Economic Development and Social Inequality in Brazil

The Relation Between Economic Development and Development of Social Equality in Brazil from Around 2002 until Today

Master Thesis

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ABSTRACT

The thesis examines the relation between economic development and development of social equality in Brazil from 2002 until today. Brazil has experienced great economic development, reduction of poverty and social inequality. However, the last five years economic development has slowed down and recently stagnated, making the path of development of social equality unsure.

The view behind the analysis believes the world is created by many systems that are part of a larger system. This view places the components, relations and synergies in the Brazilian society in focus. The Systems Approach has therefore been utilized as the main methodological approach. It enables the relationship to be broken down into political, institutional and economic elements, as well as connecting it to the surrounding world through globalization and competitiveness allowing for an in depth analysis. The PIE model is used as the framework for guiding selection of elements and illuminating their dynamics.

The theoretical discussion is used to gain predictions of the elements' synergies. When analyzing the development of the PIE elements, theoretical predictions can be compared with the actual observations in the Brazilian society. The analysis is based on secondary, quantitative data and has been simplified since it is not possible to make a correct model of the complex world. Most of the elements have the same dynamics towards economic development and social equality. Although, the elements need improvement in order to create further positive developments. The factors that distinguish themselves are the conditional cash transfer program *Bolsa Família,* which greatly contributes to development of social equality, and thus indirectly to economic development. Pensions, taxation and wages are seen as potentially too high and complicated to participate exclusively positively to economic development and development of social equality. Lastly, investments and savings have not increased with the economic growth of Brazil, contradicting the theoretical predictions.

The dynamics uncovered in the analysis shows that the PIE elements strongly affect the Brazilian society: The economic distribution affects the social groups. When the poorer and lower middle classes have grown in size, they were able to elect the Worker's Party to government and change the political situation. The political changes enabled institutional changes, which continuously impacts the economic elements. The dynamics are greatly affected by the political situation.

The relationship between economic development and development of social equality is of complex nature. Therefore, the relationship has been investigated and described through the elements of the Brazilian society that affect the relationship.

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CHAPTER 1 - INTRODUCTION

Brazil started the 21st century by impressing the world with its great economic growth and improving position in the global economy. In 2001, it was named as a BRIC country, as one of four major emerging economies. The term came about because of speculations that in 2050 these economies would be wealthier than most of the current major economic powers (O'Neill, 2001).

At the same time, Brazil was and still is a country drenched in poverty and high levels of inequality. Almost 30 pct. of the population lived under the absolutely poverty line in 2000. The difference between rich and poor is so dramatic it is difficult to grasp. Poverty levels and social inequality have been drastically reduced in the 21st century, but Brazil still remains one of the most unequal countries in the world with a Gini Coefficient of 0,53.

The last five years, Brazil has experienced changes: economic growth has slowed, and even stagnated in the last year. Social inequality has been greatly reduced, but still remains at high levels internationally. Brazil has a number of challenges to tackle. Even so it has impressed the world with its recent economic growth, reduction of poverty and improvement of social equality.

1.1 RESEARCH QUESTION

The relationship between the economic development and development of social equality in Brazil from around 2002 until today is the leading issue the thesis will investigate. It is broken down into elements of political, institutional and economic character. By looking at the development and dynamics of these elements in the time period, it will give a better understanding of the relationship between economic development and development of social equality. In order to get an understanding that involves the interaction with the rest of the world, Brazil's involvement in globalization and level of competitiveness will also be analyzed.

Research Question

1. What has been the relation between economic development and development of social equality in Brazil from around 2002 until today?
    a. What has been the role of different political, institutional and economic (PIE) elements?
    b. What has been Brazil's state of involvement in globalization and level of competitiveness in the time period?

1.2 CONCEPT DEFINITIONS

The following are definitions of the most central terms used in the thesis:

- Economic Development: economic development is meant here as the progress in an economy. The term includes economic growth, which can be defined as increases in the gross domestic product (GDP). Economic development is also used about the fundamental transformation of the economy. This includes sectorial structure, demographics and natural resources, and the social and institutional environment in the economy, its incentives and allocation of resources, and general improvement in living standards.
- Social Equality: a state in which all people within a specific society have the same status in a number of aspects. Economic aspects such as income, wealth, welfare and economic soundness are one part of the term. Furthermore, there are a number of social aspects that are included such as civil rights, freedom of speech, property rights, and equal access to social goods and services.
- Development of Social Equality: when developing social equality in a country, it means that all people are becoming more similar on some or all of the different aspects of social equality, both economic and social. For example, more equal distribution of income or improved access to education improves social equality levels.

When analyzing the relationship between the economic development and development of social equality, the relationship is broken down in order to capture the full scope of the terms. Therefore, when analyzing economic development, it is focused upon economic growth, and when analyzing development of social equality, it is focused upon income distribution. When the relationship is broken down, it allows for the inclusion of many different factors resulting in a more thorough analysis that ensures that the different elements of economic development and development of social equality are included.

List of abbreviations used in the thesis is located in Appendix A.

1.3 MOTIVATION

It is very common to focus on economic growth as the indicator of welfare and development. Economic growth is important, but it does not reflect the whole picture of what a society needs in order to reach a satisfactory level of welfare. Social equality is an essential part for the welfare of societies, and greatly influences economic growth. It is difficult for very unequal societies to experience economic development, and to achieve a level of welfare that is acceptable. The purpose is to try to gain some insight into Brazil's path of developing its welfare level.

1.4 DELIMITATION

I have chosen to utilize a positive delimitation style, which means I will discuss why I have made the choices I have, instead of listing the elements I have not included.

Economic development and development of social equality have been chosen because they are both some of the main aspects of development in a society and of welfare. They are chosen as the main factors in order to focus on a holistic aspect of welfare, and not only on economic growth or wealth. Social equality has also been in the wind in the recent years, due to publications such as the book Capital in the 21st Century by Thomas Picketty.

Brazil is chosen as a case country because it currently has an interesting situation: it has flourished on both economic growth and declining inequality levels, as well as reduction of poverty and increase in the Human Development Index, indicating higher quality of life. However, the past five years the economy has experienced a downturn, and last year, it stagnated. Inequality levels are still declining, but Brazil has high levels of inequality compared internationally. The future developments seem uncertain.

The methodology is chosen based on the worldview that the world can be seen as several systems that are part of a larger system. The Systems Approach becomes a natural choice, because it believes that a system can be explained through understanding its actors and how they act together. As economic development and development of social equality are broad terms, I have chosen to focus on the aspects that are understood as the most important: social groups, political situation, institutions, and short- and long-term economic elements. The main elements have quantitative indicators that have been measured in Brazil for many years.

I have chosen to break down the relationship to political, social, institutional and economic elements. Of these, I have chosen elements that illuminate the relationship from different angles, as well as give the analysis the opportunity to reach a certain depth of detail.

Due to the complexity of a society, it has not been possible to analyze all the different elements that come in play. I have therefore chosen elements that are possible to measure or describe relatively accurately, so that the relationship can be better illuminated. Due to high complexity and lack of more precise data, the cultural aspect has fallen outside of the thesis' main scope, even though it is acknowledged as an influential element in a society and its development.

1.5 READERS' GUIDE

The reading guide in table 1 emphasizes the connections from the methodology through the thesis and provides an overview of the different elements in the thesis.

Table 1 - **Thesis' Reading Guide**

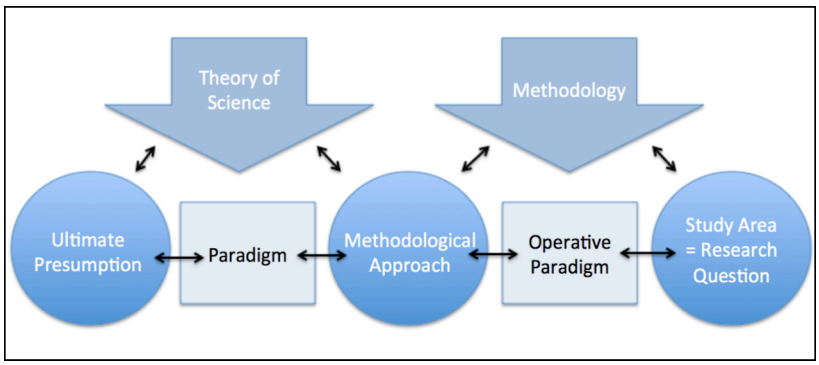
Chapter 1 - Introduction	The introduction is to frame the thesis in relation to the research question. The introduction states the research question, the thesis' relevance and main purpose. The chapter also constricts the thesis with its delimitation.
Chapter 2 - Methodology	The purpose of this chapter is to make sure that the methodology and research design is in place, which is the procedure to reach a solution. It includes explaining the logics of how the thesis is structured and tied together. Mainly, the ultimate presumptions and the method of the Systems Approach are introduced since they function as the essence in the thesis. The relation between theory and data, and the data set will also shortly be discussed.
Chapter 3 - Literature Review	The chapter's purpose is to give the reader a basic understanding of the theoretical framework, which is central for the thesis. The literature review introduces the PIE model, which is used to structure the analysis. The chapter is focused upon the dynamics between the PIE elements, and their relation to economic development and development of social equality as a prolonging of the framework established in the methodology chapter.
Chapter 4 - A Brief History of Brazil	Brazil's history is briefly presented in order to place the development in historic context.
Chapter 5 - Analysis	Chapter 5 conducts an analysis of the PIE elements chosen to illuminate the relationship between economic development and development of social equality. The analysis is based on quantitative data, and structured by the PIE model. Furthermore, the dynamics between the PIE elements and towards economic development and development of social equality are in focus.
Chapter 6 - Discussion	This chapter conducts an analytical discussion and interconnection of the presented theoretical predictions and results from the analysis. It draws on the similarities and differences from theory and practical analysis. The dynamics of the different PIE elements are discussed in relation to economic development and development of social equality. Reflections and criticism of the analysis is presented.
Chapter 7 - Conclusion	The chapter summarizes the findings previously in the thesis, and uses it to answer the research question.
Chapter 8 - Recommendations for Future Research	The last chapter focuses on what could be interesting to further research in relation to economic development and development of social equality.

Source: Author

CHAPTER 2 - METHODOLOGY

Arbnor and Bjerke's (1997) methodology and methodological procedures are the main base for the methodology of this thesis and guide for the research design. It is used because it presents a holistic, structural approach that includes the elements necessary to choose the most appropriate operative paradigm for the study area. The mechanisms and the relations are in focus. It is vital that the applied methodological approach is in harmony with the other elements of the process found in figure 1 (Arbnor & Bjerke, 1997).

Figure 1 - **Methodological Process**



Source: Arbnor & Bjerke (1997, p. 14)

Based on theory of science, thoughts about reality are formed in the ultimate presumptions. An ultimate presumption is a background hypothesis about what the environment looks like and ones own role in the environment. The paradigm is based on the ultimate presumption, and becomes a model of the world and how it functions. The paradigm includes the conception of reality and science, scientific ideas and ethics. It bridges ultimate presumptions and methodological approaches. The methodological approach controls the formulation of a problem, collecting data etc., while it is subordinated to the worldview of the ultimate presumption. (Arbnor & Bjerke, 1997).

The operative paradigm relates the methodological approach to a specific area of study. The methodology, in this sense, refers to the creation of knowledge. It includes the ultimate presumptions and provides premises for the operative paradigm in accordance with the methodological approach (Arbnor & Bjerke, 1997).

The operative paradigm consists of methods. The methods work as guiding principles for the creation of knowledge and must fit the ultimate presumption and the research question (Arbnor & Bjerke, 1997), and will be explained in the section 2.3 Methodic – Research Design. The PIE model developed by Niels Mygind will be modified to fit the thesis. The PIE model as a methodical procedure will be further described under 3.2 – The PIE Model.

I will now apply the methodological process to the thesis, starting with the ultimate presumptions.

2.1 ULTIMATE PRESUMPTIONS

The ultimate presumption at the base of the thesis is the understanding of the world as several systems that are part of a larger system. A system is a set of components that acts as a dynamic and complex whole. Examples of systems are political systems, or informal systems illustrated by culture in a society. The different components and their relations to each other, as well as their relations to the environment and to the totality are of essence. Systems depend on how the individual components are put together. This creates synergies that can be both positive and negative. It is believed that one can explain a system through understanding its actors, and how they act together. The components in a system are mutually dependent on each other, and therefore it is impossible to simply aggregate the components to get the whole. The whole can be more or less than its parts. Therefore, one must consider the holistic picture to reach a valid explanation or understanding (Arbnor & Bjerke, 1997).

The methodological approach applied is the Systems Approach. It is found the most appropriate for the thesis because it fits the ultimate presumption and the research question. The Systems Approach will now be described in close relation to the research question.

2.2 THE SYSTEMS APPROACH

The research question investigates the relation between economic growth and development of social equality in Brazil, making the components, relations and synergies in the Brazilian society of great interest. Based on the ultimate presumptions, this means that when analyzing the Brazilian environment, a change in one component can affect the whole system. The Systems Approach is of great fit since the Brazilian system will be broken down into smaller elements or systems, in order to see how the different elements influence the economic growth and social equality.

The principle for the Systems Approach is that every component in a system is a potential system of its own. Also, every system is a potential component in a larger system. The smaller system is named a subsystem, while the larger is called supersystem. For the thesis, the Brazilian society functions as a supersystem, where the subsystems lie within, such as the Brazilian political system etc. System analysis is performed to build models of the existing, real Brazilian society in order to describe, explain and understand it. System analysis is further used to study the relationships of the components to each other, and to the totality (Arbnor & Bjerke, 1997).

The system environment is what lies outside the boundary of a system, defined as the factors that are important to the system to consider, but are beyond its control (Arbnor & Bjerke, 1997). This coincides with the PIE model's surrounding world. The Brazilian system cannot be understood without understanding the

environment in which it exists, e.g. international interaction through trade and other types of economic cooperation has a strong influence on the economy (Mygind, 2007). The general characteristics of the Systems Approach are summarized in Appendix B.

It is theoretically and practically impossible to include the position of all the components and relations in the Brazilian society as a system. However, the thesis will strive to keep the description complete enough to explain and understand the real system in aspects relevant to the research question. The Systems Approach has a high explanatory value for the thesis because its focus is on the relations between the individual components in the society, just as the research questions demands.

In the following, I will discuss the operative paradigm, namely the research design.

2.3 METHODIC - RESEARCH DESIGN

The research will be performed based on a deductive exploratory approach. It will be of exploratory nature to be able to explore the relationship between economic development and the development of social equality in Brazil. The analysis will be of quantitative and of descriptive nature based on tables and graphs.

The deductive approach has been chosen in order to enable the study to create results from already established knowledge. The deductive approach makes use of logical inference from theory to the empirical research. The theory and mechanisms presented and discussed under Chapter 3 - Literature Review will be the theoretical basis and will indicate which relationships are expected to exist. By applying theories on empirical data, the quantitative data will open for analysis that will lead to answering the research question and make a comparison between the theoretical predictions and the findings from the analysis (Egholm, 2014; Thurèn, 2007). This use of theory gives structure to the research and provides further support for the arguments. Appendix C offers some clarifying definitions of the terms used in the methodology.

In the descriptive analysis, some elements will be briefer than others since it is not necessary to document deeply because the effects are clearer. More complex matters e.g. political systems and macroeconomic environment demand more explanation because of its complex nature. This does not mean it necessarily has more explanatory power.

The PIE model developed by Niels Mygind (2007) will function as the main framework for the thesis, and be the basis of the structure. Additional theoretical aspects and discussions will be supplied to broaden the framework and make it more sophisticated. This modifies the PIE model to become a refined framework that better fits the research question. The Systems Approach focuses on understanding a system through its actors and how they act together. Therefore, the connections within the PIE model and in the relation between economic development and social equality will be stressed.

The research is open to the inductive method. The inductive method makes use of the empirical research and makes inferences to a general understanding, or suggestion to theory (Egholm, 2014). As the empirical data is analyzed in relation to the theoretical framework, one cannot exclude that the empirical analysis will lead to suggestions to form general conclusions and develop new theory.

It is common to work with case studies when utilizing the Systems Approach. This is because reality is perceived as dependent on relations and on unique cases (Arbnor & Bjerke, 1997). Brazil is chosen as a case country for the investigation of the relation between economic development and development of social equality. A case study can help deepen the understanding of a phenomenon through example and contextual knowledge. Also, a case study has the advantage of allowing for both theory testing and theory building (Flyvbjerg, 1996). Furthermore, Brazil is chosen because of its significant changes in recent years in both economic development and development of social equality: economic growth was soaring, but has now stagnated. On the other hand, inequality levels have been greatly reduced.

2.4 THE DATA SET AND ITS LINK TO THEORY

The data set is chosen to best investigate the relation between economic development and development of social equality. The data set is of quantitative nature. Quantitative data is well structured to test theories and hypothesis. It is also commonly used to test relations (Saunders, Lewis, & Thornhill, 2012).

There is a strong link between the theory and the data set. Since the theory functions as a basis for the empirical research, the theory indicates which variables are to be examined, and generally suggests how to measure them. The theoretical reasoning for which variables are selected to be part of the data set can be found under the respective PIE element sections in Chapter 3 – Literature Review. The deductive exploratory approach further enables a strong relation between the theory and the data set. In the discussion, the theoretical predictions and the results from the analysis are compared enforcing the strong link between theory and data.

The next section discusses how the data set will be used, its sources and quality.

2.4.1 THE SOURCES OF DATA

The quantitative data set is of secondary nature. When the data is presented, the sources will always be referred. The sources used for obtaining the needed data are sources from Brazil, and international, global sources. The main national source is the central statistical office in Brazil, named the Brazilian Institute for Geography and Statistics (IBGE), and other departments and ministries. The international sources are global organizations, e.g. the World Bank. However, many of the global organizations are often based on national statistics. Different reports concerning Doing Business, Competitiveness etc. are used as sources when

measuring different subsystems. The reports are often based on secondary polls or interviews, representing people involved in the systems, and thus providing third party sources.

2.4.2 THE QUALITY OF DATA

The data set and method is designed to strive for objectivity.

The reliability of the data makes sure that the measurements are done in a correct manner, because data of high quality is important. That means that if the research is repeated, the method will lead to the same result each time (Egholm, 2014; Jacobsen, Lippert-Rasmussen, & Nedergaard, 2010). To ensure reliability, the measurements and the approach are carefully selected. The approach is based upon previous research and theory, as discussed under Chapter 3 - Literature Review. The use of proxy variables provides some margin of error. However, it is yet the best method to measure the factors.

The quality can further be assured by maintaining validity. Validity is the extent to which the method investigates what it is meant to investigate and nothing else (Egholm, 2014; Jacobsen, Lippert-Rasmussen, & Nedergaard, 2010). This applies directly to measurement variables that are to measure the factors. These variables are carefully chosen after theoretical consideration in order to assure validity. Furthermore, by being aware of well-performed previous research and critique of these, the method strives to be of high validity. However, inequality is a complex matter and is affected by a number of forces. There are also a number of ways to measure inequality. It is debated which method is the most appropriate (Perry, Arias, López, Maloney, & Servén, 2006; Stiglitz, 2012; Wilkinson & Pickett, 2010). This makes securing high validity more difficult.

Finally, I will criticize and discuss the limitations of the method I have chosen.

2.5 LIMITATIONS OF THE METHOD

General criticism of the System Approach is that the researcher "cannot see the tree for the forest." The researcher might get too caught up in the system, instead of the components of it. Another related criticism is that the holistic thinking might take overhand, trying to include everything. The research might become empty and void of content. Alternatively, it could contain too many conflicting conceptions and dynamics so that it becomes difficult to use it as an efficient methodological approach (Arbnor & Bjerke, 1997).

It is theoretically and practically impossible to include the position of all the components and relations in the Brazilian society as a system. Furthermore, the system is very complex, partly because a change in one component can affect the whole system, partly because the elements have dynamics going in different directions, e.g. taxes might provide both positive and negative synergies for the economic environment. The

cultural aspect will only to a limited degree be included, due to the high complexity and lack of more precise data. The thesis provides therefore a preliminary research, laying a solid basis for further research of the synergies and their causalities.

It is only recently that levels of inequality have been measured. Therefore, thorough historical data measuring inequality does not exist. This limits comparison and analysis of historical evolution of the development of social equality (Perry, Arias, López, Maloney, & Servén, 2006; Wilkinson & Pickett, 2010).

Brazil has a large informal economy. The large informal economy affects the data that can be collected from Brazil in a negative manner. It means that some aspects, such as employment, active firms etc. are not registered, generally to avoid paying taxes or bureaucracy (OECD, 2013a). Therefore, the data may give a misleading image. This is a general occurrence for data in any given country. However, there are reasons to believe the informal economy is larger than average in Brazil: the International Labor Organization (2012) estimates that the share of people in informal employment is 42.3 per cent for Brazil in 2012, which is relatively high compared internationally.

I will now present the literature review, discussing the different theoretical aspects enabling the System Approach to stress the dynamics between the components.

CHAPTER 3 - LITERATURE REVIEW

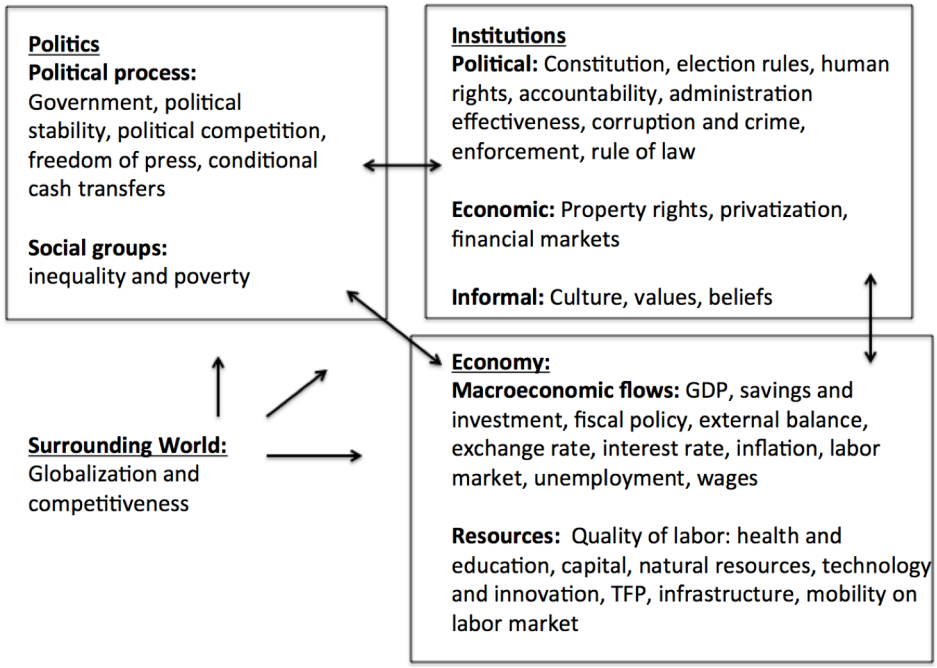
The literature review starts with an introduction of the PIE model. Thereafter, the political, institutional and economic components and their dynamics will be discussed under their respective sections. The PIE elements are tied up to economic development and development of social equality in order to try to understand the synergies created.

3.1 THE PIE MODEL

The PIE model is a framework for analysis of a society, with focus on the politics, institutions and the economy. The goal is to make a relatively simple overview of the main systems and their interactions in a society. In contrast to similar models, the PIE model gives a clear definition of the different elements and the dynamics between the elements, and makes appropriate emphasis on the role of institutions. The goal is to analyze the society in a holistic manner (Mygind, 2007).

An overview of the main elements and the dynamics modified to the thesis is shown in figure 2. The original version can be found in Appendix D. As viewed, the surrounding world is included as a necessary perspective to account for when analyzing.

Figure 2 - **Elements and dynamics in the PIE model**



Source: Author, based on Mygind (2007)

By specifying how political, institutional and economic systems function, the thesis is able to give a more precise analysis of the dynamic interactions between the three systems in accordance with the Systemic Approach. The dynamic perspectives show how the different elements influence each other. Politics include the political process and the social groups. Social equality is a common determinant of social groups. The different social groups gain power to influence politics in a society. The political process shapes the institutions. The institutions set the basis for the society: the political institutions define the rules for how the political system functions, the economic institutions set the framework for the rules of the game in the economy, and the informal institutions laid down in the given culture establish the unwritten rules for both politics and the economy. The political process enables changes of formal institutions. The economy is strongly influenced by economic institutions, and the economic policy determined in the political process. At the same time, the economy lays the base for the distribution between the different social groups. Furthermore, the economic development, accumulated resources and technological capabilities also influence the potential, quality and enforcement of institutions (Mygind, 2007).

The PIE model's elements that are focused upon in the thesis have been carefully chosen in order to best answer the research question. Some of the elements, such as the political situation or social groups, are aspects one can say is "behind the scenes". It defines how the systems in a society function, and is vital for how the different systems interact together. The elements in the PIE model are weighted and adjusted to the

specific analysis. For this thesis, this means that the PIE model is given focus in accordance with the research question - the elements given the most weight can be seen figure 2.

It is emphasized that the different elements do not necessarily fit in only one of the three categories, and that significant parts of sub-elements overlap with different systems. This is shown in Appendix D. An example of this is cash transfers, which is determined by the political process, functions as an economic institution, and can be interpreted as a resource in the economy (Mygind, 2007).

Criticism of the PIE model is that it is too simple to give an exact picture of the complex systems of a society. That is because it will never be possible to make a correct model of a real society, which means that the model simplifies aspects of the society being analyzed (Mygind, 2007). It affects the specific definitions in the model, as well as the placement of the different, overlapping subcomponents. Simplicity also limits how detailed the complex dynamics can be described. Lastly, the individually set weights on the components analyzed introduce a subjective bias into the model.

Now I move on to discussing the political elements of the model.

3.3 POLITICS

Politics includes the political process, the power game, and the social groups. The social groups are, amongst others, based on the distribution of resources in the economic system, such as income inequality. The political game between different social groups around the distribution is one of the main drivers for the dynamics of the system. The division of power indicates which social groups have control and influences the political process. The conflicts, alliances and developments in relative strengths of the different social groups go directly into the political processes, as the different groups are represented in the political parties. For example, groups that control essential resources might be able to convert their economic power position to high influence in politics. Although the groups of workers have no capital ownership, they may gain political strength through unions and political parties. The development of different social groups and the distribution of income are closely related to economic development. Factors behind the distribution are specific institutions for taxation, regulation of the labor market, development and regulation of education etc. (Mygind, 2007).

Complex dynamics of for example technological development, institutional changes or international pressure, influence the power structure in politics, potentially leading new groups to take dominant political positions. The degree of centralization has a large impact on the political process. If the society is very decentralized, it may be very difficult to gain political consensus and the ability to pass laws and policies.

