**Czech University of Life Sciences Prague**

**Faculty of Economics and Management**

**Department of Economics**


**Diploma Thesis**

# *The Impact of Economic Reforms on Economic Growth in China – lesson learned*

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## Declaration

I declare that I have worked on my diploma thesis titled "The Impact of Economic Reforms on Economic Growth in China – lesson learned" by myself and I have used only the sources mentioned at the end of this thesis.

In Prague on 23.11.2011. _____

Jana Bedečová

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# “The Impact of Economic Reforms on Economic Growth in China – lesson learned“

# ”Dopad Ekonomických Reforem na Ekonomický růst Číny - ponaučení”

# Summary

This diploma thesis examines the two approaches toward an economic transition: the Shock approach which was used by Eastern European Countries, and gradual approach, which was implemented in China. Lessons from each of the concepts are highlighted and supported by empirical evidence. Furthermore, China was researched in detail, giving a large emphasis on the analysis of the economic reforms that started in 1978. The reform era was devided into the reforms of 1980's which included: Rural Reforms, creation of Special Economic Zones (SEZ) and implementing the Dual Truck System. Then, the reforms of 1990's followed, concentrating on analysing the Austerity Plan, Banking Reforms and the Reforms of State-owned Enterprises.

The reform of Special Economic Zones was chosen as to be a possible policy that can be implemented on other developing country, on North Korea. It is assumed that opening up the economy through creation of SEZ enables to maintain the socialist and/or communist system in political terms, and at the same time, it results in an increase of a country's trade and consequently in the improvements of standards of living and foreign direct investment flows. This hypothesis was verified by an econometric model which proved the hypothesis valid. However, due to lack of information and autocorrelation, the verification could not be applied to North Korea. Consequently, an economic analysis of both countries was done based on which it was possible to make the prediction, that if the SEZ is implemented, the North Korea‘ s GDP growth will rise by 3.5 %. The analysis also applied trends of foreign direct investment and scope of openness. In order to find out whether this policy has a chance to succeed, what are the countrie‘s strenghts and weaknesses, opportunities and threats in regard to the policy, the SWOT analysis was created.



**Key words:** Transition, China, Economic Reforms, Gradual Approach, Shock Approach, Econometric Model, North Korea, FDI, Scope of Openness, Special Economic Zones

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# 1. Introduction

In the past three decades, there have been many countries that transitioned, mostly as a result from the fall of the communism. Each country had a different approach toward the way to shift from a planned economy to a market oriented economy. Generally, there are two ways to approach an economic transition, either through a shock therapy or through a gradualism. Each of these approaches will be analysed in terms of the theory and lessons learned. However, because China has achieved such a miracle in regards to the economic development, its approach to transition will be analysed in detail as well as some of their reforms that are considered by the author to have taken a significant part in its development.

China post-reform era can be divided into two main periods in which the country concentrated on specific field of economy. In the 1980's, China understood that the country needed rural reforms in order to shift its economy toward prosperity. With the implementation of contract responsibility system, the agricultural sector has been ajdusted and freed so a greater productivity was obtained. In addition, the dual pricing system enabled the raise of prices and the re-destribution of profit between the government and farmers. As the special economic zones were implemented, China opened its doors to the outside world, showing that it is ready to become a part of the world's economy.

In the 1990s, the country faced inflationary pressures caused from the sudden growth resulting from the 1980's reforms. China used the Austerity Plan, Banking Reform and Reforms in State-Owned Enterprised as tools to avoid inflation and decrease of the growth.

China has been so successful that it brings up a question whether its model can be implemented by other countries and reach the same results. This question will be further discussed in the second part of this thesis, where an econometric model is created in order to analyse a particular policy of China and its possible effects on North Korea's growth.

## 2. Objectives and methodology

The goal of the first part of this thesis is to investigate the Chinese reforms‘ era in detail: starting with the 1980’s reforms: rural reforms, creation of Special Economic Zones and implementing the dual truck system. This is followed by the analysing the reforms of 1990s, including the Austerity Plan, banking reforms and the reforms of state-owned enterprises. This analysis of the reforms aims to create a better understanding of the progress in Chinese transformation from a centrally planned economy to a market oriented economy. One reform, the Special Economic Zones Reform is further quantified in the second part of the thesis by the econometric model. The econometric model aims to verify the relationship between the improvements of stadards of living and increase in foreign direct investment flows, exports and imports of the country (the scope of openness), the labor force of the country and the increase of life expectancy.[1]

In the econometric model, there is a data set from China used, containing observations of 28 years (the period 1980–2007). The data is obtained from three sources: Index Mundi, Chinability and UN Data. The method of the calculation of the model was selected based on the given hypothesis, chosen equation and variables. The best option was to choose Ordinary Least Square Method (OLS).

