Protection (4)	0.140	-0.229	-0.358	0.337	1.000				
GDP, annual growth, % (5)	-0.047	-0.116	0.092	-0.109	0.240	1.000			
Rule of Law Score (6)	0.396	0.440	-0.415	0.940	0.208	-0.133	1.000		
Political Stability Score (7)	0.195	0.292	-0.083	0.395	-0.167	0.007	0.527	1.000	
Voice and Accountability (8)	-0.156	0.479	0.100	0.493	-0.191	-0.512	0.557	0.356	1.000
Developing countries									
CAB as share of GDP, in % (1a)	1.000								
FDI as share of GDP, in % (1b)		1.000							
Inflation, consumer price, % (2)	0.056	0.287	1.000						
Corruption Perception Index (3)	0.001	-0.133	-0.284	1.000					
Strength of Investor Protection (4)	0.009	-0.029	-0.084	0.219	1.000				
GDP, annual growth, % (5)	0.405	-0.016	0.196	-0.043	0.001	1.000			
Rule of Law Score (6)	-0.167	-0.254	-0.399	0.633	0.282	-0.116	1.000		
Political Stability Score (7)	-0.193	-0.348	-0.267	0.551	0.212	-0.104	0.789	1.000	
Voice and Accountability (8)	-0.399	-0.330	-0.223	0.399	0.339	-0.257	0.685	0.602	1.000

Appendix 7: Correlation (Pearson) between independent and dependent variables (2009)

General sample									
Variables	1a	1b	2	3	4	5	6	7	8
CAB as share of GDP, in % (1a)	1.000								
FDI as share of GDP, in % (1b)		1.000							
Inflation, consumer price, % (2)	-0.103	-0.124	1.000						
Corruption Perception Index (3)	0.190	0.101	-0.564	1.000					
Strength of Investor Protection (4)	0.055	0.135	-0.228	0.370	1.000				
GDP, annual growth, % (5)	0.044	0.030	0.322	-0.493	-0.092	1.000			
Rule of Law Score (6)	0.135	0.143	-0.576	0.919	0.376	-0.503	1.000		
Political Stability Score (7)	-0.048	0.252	-0.345	0.678	0.162	-0.367	0.737	1.000	
Voice and Accountability (8)	-0.043	0.105	-0.509	0.727	0.244	-0.575	0.789	0.641	1.000
Developed countries									
CAB as share of GDP, in % (1a)	1.000								
FDI as share of GDP, in % (1b)		1.000							
Inflation, consumer price, % (2)	-0.258	-0.092	1.000						
Corruption Perception Index (3)	0.494	0.153	-0.108	1.000					
Strength of Investor Protection (4)	0.132	0.035	0.032	0.260	1.000				
GDP, annual growth, % (5)	0.050	0.057	0.114	-0.139	0.079	1.000			
Rule of Law Score (6)	0.349	0.168	-0.132	0.915	0.145	-0.192	1.000		
Political Stability Score (7)	0.231	0.255	-0.067	0.491	-0.136	-0.186	0.569	1.000	
Voice and Accountability (8)	-0.208	-0.093	-0.144	0.376	-0.381	-0.476	0.534	0.370	1.000
Developing countries									
CAB as share of GDP, in % (1a)	1.000								
FDI as share of GDP, in % (1b)		1.000							
Inflation, consumer price, % (2)	0.030	-0.136	1.000						
Corruption Perception Index (3)	-0.008	0.057	-0.315	1.000					
Strength of Investor Protection (4)	-0.036	0.188	-0.111	0.232	1.000				
GDP, annual growth, % (5)	0.163	0.077	0.091	-0.281	0.048	1.000			
Rule of Law Score (6)	-0.071	0.167	-0.306	0.805	0.281	-0.272	1.000		
Political Stability Score (7)	-0.221	0.285	-0.121	0.568	0.074	-0.191	0.677	1.000	
Voice and Accountability (8)	-0.219	0.156	-0.254	0.523	0.173	-0.406	0.617	0.519	1.000

Appendix 8: Correlation (Pearson) between independent and dependent variables (2012)

General sample									
Variables	1a	1b	2	3	4	5	6	7	8
CAB as share of GDP, in % (1a)	1.000								
FDI as share of GDP, in % (1b)		1.000							
Inflation, consumer price, % (2)	-0.118	-0.013	1.000						
Corruption Perception Index (3)	0.136	0.135	-0.534	1.000					
Strength of Investor Protection (4)	0.009	0.166	-0.233	0.336	1.000				
GDP, annual growth, % (5)	0.235	0.140	0.202	-0.168	0.084	1.000			
Rule of Law Score (6)	0.175	0.151	-0.583	0.917	0.381	-0.247	1.000		
Political Stability Score (7)	0.018	0.216	-0.463	0.738	0.181	-0.178	0.774	1.000	
Voice and Accountability (8)	-0.132	0.120	-0.533	0.749	0.269	-0.353	0.805	0.725	1.000
Developed countries									
CAB as share of GDP, in % (1a)	1.000								
FDI as share of GDP, in % (1b)		1.000							
Inflation, consumer price, % (2)	-0.157	0.254	1.000						
Corruption Perception Index (3)	0.336	0.148	-0.189	1.000					
Strength of Investor Protection (4)	-0.056	0.099	0.227	0.259	1.000				
GDP, annual growth, % (5)	0.350	0.218	0.151	0.412	0.345	1.000			
Rule of Law Score (6)	0.361	0.198	-0.195	0.929	0.207	0.343	1.000		
Political Stability Score (7)	0.358	0.220	-0.224	0.544	-0.060	0.202	0.609	1.000	
Voice and Accountability (8)	0.013	-0.120	-0.409	0.576	-0.275	-0.151	0.635	0.502	1.000
Developing countries									
CAB as share of GDP, in % (1a)	1.000								
FDI as share of GDP, in % (1b)		1.000							
Inflation, consumer price, % (2)	-0.027	-0.029	1.000						
Corruption Perception Index (3)	-0.056	0.108	-0.406	1.000					
Strength of Investor Protection (4)	-0.063	0.198	-0.189	0.165	1.000				
GDP, annual growth, % (5)	0.344	0.193	0.051	0.055	0.186	1.000			
Rule of Law Score (6)	-0.012	0.143	-0.476	0.823	0.266	-0.001	1.000		
Political Stability Score (7)	-0.148	0.240	-0.329	0.643	0.060	-0.022	0.707	1.000	
Voice and Accountability (8)	-0.401	0.187	-0.373	0.546	0.186	-0.164	0.620	0.615	1.000