3.3.1 EQUALITY IS IMPORTANT FOR EVERYONE

There is growing evidence and focus upon inequality, and the powerful and negative effects of inequality on economic growth, poverty reduction and socially sustainable development (The United Nations, 2013).

"Inequality seems to make countries socially dysfunctional across a wide range of outcomes"

–Wilkinson & Pickett, 2010, p. 174

Social equality is a goal in itself. In addition, it is argued that reducing inequality is the best way of improving the quality of the social environment and quality of life for all (Perry, Arias, López, Maloney, & Servén, 2006; Stiglitz, 2012; Wilkinson & Pickett, 2010, p. 29; Piketty, 2014). Inequality leads to a less stable and efficient economic system that suppresses economic growth, and the participation of all members of society in the labor market (Stiglitz, 2012). The negative impacts of inequality are as banal as too early death for the poorest, which in itself is a loss. However, it also means that the labor force is unnecessarily reduced. Furthermore, inequality means lack of healthy nutrition to some. This lack leads to underdevelopment of the human body, including the brain. Underdevelopment is a form of damaging resources for the economy, e.g. the quality of labor diminishes. Yet more importantly, it reduces quality of life for the people it affects.

Inequality leads to uneven access to education and health that waste human potential and results in less dynamic and creative societies. Additionally, the uneven access to healthcare can lead to higher danger of contagious diseases to spread because the knowledge of precautious measures and health standards are absent. Vulnerability to economic crisis and recovery time is higher in more unequal societies. These factors can lead to social tensions, grounds for political and civil unrest, instability and heightened human insecurity. Besides, inequality leads to a higher rate of crime (The United Nations, 2013, s. 19).

Stiglitz (2012) argues that inequality impedes societies' efficiency in functioning, e.g. the interest group that holds the most power make rules that favor them, rather than getting rules that benefits the society as a whole, coinciding with economic theory of rent seeking. Research from Alesina and Perotti (1996) prove the negative relationship by showing that very unequal societies create incentives for individuals to engage in unbeneficial activities, e.g. crime. Highly unequal societies do not offer incentives for innovation for the groups of society without power. Socially equal nations have managed to create inclusive institutions that provide incentives for the population as a whole (Acemoglu & Robinson, 2012).

Berg and Ostry (2011) revealed in their study, across 174 different countries that income inequality had a large say in the quality of economic growth. There seems to be a rather large consensus that high levels of inequality can seriously damage future economic growth (Perry, Arias, López, Maloney, & Servén, 2006;

Piketty, 2014; Stiglitz, 2012; The United Nations, 2013). In addition to impediment of economic growth, inequality can create greater market volatility and instability (Galbraith, 2012). On the other hand, Okun (1975) argued that attaining equality could reduce the economic efficiency in a society. Some inequality would stimulate capital accumulation and technological innovation, as well as creating incentives to invest in education and health.

Simon Kuznets published his famous theory in 1955, which said that inequality would follow economic development in an upside down U-curve. At first, inequality levels would be low at early stages of development, when societies were mostly agricultural. During the agricultural period, inequality levels would rise. When inequality levels were high enough, it would stipulate higher savings and investment and then industrialization would start. However, the rich would invest more and as the country further developed, equality levels would increase. Increasing equality would come about with increased education and the growing political power of lower income groups would create sufficient pressure to decrease inequality levels (Kuznets, 1955). However, increasing inequality levels are also apparent in the later stages described by Kuznets as the period where equality would stabilize (Stiglitz, 2012; Wilkinson & Pickett, 2010). The rich, developed countries that still experience high levels of inequality, e.g. the United States, exemplify this.

Piketty (2014, s. 20-22) criticizes Kutznets' idea as very speculative and argues that the curve theory has weak empirical underpinnings, yet underlines the importance of his work. He argues that the two world wars and the policies that followed induced improved equality in the developed countries. Thereafter, economic, social and political actors and their relative power have further shaped inequality. To exemplify, Piketty (2014) states that after increased organization of labor and increased power of labor unions the working class gained political power and could influence the remuneration policy.

3.3.2 INEQUALITY AFFECTS ALL

Wilkinson & Pickett (2010, p. 176) indicate that inequality affects the whole population, not just the poor. Michael Marmot, professor of Epidemiology, argues that even if you take away all the health issues of the poor, the problem of health inequalities would remain (The Marmot Review, 2010).

Banks, Marmot, Oldfield, and Smith (2006) conducted a research that compared health among middle-aged men in the USA and England and showed that average health status was better in England than in the USA across all educational levels, coinciding with the fact that the USA is a more unequal country than England (The World Bank, 2015). The fact that the relationship is documented across all educational levels indicates that inequality, as mentioned, does in fact affect the whole population, not just the poor (Banks, Marmot, Oldfield, & Smith, 2006). This is reasonable because usually there tends to be a large difference in years of

education, quality of education, general health and health system access between the poor and the more well off in a society (Wilkinson & Pickett, 2010, p. 177; Perry, Arias, López, Maloney, & Servén, 2006).

3.3.3 POVERTY

Poverty is defined internationally as well as nationally. The definitions sometimes vary. In this thesis, absolute poverty is defined as living with less than 2 USD per day, while relative poverty is the percent of the population with per capita income below 50 pct. of the median income (United Nations, 2015).

Poverty is seen as a barrier for economic growth and increasing social equality levels. Poverty damages quality of life and welfare in a society. It hampers achievement of high and sustained growth rates, and can lead a society into vicious circles. To exemplify, poor students under invest in education when faced with below average standard schools and volatile returns to their human capital. Furthermore, in the same manner, poverty decreases social equality (Perry, Arias, López, Maloney, & Servén, 2006).

Poverty seems to be more responsive to growth, the more equal the income distribution is in a society. Yet, there seems to be no empirical evidence that suggests a general tendency for growth to make income distribution more or less equal (Perry, Arias, López, Maloney, & Servén, 2006, s. 57-71) contrary to what Kuznets stated in 1955. Kraay (2005) and Perry et al. (2006, s. 62) show empirical evidence that economic growth and inequality reduction have induced changes in poverty. However, the studies are sensitive to how poverty is defined, and must thus take this into consideration. In addition, inequality excludes the people living in poverty from sharing the benefits of economic growth (The United Nations, 2013, s. 61-73).

3.3.4 MEASURES OF POLITICS

Social groups are strongly related to the level of social equality in the society. Therefore, there tends to be some overlaps when measuring. Poverty levels, income shares, distinction of social classes, and rural/urban distribution and age distribution can be used when investigating social groups in a society (Perry, Arias, López, Maloney, & Servén, 2006; Stiglitz, 2012; Wilkinson & Pickett, 2010).

The political system is very complex, and it is extremely difficult to boil it down to simple measurements. Therefore, a description of the political process and political elements is necessary, and will be supplied by measurements. Political scientists have made different indicators such as political stability, the degree of political competition and freedom of press (Mygind, 2007). These measurements give an indicator of the state of the political system and situation in the society. The degree of centralization in the society will also be described.

The Human Development Index (HDI) emphasizes that people and their capabilities should be the ultimate criteria for assessing the development of a country, not economic growth alone. HDI can also be used to question national policy choices e.g. how can different countries with the same GDP per capita level have different human development outcomes? HDI measures healthy lives, being knowledgeable and having a decent standard of living (United Nations Development Programme, 2015). Therefore, HDI can be used as a more holistic measure of welfare in a society. It is discussed under politics, even though it affects all the components in the PIE model. The United Nations Development Programme (Human Development Index, 2015) has developed an inequality-adjusted Human Development Index (IHDI) that can be used when including measures for inequality.

MEASURES OF INEQUALITY

There are many ways to measure inequality. Measures for income, wealth, consumption or other attributes are used. There seems to be a consensus that wealth is more unevenly distributed than income, and that consumption is less concentrated at the upper end than either wealth or income (Desilver, 2013). This is because the relatively richer generally gets income in terms of wages and profits, and they are able to save a larger proportion of their income, which then accumulates on its own as wealth. After a certain level of income, consumption remains at the same level, while for lower levels of income, consumption tends to increase with increasing income (Holden, 2009).

The Gini Coefficient, published in 1912 by Corrado Gini (Ceriani & Verme, 2012), measures inequality across the whole society rather than comparing the extremes, e.g. comparing the top and bottom ten per cent. The Gini Coefficient of income, hereby referred to as the Gini Coefficient or the coefficient, measures the income distribution of a country's residents. The value ranges from 0-1, where a completely equal society would have a coefficient of 0. The lower the value of the coefficient, the more equal a society (World Bank, 2015; Desilver, 2013; Litchfield, 1999).

A disadvantage of using the Gini Coefficient is that it is not additive. Adding the coefficient of sub-groups in a society would not equal the coefficient of the society as a whole (Litchfield, 1999). This is in accordance with the belief of the ultimate presumption– the whole is more than the sum of the parts. Piketty (2014, s. 242-243) criticizes the coefficient for mixing inequality with respect to labor and capital, which makes it difficult to distinguish clearly among the dimensions of inequality and the various mechanisms. However, the Gini Coefficient is the most commonly used indicator mainly because the data is the most comprehensive. This advantage makes it able to compare the levels of inequality across societies, nations and across time (Stiglitz, 2012; Wilkinson & Pickett, 2010; World Bank, 2015).

The next section will discuss political, economic and informal institutions.

3.4 INSTITUTIONS

Institutions are any form of constraints that human beings devise to shape human interaction (North, 1990). Institutions define the rules of the game between the citizens in a given society, and high institutional quality is a main driver for growth. Political, economic and informal institutions are included in this category. In a system with high quality institutions, it is easier and less costly to make transactions. It secures higher efficiency in the interaction and cooperation between human beings. Institutions play an essential role in securing efficient use of the scarce resources in the society (Mygind, 2007).

Institutions have a strong impact on the political and economic elements – the political process and social groups must operate by the rules set by the political institutions, as the economy follows the framework the economic institutions provide. For example, the institutions define the rules of how the political process is run, how property rights are protected and distributed in the economy etc.

The importance of institutions and the institutional quality in the process of development has long been emphasized (Perry, Arias, López, Maloney, & Servén, 2006, p. 88). Acemoglu and Robinson (2012) argue that the virtuous circles of inclusive institutions, e.g. voting rights, open the doors to greater inclusiveness. Calderón and Fuentes (2005) argue that institutional quality seems to play a significant role in understanding the impact on growth of both financial sector liberalization and openness to trade. When institutional quality is great, economic growth will be greater. If institutional quality is weak, growth can even become negative (Perry, Arias, López, Maloney, & Servén, 2006, p. 89).

3.4.1 POLITICAL INSTITUTIONS

Political institutions define the rules, and lay the framework for how the political system functions through the constitution. To get a better understanding of the political situation, it becomes vital to understand the framework for it, namely the political institutions. The political institutions define the rules for the political process, including the formal division of power between government, parliament, and judiciary with checks and balances to avoid abuse of power (Mygind, 2007).

Elements under political institutions are constitution and rules for elections. Guarantees for human rights such as freedom of speech, voting and association, and independence of media are also considered elements under political institutions.

3.4.2 ECONOMIC INSTITUTIONS

The economic institutions set the framework for the rules of the game in the economy. Economic institutions determine a set of incentives that influence the behavior of the agents of the society. This includes property

rights, privatization, regulation of foreign trade and financial markets (Mygind, 2007). Property rights functions as great incentive to innovation. Well-working credit markets and judiciary system, political stability, democracy and good political institutions, in addition to a public sector that functions in a correct and efficient manner are equally important factors to sustain economic growth in a society (United Nations, 2015). Privatization can generate substantial sums and improve the fiscal position of the government, as well as achieve gains in economic efficiency. It has even been used to finance fiscal deficits (Mackenzie, 1998; Davis, Ossowski, Richardson, & Barnett, 2000). Davis et al. (2000) is one of the authors that make the point that there is macroeconomic evidence indicating that privatization has had positive effects over time on economic growth and employment.

The division between political and economic institutions is not always clear. For example, efficient administration and enforcement, corruption and crime, conditional cash transfers (CCT) and taxes are elements that are part of both political and economic institutions. However, these elements are treated under economic institutions because they ensure the efficiency of the economic system.

EFFICIENT ADMINISTRATION AND ENFORCEMENT

The state administration and the judiciary are the organizations implementing the formal rules to the political and economic institutions and makes sure that they are enforced. It determines the actual implementation of the formal institutions and its efficiency. Enforcement is necessary to make sure the institutions function as they are supposed to (Mygind, 2007). Enforcement of the rules that the institutional environment creates make sure that society works swiftly, and contributes positively to total factor productivity, TFP (United Nations, 2015). TFP measures productivity growth, a positive contribution to economic growth. The variable is further discussed under 3.5 Economy.

More efficient administration and enforcement would also participate in improving governmental project such as conditional cash transfers. Such an improvement would benefit the development of social equality. In addition, it would be easier to start businesses or do entrepreneurial work, which would benefit both economic growth and development of social equality (Perry, Arias, López, Maloney, & Servén, 2006). How economic development and development of social equality affects efficiency in administration is not applicable.

CORRUPTION AND CRIME

High levels of corruption and crime lead to large inefficiencies in an economy and society. Furthermore, corruption and crime increase uncertainty and the cost of doing business (Perry, Arias, López, Maloney, & Servén, 2006). Both of which decrease TFP and institutional quality, (Mygind, 2007).

There is a strong negative correlation between perceived corruption and the level of output. Corruption causes misallocation of resources, distortions of incentives and other inefficiencies in a society. In addition, corruption can inflict additional welfare costs in terms of adverse effects on the distribution of income and disregard for environmental protection. Furthermore, corruption undermines public trust in the government and thus makes it more difficult for the government to fulfill its tasks. Finally, corruption can lead to social unrest and severe political and economic instability (OECD, 2013b).

Crime can undermine the security of property rights, and ruin the confidence in the rule of law. Crime can also lead to lower health levels in a society (Powell, Manish, & Nair, 2010).

Both corruption and crime is generally of negative influence on economic growth and development of social equality. The effects of economic growth and development of social equality on crime and corruption is not applicable.

HIGHER TRANSFERS

The government appoints a redistributive role through taxes and transfers. Lindert et al. (2005) and Perry et al. (2006) find that public transfers, defined as social assistance and social insurance, help lower income inequality levels. Transfers are dealt with under economic institutions because they function as an institutional structure.

Some societies make the use of conditional cash transfers (CCT), such as *Bolsa Família* in Brazil. These programs demand that the recipient must fulfill some requirements to receive the transfer. Examples of these requirements are investing in education and health of family members. Such programs directly contribute to reduction in inequality and poverty by the cash transfer component, while over the long run it benefits through the accumulation of human capital. In this sense CCT contribute both to economic growth and social inequality (Perry, Arias, López, Maloney, & Servén, 2006).

Transfer efforts must be well targeted. However, their values are limited, which limits the effects. Another disadvantage of such transfers is that there might be many households that do not have access to these benefits. This occurs when there is a requirement of employment in the formal labor market, while many poor households tend to work in the informal market. Furthermore, in certain cases such transfers require large fiscal effort. Yet, CCT does not necessarily damage economic growth (Perry, Arias, López, Maloney, & Servén, 2006, pp. 92-101).

Pensions are another form of transfers distributed in consideration of past services, age and merit. The pension transfer generally reduces poverty among the older and equalizes income through ages. Generally pensions are one of the few transfers to secure income of the older part of the population. However, pension

payments may damage the economy if they become too high (Perry, Arias, López, Maloney, & Servén, 2006; Stiglitz, 2012; Wilkinson & Pickett, 2010).

Higher transfers, if targeted correctly, stimulate positive development of social equality. The effects on economic development are uncertain depending on the resources demanded, and the return of the transfers. It is likely that economic growth stimulates the use of CCT if the government finds it necessary. How social equality affects CCT depends on the political situation and the relative power of the social groups (Perry, Arias, López, Maloney, & Servén, 2006).

TAXATION LEVELS

The government can take on a redistributive role through taxation. By collecting on principles such as income, capital or consumption, taxation can target different social groups (Perry, Arias, López, Maloney, & Servén, 2006). Taxation revenue is widely used to ensure social policies, such as free health care. Taxes ensure society's common destiny and collective action. Without taxation the social state could never have emerged. Progressive income tax has played a key role in the reduction of inequality in the last century. Taxes are usually distinguished among income, capital and consumption. The distinction is not always as clear and may be overlapping. Taxes on consumption have always existed and are often the most disliked, as well as the heaviest burden on the lower class. Progressive taxation can have a strong influence on the structure of inequality. In some countries taxes have become regressive at the top of the income hierarchy, reflecting the importance of consumption taxes and social contributions (Piketty, 2014). This makes the effect of taxes on social equality levels uncertain.

Taxation administration can become highly complex, hampering with efficiency for public and private actors. Furthermore, too high taxation levels can become a burden for the society. It is therefore important that there is high efficiency in collection and spending of taxes. Taxation has a potential negative impact on economic efficiency, since it requires much administration, enforcement and effort from both the private and public (Piketty, 2014; Perry, Arias, López, Maloney, & Servén, 2006). Because of these uncertainties, it is difficult to conclude from a theoretical perspective whether taxes exclusively contribute to economic development and development of social equality. It seems more likely although uncertain, that the economic development is negatively affected, because of the likelihood of creating inefficiencies. The development of social equality is most likely positively affected due to the redistributive role. The political situation determines the effects of economic development and development of social equality, and therefore they are not applicable in the thesis.

3.4.3 INFORMAL INSTITUTIONS

The informal institutions specific to a given culture set the unwritten rules of the game both for politics and economy (Mygind, 2007). The informal institutions include cultural aspects, such as degree of social trust, religious and ethnic groups, which overlaps with politics and social groups. It is vital to acknowledge that the informal institutions play a large role in society. Due to high complexity and lack of more precise data, informal institutions will only to a limited degree be included.

3.4.4 MEASURES OF INSTITUTIONS

It is not straightforward to measure the quality of institutions. Behind institutional sets, there lie implicit values, which may change over time and vary with different cultures. There is no objective definition of the best set of institutions. This is because a given set of institutions leads to a certain outcome in the economic system that has a specific distribution between social groups. Therefore, different social groups may prefer different sets of institutions (Mygind, 2007).

Political institutions may be measured in relation to how they guarantee human rights and economic institutions in the ease of doing business (Mygind, 2007). For example the Worldwide Governance Index (2014) has indicators of voice and accountability and government effectiveness. Also indicators of government bureaucracy, freedom of press etc. from the Global Competitiveness Report (World Economic Forum, 2015) can be used (Mygind, 2015). Government spending on transfers measures conditional cash transfers and pensions (Blanchard, 2009).

Property rights, ownership structure and privatization levels from Doing Business and Enterprise Survey can measure economic institutions (World Bank Group, 2015). Transparency International's corruption index measures corruption levels and the homicide rate can be used as a proxy to measure crime (Perry, Arias, López, Maloney, & Servén, 2006; Stiglitz, 2012; Wilkinson & Pickett, 2010).

When evaluating quality of institutions, one must include the rules and to which extent they are enforced. Effective enforcement is a condition for high institutional quality (Mygind, 2007). Efficient enforcement can be measured through indicators from the Worldwide Governance Index (2014) on regulatory quality and rule of law. While the Global Competitiveness Report (World Economic Forum, 2015) offers indicators of judicial independence and favoritism in decisions of government officials.

Informal institutions can be measured by looking at religion, ethnicity groups, cultural aspects etc., which in the thesis will only be briefly discussed.

The following sections will discuss the various economic elements from the PIE model.

3.5 ECONOMY

The economic system includes both the flow of production and income, and the stocks of accumulated resources. Economic policy is included, even though it also includes elements of political and economic institutions.

The gross domestic product, GDP, largely measures the size of the country's economy. GDP is a measure of aggregate output in a country. Economic growth is generally described as growth in GDP or growth of GDP per capita. GDP can be used as an indicator of the overall health of the economy (Blanchard, 2009). Kuznets (1967) underlined that economic development is not just about growth of aggregate output (GDP), but also about the fundamental transformation of the economy. This includes sectorial structure, demographics and natural resources, and the social and institutional environment in the economy, its incentives and allocation of resources.

I will start by connecting the short and long run economic growth.

3.5.1 CONNECTION BETWEEN SHORT AND LONG RUN ECONOMIC GROWTH

The macroeconomic factors in the short-term greatly affect the state of the economy, which in return affects the long-term factors, e.g. quality of education. For example, a recession in the short-term with high unemployment would mean fall in investments and low growth in the long run. This shows that the ties between the factors in the short and long run of economic development are connected and strong.

To exemplify, I will give one example of how the macroeconomic factors from the short-term stimulate a negative spin on the factors in the long-term growth model: an economy working at full capacity creates higher demand and needs more investments. Working at full capacity means that the economy produces or has as large of an output as is possible with the installed equipment (Blanchard, 2009). Reaching close to full capacity boosts the economy as a whole, and investment rises. On the other hand, low exploitation of capacity levels in an economy usually occurs in worse times, when the macroeconomic factors are unfavorable for the economic development. Working at low capacity, the economy leaves capital, stock and workers unused. These effects decrease demand. If capacity is not fully used, there is no further need for investments to expand capacity. The investment levels fall. It can become difficult to operate at full capacity again (Holden, 2009).

3.5.2 SHORT-TERM ECONOMIC ELEMENTS

The macroeconomic environment is the economic environment that surrounds a country. It influences the smaller national economies in a number of ways. Therefore the nations need to understand how to work with

it (Blanchard, 2009). The national economies have economic policies tied up to the macroeconomic environment, so that shocks or changes will be absorbed in the smaller economies with more ease, e.g. high trade and current account deficits may be a warning for necessary strengthening of economic policy (Mygind, 2007).

The short-term economic elements that are the most relevant to the research thesis are briefly discussed.

SAVINGS AND INVESTMENTS

Savings and investments stimulate higher stock of capital, and boost development of a society by securing functionality and contributing to infrastructure, education, technology and research. A lower investment rate generally leads to lower economic growth. When a country invests highly in developing human capital and in fixed capital of enterprises and infrastructure, it increases the potential for future growth (Mygind, 2007). Savings and investments contribute positively to social equality because it improves the institutions to combat inequality, as well as indirectly by stimulating economic growth.

The factor contributes positively to both economic growth and social equality. Economic growth is likely to affect positively. How social equality affects savings and investments depends too much on the politics in the specific country to state a specific impact.

LABOR MARKET

Larger participation in the labor market contributes positively to both economic growth and social equality. Firstly, it means that the labor factor in the modern growth model increases, which in turn increases economic growth. Secondly, more people in the labor force mean more wages and disposable income, which is positive for the social equality levels in a society. Furthermore, it is likely that demand will increase, which again throws the economy into a positive spin (Holden, 2009). The labor market is dependent on the demographics and age distribution, because children, young people under education and retirees are outside the labor force (Mygind, 2007). A high rate of unemployment means that there are many people in the economy that cannot provide for themselves and need economic help such as social welfare etc. Still unemployment is often associated with financial and psychological suffering (Blanchard, 2009). High unemployment indicates that the current resources are not used efficiently and changes in economic policy and/or economic institutions are needed (Mygind, 2007).

Larger participation in the labor market affects both economic development and development of social equality positively. Economic development generally has a positive effect on employment rate (Holden, 2009). It is likely that social equality has a positive effect on employment, but it is uncertain (Perry, Arias, López, Maloney, & Servén, 2006).

WAGES

Higher wages is positive for social equality levels in a society, since the disposable income increases for all. Additionally, higher average wages influence minimum wages, and in turn pension and social welfare transfers. An increase in the minimum wage means more income to the poorest, as well as a higher pension to the retirees, which is generally an exposed group (Blanchard, 2009; Piketty, 2014).

Better organization of workers has created stronger labor unions. Newer remuneration policies have increased the minimum wage and wages generally. At a certain point, wage levels can become too high. If the wages increase too dramatically, so will a society's remuneration level, competitiveness might fall and macroeconomic factors, e.g. inflation could be affected (Holden, 2009).

The wage levels should follow productivity levels. In cases where the wages have historically developed slower than productivity levels, it is necessary for wage increases. However, in other countries, such as Brazil, it can be argued that wage levels are too high. If wages increase faster than productivity, firms will see rising labor cost per unit, meaning that the share of wage in relation to profit is increasing, putting a downward pressure on investments (Blanchard, 2009; Mygind, 2015).

Higher wages might positively affect development of social equality. However, the effects on economic development are unclear and likely to be negative. The opposite causality is not relevant.

Now I will move on to discuss the factors fundamental for long term growth.

3.5.3 LONG TERM ECONOMIC ELEMENTS

The growth model in focus is developed from Solow's Neoclassical Growth Model from the late 1950s. Roberto Solow developed the long-term growth model where steady increase of output or GDP over time can come from increases in labor, capital and productivity described by the aggregate production function. The growth model is based on diminishing returns, meaning that if capital is added to a fixed population, the return to capital falls as the capital to labor ratio rises. To illustrate, if the worker gets a saw, productivity will increase. However, productivity will increase less if the worker gets another saw (Solow, 2000).

Solow's model remains an inherent building block in economic growth theory. With modernization of the theory, the long-term growth model now includes and will be structured by: stock of capital, technology, quantity of labor, quality of labor, resources, here including natural resources and infrastructure, as well as total factor productivity (Blanchard, 2009, s. 245-269; Holden, 2009).

CAPITAL, TECHNOLOGY AND INNOVATION

Solow (2000, s. 16) explains that capital is at a given time equipped in any economy. Investment affects the stock of capital. If there are positive investments in year 0, then in year 1 there would be more capital available – more capital e.g. equipment, until a certain point, increases the output that the economy is able to generate. The benefit of a larger stock of capital diminishes with the size of the stock for a given level of technology. An increase in stock of capital provides positive consequences for the economy per se, while its effect on social equality is uncertain.

Technology has a strong impact on efficiency and productivity levels. Improvements have historically increased efficiency immensely. Technology improvements are related to research, development and education, which again are affected by the institutions and the economic incentives they create. Innovation contributes to technological development and increased productivity (Holden, 2009). Technological progress reduces the amount of workers needed to produce a given amount of output, making the work process more effective (Blanchard, 2009). Yet, there could be negative external effects of newly developed technology. This occurs e.g. when new technology is developed that makes older technology obsolete (Holden, 2009). For these reasons, technological developments can positively affect economic growth, while the effect on social equality is uncertain and might be negative.

On the other hand, high inequality levels can prevent potential innovators from undertaking the necessary investments to contribute with economically meaningful innovations (Perry, Arias, López, Maloney, & Servén, 2006, p. 122).

Improvement of technology and innovation is likely to positively affect economic development. The effect on social equality is unsure, depending on how the technology and innovation develop. The opposite relation depends too much on politics and policies in the particular case to be relevant.

QUANTITY AND QUALITY OF LABOR

Quantity of labor includes the population in a given country, the dependency rate – meaning how large a portion of the population are able to be active in the work force, and people employed in the economy.

Quality of labor can be understood as human capital, which includes education, knowledge, social and logical skills etc. Social inequality levels are influenced by the labor market through different wage levels related to the workers productive endowments, which is influenced by education and health etc., and through the overall productivity levels (Perry, Arias, López, Maloney, & Servén, 2006, p. 146).

IMPROVEMENT OF EDUCATION

The level of education matters a great deal to the quality of the work force, productivity and consequently economic growth. In addition, education is vital for the general health and welfare of a society (Piketty, 2014). Educational achievement is a critical dimension of human well-being. This is because education is both a right on its own, while is an input to a person's empowerment, capabilities and full participation in society (The United Nations, 2013). Quality of labor is directly linked to education, and is as discussed a necessary factor for long-run economic growth. Both a well-educated work force and specialization of knowledge are positive for productivity levels and competitiveness, and stimulates economic growth (Blanchard, 2009). Increased education increases the efficiency of the labor and can therefore increase the production per employee, increasing TFP (Holden, 2009).

It has become more evident that inequality affects the educational levels in a society (Perry, Arias, López, Maloney, & Servén, 2006; Stiglitz, 2012; The United Nations, 2013; Wilkinson & Pickett, 2010). The research conducted by Hoff & Pandey (2004) demonstrates the effects inequality has on learning and cognitive abilities in children. The research made 642 Indian 12 year-old boys, half from a high-caste and half from a low-caste, perform tasks of solving mazes. When the children did not know which caste anyone was from, the children performed more or less equally. However, after it was know who belonged to which caste, the performance of the low-caste boys dropped significantly. The research implies that how we feel, and how others judge us impact behavior and performance.

Golden and Katz (2007) compared wage gaps between U.S. workers who graduated from college and workers who had a high school diploma in the period from 1890-2005. They concluded that increased wage inequality in the U.S. is partly because of a failure to invest sufficiently in higher education.

Education positively affects labor quality, literacy, self-esteem, family background, productivity and competitiveness. It is apparent that improved education positively influences both economic growth and social equality, while economic growth and social equality generally also positively influences education.

GENERAL IMPROVEMENT OF HEALTH

Poor health and social problems tend to occur more frequently in societies that are more unequal (Perry, Arias, López, Maloney, & Servén, 2006; Stiglitz, 2012; Wilkinson & Pickett, 2010; The Marmot Review, 2010; The United Nations, 2013). Poor health has a number of externalities that affect the society. Diseases, high mortality rate, early death, and low brain development are only a few of these externalities that negatively affect economic growth. In general, both quantity and the quality of the labor force, together with its productivity are damaged by poor health. When health levels in a society increase, both economic growth and social equality benefit.

British Medical Journal published a study in 1996 confirming the link between income inequality and health by researching inequality and death rates (Wilkinson & Pickett, 2010, p. 81). They discovered that the more equal the wealth is distributed and the more equal society, it follows that the better the health of that society is (Editor's Choice, 1996). It is further researched that inequality is associated with lower life expectancy, higher rates of infant mortality, less brain development, shorter height, poor self-reported health, low birth weight, depression, poorer physical and mental health, gender inequality such as index of women's status, homicides per million and prisoners per 100,000 people etc. (Wilkinson & Pickett, 2010; The United Nations, 2013). Wilkinson & Pickett (2010) concluded on their studies that a country with higher income inequality experiences an increase in health and social problems, which greatly affect the economic development and welfare of a country.

The relationship between inequality and health is complex and affected by other factors such as politics, geological scale, widespread health impacts etc. and still needs further evidence to become complete. Yet, the evidence so far indicates that improvement of health levels has positive dynamics with economic development and development of social equality and vice versa.

RESOURCES

Natural resources have its common place here, while infrastructure has been structured under resources because it is defined as economic resources from the PIE model.

Examples of natural resources are oil, iron, water resources etc. However, they can stimulate growth, such as in the early phases of the growth process, or for countries with very high natural resource endowments (Holden, 2009). An increase in natural resources provides positive consequences for the economy, while its effect on social equality is uncertain.

INFRASTRUCTURE

Investments in infrastructure lay the foundation for economic development. Improvement of infrastructure increases efficiency and productivity in an economy. Transportation time and cost of goods and labor usually decrease with infrastructural improvements. This leads to savings in production and generally improves productivity levels (The United Nations, 2013, p. 34). Investment in infrastructure will create jobs for both high and low skilled workers in the short run. In addition, better infrastructure improves practicality and might make life easier in general, e.g. increased access to water or electricity. Improved infrastructure generally increases TFP (Mygind, 2007).

However, improvement of infrastructure generally demands large investments sums. These resources come from the national budget, and naturally mean that there will be smaller means for other posts. This may

affect other efforts to decrease inequality levels. Furthermore, the type of infrastructural improvements matters for the effect on social equality. Some types only gain the rich, while other types are beneficial for the poor, or the whole society. E.g. rural infrastructure could mainly benefit the poor by enhancing land equity and productivity (The United Nations, 2013, p. 34).

Improvement of infrastructure contributes positively to economic development, and to development of social equality if targeted so.

TOTAL FACTOR PRODUCTIVITY

Total factor productivity includes all the elements of growth that are not explained by extra capital, labor and raw materials. That means that TFP increases when resources are better allocated and there are better incentives to use the resources more efficiently. TFP increases are determined by the quality of institutions, tying the economy and the institutions of the PIE model together.

Productivity growth reflects a combination of gains from more investment and a better use of capital, from improvement in the average efficiency of workers, and from changes in the mix of employees and more useful allocation of capital (Ukon, Bezerra, Cheng, Aguiar, Xavier, & Le Corre, 2013, p. 10). The institutional environment determines the economic incentives, and the allocation of resources. It functions as a connecting variable, and is therefore affected by many of the other elements, e.g. efficient administration increases TFP.

Stiglitz (2012, pp. 92-106) argues that more equal societies will have higher productivity levels for three reasons. Firstly, everyone in the society would be interested in beneficial public investments such as infrastructure and public schools, while in highly unequal societies the wealthy would be more reluctant to spend on common goods seeing as they would not use them as much (prefer private hospitals and private education etc.). Second, in unequal societies there exists more rent seeking behavior, which distorts resource allocation and makes the economy weaker. Lastly, Stiglitz argues that the labor force needs to be motivated, and that this is difficult if they feel that they are being treated unfairly. The feeling of unfair treatment is common in a society that deals with large social inequalities.

Positive development of productivity levels seems to boost social equality, while also remaining one of the main factors increasing long-term economic growth.

I will now concluding the section with a description of how to measure the economic elements.

3.5.4 MEASURES OF ECONOMY

Economic development is generally measured by GDP growth and GDP per capita growth. There exist already general, internationally accepted variables to measure the short-term elements (Blanchard, 2009; Holden, 2009). The unemployment rate, and the dependency rate, which is the proportion of the population outside the working age group, together lead to a measure of the total active labor force (Holden, 2009).

The long-term economic factors can be measured as follows:

Quality of labor is divided into two main elements: education and health. Literacy rate and PISA test scores measures quality of education (Piketty, 2014; Perry, Arias, López, Maloney, & Servén, 2006; Stiglitz, 2012). Public spending on education as percentage of GDP measures investment in education and might give indications of quality (The Economist, 2013b). Average life expectancy and child mortality can be a proxy measurement for health levels (Stiglitz, 2012; Wilkinson & Pickett, 2010).

To measure capital and natural resources one can use population, size and growth for human capital and energy mix, description of natural resources, depletion and success sectors for illuminating the natural resources (Mygind, 2007).

Technology readiness and innovation by The Global Competitiveness Report (World Economic Forum, 2015) can be used to measure technology and innovation levels and initiatives. Furthermore, research and development (R&D) in percentage of GDP, and patents in percentage of GDP can be used as indicators for the technological level. Productivity levels measure TFP. Productivity can be calculated by dividing gross value added (in constant U.S. dollars) by total employment (Ukon, Bezerra, Cheng, Aguiar, Xavier, & Le Corre, 2013, p. 10).

Price of import and export of a container, overall infrastructure quality by World Economic Forum (2015), mobile and Internet penetration rate and other indicators for quality of roads, harbors, railways etc. can be used as measurements for infrastructure (Mygind, 2007).

To finalize the theoretical discussion, I will discuss the surrounding world's impact on a society.

3.6 THE SURROUNDING WORLD

International relations and political developments in other countries affect the situation and political agenda in a given society. International organizations, security issues etc. have a direct effect on national politics. Furthermore, changes in political and economic institutions are often inspired from abroad, e.g. often directly from international alliances and agreements. The national economy cannot separate itself from international

economic development (Mygind, 2007). In the theoretical discussion of the surrounding world, the focus will be on globalization and competitiveness.

3.6.1 GLOBALIZATION

Globalization is the term used for the closer integration of the economies of the world, which has come about with the modernization and development of technology. The globalization process has reduced obstacles of flow of capital, goods, information and people across borders and trade barriers. Globalization has led to increased sharing and development of both knowledge and technology. Increased competition and specialization are also outcomes of globalization. Liberalization is a factor that has been positive for economic development. Trade liberalization is the reduction or even removal of restrictions and barriers on the free exchange of goods between nations, and is seen as an element of globalization. The mechanisms of liberalization have increased competitiveness. It may also decrease domestic demand of goods, and it can be argued that it in turn has driven wages down (Stiglitz, 2012, p. 61). This occurs when the competitiveness of the country is low, and it diminishes the export levels. Mygind (2007) states that long periods of protection followed by liberalization might reveal much unprofitable equipment in need of restructuring. It can also involve costly short-run macroeconomic adjustments. At the same time such liberalization might open up for many new investment opportunities (Mygind, 2007). Choudhri et al. (2006) are one of many stating that trade liberalization leads to long run gains.

The effects of globalization have been discussed to be both positive and negative. Bhagwati (2007) and Wolf (2004) argue that globalization provides benefits of economic, political and social character: free markets denote voluntary exchange and allocation according to supply and demand. Success and failure is based on effort and talents. Piketty (2014, p. 21) firmly argues that the diffusion of knowledge and skill is the key to overall productivity growth as well as the reduction of inequality both within and between countries.

Negative consequences of globalization is prompted to be rising inequalities and higher poverty rates reasoned by the fact that globalization will stand in the way of economic and social development because it removes the independence of governments to act in the people's interest (de Soysa & Vadlamannati, 2011). However, it is also argued that globalization plays a part in decreasing global inequality. World poverty is declining and global inequality is no longer rising. One way of explaining the phenomenon is that with globalization, it has been possible to fulfill demand from production sites that produces at the lowest cost worldwide. This has increased production levels in relatively cheaper developing countries, additionally leading to wage decreases in same sectors in richer countries. The discussion shows that globalization has affected the wage share development in the world.

The effects of globalization on economic growth and social equality are very complex. Trade openness is generally viewed as a key element of economic growth strategies. Wages for workers in the sectors of comparative advantage increase with increasing demand. However, import of relatively cheaper goods could distort domestic production and lead to unemployment. Capital goods may become cheaper. Diffusion of health technology might improve mortality rate and health in general. Milanovic et al. (2005) argue that higher levels of openness appear to benefit the poor and the middle class after a certain level of income is reached. Theory and empirical evidence is divided, and points in both directions (Perry, Arias, López, Maloney, & Servén, 2006, pp. 80-81). Piketty (2014) argues that diffusion of knowledge and skills have become more common after globalization, and are key for both economic development and development of social equality.

The institution pillar from the Global Competitiveness Report (World Economic Forum, 2015) can be used to measure institutional change (Mygind, 2007). The McKinsey Global Institute's Connectedness Index can also be used to measure institutional change, specifically trade flow to indicate level of openness of the economy. Additionally, trading across borders by the Doing Business Report can also be used (Mygind, 2015; World Bank Group, 2015).

3.6.2 COMPETITIVENESS

The World Economic Forum (2015) defines competitiveness as "the set of institutions, policies, and factors that determine the level of productivity of a country. The level of productivity, in turn, sets the level of prosperity that can be earned by an economy."

Competitiveness investigates how one actor is able to compete with another. It looks into the advantages and disadvantages the actor has relative to others. The Global Competitiveness Report made by the World Economic Forum looks into the 12 pillars to determine competitiveness of a country, which are in the areas of institutional quality, infrastructure, macroeconomic environment, health and education, goods -, labor -, and financial markets, technology and innovation, market size, and business sophistication. In terms specific to production, competitiveness looks into the cost of producing one unit and what comes out of one production hour.

High level of competitiveness facilitates attracting capital, talent and skilled workers, as well as businesses. In addition, high level of competitiveness can improve the balance of payment and the macroeconomic environment and development of a country (Holden, 2009). Improved competitiveness seems to be positive for economic development and development of social equality. It is uncertain how economic development affects competitiveness, while development of social equality's effect on competitiveness is not applicable.

Lead by the Systems Approach, I will now discuss the dynamics between the different elements presented.

3.7 DYNAMICS

There are strong dynamics between the PIE systems and within them:

The political elements consist of social groups and the political situation, which highly influences each other. The political game between social groups around distribution is one of the stronger forces that can create change in a society. Culture also plays a role in relation to different social groups, such as ethnic or religious groupings. Sometimes groups that control essential resources are, within given institutional constrains, able to convert their economic power position to high influence in politics. This links political power with economic resources. Further, the rules for how the political system functions are set through the political institutions. Also, certain informal institutions, such as values, highly influence the political process. The economy establishes the resources the politics have to work with (Mygind, 2007).

The political, economic and informal institutions are interconnected. For example, the informal institutions influence the political and economic institutions in accordance with what is expected to belong from a cultural perspective. The formal institutions are changed through politics and the political process. At the same time, institutional changes can imply changes in the actual political power structure. A given set of institutions leads to outcomes in the economic system, which has specific distribution within social groups. High institutional quality is a main driver for economic growth. Further dynamics exists between institutions and economy. Technological developments have greatly affected the number of workers in different industries, shifting sectorial importance to the service industry. Regulations of the labor market and development of education are factors that strongly influence social groups (Mygind, 2007).

The economy consists of both resources and flows. Positive economic flows generally lead to more resources, while the economic resources can be used to ensure good flows. Economic performance is closely connected to the quality of institutions, since they lower uncertainty and transaction costs and increases incentives for innovation, high effort and efficiency. Furthermore, politics influence the distribution of different economic variables. The economic policy determined in the political process and the economic institutions strongly influence the economy. The PIE model elements are tightly interconnected (Mygind, 2007).

3.7.1 INSTITUTIONAL CHANGE

Institutional change is dependent on the power of the different social groups, and the political process. The process of institutional change often starts in the political system by powerful political groups believing that their situation can be improved (Mygind, 2007). Institutional change can get stuck in inefficient institutional settings because of the distribution of power (North, 1990). At the same time, the institutions set the framework for how the political change process is run. Some groups have an interest in keeping the status

quo. If they are strong enough to defend the current institutions, they could present a barrier to change. On the other hand, social groups interested in change may be strong enough to initiate such changes if they can successfully consolidate their power and push for further changes (Mygind, 2007). An example of strong social groups is when enough individuals from the labor force becomes unionized and presses for political change. Furthermore, change is related to economic and technological development (Mygind, 2007).

By explaining the dynamics and synergies it becomes apparent that the elements are highly interconnected and strongly influences each other. Coinciding with the Systems Approach, a change in one component within the PIE model can affect the whole system of a society.

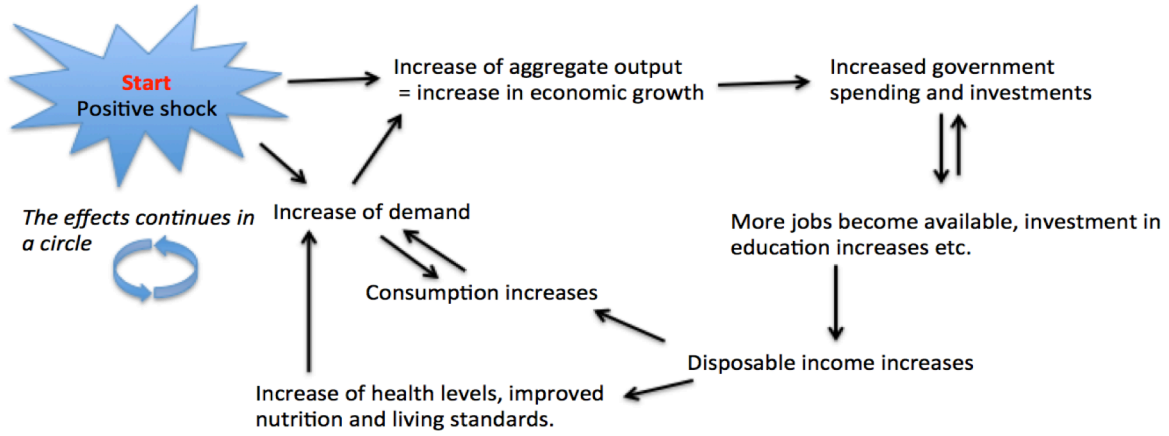
3.7.2 VIRTUOUS AND VICIOUS CIRCLES

A virtuous circle is a cycle of events where the components affect each other positively, while in a vicious circle the components affect each other negatively. It is easy to get caught in such a circle, because once the dynamics start they keep reinforcing themselves.

There are a number of different effects in economic development. Virtuous and vicious circles can be created in almost an infinite number of ways in the economy. To expound the mechanisms, one example of each cycle will be explained. However, other circles can occur, and the mechanisms explained are just examples – other effects will also happen, and some effects are stronger than others and it is debatable which effects are the most dominant. The relative strength depends on the components and society involved.

Figure 3 shows one example of a virtuous circle in the economic system. Economic growth leads to increased economic activity that leads to demand for further labor. This in turn leads to higher consumption, which stimulates economic growth. The stimulation leads to more fiscal means for the government, which can be used for investment, savings etc. Economic growth stimulates educational investment and participation, for instance by creating demand for engineers. By governmental investment, the growth also stimulates improved health in the society. Job creation and participation in the labor market induces further positive effects by giving families more income, which is used on necessities, such as proper nutrition, doctors' appointments, better living standards etc. This will again increase the general health of the society, and making people better fit to enter the labor force. Healthy citizens, larger workforce, better educated people increase economic growth again, and the circle continues.

Figure 3- **Example of Virtuous Circle**



Source: Author

To exemplify a vicious circle, the PIE model is used as framework to show how a negative circle can occur in the PIE elements. If there is a social group functioning as a strong elite in a country, they might gain political power and use their position to extract rents and restrict entry and competition. This creates a powerful process of negative feedback that enforces their position and wealth. These effects can cause a negative circle of stagnation where the privileged groups monopolize power, conserve outdated institutions, and suppress other social groups who challenge their power. This process can lead to low efficiency in the economic system. However, it can be reproduced because of access to a constant flow of resources e.g. natural resources like oil (Acemoglu & Robinson, 2012; Mygind, 2007)

To finalize the literature review, I will present an overview of the PIE elements and their dynamics towards economic development and development of social equality, as well as an overview of how they are measured. This provides the basis for the analysis and discussion that follows.

3.8 OVERVIEW OF THE PIE ELEMENTS AND ITS DYNAMICS

Table 2 provides an overview of the factors that are of the most importance to economic development and development of social equality and summarizes their dominant effects on economic growth and social equality, and vice versa accordance with the Systems Approach. An overview of which measurements will be used is presented in table 3.

Table 2 - **The Dynamics Between the PIE Elements, Economic Growth and Development of Social Equality**

Political Elements	**Economic Development**		**Social Equality**	
	How x Influences Growth	**How Growth Influences X**	**How X Influences Equality**	**How Equality Influences X**
n.a.	n.a.	n.a.	n.a.	n.a.
Institutional Elements	**Economic Development**		**Social Equality**	
	How x Influences Growth	**How Growth Influences X**	**How X Influences Equality**	**How Equality Influences X**
Efficient Administration and Enforcement (+TFP)	+	n.a.	+	n.a.
Corruption and Crime (-TFP)	-	n.a.	-	n.a.
Conditional Cash Transfers	+?	+	+	n.a.
Pensions	?	+	+?	?
Taxation	-?	n.a.	+?	?
High Institutional Quality (+TFP)	+	n.a.	+	n.a.
Economic Elements	**Economic Development**		**Social Equality**	
	How x Influences Growth	**How Growth Influences X**	**How X Influences Equality**	**How Equality Influences X**
Increase in Savings and Investment	+	+?	+	n.a.
Larger Participation in the Labor Market	+	+	+	+?
Higher Wages	-?	+?	+	n.a.
Increase in Capital	+	n.a.	?	n.a.
Improvement of Technology and Innovation	+	n.a.	?	n.a.
Improvement of Education	+	+	+	+
General Improvement of Health	+	+	+	+
Increase in Natural Resources	+	n.a.	?	n.a.
Improvement of Infrastructure (+TFP)	+	n.a.	+ ?	n.a.
Increase of TFP	+	n.a.	+?	+?
Surrounding World	**Economic Growth**		**Social Equality**	
	How x Influences Growth	**How Growth Influences X**	**How X Influences Equality**	**How Equality Influences X**
Globalization	+	+?	+?	n.a.
Competitiveness	+	+?	+	n.a.

Source: Author

Table 3 **- Overview over Measures**

Main Variables	**How to Measure**	**Economic Variables**	**How to Measure**
Economic Development	GDP, GDP growth, GDP per capita, GDP per capita growth	Short-term elements	
		Macroeconomic Variables	GDP, GDP growth, inflation, interest rate, investment rate, savings rate, government balance, primary balance, public debt, unemployment rate, current account, external debt, forex reserve, export, import, exchange rate BRL/USD
Development of Social Equality	Gini Coefficient, average annual growth rate in real household income, poverty levels, HDI, IHDI		
Political Variables	**How to Measure**	Participation in the Labor Market	Labor force participation rate, unemployment, age dependency ratio
Social Groups	Income distribution, age distribution, rural/urban population, division into social classes	Wages	Minimum wage, real average wage
Political Situation	Current government, political system, voting pattern in relation to labor incomes and inequality, role of the media, upcoming elections, political stability, degree of political competition, freedom of press	Long-term elements	
		Access and Quality of Education	Literacy rate, government spending on education, PISA test scores, division in education between poor and rich
Institutional Variables	**How to Measure**		
Political Institution	Constitution, political system, degree of centralization, political rights, civil liberties	Health Levels	Average life expectancy, mortality rate
Economic Institutions	Property rights, protection of minority shareholders' interests, financial institutions and markets etc.	Capital and Natural Resources	Population size and growth, natural resources, energy mix, depletion, success sectors
Administration Efficiency and Enforcement	Government effectiveness, government bureaucracy, regulatory quality, rule of law, judicial independence, reliability of police service	Technology and Innovation	Technology readiness and innovation
Corruption and Crime	Transparency of government policymaking, irregular payments and bribes, etc. Corruption index and homicide rate	Total Factor Productivity	TFP growth, labor cost and productivity, TFP change
Cash Transfers	Bolsa Família, pensions, pensions in relation to old-age dependency ratio, public transfers impact on poverty	Infrastructure	Quality measures, infrastructure as pct. of GDP, cost to export or import a container
Taxation	Tax levels, tax administration	**Surrounding World**	**How to Measure**
Informal Institutions	Culture, religion, informality	Competitiveness	Global competitiveness index, description of competitiveness
Institutional Quality	Doing Business parameters, ranking of institutions in international context	Globalization	MGI connectedness index, trade liberalization, policies, description of openness

Source: Author

CHAPTER 4 - A BRIEF HISTORY OF BRAZIL

This section is constructed to gain historical information about Brazil. This is important because the current society is the result of earlier developments. At the same time they set the rules of the game for future changes. The dynamic interaction is path dependent, meaning that the initial conditions are decisive when determining the next step (Mygind, 2007). Table 4 presents some initial facts about Brazil.

Table 4 - **Fact Box Brazil, 2014**

GDP (t)	Capital	Language	Population (m)	Area (sq. km.)	Population Density
2.353	Brasilia	Portuguese	202.7	8,515,770	24

Source: IMF (2015), World Bank (2015)

4.1 POLITICS AND POLITICAL INSTITUTIONS PRE 2002

Brazil became a Portuguese colony after being discovered in 1500. The Portuguese tried to enslave the natives, in hunt for the country's natural resources. Thereafter they brought African slaves for their workforce. Historic plantations and slavery are seen as the major factor of the resistant large social inequality in the country (Bueno, 2010).

After a period of struggle between foreign powers, Brazil finally gained its independence in 1822. The abolishment of slavery came about in 1888, and already the year after, the royal family was overthrown and Brazil became a republican government. From the late 19th century to the end of the 20th century, Brazil experienced two military coups, and military ruling during 1964-1985 (Bueno, 2010).

Brazil consisted of a small elite of landlords controlling the economic resources, and a big conservative group without interest in modernization. The population was further divided into a large group of very poor land and mine workers. The conservative parties based on landlords had dominated politics for many years. Concentration of economic and political power was extreme (Bueno, 2010).

4.2 ECONOMY AND ECONOMIC INSTITUTIONS PRE 2002

The economy experienced ups and downs: in the 1930s the economy relied on import substitution growth. Import substitution means that imports are replaced by domestic production under protection by high tariffs, import quotas and subsidies. It can help industries in the start phase and build competitive advantage, as well as shield the economy from volatile prices and demand for certain products and commodities. Naturally, necessary import is still conducted in the cases where the country is not self-sufficient of the product, such as

oil. However, import substitution also prevents the economy from developing comparative advantages of trade, since it closes itself off from foreign competition. Costs can also rise to above that of the world market, and the economy's growth becomes dependent on the home market (Mygind, 2015).

High economic growth led to the "economic miracle" in the mid 1960s – 1970s, although competitiveness was low and Brazil had a large external deficit reliant on foreign capital inflows. The negative trade balanced was a result of importing necessary goods e.g. oil, but not exporting sufficiently as an effect of the import substitution. Following the oil crisis of 1973-1974, economic growth slowed and inflation and external debt increased. In the 1990s, trade was liberalized, and the import substitutions ended. Institutional change became a fact. Privatization of key sectors, such as steel, mining, energy and telecommunication, stimulated the economy positively. Using comparative advantages such as cheap labor and commodities increased competiveness, while upgrading of skills, technology and infrastructure lead to a more advanced production. However, hyperinflation became a fact, and the economy did not stabilize (Bueno, 2010; Mygind, 2015).

To control the soaring inflation levels, *Plano Real* – the real plan, where real is the name of Brazil's currency, was introduced in 1994 with success. The BRL became fixed to the US dollar. Together with deregulation and further opening for foreign capital, this lead to successful stabilization. IMF helped the process. Yet, congress resisted institutional reforms of tax and social security systems amongst others. In the years to follow, Brazil was exposed to the Asian crisis: the currency was overvalued, structural reforms stalled etc. Economic growth was low, unemployment high and social opinion grew agitated and strong (Bueno, 2010; Mygind, 2015).

The Brazilian society was ready for change. The period from 2002 and until today will be investigated in the analysis, which follows in the next chapter.

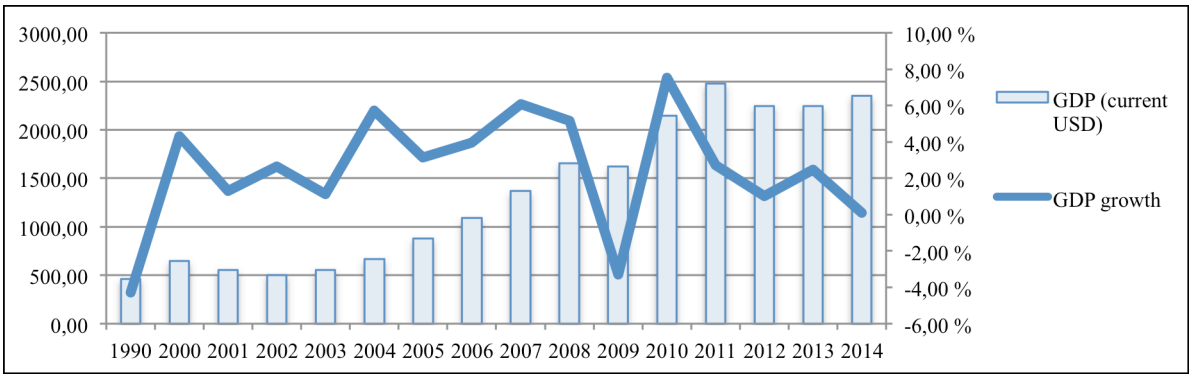
CHAPTER 5 - ANALYSIS

The analysis is structured in accordance with the PIE model. Economic development and development of social equality will be analyzed first. Thereafter, the different PIE elements are analyzed in the order of politics, institutions and then economy as in the literature review. Lastly, the relation Brazil has to the surrounding world in form of globalization and competitiveness is analyzed.

5.1 ECONOMIC DEVELOPMENT

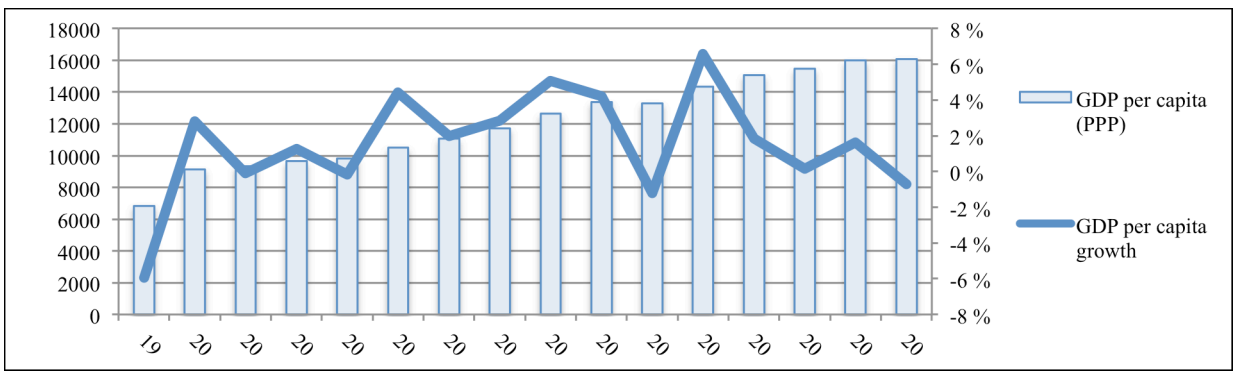
Brazil has experienced high growth since 1990. During the financial crisis in 2008 – 2009 growth stagnated, and the recent levels have not lived up to the expectations of similar growth levels as before the crisis. This is shown in figure 4 and 5. In figure 4, the fall in GDP in 2011-2012 is probably because of depreciation of the Real. In figure 5, GDP is measured by purchasing power parity (PPP), not directly influenced by depreciation.

Figure 4 - **GDP Levels in Current USD Billions, and Annual GDP Growth Rate in Pct., 1990-2014**



Source: IBGE (2015), IMF (2015), The World Bank (2015)

Figure 5 - **GDP per Capita (PPP) and GDP per Capita Growth in Pct., 1990-2014**



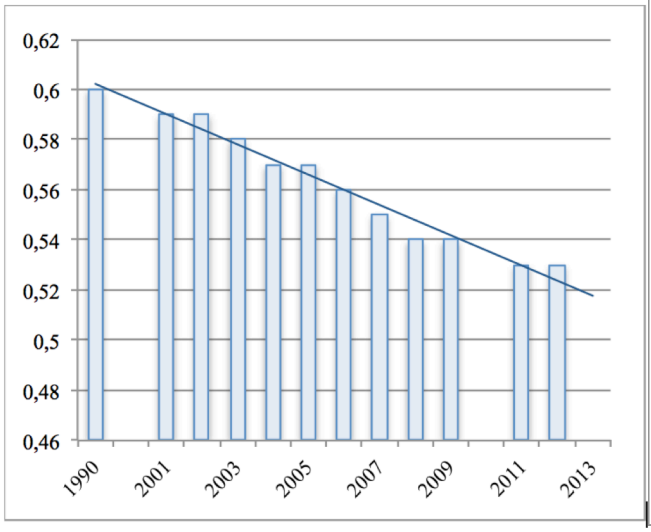
Source: IBGE (2015), IMF (2015), The World Bank (2015)

Economic growth has been great since 2002 and up to the financial crisis. Brazil dealt with the crisis and managed to spur growth rates quickly. However, the past five years, the economic growth has been relatively slow. Forecasts for the next 5 years are relative low, - 0,1 pct. in 2015 and 1 pct. in 2016 (The Economist Intelligence Unit, 2015).

5.2 DEVELOPMENT OF SOCIAL EQUALITY

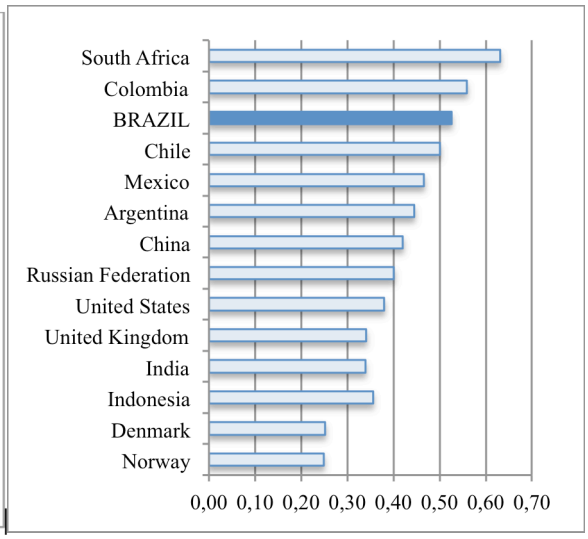
The Gini Coefficient has been reduced substantially since 2002 as shown in figure 6. It is still however relative high in international comparison (figure 7).

Figure 6 - **Gini Coefficient Brazil, 1990 – 2013**



Source: The World Bank (2015) Note: Data from 2000,

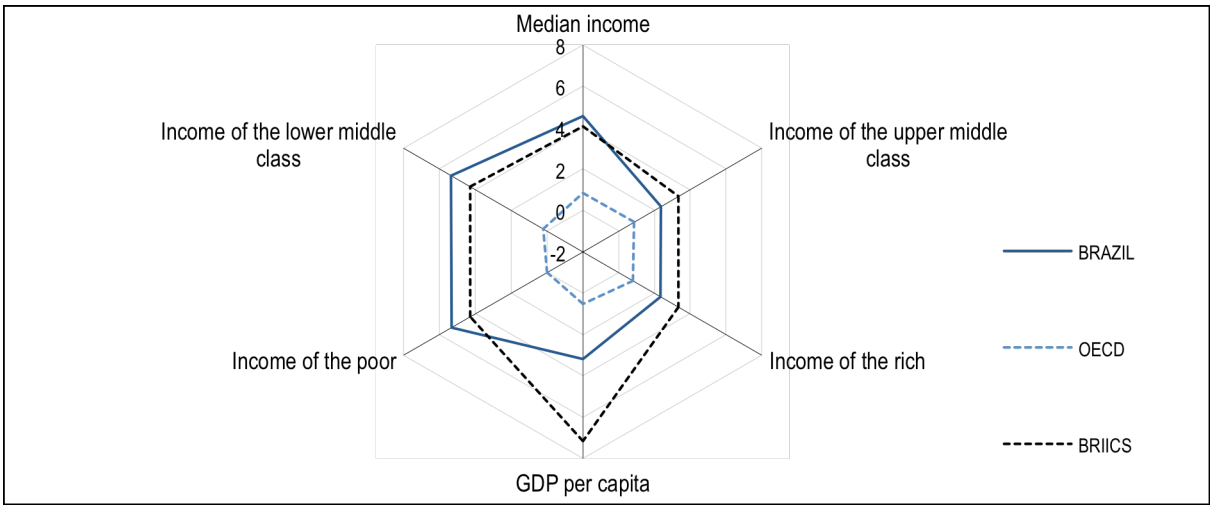
Figure 7 - **Gini Coefficient International Context, 2010**



Source: The World Bank (2015), OECD (2013a).

Growth in real household income was stronger in the lower than in the upper half of the distribution, as figure 8 shows, contributing positively to social equality. The OECD countries have the lowest average annual growth rate in real household income, but the starting point in 2005 was higher than Brazil and the other BRIC countries. Brazil particularly has a higher average annual growth rate when it comes to the income of the lower middle class and the poor.

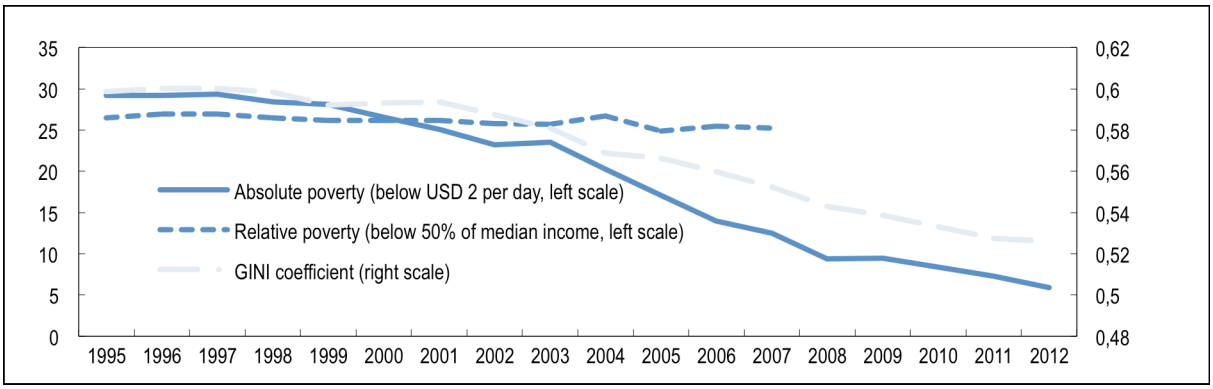
Figure 8 - **Average Annual Growth Rate in Real Household Income, 2005-2011**



Source: OECD (2015) Note: BRIICS here is Brazil, Russia, India, Indonesia, China and South Africa.

Figure 9 illustrates the positive development of reduced poverty and inequality measures historically for Brazil. Both absolute poverty and relative poverty have been reduced greatly since 1995. The Gini Coefficient has also been reduced, but not as much. This indicates a good development, but that there still are room for improvements.

Figure 9 - **Poverty and Inequality Over Time, 1995 - 2012**



Source: OECD (2013a). Note: Data from 2013 and 2014 is unavailable.

Figure 10 shows that poverty levels have decreased significantly in Brazil. In an international context, Brazil does better when measuring poverty than the other BRIC countries, while the neighboring countries of Argentina, Chile and Mexico register lower poverty measures, as shown in figure 11.

Figure 10 - **Poverty Levels, 1990 – 2012**

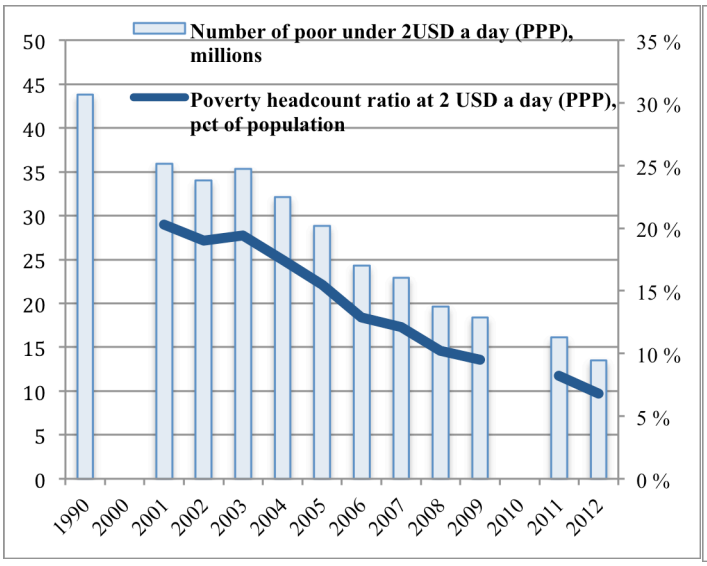
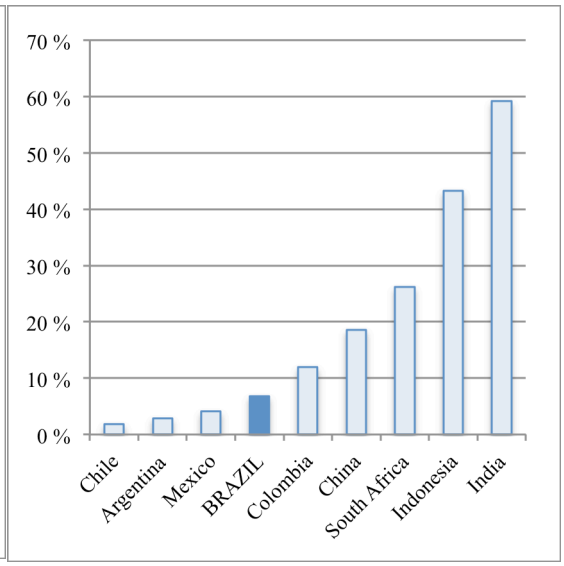
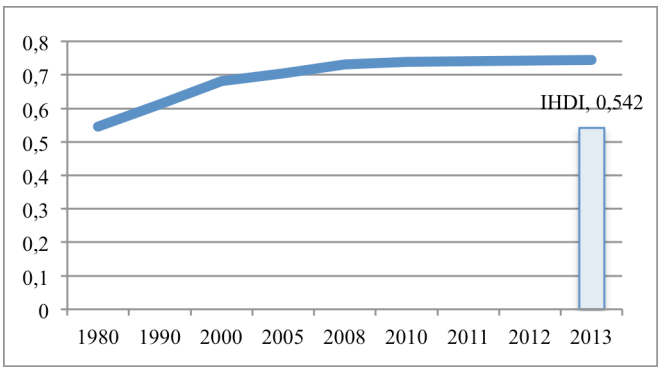


Figure 11 - **Poverty in International Perspective, 2012**



Source: The World Bank (2015). Note Figure 11: poverty is measured by poverty headcount ratio at 2 USD (PPP) a day, in pct. of population. All data is from 2011, except for Brazil, Colombia and Mexico where the data is from 2012.

Figure 12 – **HDI Development and IHDI levels, 1980-2013**



Source: United Nations Development Programme (2015).

Note: IHDI only available for 2013

Brazil scored 0,744 as number 79 out of 187 countries included in the list in the Human Development Index in 2013. HDI levels have improved since 1980, but seem to be at a stagnated level since 2005 (figure 12). When adjusted for inequality, Brazil scores only 0,542 at the Inequality-adjusted HDI index, indicating that the inequality levels in the country lower the index (United Nations Development Programme, 2015).

Poverty levels, inequality and HDI have greatly improved, showing that Brazil has and still is experiencing positive development in social equality. Yet, there is room for improvements particularly in reducing social inequality.

5.3 POLITICAL ELEMENTS

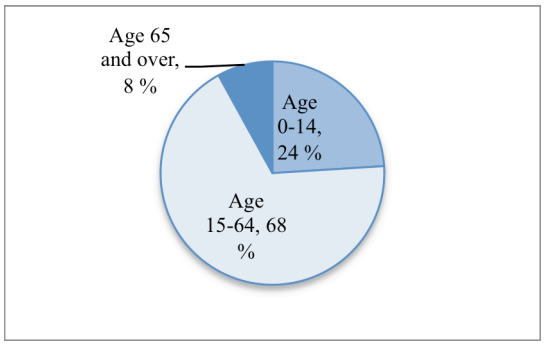
In the following chapter, the social groups and the political situation are analyzed.

5.3.1 SOCIAL GROUPS

Social groups are investigated by distribution of income, age distribution, rural/urban distribution, and by social classes in order to get a comprehensive image of the situation in Brazil.

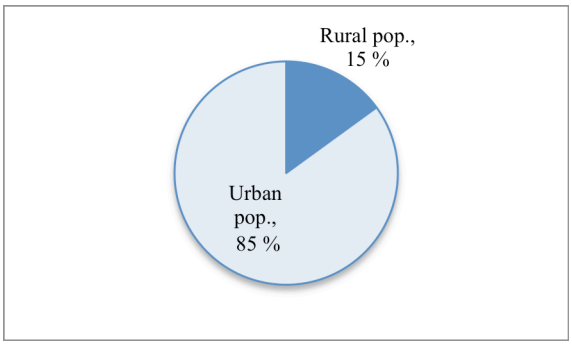
Analyzing the income distribution in Brazil, the wealthiest 20 pct. of the population gets 57 pct. of the income, while the poorest 20 pct. of the population only get 3 pct. of the income in 2012 (The World Bank, 2015). There remain high levels of income inequality, as seen in 5.2 Development of Social Equality.

Figure 13 - **Age Distribution, 2013**



Source: The World Bank (2015)

Figure 14 - **Rural and Urban Distribution, 2013**



Source: The World Bank (2015)

Brazil has a multi-racial population. The main ethnic groups are white, 47.7 pct., and mulatto, 43.1 pct., while blacks, Asians and indigenous Indians account for 7.6 pct., 1.1 pct., and 0.4 pct. respectively (Bueno, 2010). The age distribution has had a stable development. However, in the more recent years the youngest part of the population is declining. The old age group has doubled since 1980, and workforce, age 15 – 64, is increasing. I will address age distribution more detailed under quantitative labor supply under 5.2.2 Long-Term Economic Elements. The rural/urban distribution has also had a stable development, with a movement towards more urban population. The distribution has changed with approximately 10 percentage points since 1980 (The World Bank, 2015). Figure 13 and 14 shows the age and rural/urban distribution in 2013.

The social classes in Brazil can be divided and described in distinct groups named with the letters from A to E. This definition is overall based on household gross monthly income. However, in the recent years, educational attainment, occupations and geographic locations have been added (Neri, 2014). It is a general

definition, presented in table 5. The data in table 5 is divided into the different social classes, except for social class A and B, which is joined in the descriptions of educational level and occupation.

Table 5 - **Distinction of Social Classes in Brazil, 2009**

Social Classes	Upper Limit of Total Household Income	Approx. Pct. of Population	Population, in millions	Educational Level	Occupation
Class AB	No limit	14%	29	Usually completed higher education	Private sector, business owners, white collar workers, politicians, judges etc.
Class B	4170 USD				
Class C	3200 USD	58%	118	Most have finished high school, a significant quantity have completed higher education or technical level degree	Mostly those who provide services directly to the wealthier groups, e.g. teachers, managers, mechanics, electricians, nurses etc.
Class D	742 USD			Most have not finished high school	Provide services to class C, e.g. housemaids, bartenders, blue collars workers
Class E	464 USD			Not finished elementary school, some illiterate	Earns minimum salaries, e.g. cleaners, street sweepers and unemployed
Class DE	742 USD	24%	49		

Source: Brazilian National Household Survey, 2009 (latest year available), Neri (2014)

The social classes have become increasingly polarized, since the different social classes are dividing into opposing factions. Since 2002, the upper classes and middle classes have increased. Middle class called “C” increased with 53 million people from 2003 to 2014, while upper classes “AB” increased with 17 million people in the same period. This means that the upper classes grow proportionately more than the middle class (Neri, 2014). How the social groups are presented in political parties is discussed in the next section concerning the political situation.

The poorer social classes are located in the northern states of Brazil. In the larger cities such as São Paulo, Rio de Janeiro and Brasília, all social classes are represented. The poorer classes have a larger percentage of rural population and people of black ethnicity. In addition, there is a large division showing the richer classes more frequently attend private school, has college education and social security coverage. The upper classes report of better public services such as health care. However, all classes seem to experience an equal level of violence (Neri, 2014). Further details of the characteristics of the different social classes are in Appendix E.

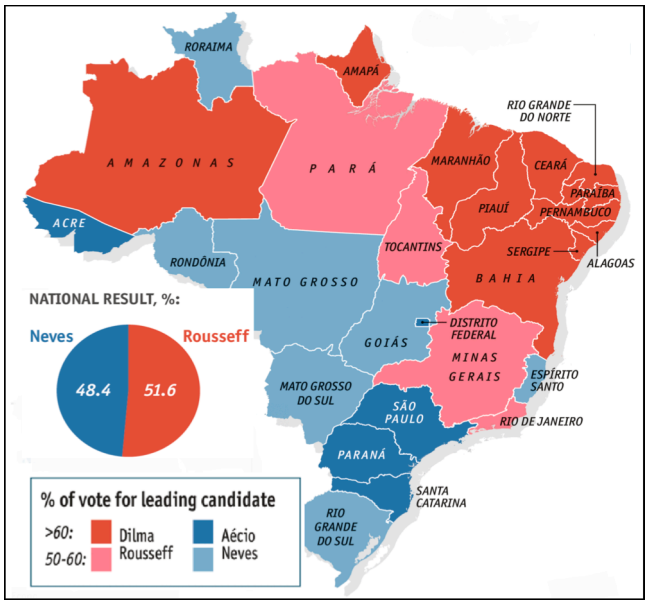
Higher political influence of the poor altered the political situation in 2002, electing the Workers' Party to government together with its coalition parties. The poor has experienced increasing political influence since. This has affected the political process, which in turn has affected the institutions e.g. conditional cash transfer programs, pensions and taxation levels, again affecting the economic situation.

5.3.1 POLITICAL SITUATION

The year 2002 marked a new era politically in Brazil, when Luiz Inácio Lula da Silva, hereafter referred to as Lula, won the presidential elections. Lula is of the center-left oriented political party, Workers' Party *(Partido dos Trabalhadores*, PT), which was launched in 1982 from a trade union organization of workers in the state of São Paulo (Bueno, 2010). The results of the elections were a reaction to the low growth, high unemployment, and raging high inequality. The circumstances had created social unrest and strong will, particularly among the poor to change the political situation.

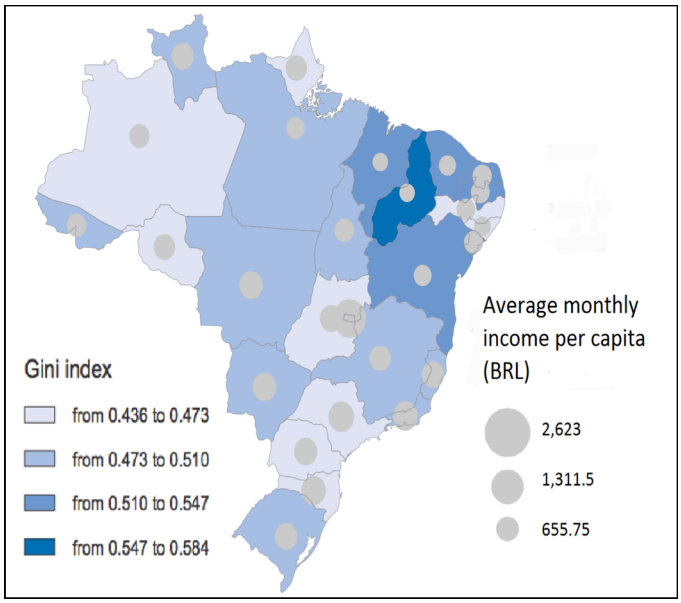
Lula came to power based on the growing power of the poorer social groups, as well as some support from the lower middle class, through the more center-oriented coalition parties. Lula introduced the conditional cash transfer (CCT) program *Bolsa Família,* which has been a great success in helping people out of poverty and contributing to more social equality (discussed more thoroughly under 5.4 Institutional Elements). As president, he was able to win over parts of the middle class by promising and actually achieving economic stability. He was also lucky in this aspect, as the macroeconomic factors, particularly the commodity prices were in Brazil's favor. Lula was able to provide economic stability, improvements for the poor and economic growth. The economic situation will be discussed further in 5.5 Economic Elements. This is also one of the main reasons for the continued support from the poor and parts of the middle class. Lula was reelected in 2006, and is still called one of the most popular politicians in the world. He was President when Brazil was one of the first to come out of the economic recession in 2008, with lowered inequality levels and reduced poverty (Bueno, 2010; Mygind, 2015).

Figure 15 - **Brazilian Presidential Elections, 2014**



Source: The Economist (2014)

Figure 16 - **Average Labor Incomes and Inequality, 2011**



Source: OECD (OECD, 2013a)

As the social groups of poorer and new middle class grew in numbers, as did their political power. In 2010, Dilma Rousseff also of PT, preceded Lula, and became the first female president of Brazil. Dilma was reelected in 2014 with 51.6 pct. of the votes nationally, down from 55 pct. from the previous election. As figure 15 and 16 shows, Dilma's support mainly came from the Brazilian states that have a lower average labor income and higher inequality. Most of these states are located in the North and North East of Brazil. The approximate same picture can be shown from Lula and Dilma's previous elections: the poorer and middle income social groups increased in numbers, and gained political power, which kept PT as ruling governing political party from 2002 continuing today.

The last years have been highly influenced by social unrest, demonstrations and protest. The handling of the FIFA World Cup (2014) and the Olympic Games (2016) has been highly criticized. The main argument is that public spending is used on investment and infrastructure that is short minded and mainly contributes to these international events, instead of improving the quality of life of the Brazilian citizens, which is still needed for many (The Economist, 2013b). Furthermore, the macroeconomic environment has not been as favorable to Dilma as it was to Lula, leading to dropping commodity prices, decreasing investments, and difficulty to finance benefits for the poor etc.

The politics of Lula and now Dilma have economic growth, reduction of poverty and reduction of social inequality as some of its main elements. This has created policies that have enhanced such development.

This has led to a seemingly virtuous circle: the population becomes satisfied, and believes that this government will improve their lives further. Therefore, they again vote for PT and to make sure the circle continues. However, now with the poor economic outturn and the scandals concerning the international events and Petrobras (more on this under Corruption and Crime), Dilma has lost much support.

The political system is fragmented, complex and relatively unstable with 28 parties after the 2014 elections. There are nine parties in the governing coalition, which together have 314 representatives out of 513 in the National Congress. Of these, Dilma's PT has 70 representatives. PT's main coalition party, The Brazilian Democratic Movement (*Partido do Movimento Democrático Brasileiro*, PMDB), a centrist party, has 66 representatives. The main opposition party, the Party of Brazilian Social Democracy (Partido da Social Democracia Brasileira, PSDB) marked in blue in figure 15 with Neves in forefront is a social democratic, center right party and has 54 representatives in the National Congress (Mygind, 2015; Portal Brasil, 2015; Portal Forum, 2014)

Trade unions have had a weaker position after the start of the liberalization process. However, they have a strong placement in the public sector. Furthermore, the Roman Catholic Church, the leading religion in Brazil, is relatively influential with a group of bishops that defends civil and political rights. Media in Brazil is strong and independent with mostly regional rather than national news bureaus (Bueno, 2010; Mygind, 2015). However, Brazil's media is ranked as 90 out of 199, with the classification partly free. Of the Americas, media freedom in Brazil is ranked as number 21 out of 35 (Freedom House, 2015).

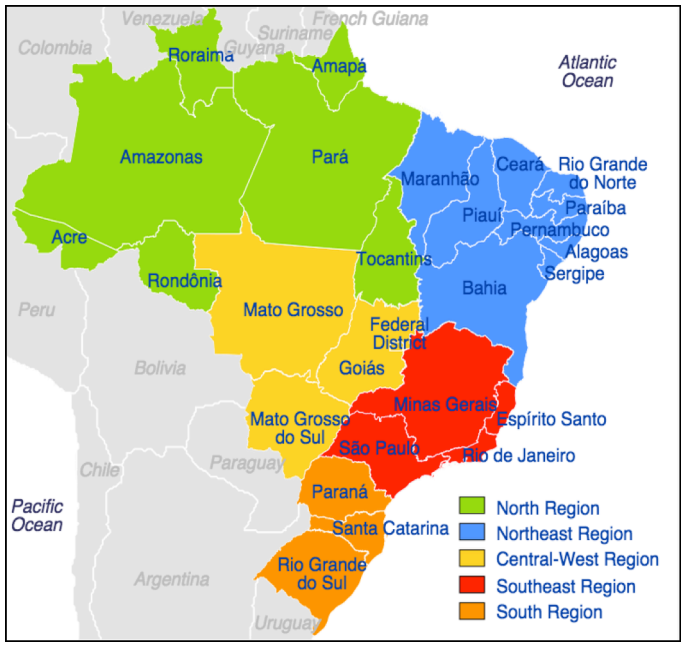
Political Elements Summary: the political process is fragmented and complex, making it time consuming and complicated for government to pass laws and make changes. PT, led by first Lula and now Dilma, has brought positive changes for both economic growth and development of social equality since 2002. PT has gained the votes of the poorer and middle-income social groups that have gained political power during the past decades. Yet, with demonstrations, corruption rumors and an unfavorable economic environment, PT is losing their political upper hand – support from the largest social groups.

5.4 INSTITUTIONAL ELEMENTS

This section will analyze the different political, economic and informal institutions in Brazil in relation to economic development and development of social equality.

5.4.1 POLITICAL INSTITUTIONS

Figure 17 - **Federal Units in Brazil**

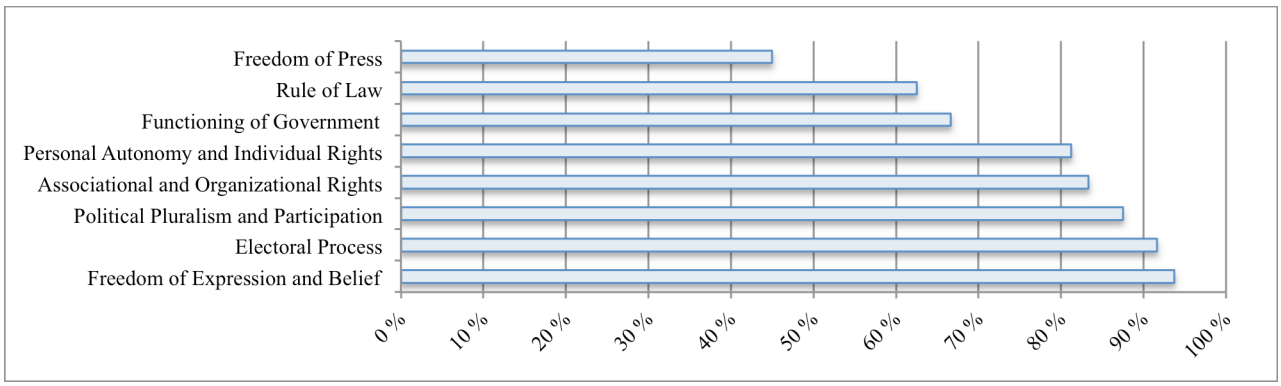


Source: IBGE (2015)

Brazil has a federal presidential representative democratic republic, meaning that the President is head of state and government, and of a multi-party system. Brazil is organized in federal government, states, federal district and municipalities. The central government is controlled by the federal government, which is divided into independent executive, legislative and judicial branches. Brazil is a decentralized country also in the sense that the states have much autonomy and their own regional legislature and Governor Administration. There are 27 federal units: 26 states and one federal district as seen in figure 17 (Bueno, 2010; IBGE, 2015; Portal Brasil, 2015). The decentralization makes it difficult and time consuming for government to pass laws, and makes the voting system more complex (The Economist, 2013b).

Freedom House's estimation of the quality of political rights and civil liberties in Brazil is shown in figure 18. Brazil scores relatively well on many of the indicators and is ranked as generally free, although the quality of freedom of press, rule of law and functioning government is rated as relatively poorer in international comparisons. Brazil's world governance indicators analyses six aspects of political and economic institutions in an international perspective. The definitions and developments of the different aspects can be found in Appendix F. Brazil scores overall average on the different indicators, while many of them seem to have decreased from 2010. Particularly political stability has decreased. This is due to the more frequent demonstrations and social unrests mentioned under 5.3 Political Elements. The individual aspects are analyzed further later.

Figure 18 - **Political Rights and Civil Liberties, 2015**



Source: Freedom House (2015). Note: Where 100 pct. is best quality and/or completely free.

5.4.2 ECONOMIC INSTITUTIONS

Brazil ranks on a medium level on many of the economic institutions according to The Global Competitiveness Report, found in Appendix G. Protection of minority shareholders' interests and financial institutions are well ranked and indicate that the regulatory quality is relatively high in Brazil compared to other countries. Yet, OECD (2015) states that long-term financial markets are underdeveloped, and therefore hampers capital allocation and productivity. Perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development have been reduced since 2000 according to Governance Indicators. The most problematic economic institutions are taxation levels and a complex tax system, even though efficiency of administration, enforcement and corruption and crime are institutions in need of improvements.

World Economic Forum has measured the quality of political institutions, efficient enforcement, and corruption and crime in Brazil. Trust in politicians, government wastefulness, burden and transparency are ranked almost as the worst in the world. In addition, the number of days and procedures it takes to start a business are higher than in most other countries.

ADMINISTRATION EFFICIENCY AND ENFORCEMENT

Inefficient government bureaucracy is one of the most problematic factors for doing business in Brazil (World Economic Forum, 2015). The government seems to spend too much time on administrative tasks, as well as being perceived as wasteful and too complex. Government effectiveness (Appendix G) is ranked as relatively poor, which corresponds to Freedom House ranking functioning of government (figure 18). World Economic Forum's different indicators relative to government effectiveness ranks Brazil as one of the countries with the poorest quality. Empirical research from OECD (2013a) on firm-level analysis confirms

that the administrative burden in Brazil negatively affects the productivity performance of firms in the country.

Enforcement in Brazil is perceived as relatively good. The Competitiveness Report (World Economic Forum, 2015) ranks it of right under middle quality internationally. Efficiency of legal framework in settling disputes and legal rights are the most poorly ranked. The rule of law has improved since 2000, but is still relatively low in accordance with Freedom House's rank (figure 18). OECD (2013a) states that productivity suffers from difficulties in enforcing contracts, and that strengthening contracts enforcement through the court system or other forms of arbitration etc. would improve productivity for firms in Brazil.

World Bank's Enterprise Survey (The World Bank, 2014) informs that 70 pct. of firms in Brazil compete against unregistered or informal firms. Half of all firms identify practices of competitors in the informal sector as a major constraint. The large informal Brazilian economy avoids following the regulations, and creates large inefficiencies, showing that enforcement of formal economic institutions is flawed.

CORRUPTION AND CRIME

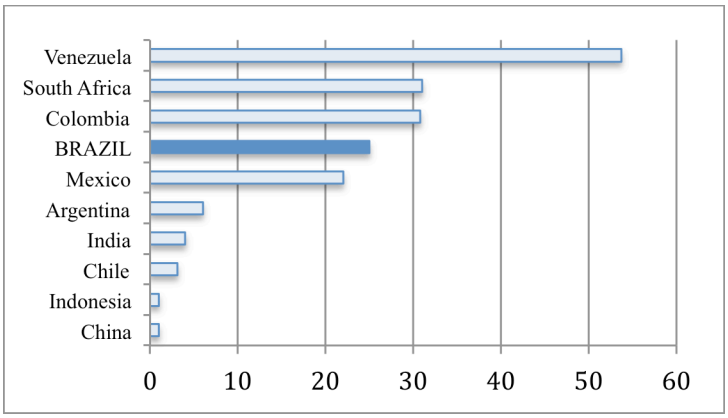
Transparency International ranked Brazil 69 out of 175 countries in 2014. It has improved from its 2013 position with one step, yet in 2012 it was at the same level as now (Transparency International, 2015). See map in Appendix H, as well as indicators of corruption and crime from World Bank Enterprise Survey for Brazil in 2009. Corruption levels in Brazil are relatively high, as shown by Transparency International's rank and World Bank Governance Indicators (figure 18). Furthermore, approximately 33 pct. of firms states they must give gifts to secure government contracts, while 69 pct. of firms in Brazil identifies corruption as a major constraint (World Bank Group, 2015). Still, corruption is surveyed as the 7th most problematic factor for doing business in Brazil (World Economic Forum, 2015).

Currently, there is a multi-billion-dollar corruption scandal at Petrobras, the largest oil company in Brazil and towards President Dilma. It seems that Dilma is not directly involved, but she was chairman of the board of Petrobras during the period of corruption accusations, and Minister of Energy from 2003 – 2010. The allegations have damaged her reputation (The Economist, 2015).

Corruption scandals emerge increasingly in Brazil, involving both private actors and public officials. It might seem that corruptions is increasing, but on the other hand, it could be an indication of improving transparency and that more corruption cases are brought forward to daylight.

The national homicide rate has changed only little over the last 30 years. Intentional homicide rate is 25 per 100.000 people in Brazil according to The World Bank (2015). This is a relative high level internationally, as pictured in figure 19. There have been significant changes in the different states. Homicide rates have declined in the states of the largest cities, e.g. São Paulo and Rio de Janeiro, while it has increased in other states, particularly in the North and North East (United Nations Office on Drugs and Crime, 2014). Details are located in Appendix H. As seen earlier under 5.3.1 Political Situation, this is also where inequality and poverty is dominating. According to World Bank Group's (2015) Enterprise Survey on Crime, 73 pct. of firms pay for security, while 69 pct. identifies crime, theft and disorder as a major constraint. World Economic Forum (2015) lists crime in the top 15 most problematic factors of doing business in Brazil.

Figure 19 - **International Comparison of Homicide Rates, 2012**



Source: United Nations Office on Drugs and Crime (2014), The World Bank (2015). Note: Number per 100.000 inhabitants. Data from Argentina and Chile are from 2010. Data is not available from e.g. Denmark, Norway, UK or USA.

The issues with poor administration efficiency and relatively high rate of corruption and crime are that they imply inefficient enforcement of institutions, thus creating negative dynamics for the rest of the PIE model. By reducing efficiency, political process becomes slower, and economic gain is more difficult to attain, further implying negative synergies for economic development and development of social equality.

CONDITIONAL CASH TRANSFER – *BOLSA FAMÍLIA*

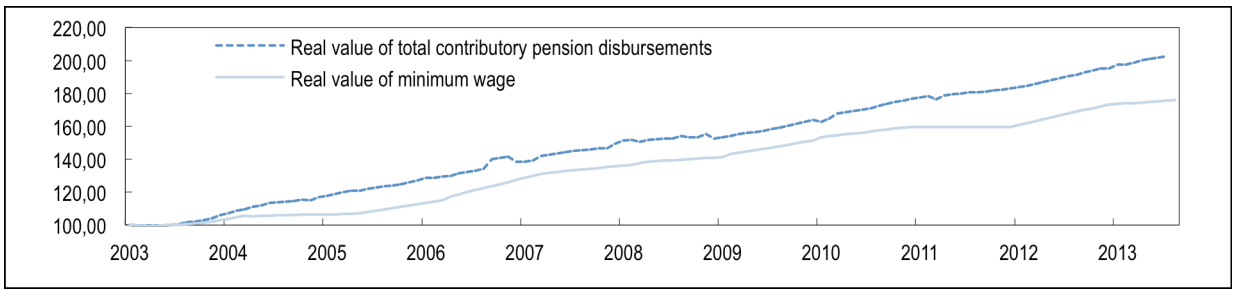
The thesis focuses on the CCT *Bolsa Família* because of its success and importance for lowering social equality. The criteria to get the CCT *Bolsa Família* are that each family member earns less than approx. USD 45 per month and that the family is registered. The further requirements are that the children's school attendance is at least 85 pct., and that the families receiving socioeconomic services, gets the mandatory vaccinations and doctors' appointments The families get between USD 10 and USD 65 depending on their salary and number of children. Studies show that *Bolsa Família* has decreased poverty and child labor, improved nutrition, health levels, school attendance and grade progression (Ministério do Desenvolvimento Social e Combate à Fome, 2015). CCT are responsible for 13 pct. of the decrease in inequality, even though Brazil spends less than 1 pct. of GDP on these (OECD, 2013a).

The program *Bolsa Família* uses approximately 0,5 pct. of GDP per year and benefits to approximately 14 million households, which is approximately 50 million people or about 25 pct. of the Brazilian population (IBGE, 2015; The World Bank, 2015). In 2004, when the program started, 0.3 pct. of GDP was used to distribute the CCT to 6.5 million Brazilians (Ministério do Desenvolvimento Social e Combate à Fome, 2015).

PENSIONS

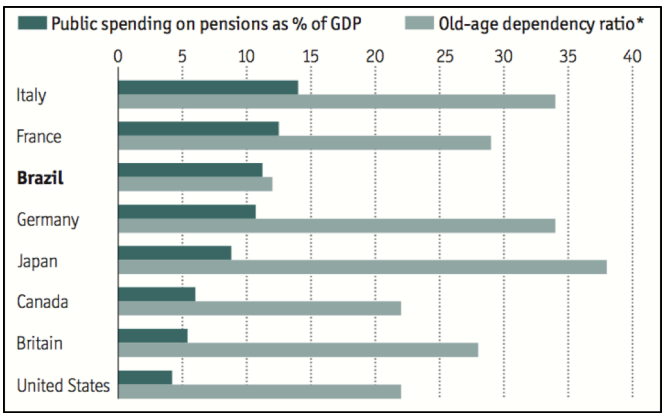
The pensions system in Brazil is strong, ranking similarly to the OECD average. The pension payments have increased much over the past year as figure 20 illustrates. The rise in pension benefits stems from the rapid

Figure 20 - **Pensions and Minimum Wage, BRL, 2003 - 2014**



Source: OECD (2013b)

Figure 21 - **Pensions and Old-Age Dependency Ratio, 2010**



Source: The Economist (2013b). Note: Data is from 2010 or later.

*65-year-olds and over as pct. of 20- to 64-years-olds.

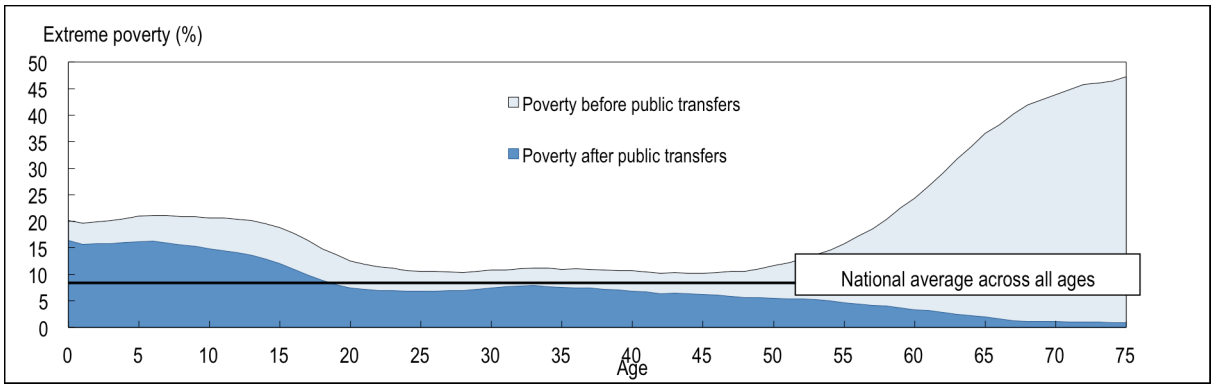
increase in the minimum wage, whose adjustment is linked to the sum of the real GDP growth and CPI inflation (OECD, 2011). Pension benefits have reduced inequality because the recipients tend to have below-average incomes. OECD's Economic Survey of Brazil (2013a) states that 23 pct. of the reduction in inequality stems from the contributory and non-contributory pensions.

When investigating pension spending as pct. of GDP in relation to the old-age dependency ratio, as displayed in figure 21, it is clear that Brazil spends a very large

proportion on pensions in relation to how many in the population are of old age. Even in an international perspective, this sticks out drastically. Furthermore, Brazil also spends internationally unmatched 3 pct. of GDP on survivors' pensions (The Economist, 2013b).

Research states that the public transfers greatly reduce poverty in Brazil. As figure 22 shows this is highly represented in the older age groups, indicating that pensions payments is the public transfer reducing poverty the most, however for the population over 50 years old.

Figure 22 - **Public Transfers Impact on Poverty by Age Group, 2010**



Source: Barros et al. (2010), OECD (2011) Note: Extreme poverty is here defined as households having incomes below the federal poverty line of 70 BRL per month. The figure includes public transfers such as pensions and *Bolsa Família* etc.

TAXATION LEVELS

Brazil's tax revenue as pct. of GDP is relative high in an international comparison as illustrated in figure 24. Yet, taxes on income, profits and capital gains have been reduced since 2004, as shown in figure 23. The World Bank (2015) estimates the total tax burden on the profits of a benchmark medium-sized manufacturing company to be 69 pct. in Brazil compared to an average of 47 pct. in Latin America and 43 pct. in the OECD countries (OECD, 2013a).

Figure 23 - **Tax Levels, 1990 – 2013**

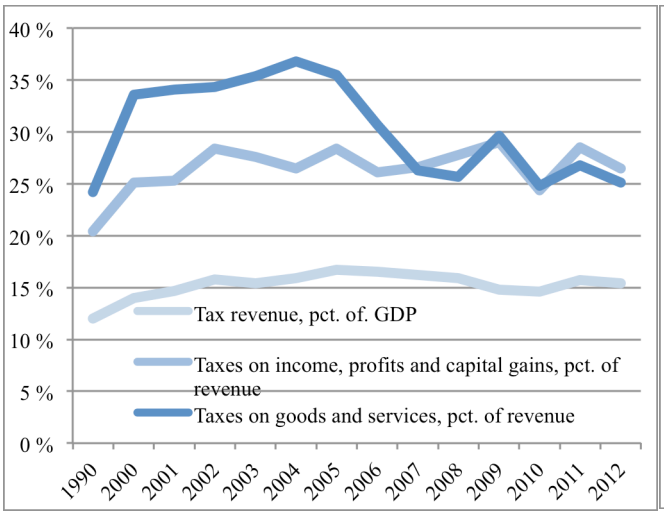
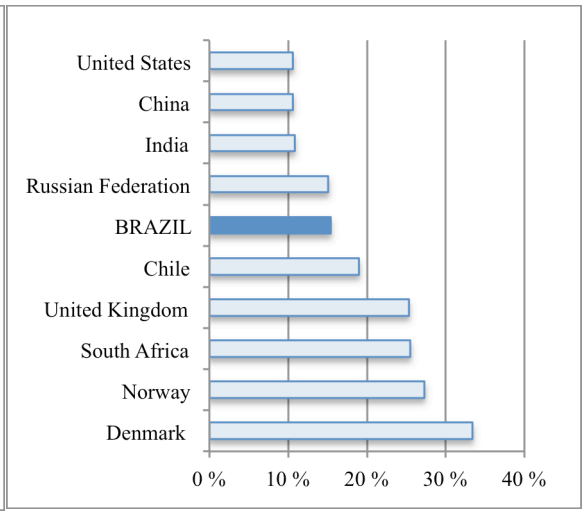


Figure 24 - **Taxation Levels in an International Perspective, 2012**



Source: The World Bank (2015). Note Figure 24: measured in tax revenue as pct. of GDP. All data is from 2012, except for China and USA, which has data from 2013.

Taxes are necessary for financing public expenditures. To distort the economy as little as possible, it is important that there is high efficiency both on the expenditure side, and the way taxes are collected. Tax rates and regulations are listed as the second and third most problematic factors for doing business in Brazil (World Economic Forum, 2015). Because of the decentralization, companies that want to offer goods and services nationwide must comply with each state's individual tax rules. Brazil is estimated to be one of the countries in the world where it takes the most hours to prepare taxes, approximately 2600 hours for a model company used in the survey, while the average in Latin America is 367 hours (OECD, 2013a).

Bolsa Família is a success story, contributing positively to the PIE elements, development of social equality and indirectly therefore to economic development. The pensions and tax systems participate positively in principle, but because of the magnitude and complicated state of the systems, they might do as much harm as they do well it seems like. Further research is needed to conclude more on the issue, but it is safe to assume that the outcome is uncertain and not as positive as initially believed.

5.4.3 INFORMAL INSTITUTIONS

The analysis of informal institutions in Brazil is limited due to high complexity and lack of more precise data. 5.3.1 Social Groups analyze ethnicity and different distributions of the population. The main religion is the Roman Catholic Church (Encyclopedia Britannica, 2015). It has played a large role in forming the basis of the Brazilian culture and values (The Economist, 2013b). There was a strong movement within the Latin

American Catholic Church, mainly through education on matters of social justice, to improve social welfare and lower inequality (Bueno, 2010).

Culture and values are very difficult to measure and explain. However, the relative high corruption and crime occurrences in Brazil give reason to believe that the degree of social trust is relatively low. Another aspect to note is the large informal economy, indicating that to a higher degree the informal institutions regulate aspects of the informal economy.

5.4.4 INSTITUTIONAL QUALITY

The World Economic Forum ranks institutions in Brazil as 80 out of 148 countries (World Economic Forum, 2015). The complete Global Competitiveness Report of Brazil can be found in Appendix G. The overall ranking has improved from 2014, but factors such as starting a business, dealing with construction permits, paying taxes etc. are rated as very poor. Getting electricity and protecting minority investors are some of the factors Brazil manages particularly well.

Institutional Elements Summary: the institutional elements such as *Bolsa Família* contributes without a doubt to positive synergies to the other PIE elements, as well as to development of social equality and thus indirectly to economic growth. Other institutional aspects such as securing human rights and financial institutions have reached high quality. Institutional quality in Brazil needs improvement particularly with administration, corruption and crime, and taxation levels. The decentralization of the country and large autonomy to the different states seem to make administration more complex than necessary. The institutional elements that need improvement seem to produce negative synergies, and reducing the positive developments of economy and social equality.

5.5 ECONOMIC ELEMENTS

The thesis will first analyze the macroeconomic development through 2002 until the today with focus upon the short-term elements with most significant effects. The development of the main macroeconomic variables is summarized in table 6 in the end of the section. Lastly, the long-term growth elements will be analyzed separately.

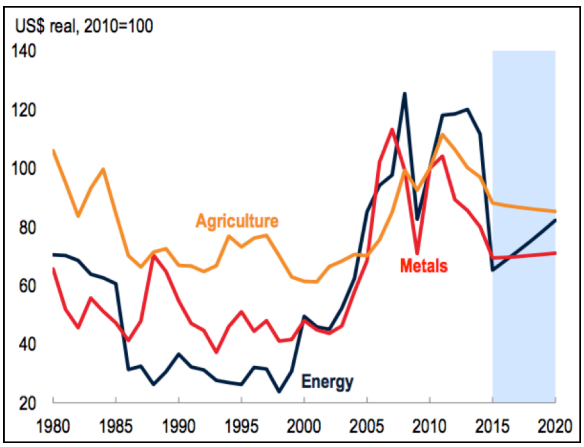
5.5.1 SHORT-TERM ECONOMIC ELEMENTS

The short-term economic elements generally include the elements in the macroeconomic environment, and includes the short-run stabilization policies such as state budget, inflation etc. The elements between short and long-run growth should be distinguished, while keeping in mind that they are closely related, e.g. economic recession with increasing unemployment in the short-run means consequences in the long-run, such as fall in investments, and low growth.

MACROECONOMIC ELEMENTS

Since Lula came to power in 2002, the economy grew rapidly, and inequality declined (Bueno, 2010; Mygind, 2015)**.** GDP growth has been excellent, landing Brazil in the BRIC grouping in 2001 (O'Neill, 2001). Ukon et al. (2013) describes the period from 2003-2011 as a virtuous economic cycle: growth led to higher employment, which in turn led to increased domestic consumption and more growth. Reaching a larger working-age population, increasing the lower-middle class, wider availability of consumer credit and consequently increase in consumer purchasing power has expanded the domestic market. Table 6, located at the end of the section, presents an overview over the development of short-term economic variables.

Figure 25 - **Commodity Price Indices, Annual**



Source: World Bank Group (2015)

The 2000s global commodity boom helped drive economic growth, particularly due to the large Brazilian reserve of metals and agricultural products. Finding vast deposits of deep-sea oil in 2007 also gave the economy a boost some years later when production started. The past two years have delivered a dramatic decline in commodity prices, particularly oil (figure 25), which has affected the Brazilian economy negatively. The commodity prices also boosted trade surplus positively, which in 2005 reached USD 36 billion. However, when the commodity prices fell, so did the trade to a deficit of negative USD 44 billion in 2013 (The World Bank, 2015). Even if commodity exports have increased, the net exports of manufactured goods have declined sharply since 2005 (Elstrodt, Manyika, Remes, Ellen, & Martins, 2014).

The Brazilian total budget has not had a surplus for many years, thus not being able to lower the public debt. Since the 2000s, Brazil has had strict fiscal policy, with a budget around negative 2 pct. Note that the primary budget is approximately at 2 pct., but GDP interest payments are at 4 pct. Because of the relatively

high interest rate, the public debt has been a burden for the Brazilian economy for many years. However, the public debt relative to GDP decreased in the early years of Lula's presidency (Mygind, 2015).

Brazil has struggled with public fiscal deficit, and low public investment with deteriorating infrastructure. The investment ratio has been below 20 pct. since 1990. Both the savings and investment rate are too low to sustain the needed expansion of industrial capacity and infrastructure (The Economist, 2013b; The World Bank, 2015). However, infrastructure is a long-term element, and will be discussed under 5.5.2 Long-Term Economic Elements. Global factors have explained some of the initial period of weak investment, while domestic factors have been more dominating since the start of 2012 with falling commodity prices, tighter global financial conditions, downgrades to growth and greater uncertainty about the outlook (IMF, 2013). Public investment includes most infrastructures. It is low because of tight fiscal policy. Private investment is low due to crowding out of high public budget deficit – high financing is needed, but combined with the tough monetary policy it leaves investment at low levels. Expected profit levels, demand, and costs e.g. wages also influence investment levels. Foreign direct investment, portfolio, and bond and equity markets have been and still are volatile (Mygind, 2015; OECD, 2013a). Despite weakening domestic demand, the current account deficit reached 4.2 pct. of GDP in 2014, from 2.4 pct. of GDP in 2012 (IMF, 2015).

Parts of the economic growth have been due to government efforts to prolong a consumption and credit-led boom (Leahy, 2015). Higher incomes and somewhat more accessible consumer credit have created a virtuous circle to boost consumption, and thus creating more jobs. Both public and private consumption has been a large driver for growth in Brazil, which has intensified since 2008. This has also had an unfortunate effect of increasing household debt, which has more than doubled as share of income from 2005-2012 (McKinsey Global Institute, 2014). 21.5 pct. of household income goes to service debt (OECD, 2013a). It is common to pay in installments in Brazil. This holds for household appliances as well as shoes. Increasingly bad news since the interest rate is high.

The BRL/USD appreciated first in the 2000s, see table 6, but has now depreciated by almost the same percentage (The World Bank, 2015). Foreign debt was falling until 2011, and exchange reserves were building up, but now the progress seems to be reversing. Weaker currency has helped with Brazil's situation: ensuring that exports have remained competitive even if prices have increased. In the short-term the weaker currency has helped, as long as tight fiscal and monetary policy prevents it from fuelling inflation. But a cheaper Real makes Brazilians poorer by lowering their wages in foreign-currency terms. However, it protects jobs by making exports cheaper and imports pricier, and by reducing the price of services compared with tradable goods (OECD, 2013a; The Economist, 2013b).

Inflation is finally under control, and is handled under a monetary inflation target. Brazilians still remember the hyperinflation in 1980-1994, which reached extreme 2 947 pct. in 1990 (The World Bank, 2015), before

the *Plano Real* was introduced. For the end of 2015, the Planning Ministry (*Ministério do Planejamento, Orçamento e Gestão*) estimates inflation to 8.26 per cent, slightly high relative to the inflation goal of 4.5 per cent, plus or minus 2 pct. points. The annual inflation will then be on its highest for the last 10 years. The central bank is increasing interest rates to keep the inflation under control (Leahy, 2015; Ministério do Planejamento, Orçamento e Gestão, 2015).

The labor force in Brazil is one of the largest in the world and will grow together with the population. However, the population growth has stagnated as further discussed under Capital and Natural Resources. Unemployment has been low and stable, but in May, IBGE (2015) reports that the unemployment rate reached 6.4 pct. in April, which is the highest level in four years (Leahy, 2015).

The term *Custo Brasil* refers to the high cost in the country. From 2003 till 2013, the country's unit labor costs have doubled, while inflation has increased by 67 pct. The main reason is the very large increase in minimum wage by almost 200 per cent in real terms in the same time period (The Economist, 2013b). Further, the labor productivity has not followed the development in wages. When productivity is not following increases in wage, it means the labor cost per unit is increasing. This increases the share of wage in relation to profit, and puts a downward pressure on investments. Taxes are very high, and tax administration is very complicated (Mygind, 2015). The high price of consumer goods makes households struggle to meet their needs, diminishing their purchasing power and leading millions of households into debt (Elstrodt, Manyika, Remes, Ellen, & Martins, 2014).

The years of Lula can be described in economic terms by a high, but falling interest rate, high economic growth, debt stabilization and low investments. The economy suffered from the economic crisis in 2008, but recovered relatively fast. Brazil has had a monetary and fiscal tightening cycle. Labor market has also been tight recently, with low unemployment rates. Dilma's years have been characterized by low growth, falling BRL, inflation and interest rate increasing, budget deficit increasing, state debt increasing, low investments and still volatile foreign direct investment.

At the current time, Brazil's economy is expected to contract by almost one-quarter in dollar terms in 2015 due to depreciating currency and a deepening recession, according to the Planning Ministry. They forecast 23 pct. reduction of GDP (Ministério do Planejamento, Orçamento e Gestão, 2015). The Real is currently the worst performing significant emerging market currency after Turkey's lira. The Real is depreciating 21 pct. against dollar, leading to a year-end estimate of 3.22 BRL/USD (Leahy, 2015). Brazil's difficult situation has come about mainly because of the worsening of external conditions, weak investment, diminished competitiveness, a persistent deterioration of fiscal outcomes and above-target inflation (IMF, 2015).

Table 6 - **Economic Data Brazil, 2000-2014**

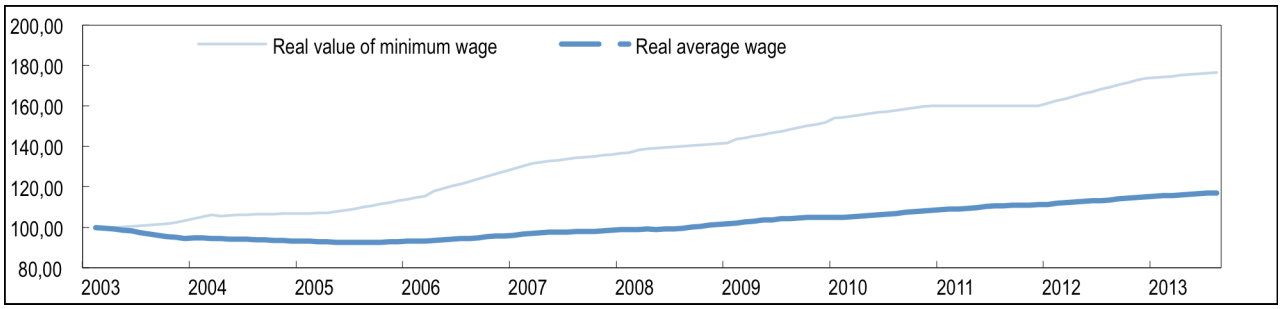
Economic Indicators	**2000**	**2005**	**2010**	**2011**	**2012**	**2013**	**2014**
GDP (current USD, billion)	644	882	2142	2476	2248	2245	2353
GDP growth	4.31%	3.16%	7.53%	2.73%	1.02%	2.49%	0.1%
Inflation (Consumer Price Index) annual pct.	7 %	7 %	5 %	7 %	5 %	6 %	6 %
Interest rate, *Taxa Selic*	19 %	18 %	9 %	11 %	10 %	10 %	11 %
Investment pct. of GDP	16.8%	15.9%	19.5%	19.3%	18.1%	18 %	17 %
Gross savings of gross disposable income (savings rate)	14.3%	17.8%	17.8%	17.5%	15 %	16 %	17 %
Government balance pct. of GDP	-2 %	-4 %	-2 %	-3 %	-2 %	-3 %	-4 %
Primary balance pct. of GDP	2 %	3 %	2 %	2 %	2 %	2 %	0 %
Public debt pct. of GDP	51 %	48 %	52 %	53 %	59 %	57 %	63 %
Unemployment rate	10 %	9 %	8 %	7 %	6 %	5 %	5 %
External Indicators	**2000**	**2005**	**2010**	**2011**	**2012**	**2013**	**2014**
Current account pct. of GDP		2 %	-2 %	-2 %	-2 %	-4 %	-4 %
External debt pct. of GNI	39 %	22 %	17 %	17 %	20 %	21 %	25 %
Forex reserve pct. of GDP		6 %	14 %	14 %	17 %	16 %	17 %
Export pct. of GDP	10 %	15 %	11 %	12 %	13 %	11 %	10 %
Import pct. of GDP	12 %	12 %	12 %	13 %	14 %	15 %	
Exchange rate BRL/USD	1.8	2.4	1.8	1.7	2.04	2.3	2.6

Source: IBGE (2015), The Economist Intelligence Unit (2015), World Bank Databank (2015)

WAGES

The minimum wage has increased almost twice as much in real terms from 2003 with BRL 200 a month, to BRL 678 a month in 2013 (The Economist, 2013b). Figure 26 shows that from 2003, the real value of the minimum wage has increased from 100 to around 175 in real terms. The minimum wage sets a trend for all pay negotiations and the standard for pensions etc. and therefore greatly affects the economy. Its adjustment is linked to the sum of the real GDP growth and CPI inflation (OECD, 2011).

Figure 26 - **Real Value of Minimum Wage and Real Average Wage, 2003-2013**



Source: OECD (2013a)

Tight labor market and skill shortages have pressed for wage increase (OECD, 2013a). At the time Lula took office, it was needed to raise the value of the minimum wage in order to reduce poverty and increase social equality. However, more than ten years later, it seems that the level is too high when investigating pension levels and public expenditure related to the matter (OECD, 2013a; The Economist, 2013b; McKinsey Global Institute, 2014).

5.5.2 LONG-TERM ECONOMIC ELEMENTS

The long-run economic elements, as presented in the long-term growth model, will be analyzed. These economic elements affect the economy over a longer period of time, while the short-term economic elements' effect is on a temporary basis. The elements from the two terms do however influence each other greatly. The section is structured after the typical order: stock of capital, technology, quantity of labor, quality of labor, resources, including infrastructure, and lastly total factor productivity.

STOCK OF CAPITAL, TECHNOLOGY AND INNOVATION

The stock of capital is evaluated to be relatively little as a result of low investment level over a number of years and depreciation.

The Global Competitiveness Report (World Economic Forum, 2015), found in Appendix G, ranks Brazil's technology and innovation levels on an average level in international comparison. Brazil shows particular promise on foreign direct investment and technology transfer, mobile broadband subscription, Internet access, capacity of innovation and company spending on R&D. Technology and innovation seem to be one of the elements that strengthen economic development in Brazil. However, with further improvements, it would be able to contribute more substantially to positive developments. The increase of Internet access has provided all of Brazil with the improvements, not distinguishing between social groups.

LABOR

Brazil's population is the 5th largest in the world with 202.7 million people. Population growth has slowed the past years, and grows now at approximately 0.85 pct. per year in contrast to 1.9 pct. in 1990 (The World Bank, 2015). The dependency ratio has decreased with approximately 10 percentage points to 46 pct. of working-age population in 2013, meaning that the part of the population that is able to work is increasing (The World Bank, 2015).

QUALITY OF LABOR

In the section of quality of labor, education and health levels are the focus areas. Education and health is chosen because of the theoretical discussion that argued the importance of these two elements for social inequality, but also for economic growth.

IMPROVEMENT OF EDUCATION

Access and quality of education have improved by much in Brazil in the last years. At the moment, primary education last four years, while secondary education is 7 years (OECD, 2012).

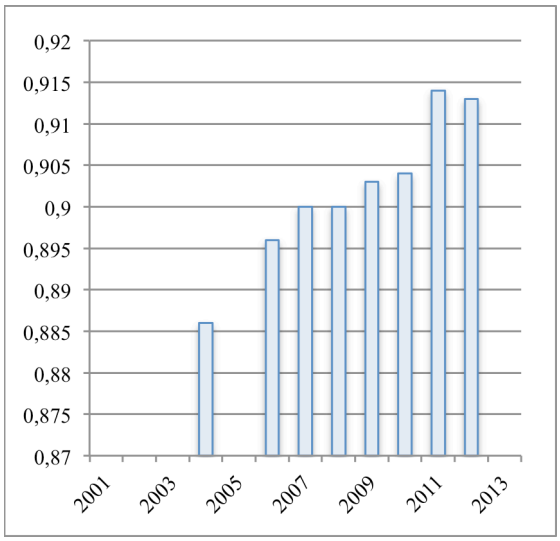
Quality of education is investigated by looking at the Programme for International Student Assessment (PISA). Brazil performs below the OECD average, but its average performance has improved since 2003 in all of the fields: mathematics, reading and science. Improvements have been particularly strong among low performers. Overall PISA scores remain in the bottom half of all countries participating Furthermore, enrolment in primary and secondary schools have improved from 65 pct. of 15-year-olds in 2003 to 78 pct. enrolment rate of 15-year-olds in 2012. Factors that pull down educational endowment are uneven teacher quality, poor infrastructure and low student commitment (OECD, 2012).

As figure 27 shows, the literacy rate in Brazil has improved very much since 2000. Furthermore, Brazil spends almost 6 pct. of GDP on education, which has increased by 2 pct. in the last decade (The World Bank, 2015). The issue in Brazil is not how much money is spent on education. In an international comparison, the country's spending is average. However, the money does not seem to be well spent, which is what causes the below average enrolment and quality of education (OECD, 2013a). Manpower Group (2013), an employment agency, sates Brazil is the world's second-hardest place for firms to find the skills they need after ageing Japan.

Educational attainment displays a very uneven distribution, shown in figure 28, although recent improvements in access to education have contributed to decreasing income inequality. OECD (2015) states

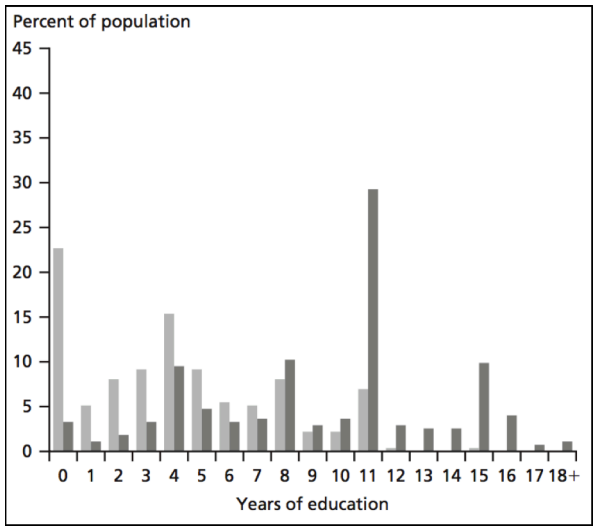
that additional action for educational access and quality could increase economic growth and lead to further reductions in income inequality.

Figure 27 - **Literacy Rate, 2000 – 2012**



Source: The World Bank (2015)

Figure 28 – **Educational Division Between Poor and Rich, Brazil, 2006**



Source: Perry et al. (2006)

GENERAL HEALTH LEVELS

General health levels in Brazil have improved greatly the past decade. Figure 29 shows the positive development of life expectancy and mortality rate. Particularly mortality rate have improved immensely since 2000.

Figure 29 - **Life Expectancy and Mortality Rate, 2000 – 2014**

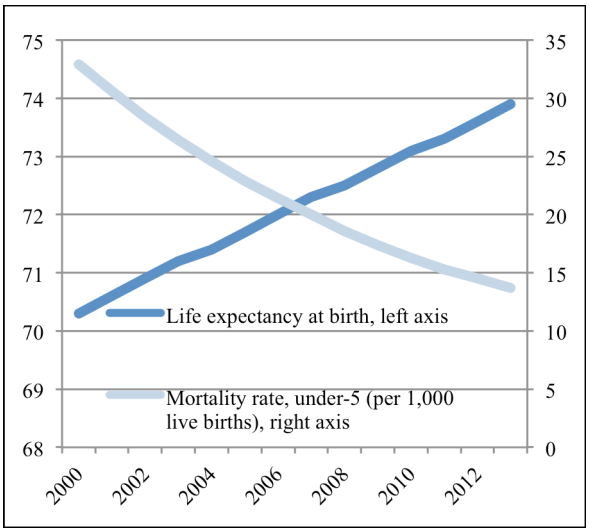
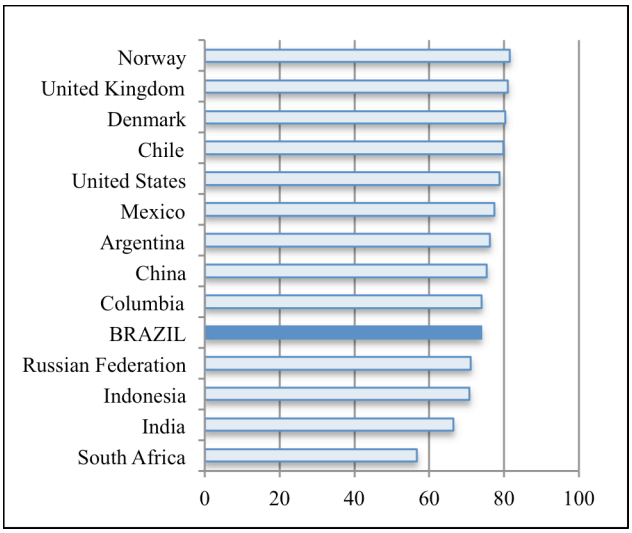


Figure 30 - **Compared Life Expectancy, 2013**



Source: The World Bank (2015)

Although Brazil's general health levels have improved in the last decade, when comparing internationally, the country's position is not strong (figure 30). Life expectancy in Brazil is 74 years, below most OECD countries and neighboring countries, however, above most of the BRIC countries (The World Bank, 2015).

Improvement in educational and health levels is therefore seen as necessary elements. They are major facilitators of getting people out of poverty and increases in access and quality of education and general health levels seem to contribute positively to development of social equality, as well as improving the quality of the labor force, contributing positively to economic development as well.

NATURAL RESOURCES

The country is rich in agricultural products such as sugar, corn etc. There are strong reserves of raw material, including oil, ethanol and hydropower. Forest depletion has been a large issue in Brazil, but in the recent years it has slowed (OECD, 2013a). Deforestation has also been a challenge of Dilma's presidency (The Economist, 2013b). Brazil has large resources even if deforestation stops.

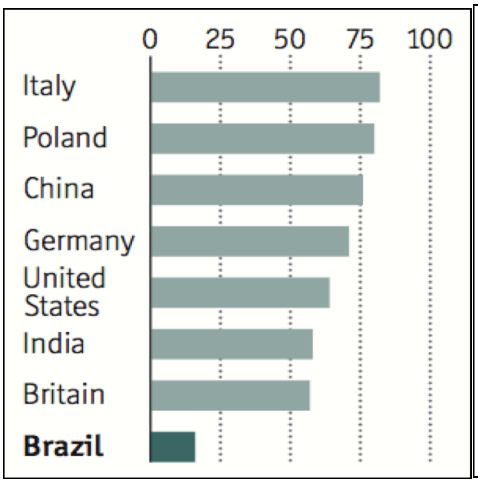
Brazil has some advanced sectors that deliver high quality goods, capital and services, such as the agricultural sector, the ethanol industry and the aerospace industry, particularly the firm Embraer. The country has also made substantial progress in the sustainable use of natural resources, exemplified by ethanol (OECD, 2013a). Brazil's resources offer many opportunities for the country if they are utilized correctly.

INFRASTRUCTURE

The situation of infrastructure in Brazil is defective. The roads are filled with cars, and queues stretch for hours, affecting transportation time and rising costs levels. There is a growing demand for public goods that the government has tried, but failed to respond to – big projects are delayed and becoming more costly (The Economist, 2013b).

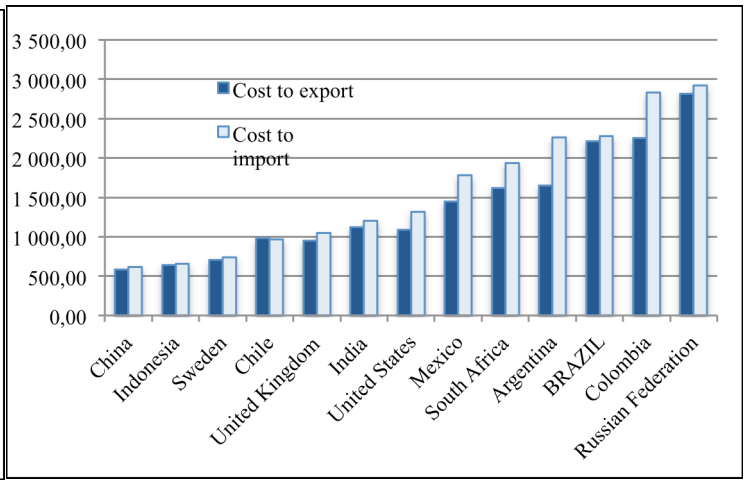
The slowdown in economic growth has led to reductions in investment levels, which is desperately needed to improve infrastructure (The Economist, 2013b). Brazil's infrastructure as pct. of GDP (figure 31) is low compared internationally. Furthermore, the cost of exporting or importing a container in Brazil is generally

Figure 31 - **Infrastructure stock as pct. of GDP, 2012**



Source: The Economist (2013b)

Figure 32 **- Cost to Export or Import a Container, 2013**



Source: OECD (2013a)

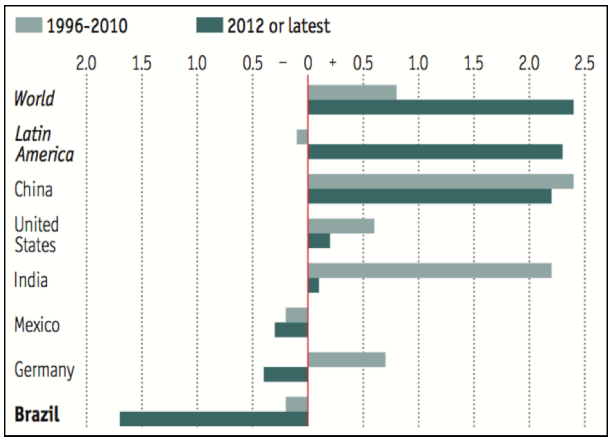
high compared to OECD, Latin America and BRIC countries' average, as shown in figure 32. The World Economic Forum (2015) rates quality of roads, railroads, ports and air transport infrastructure in Brazil as of poor quality. However, Brazil ranks well in the areas of telephone and Internet infrastructure. World Economic Forum's complete evaluation of the infrastructure can be found in Appendix G.

Infrastructure affects both political and institutional elements negatively. The political situation becomes unstable because some of the social groups are becoming increasingly agitated because of the lack of infrastructure. On the other hand, the poor infrastructure in the country makes institutional changes more difficult, e.g. administration and enforcement need proper infrastructure to be efficient.

TOTAL FACTOR PRODUCTIVITY

Research from Boston Consulting Group (Ukon, Bezerra, Cheng, Aguiar, Xavier, & Le Corre, 2013) shows that approximately 74 pct. of GDP growth in Brazil over the past decade was due to the increase in the number of people working, and around 26 pct. was due to productivity gains. Brazil's average annual TFP growth since 2000 has been negative, with -0.3 pct. over the period 2000 – 2012. Much of Brazil's productivity growth has taken place in resource strong sectors, specifically agriculture and recently in the mining sector. Manufacturing and the service sector accounted for approximately only 20 pct. of productivity growth, even though 80 pct. of value added and employment took place in those sectors (OECD, 2013a). TFP has in general decreased in the country. For the agricultural sector, TFP has grown by approximately 4.6 pct. a year steadily in the past years (Xavier, et al., 2013). Figure 33 shows the development of TFP in Brazil.

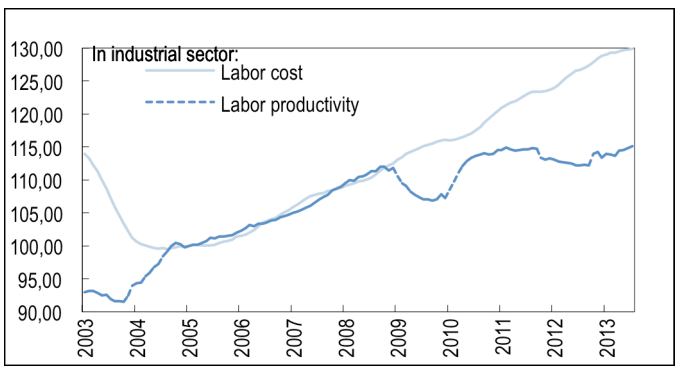
Figure 33 - **Total Factor Productivity Change, Annual Average, Pct., 1996-2013**



Source: The Economist (2013b)

As a prolonging of TFP, labor productivity is placed in the same section, even though it is not the same. Boston Consulting Group (Xavier, et al., 2013) estimated that ¾ of Brazil's growth in the past decade has come from adding more workers and only one quarter from productivity gains. As shown in figure 34, labor cost and productivity has not followed hand in hand after 2008. Labor cost have continued rising, while labor productivity has slowed substantially in comparison. This means that labor cost per unit is increasing, and that the share of wage in relation to profit is increasing. This makes it relatively more costly for firms to produce, and puts a downward pressure on investments. Investments must be sustained both for the economy, but also for a number of elements such as education or health to sustain and contribute to development of

Figure 34 - **Labor Cost and Productivity, 2003 – 2014**



Source: OECD (2013a). Note: Labor cost/wage is measured as average monthly real wages in the industrial sector. Both factors are shown as 12-month moving averages.

social equality. Therefore, growth of labor productivity is one of the elements Brazil needs to improve in order to strengthen both economic development and development of social equality.

Economic Elements Summary: the short-term economic elements created positive synergies under Lula, but at the time they are not favorable, thus creating negative synergies. It is negatively affecting the political elements, hurting the social groups that in turn express their discontent towards the political situation, and the institutional elements. The long-term economic elements include many positive developments, such as improvement of education and health, which participates to positive economic development and development of social equality. However, there are some elements that need improving, which at the time create unfavorable dynamics, such as the relatively low TFP and poor infrastructural situation.

5.6 SURROUNDING WORLD

To finalize the analysis, Brazil's relation to the surrounding world by competitiveness and degree of globalization will be investigated.

5.6.1 GLOBALIZATION

The Connectedness Index from McKinsey Global Institute (McKinsey Global Institute, 2014) looks into openness and the degree of globalization that different countries have experienced. Brazil gained 15 places from 1995 – 2012 mainly due to services and financial flows. However, Brazil ranks only 43rd overall, behind the other BRIC countries. Greater openness could yield larger opportunities for productivity enhancements and economic growth. In addition, also improvement of human capital, knowledge, innovation and technology improvement will come about with a higher degree of openness (Elstrodt, Manyika, Remes, Ellen, & Martins, 2014).

For many decades, Brazil's economic policy has focused on local protection, and drawing on the strengths of its expanding and vast domestic market. The inward focus has come at a cost of international competitiveness (Elstrodt, Manyika, Remes, Ellen, & Martins, 2014). The country exports many resources, while otherwise the ties to the rest of the world are relatively limited. As Brazil welcomes the two global events of FIFA World Cup and the Olympic Games, the country turns its focus more towards the international world.

Trade liberalization after 1990 has left some sectors highly protected and taxed, while other sectors have been more exposed to global market forces. Elstrod et al. (2014) state that when comparing sectors, the open sectors have been more effective in boosting sector productivity. Brazil can use the valuable lessons from opening the agricultural sector and establishing the globally competitive aerospace firm, Embraer. For

example, the Brazilian ethanol industry is very successful, the ethanol exports has increased rapidly since 2003, and has created cooperation with other countries such as the USA. The production in the two countries is at the same level, but the costs per unit are much lower in Brazil (Mygind, 2015). Manufacturing has also successful elements, such as steel production due to low cost, high grade and supply resources and developed industry, which is partly because of the import substitution that allowed manufacturing to gain competitive advantages (Bueno, 2010).

5.6.2 COMPETITIVENESS

Low productivity growth partly due to cyclical factors and rising wages has been part of the reason for declining competitiveness over the past decade, specifically for manufactured products. *Custo Brasil*, including high and complicated tax systems, poor infrastructure, high costs and administrative hurdles, is another part of the reason for the relative low degree of competitiveness (Elstrodt, Manyika, Remes, Ellen, & Martins, 2014). The exchange currency has contributed to the rising unit labor costs in foreign currency, while most of the loss of competitiveness is due to domestic factors (IMF, 2013; OECD, 2013a).

Lowering trade barriers has become a priority for Brazil to increase exposure to international competition and strengthen incentives for productivity improvements (OECD, 2015). All in all, the Global Competitiveness Report (World Economic Forum, 2015; Appendix G) ranks Brazil a little below average on competitiveness compared to economies in the same stage of development. The best pillars are market size and business sophistication, and the worst being education, health, infrastructure, goods market efficiency and macroeconomic environment. Improved competitiveness generally boost development in the whole PIE model, stimulating the economy, granting political confidence, making it possible to secure institutional efficiency, which in turn may increase competitiveness.

Brazil is still a relatively protected economy, which seems to be damaging its competitiveness. There are indications that the sectors that have become more opened and prone to globalization have experienced boosts in productivity, economic growth, and resulting in improved level of competitiveness. If opening up would boost productivity and enhance the economic flows, it is likely that the social groups would be better off, taking pressure of the political situation. Improved competitiveness could be achieved by dealing with some of the aforementioned issues such as *Custo Brasil,* resulting in a stronger position in the global economy. A changing political situation may lead to institutional changes, which may enhance economic competitiveness. Such development is likely to enhance economic development, and contribute positively to the development of social equality.

The following chapter will discuss the findings made and compare them to the theoretical predictions.

CHAPTER 6 - DISCUSSION

This chapter discusses the relationship between economic development and development of social equality in Brazil from 2002 till the present. This will be done by first comparing and discussing the theoretical predicted effects of the PIE elements with the findings in the analysis. Thereafter, the dynamics within the PIE model will be discussed in relation to economic development and development of social equality. Lastly, criticism and reflections are deliberated.

6.1 THE PIE ELEMENTS

Table 7 shows the effects of the PIE elements from the theoretical perspective compared to the findings from the analysis. The green coloring indicates that the effects found in the analysis correspond to the theoretically predicted effects, while the red coloring indicates that it does not correspond. To summarize the effects of the PIE elements, they generally create the same synergy towards economic development and development of social equality – meaning that if increased, or lowered in the case of corruption and crime, there is likely to be positive synergies.

The discussion will focus on four elements of the PIE model that distinguish themselves from the rest. The institutional elements conditional cash transfer (CCT), *Bolsa Família*, and pensions, and the economic elements wages and taxation are discussed in detail. These four aspects are chosen because they particularly impact the Brazilian development. Furthermore, *Bolsa Família,* pensions and taxation have different theoretical predictions than findings from the analysis.

Table 7 – **Compared Dynamics**

Political Elements	**Economic Development**				**Social Equality**			
	How x Influences Growth		**How Growth Influences X**		**How X Influences Equality**		**How Equality Influences X**	
	THEORY	ANALYSIS	THEORY	ANALYSIS	THEORY	ANALYSIS	THEORY	ANALYSIS
n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Institutional Elements	**Economic Development**				**Social Equality**			
	How x Influences Growth		**How Growth Influences X**		**How X Influences Equality**		**How Equality Influences X**	
	THEORY	ANALYSIS	THEORY	ANALYSIS	THEORY	ANALYSIS	THEORY	ANALYSIS
Efficient Administration and Enforcement (+TFP)	+	+	n.a.	n.a.	+	+	n.a.	n.a.
Corruption and Crime (-TFP)	-	-	n.a.	n.a.	-	-	n.a.	n.a.
Conditional Cash Transfers	+?	+	+	+	+	+	n.a.	n.a.
Pensions	?	-?	+	+	+?	+?	?	?
Taxation	-?	-?	n.a.	n.a.	+?	?	?	?
High Institutional Quality (+TFP)	+	+	n.a.	n.a.	+	+	n.a.	n.a.
Economic Elements	**Economic Development**				**Social Equality**			
	How x Influences Growth		**How Growth Influences X**		**How X Influences Equality**		**How Equality Influences X**	
	THEORY	ANALYSIS	THEORY	ANALYSIS	THEORY	ANALYSIS	THEORY	ANALYSIS
Increase in Investments and Savings	+	+	+?	?	+	+	n.a.	n.a.
Larger Participation in the Labor Market	+	+	+	+	+	+	+?	+?
Higher Wages	-?	-?	+?	+?	+	+	n.a.	n.a.
Increase in Capital	+	+	n.a.	n.a.	?	?	n.a.	n.a.
Improvement of Technology and Innovation	+	+	n.a.	n.a.	?	?	n.a.	n.a.
Improvement of Education	+	+	+	+	+	+	+	+
General Improvement of Health	+	+	+	+	+	+	+	+
Increase in Natural Resources	+	+	n.a.	n.a.	?	?	n.a.	n.a.
Improvement of Infrastructure (+TFP)	+	+	n.a.	n.a.	+ ?	+?	n.a.	n.a.
Increase of TFP	+	+	n.a.	n.a.	+?	+?	+?	n.a.
Surrounding World	**Economic Development**				**Social Equality**			
	How x Influences Growth		**How Growth Influences X**		**How X Influences Equality**		**How Equality Influences X**	
	THEORY	ANALYSIS	THEORY	ANALYSIS	THEORY	ANALYSIS	THEORY	ANALYSIS
Globalization	+	+	+?	+?	+?	+?	n.a.	n.a.
Competitiveness	+	+	+?	+?	+	+	n.a.	n.a.

Source: Author

The first section discusses the conditional cash transfer program *Bolsa Família.*

The conditional cash transfer (CCT), *Bolsa Família*, is particular to the case of Brazil. It is particularly mentioned because it contributes greatly to the reduction of social inequality Brazil has experienced. The theoretical predictions were unsure if it would contribute to economic development, because it much depends on the resources demanded, and the return of the transfers. The analysis has shown that *Bolsa Família* demands little economic resources, and has proved not to be too complex to administrate. Therefore it is a relatively efficient institution. The returns of the CCT are large; it has improved health levels and educational enrolment, decreased poverty and child labor, improved nutrition, health levels, school attendance and grade progression – all in all contributing to development of social equality. Due to the large returns from the program, it has indirectly also contributed to economic development, e.g. improved nutrition and education levels, and increase the quality of the work force.

On the other hand, *Bolsa Família* is argued to create a culture of dependency in Brazil. If the poor can only survive on the transfers of the government, they are not able to sustain themselves, making them dependent on the transfers. If this is the case, *Bolsa Família* contributes in the short run, while it becomes unsure of its contributions in the long run. The analysis does not provide enough information about the long run consequences to conclude on the dependence issue.

The next sections discuss the institutional element of pensions: Brazil spends as much on pensions as countries with much higher old-age dependency ratio. Because of the strain the high pension levels pose on the economy, the analysis disagrees with the theoretical prediction, changing the effect from unsure to possibly negative to economic development. The analysis found that the population growth is slowing, indicating that in the future the pensions will grow in size, straining the economy further. The high levels of pension payments and the attribute of survivors' pensions are too high to be sustainable.

However, the pensions have contributed greatly to lift the population over 50 years out of poverty, contributing positively to development of social equality. This does give some positive indirect effects towards economic development, such as increased consumption. Although all in all the effects are likely to be negative for the economy. The discussion leads to thoughts of reform in order to keep the pension system sustainable – then it could demand less economic resources, while continuing to create positive synergies for development of social equality.

The following paragraph presents the discussion of the last institutional element, taxation.

The analysis shows that the taxation system is one of the largest institutional challenges Brazil has. The findings from the analysis show that the taxation system is too complex, proving it to be an inefficient institution that damages the economy. It was theoretically predicted to have unsure or negative effects on the economy, which the analysis agreed with. It is ranked as one of the most problematic factors of doing business in Brazil, leading it to deter competitiveness as well.

It is unlikely that its redistributive effects are larger than its negative effects. Theory predicted only unsure synergies from taxation to development of social equality. The analysis made it clear that taxation could have a negative impact on the development of both the economy and social equality. Therefore, the taxation system in Brazil in its current state is not contributing to the development of the country. It needs reform, in the sense of simplification and also lowering of taxes. Not only is it an inefficient institution, it also tempts businesses and employment into the informal economy.

Lastly, the economic institution wages are discussed.

Wages are another of the main issues in Brazil. One of the issues is that productivity growth is not following the same pace. This increases labor cost per unit and the share of wage in relation to profit. Together, it puts a downward pressure on private investments while costs are rising. Besides, these increases have also affected the minimum wage. As the minimum wage is the benchmark for pension payments, it does participate to the larger pension payments.

The increase in the minimum wage has increased wages for all, meaning it has lifted income for all social groups, contributing to development of social equality. Nonetheless, the creation of the productivity gap and increase in cost negatively impacts the economic development.

The effects discussed previously are the most remarkable findings in the analysis. The other PIE elements also impact the development, generally speaking most elements needs improvement and will then create positive synergies. In addition to the elements discussed, it is worth mentioning briefly that investments particularly should be raised so that the resources the country already has can be sustained. Secondly, infrastructure is at a very poor level, improvements would without doubt participates to the economic development, and if targeted at all social groups also to development of social equality.

6.2 THE DYNAMICS

In this section, the dynamics in the Brazilian PIE model are discussed. By concentrating the most important elements within a society, the PIE model has made it possible to select elements important to the development of the Brazilian society. Theoretical discussion and analysis of the three PIE blocks have, although simplified, created an understanding of the real society as a whole.

The PIE model has laid the foundation for the theoretical understanding of the dynamics, and made it possible to see the links between the different PIE elements in the Brazilian society.

The political situation has clearly affected both economic growth and development of social equality. After PT won the elections, both factors have developed more positively than before: improving the quality of the institutional framework, policies that target social equality, as well as a number of measures to improve TFP,

which have strengthened the positive economic development and development of social equality. The economic elements have had a large say for the economic development, as well as the development of social equality by e.g. wage levels, education and general health levels. The dynamic between the PIE elements seem to be of essence to secure the positive development of the two main factors and its relation. The analysis of the political elements further supports the dynamics found in theory – the poorer social groups have grown stronger due to changes in economic distribution. This has influenced them to vote for the political parties they feel support them, bringing these social groups more political power as they stand united. The change in the political situation in 2002 has inspired institutional changes that have affected the economy and the political elements in turn, creating a circle of dynamics.

Many of the effects from the PIE elements are determined by the politics in the country. The political choices the government makes have different tradeoffs. It does not necessarily mean that the outcomes are better or worse, but it does mean that the outcomes would be greatly affected by the political ideology and political choices made. To illustrate, improvements in technology and innovation would under any circumstance increase economic growth, and most likely also development of social equality. However, if the improvements were used in a way that only gives advantages to the rich, such improvement would actually deteriorate development of social equality. This makes it difficult to accurately evaluate how the different elements affect the society, and demands even more thorough and detailed research.

The way social equality affects the different elements is difficult to analyze. This is because the effects are specific to the environment, historical context and the politics already in place. When social equality improves, the poor and lower middle-income classes will continue the support for their parties. This could set off a virtuous cycle, where the politics positively affects institutions, which positively affect economic elements, continuing the economic distribution in favor of the poorer and lower middle classes. However, the richer classes may lower their investment, restricting growth inducing other tendencies to happen.

6.3 REFLECTIONS AND CRITICISM

The dynamics within the PIE model are very complex. Since the analysis is of such broad nature, it becomes impossible to thoroughly research all the mechanisms in detail.

The effects of the different PIE elements (table 7) that are not available are too unclear to conclude on based on the information analyzed, or the effects are not relevant in this particular case. When the effects are not relevant, it is usually because it depends heavily on the political choices, which would need to be analyzed even further and for the particular case, in order to know the extent of the effects.

The relation has very high complexity. This impacts the analysis in a number of ways, where some of the most crucial are:

1) It becomes difficult to determine the exact causality between the different elements. 2) A change can influence directly or indirectly. For example, increase in TFP gains economic growth. This will often lift rich and poor, so economic distribution may not change, but poverty might decrease. 3) Change in one element might have combinations of higher growth and lower inequality, or lower growth and higher inequality, in both cases a trade-off, which is based on a political choice. This is exemplified by improvement of infrastructure. If the infrastructure is targeted at the richest in society, it might still attribute to positive economic growth, but could make the difference between rich and poor larger. Thereafter one can identify which effect is the strongest in order to perceive the strongest effects.

By adopting another ultimate presumption, the methodology would change, and the interpretation of the systems could be different. To explain a system one must understand its elements and the relations among them. With the belief that the components are mutually dependent on each other and one cannot aggregate the components to get the whole. Therefore, it has been necessary for the analysis to first focus on the different PIE elements separately, and take a closer look at the interactions between them in relation to economic development and development of social equality.

The remaining chapter concludes the research and presents recommendations for further research.

CHAPTER 7 – CONCLUSION

Increases in welfare does not only come from economic growth, but from increases in living standards provoked by economic development and development of social equality.

The objective of the thesis is to answer the research question:

- What has been the relation between economic development and development of social equality in Brazil from around 2002 and until today?

The research question is supported by two sub-questions concerning the role of political, institutional and economic elements and Brazil's state of involvement in globalization and competitiveness.

The relation between economic development and development of social equality is complex. In Brazil, the relation has developed positively together and impressed with both great economic growth and large reduction of social inequality levels until approximately 2011, with the exception of the slowing of economic growth during the financial crisis in 2008. After 2011, the economic development has had less positive development and in 2014 economic growth stagnated. At the same time, development of social equality has continued its positive development. The past four years, the relation stopped developing as strongly together as it had before.

The ultimate presumption sees the world as a large system composed of many smaller components. It has made it possible to see the relation the same way: the relation between economic development and development of social equality is based upon the dynamics within the Brazilian society. The Systems Approach enables investigation of the components and their dynamics within the relation in order to understand the relation more thoroughly because one understands how economic development and development of social equality are affected.

The methodology has introduced the PIE model as leading framework. The PIE model has been ideal for the purpose of the analysis. This is because not only does it present the most influential elements of the society: political, institutional and economic. It also focuses on the dynamics between the PIE elements and their synergies, which are what affect the economic development and development of social equality. The relation highly depends on the development of the Brazilian society, which is analyzed through the PIE elements. The PIE model also implicates that the political, institutional and economic elements strongly influences each other and is the reason for change in a society.

The selected PIE elements have been discussed theoretically, which resulted in a prediction of the PIE elements' effects towards economic development and development of social equality. Thereafter, the actual dynamics in the Brazilian society from approximately 2002 until today have been analyzed.

The comparison has lead to some interesting results. Generally speaking, the PIE elements contributes to positive economic development and development of social equality when its quality is improved. Most of the PIE elements need further strengthening at the current time.

There are four PIE elements that stand out, three institutional and one economic element: conditional cash transfers, pensions and taxation, and wages. Pension, taxation and wages are at too high levels to be sustainable. At the same time the taxation system is too complex to be beneficial. Even though pensions, taxation and wages initially contribute positively to the development of social equality, the PIE elements strain the economic development in such an extent that its complete effects on economic development and development of social equality are likely to be negative.

The conditional cash transfer, *Bolsa Família*, contributes greatly to improving social equality. Theoretical predictions were unsure if it also contributes to economic development, but after the analysis it is clear that it does at least indirectly. Overall effects of the CCT are exceptionally positive. However, there are doubts that the CCT might make the recipients dependent on the system in the long run.

In terms of the surrounding world, Brazil has adapted steadily, and the sectors e.g. agriculture that have fully accepted globalization shows great promise. The level of competitiveness in Brazil will increase if dealing with the issues previously discussed.

The dynamics between the PIE elements have shown to have a large explanatory power of the relation between economic development and development of social equality. The political situation determines much of the effects of the PIE elements in relation to economic development and development of social equality. The social groups, to a large degree determined by the economic distribution, have large influence on the political situation: the poorer and lower-middle class in Brazil voted for the Worker's Party and have kept them in government since. The change in politics has influenced the institutions, e.g. creating *Bolsa Família*. This has led to changes in the economy and the economic distribution, increasing the lower-middle class and their political power. However, the upper social classes may lower their investment, restricting growth and induce other tendencies to happen. Thus the dynamics within the PIE model have proven to be strong, and largely impacts the economic development and development of social equality.

The above findings of the PIE elements impact on economic development and development of social equality lead to a better understanding of the relation between economic development and development of social equality. The PIE elements and dynamics have been illuminated, showing the relation between economic development and development of social equality to be of complex and intertwined nature.

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CHAPTER 8 – RECOMMENDATIONS FOR FUTURE RESEARCH

The thesis has made an initial analysis of the relationship between economic development and development of social equality in Brazil from around 2002 until 2015. The analysis is of very broad nature. Alternatively, future research could choose some of the elements and go deeper into the details and dynamics of them. Another option is to continue with a broad analysis, but make it more comprehensive and allowing for much deeper analysis of the separate parts.

Parts that would be interesting to analyze further are the social groups, including the cultural differences that exist among them. How the social groups are divided, more specifically how they affect the political situation etc. might give important input as to comprehend the dynamics. Understanding culture is a complex matter, and requires sufficiently resources and information to do so. Future research could utilize primary sources for example through qualitative data. This would add aspects that are difficult to attain through quantitative research.

Another aspect that would be interesting to research further is the details of the different sectors in the Brazilian economy. The agricultural sector is an example of a successful sector. Thorough analysis of the sector could provide future research with which factors have been successful and it could be interesting to study if and how these factors could be applied to other sectors in the Brazilian economy. Furthermore different sectors may be compared in order to gain insight into which differences create the success factors.

The elements pointed out in the thesis for not being consistent between theory and the analysis is another suggestion of further investigation. Such investigation might have implications for the theory, perhaps adding insights or modifications. Social mobility is recommended to add as a PIE element. Due to lack of precise data it was not viable to include it at this point in time.

It would be interesting to see the causalities between the different elements further analyzed. This would include a complex analysis of the political situation, meaning that the political targets and implication of policies would have to be analyzed.

Lastly, it would be interesting to make a comparative analysis with other countries, for instance with the other BRIC countries. A comparative analysis could open up for further insight into the dynamics of the PIE elements, how the economic development and development of social equality can proceed differently, and how a different political situation impacts the society and its development etc.

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CHAPTER 10 - APPENDIX

APPENDIX A – LIST OF ABBREVIATIONS

B - Billion

BOP – Balance of Payments

BRIC – Brazil, Russia, India, and China

BRL – Brazilian Reais

CCT – Conditional Cash Transfers

CPI – Consumer Price Index

FDI – Foreign Direct Investment

GDP – Gross Domestic Product

HDI – Human Development Index

IBGE Brazilian Institute for Geography and Statistics (*Instituto Brasileiro de Geografia e Estatística*)

IHDI – Inequality-adjusted Human Development Index

IMF – International Monetary Fund

M - Million

OECD – Organization of Economic Cooperation and Development

PMDB - The Brazilian Democratic Movement (*Partido do Movimento Democrático Brasileiro)*

PSDB – The Party of Brazilian Social Democracy (*Partido da Social Democracia Brasileira*)

PT – Workers' Party (*Partido Trabalhadores)*

R&D – Research and Development

T - Trillion

TFP – Total Factor Productivity

UN – United Nations

APPENDIX B – CHARACTERISTICS OF THE SYSTEMS APPROACH

The characteristics of the Systems Approach are summarized in table 2. It shows that knowledge developed by the systems approach does not become general in the same absolute way as knowledge developed with a more positivistic thinking as ultimate presumption. The systems approach is mainly based on a normative philosophy, yet parts of it interfere with hermeneutics – understanding is not an objective knowledge since every case in the sociocultural world is unique and cannot be subordinated to an objective or quantitative rule (Arbnor & Bjerke, 1997).

Table 2 - **The Characteristics of the Systems Approach**

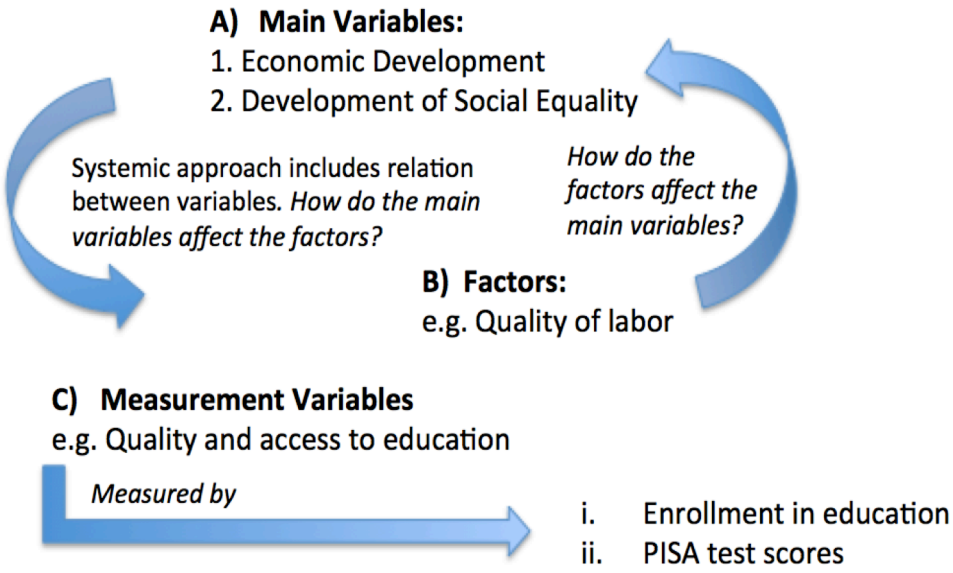
Conception of Reality	An objective (at least objectively accessible) reality, consisting of wholes, the outstanding characteristic of which is synergy.
Knowledge Is Dependent on System	The description of reality consists of pictures of systems or parts of such systems. These pictures, however, are normally not regarded as general, but as valid only for specific system classes.
Explanation and Understanding	The researcher seeks finality relations, i.e. relations among (for the systems) purposeful forces and their positive/negative results
Result	The theory of reality becomes an ever better explanation or understanding of the behavior of different classes of systems. Even the classification itself is changing and improving.
Prerequisites for Continuing	When studying new problems, the researcher is relatively free to draw analogies with results of earlier or similar studies. These analogies, however, must be adapted to the specific case, which could mean a rather unique picture of the new system.

Source: Arbnor & Bjerke (1997, p. 70)

APPENDIX C – CLARIFYING DEFINITIONS

The main variables are the economic development and the development of social equality. The relationship between the two variables is the object of which is to be thoroughly examined. Figure 1 provides an illustration of the most important terms.

Figure 1 - **The Definitions of the Methodology**



Source: Author

The factors are the different economic, social or other factors discussed to contribute to economic growth and social equality. To get a holistic picture, the analysis will look at how these factors affect the main variables and vice versa when relevant.

The factors are given variables in order to measure them. The variables can be general or they can be proxies for the factors. The proxies are the best way to capture measurements of the factor when the variable otherwise would be immeasurable or unobservable (Saunders, Lewis, & Thornhill, 2012). The variables used to analyze quality of education are examples of proxy variables.

APPENDIX D – ORIGINAL ILLUSTRATIONS OF THE PIE MODEL

The original illustrations of the PIE model are shown in figure 2 and figure 3.

Figure 2 - **Overlapping PIE-Model: Politics – Institutions - Economy**

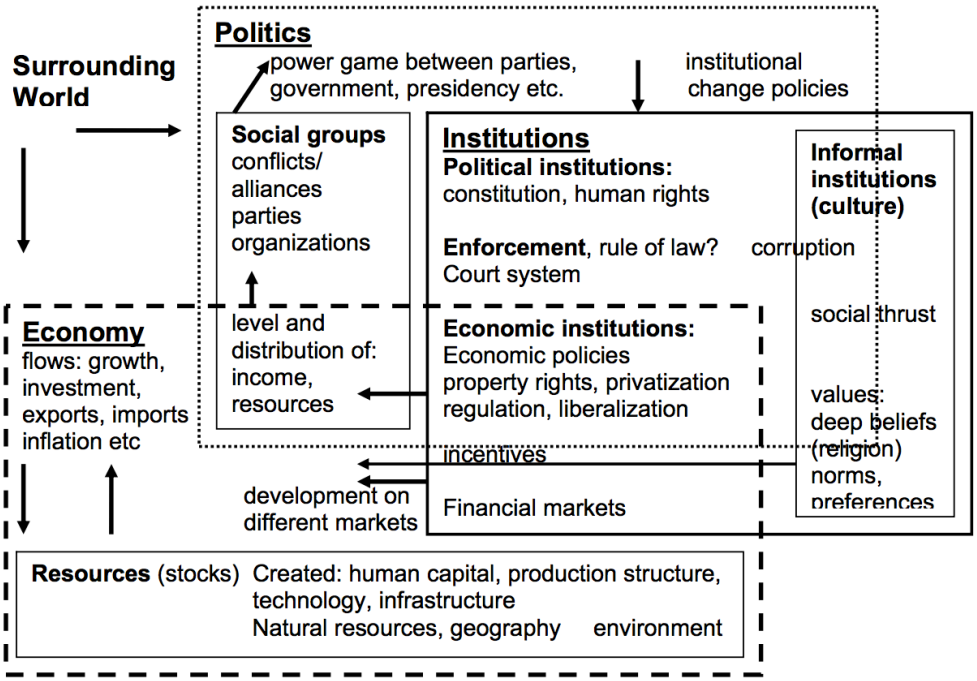
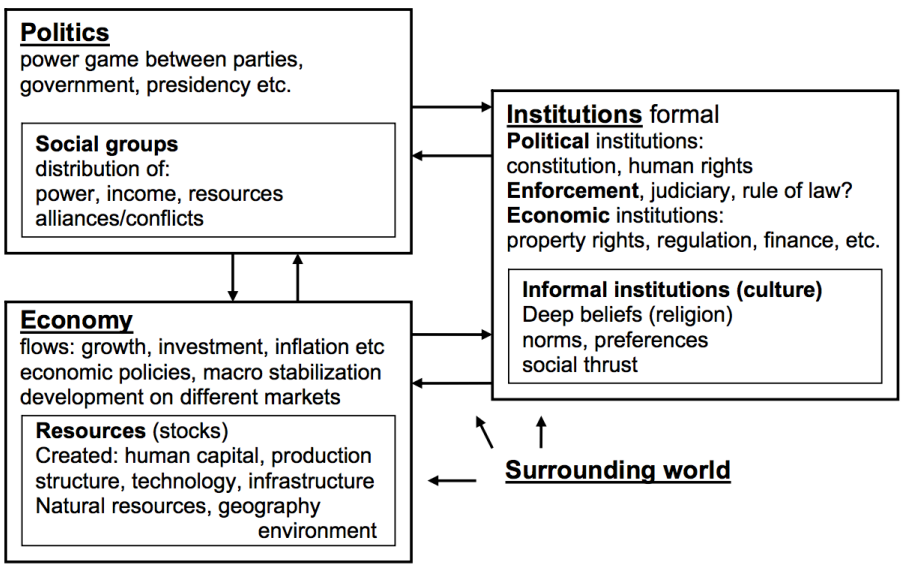


Figure 3 - **Dynamics of the PIE-Model: Politics – Institutions - Economy**



Source figure 1 and figure 2: Niels Mygind (2007)

APPENDIX E – CHARACTERISTICS OF SOCIAL CLASSES IN BRAZIL

Table 4 shows individual characteristics for education and work by economic classes in Brazil in 2009.

Table 4 - **Individual Characteristics, Education and Work by Economic Classes, 2009**

Individual characteristics by Economic Classes	Total Population	Economic Class				Gradient AB/E
		Class E	Class D	Class C	Class AB	
Female	51,23%	50,24%	51,07%	51,63%	51,75%	103%
Youth 20 t0 29 years	17,30%	15,79%	17,30%	18,00%	16,98%	108%
Black	7,73%	9,31%	9,59%	6,87%	3,86%	41%
Rural	17,03%	35,99%	19,63%	10,56%	4,14%	12%
Metropolitan Core	23,16%	13,59%	19,46%	24,88%	42,55%	313%
Metropolitan periphery	12,69%	8,45%	14,38%	13,98%	10,53%	125%
Covered by Bolsa Familia	4,99%	12,66%	7,38%	1,54%	0,14%	1%
Attends Private school	6,80%	1,41%	3,07%	8,39%	19,15%	1362%
Attends public school	24,56%	40,87%	31,26%	17,93%	6,92%	17%
Has college education	8,76%	0,75%	1,82%	9,89%	36,19%	4843%
Social security coverage	37,43%	10,23%	25,58%	44,18%	56,09%	548%
Private Employee	18,64%	7,10%	14,85%	24,60%	23,09%	325%
Public Employee	5,43%	0,98%	2,81%	6,71%	14,63%	1491%
Employer	1,03%	0,08%	0,15%	1,19%	4,38%	5379%

Source: Neri (2014)

Further, table 5 shows public services quality and individual perceptions by economic classes in Brazil.

Table 5 - **Public Services Quality and Individual Perceptions by Economic Classes in Brazil, 2009**

Public Services and Standard of Living Perceptions by Economic Classes	Total Population	Economic Class				Gradient AB/E
		Class E	Class D	Class C	Class AB	
Standard of Living Perceptions						
Enough family income	21,70%	5,11%	10,58%	26,93%	58,20%	1139%
Always consumes type of food wanted	31,39%	9,83%	19,22%	38,99%	69,24%	704%
Has special checking account	13,66%	0,97%	2,48%	13,18%	52,52%	5442%
Delay in debt payments	33,15%	43,25%	39,45%	29,30%	16,88%	39%
Good overall housing conditions	49,25%	33,46%	39,86%	55,36%	75,78%	227%
Public Services Coverage and Perceived Quality						
Good public transportation services	63,40%	59,81%	60,32%	64,84%	67,86%	113%
No public transportation services	25,18%	45,98%	28,55%	17,76%	10,61%	23%
Good educational services	68,96%	68,64%	66,94%	69,41%	72,76%	106%
No education services	2,70%	2,61%	2,68%	2,70%	2,85%	109%
Good health services	43,49%	39,58%	39,10%	44,70%	56,39%	142%
No health services	4,03%	5,77%	4,58%	3,14%	3,31%	57%
Good leisure and sports services	51,33%	47,33%	45,51%	51,48%	64,92%	137%
No leisure and sports services	42,85%	56,82%	48,75%	38,20%	22,23%	39%
Good sewage services	77,48%	65,36%	71,20%	80,64%	86,11%	132%
Not covered by sewage services	36,80%	61,98%	43,77%	27,57%	12,95%	21%
Good quality of garbage collection services	86,09%	78,40%	82,61%	88,64%	92,79%	118%
No garbage collection services	13,90%	33,24%	16,08%	7,05%	2,65%	8%
Violence in the Neighborhood	31,07%	28,87%	33,08%	30,76%	31,44%	109%

Source: Neri (2014)

APPENDIX F – DEFINITIONS AND DEVELOPMENTS OF WORLD BANK GOVERNMENT INDEX

The explanations below are the definitions of the different measures in figure 4 used by the World Bank World Governance Index, 2014.

Voice and Accountability: Captures perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media.

Political Stability and Absence of Violence/Terrorism: Measures perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically motivated violence and terrorism.

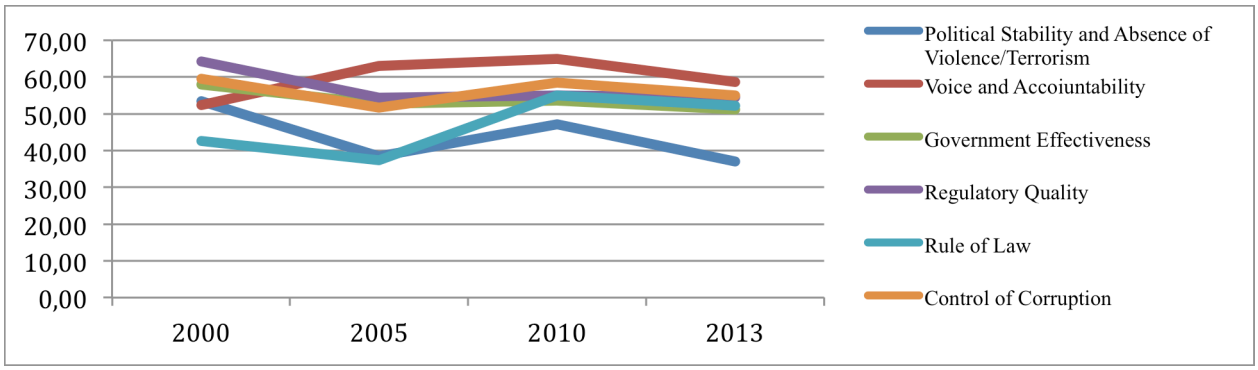
Government Effectiveness: Captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.

Regulatory Quality: Captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.

Control of Corruption: Measures abuse of power, and public power exercised to private gain such as secret dealings and bribery.

As seen in figure 4, Brazil has made improvements on all indicators from 2000 – 2010. In 2010, the macroeconomic environment started to become unfavorable, and the social demonstrations and protests started to emerge.

Figure 4 - **World Bank Governance Indicators, 2000 – 2013**

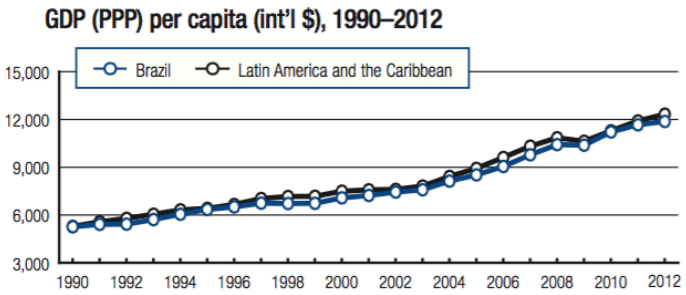


Source: The World Bank Group (2014). Note: Number indicates rank of country among all countries in the world. 0 is the lowest rank, and 100 is the highest.

Brazil

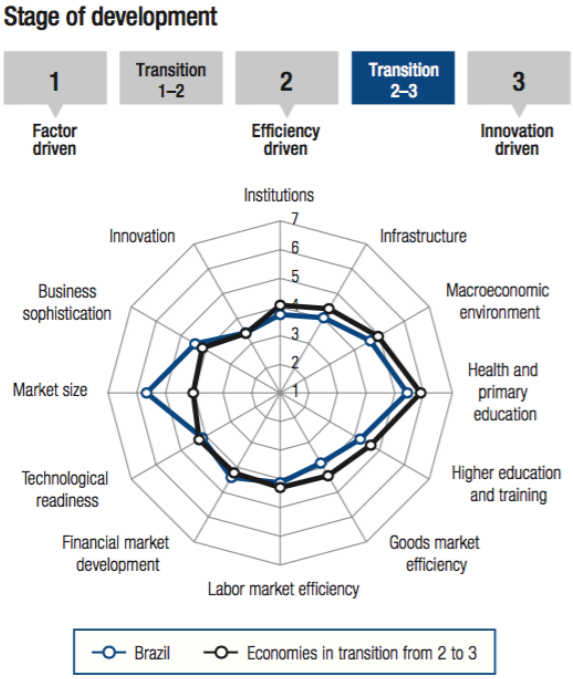
Key indicators, 2012

Population (millions) 196.7
GDP (US$ billions) 2,396.0
GDP per capita (US$) 12,079
GDP (PPP) as share (%) of world total 2.83



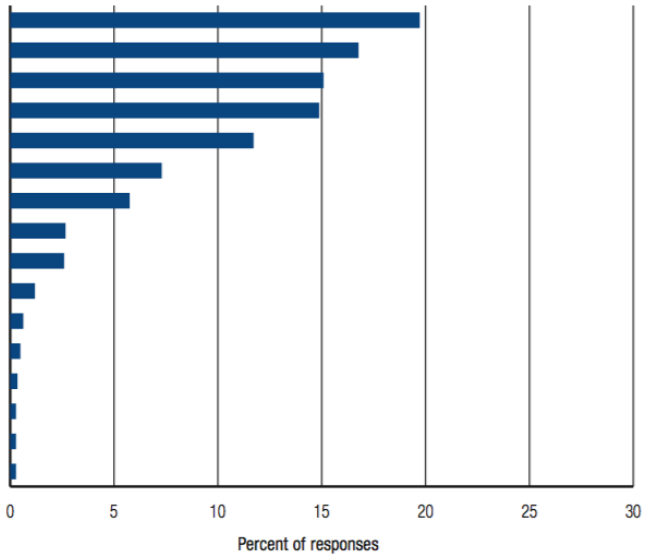
Global Competitiveness Index

	Rank (out of 148)	Score (1–7)
GCI 2013–2014	**56**	**4.3**
GCI 2012–2013 (out of 144)	48	4.4
GCI 2011–2012 (out of 142)	53	4.3
Basic requirements (32.3%)	**79**	**4.5**
Institutions	80	3.7
Infrastructure	71	4.0
Macroeconomic environment	75	4.6
Health and primary education	89	5.4
Efficiency enhancers (50.0%)	**44**	**4.4**
Higher education and training	72	4.2
Goods market efficiency	123	3.8
Labor market efficiency	92	4.1
Financial market development	50	4.4
Technological readiness	55	4.1
Market size	9	5.7
Innovation and sophistication factors (17.7%)	**46**	**3.9**
Business sophistication	39	4.4
Innovation	55	3.4



The most problematic factors for doing business

Inadequate supply of infrastructure	19.7
Tax regulations	16.8
Tax rates	15.1
Inefficient government bureaucracy	14.9
Restrictive labor regulations	11.7
Corruption	7.3
Inadequately educated workforce	5.8
Policy instability	2.7
Access to financing	2.6
Insufficient capacity to innovate	1.2
Poor work ethic in national labor force	0.6
Government instability/coups	0.5
Foreign currency regulations	0.4
Crime and theft	0.3
Inflation	0.3
Poor public health	0.3



Note: From the list of factors above, respondents were asked to select the five most problematic for doing business in their country and to rank them between 1 (most problematic) and 5. The bars in the figure show the responses weighted according to their rankings.

Brazil

The Global Competitiveness Index in detail

	INDICATOR	VALUE	RANK/148
	1st pillar: Institutions		
1.01	Property rights	4.6	51
1.02	Intellectual property protection	3.5	80
1.03	Diversion of public funds	2.3	133
1.04	Public trust in politicians	1.9	136
1.05	Irregular payments and bribes	3.9	72
1.06	Judicial independence	3.9	65
1.07	Favoritism in decisions of government officials	2.9	89
1.08	Wastefulness of government spending	2.2	132
1.09	Burden of government regulation	2.0	147
1.10	Efficiency of legal framework in settling disputes	3.3	101
1.11	Efficiency of legal framework in challenging regs.	3.5	68
1.12	Transparency of government policymaking	3.7	112
1.13	Business costs of terrorism	6.3	**22**
1.14	Business costs of crime and violence	3.4	124
1.15	Organized crime	4.0	126
1.16	Reliability of police services	4.3	64
1.17	Ethical behavior of firms	3.7	87
1.18	Strength of auditing and reporting standards	5.3	**31**
1.19	Efficacy of corporate boards	4.8	**44**
1.20	Protection of minority shareholders' interests	4.9	**26**
1.21	Strength of investor protection, 0–10 (best)*	5.3	69
	2nd pillar: Infrastructure		
2.01	Quality of overall infrastructure	3.4	114
2.02	Quality of roads	2.8	120
2.03	Quality of railroad infrastructure	1.8	103
2.04	Quality of port infrastructure	2.7	131
2.05	Quality of air transport infrastructure	3.3	123
2.06	Available airline seat km/week, millions*	3,780.6	**9**
2.07	Quality of electricity supply	4.8	76
2.08	Mobile telephone subscriptions/100 pop.*	125.2	**45**
2.09	Fixed telephone lines/100 pop.*	22.3	52
	3rd pillar: Macroeconomic environment		
3.01	Government budget balance, % GDP*	-2.8	72
3.02	Gross national savings, % GDP*	15.4	93
3.03	Inflation, annual % change*	5.4	98
3.04	General government debt, % GDP*	68.5	117
3.05	Country credit rating, 0–100 (best)*	68.0	**38**
	4th pillar: Health and primary education		
4.01	Business impact of malaria	6.2	82
4.02	Malaria cases/100,000 pop.*	219.6	107
4.03	Business impact of tuberculosis	6.0	**50**
4.04	Tuberculosis cases/100,000 pop.*	42.0	68
4.05	Business impact of HIV/AIDS	5.5	75
4.06	HIV prevalence, % adult pop.*	0.30	60
4.07	Infant mortality, deaths/1,000 live births*	13.9	74
4.08	Life expectancy, years*	73.4	78
4.09	Quality of primary education	2.5	129
4.10	Primary education enrollment, net %*	94.4	69
	5th pillar: Higher education and training		
5.01	Secondary education enrollment, gross %*	105.8	**20**
5.02	Tertiary education enrollment, gross %*	25.6	85
5.03	Quality of the educational system	3.0	121
5.04	Quality of math and science education	2.6	136
5.05	Quality of management schools	4.5	**49**
5.06	Internet access in schools	3.6	98
5.07	Availability of research and training services	4.7	**38**

	INDICATOR	VALUE	RANK/148
	6th pillar: Goods market efficiency *(cont'd.)*		
6.06	No. procedures to start a business*	13	135
6.07	No. days to start a business*	119	144
6.08	Agricultural policy costs	4.4	**23**
6.09	Prevalence of trade barriers	3.9	116
6.10	Trade tariffs, % duty*	11.3	126
6.11	Prevalence of foreign ownership	4.5	84
6.12	Business impact of rules on FDI	4.3	97
6.13	Burden of customs procedures	3.0	139
6.14	Imports as a percentage of GDP*	13.0	148
6.15	Degree of customer orientation	4.8	55
6.16	Buyer sophistication	3.6	58
	7th pillar: Labor market efficiency		
7.01	Cooperation in labor-employer relations	4.1	87
7.02	Flexibility of wage determination	4.1	127
7.03	Hiring and firing practices	3.2	127
7.04	Redundancy costs, weeks of salary*	15.4	75
7.05	Effect of taxation on incentives to work	2.5	138
7.06	Pay and productivity	3.6	99
7.07	Reliance on professional management	4.8	**38**
7.08	Country capacity to retain talent	4.1	**38**
7.09	Country capacity to attract talent	3.7	53
7.10	Women in labor force, ratio to men*	0.76	86
	8th pillar: Financial market development		
8.01	Availability of financial services	5.3	**30**
8.02	Affordability of financial services	4.5	**48**
8.03	Financing through local equity market	3.8	**48**
8.04	Ease of access to loans	2.9	64
8.05	Venture capital availability	2.7	61
8.06	Soundness of banks	6.3	**12**
8.07	Regulation of securities exchanges	5.8	**7**
8.08	Legal rights index, 0–10 (best)*	3	118
	9th pillar: Technological readiness		
9.01	Availability of latest technologies	5.1	63
9.02	Firm-level technology absorption	5.0	51
9.03	FDI and technology transfer	5.1	**25**
9.04	Individuals using Internet, %*	49.8	65
9.05	Fixed broadband Internet subscriptions/100 pop.*	9.2	64
9.06	Int'l Internet bandwidth, kb/s per user*	25.1	61
9.07	Mobile broadband subscriptions/100 pop.*	36.6	**43**
	10th pillar: Market size		
10.01	Domestic market size index, 1–7 (best)*	5.7	**7**
10.02	Foreign market size index, 1–7 (best)*	5.6	**26**
10.03	GDP (PPP$ billions)*	2,355.6	**7**
10.04	Exports as a percentage of GDP*	11.7	145
	11th pillar: Business sophistication		
11.01	Local supplier quantity	5.3	**16**
11.02	Local supplier quality	4.8	**49**
11.03	State of cluster development	4.5	**26**
11.04	Nature of competitive advantage	3.0	108
11.05	Value chain breadth	3.7	68
11.06	Control of international distribution	4.3	**47**
11.07	Production process sophistication	4.5	**35**
11.08	Extent of marketing	5.1	**29**
11.09	Willingness to delegate authority	4.3	**34**

5.08	Extent of staff training	4.3		44
	6th pillar: Goods market efficiency			
6.01	Intensity of local competition	5.0		70
6.02	Extent of market dominance	4.4		28
6.03	Effectiveness of anti-monopoly policy	4.5		40
6.04	Effect of taxation on incentives to invest	2.5		140
6.05	Total tax rate, % profits*	69.3		140

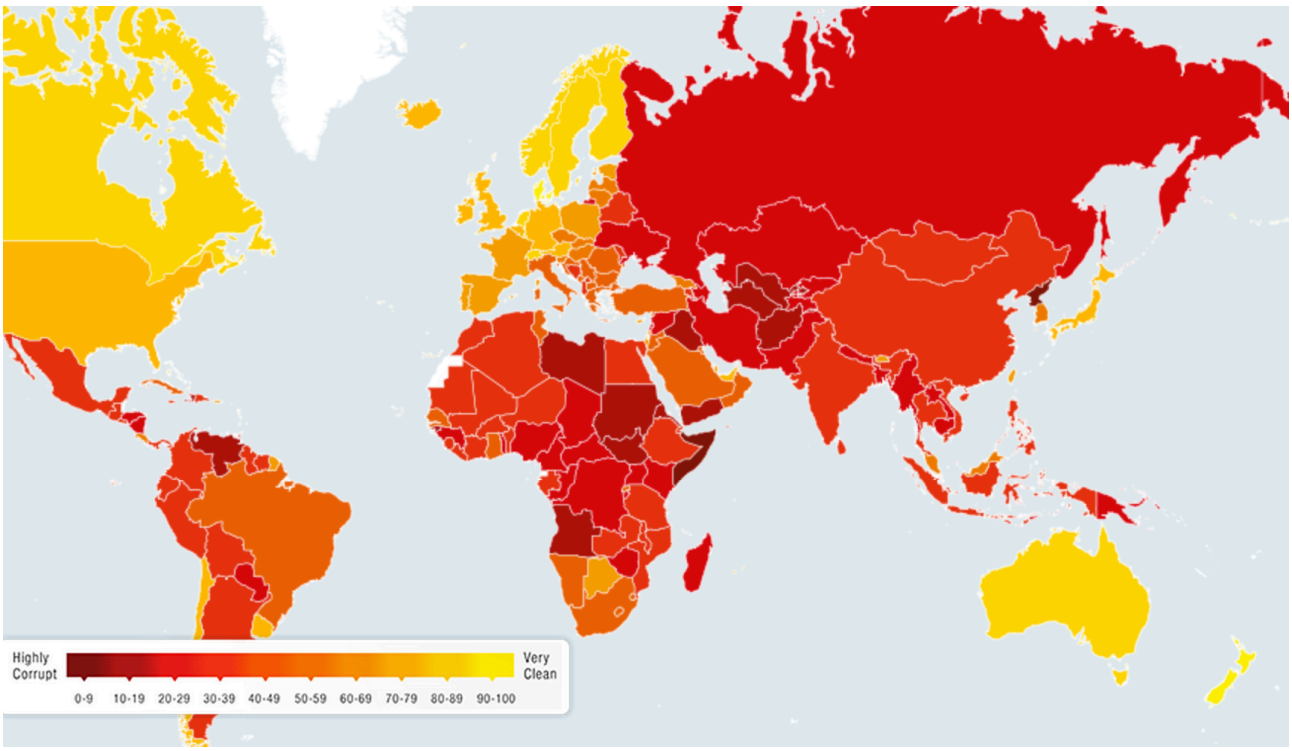
	12th pillar: Innovation			
12.01	Capacity for innovation	4.0		36
12.02	Quality of scientific research institutions	4.3		42
12.03	Company spending on R&D	3.6		37
12.04	University-industry collaboration in R&D	4.0		49
12.05	Gov't procurement of advanced tech products	3.5		69
12.06	Availability of scientists and engineers	3.4		112
12.07	PCT patents, applications/million pop.*	2.9		51

Notes: Values are on a 1-to-7 scale unless otherwise annotated with an asterisk (*). For further details and explanation, please refer to the section "How to Read the Country/Economy Profiles" on page 97.

APPENDIX H – CORRUPTION AND CRIME

The map in figure 5 shows Transparency International's global judgment of corruption levels.

Figure 5 - **Transparency International's Corruption Index**



Source: Transparency International (2015)

Table 6 and table 7 show The World Bank's Enterprise Surveys (2014) for corruption and crime in Brazil.

Table 6 - **Corruption Enterprise Survey, 2009**

Corruption Category	Brazil	Latin America	All Countries	Corruption Category	Brazil	Latin America	All Countries
Bribery incidence (percent of firms experiencing at least one bribe payment request)	11,7	10,4	18,1	Percent of firms expected to give gifts to get a construction permit	9,4	15,0	23,0
Bribery depth (% of public transactions where a gift or informal payment was requested)	8,4	7,1	13,9	Percent of firms expected to give gifts to get an electrical connection	4,6	3,9	17,5
Percent of firms expected to give gifts in meetings with tax officials	8,3	6,5	13,0	Percent of firms expected to give gifts to get a water connection	6,7	11,0	17,1
Percent of firms expected to give gifts to secure government contract	32,9	20,9	27,3	Percent of firms expected to give gifts to public officials "to get things done"	12,4	11,3	19,8
Value of gift expected to secure a government contract (% of contract value)	0,4	1,2	1,7	Percent of firms identifying corruption as a major constraint	68,8	44,9	35,2
Percent of firms expected to give gifts to get an operating license	9,9	7,9	15,3	Percent of firms identifying the courts system as a major constraint	45,4	29,1	15,5
Percent of firms expected to give gifts to get an import license	1,2	6,1	13,9				

Source: The World Bank (2014)

Table 7 - **Enterprise Survey on Crime, 2009**

Crime Category	Brazil	Latin America	All Countries
Percent of firms paying for security	72,6	61,9	55,8
Security costs (% of annual sales)	1,7	1,5	1,7
If the establishment pays for security, average security costs (% of annual sales)	2,4	2,6	3,3
Percent of firms experiencing losses due to theft and vandalism	38,3	27,5	21,6
Losses due to theft and vandalism against the firm (% of annual sales)	2,5	1,0	0,9
If there were losses, average losses due to theft and vandalism (% of annual sales)	6,9	3,8	5,3
Products shipped to supply domestic markets that were lost due to theft (% of product value)*	0,5	0,7	0,8
Percent of firms identifying crime, theft and disorder as a major constraint	68,6	35,9	22,1

Source: The World Bank (2014)

Figure 7 shows the percentage change in homicide rates within Brazil's state in the period from 2007 -2011.

Figure 7

Percentage Change in Homicide Rates Within Brazil, 2007-2011