*OLS has five assumptions:*

1) The random error term ***u*** is normally distributed. It results in a normal distribution of sampling distribution of the parameters ***Y*** which means that the tests can be done based on the significance of the parameters.
2) The expected value of the error term is zero
3) The variance of the error term is constant in each period and for all variables of ***X*** which means that all the observations are reliable, so the estimates are efficient and tests of hypothesis are not biased.

[1] They are expressed in the model as:
y1- Standarts of living
x2- Labor force (expressed through the unemployment rate, % of total Labor force)
x3- Life expectancy (years)
x4- FDI (Bill $)
x5- scope of openess [ (Exp + Imp) / GDP ] where all three are measured by Bill $

4) The value assumed by the error term in one period is not correlated or is not related to its value in any other period which means that average value of ***Y*** depends only on ***X*** and not on ***u***
5) The explanatory variable assumes fixed values which may be obtained in repeated samples and therefore the explanatory variable is also uncorrelated with the error term.

(Salvatore, 2001)

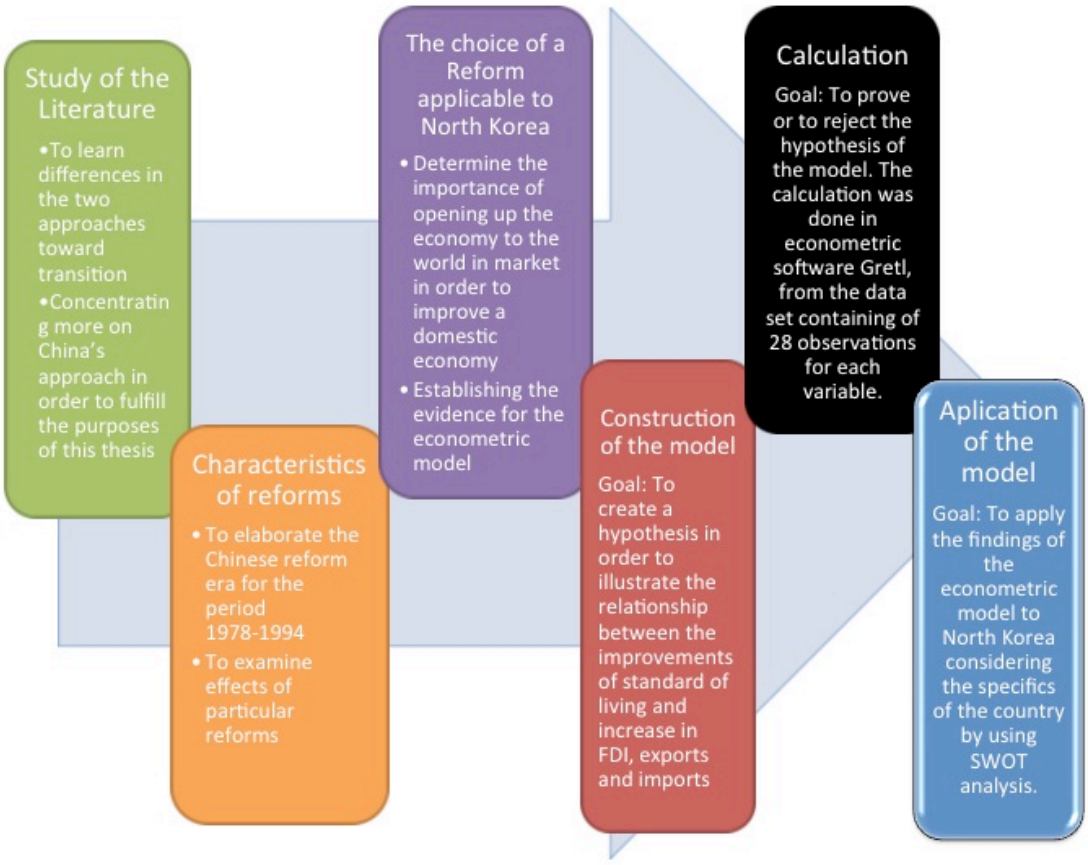
The quantification was done in *Gretl* ('Gnu Regression, Econometrics and Time-series Library'), the cross-platform software package for econometric analysis. The length of the data set is 28 years which should be enough for illustrating the relationship between the variables. Variables X2, X4 and X5 has a positive influence on Y1, therefore, it is assumed that the calculated coefficients will have a positive number.

Based on the results from the econometric model, it is estimated whether the Special Economic Zones Reform can be applied to North Korea. The results showed that the hypothesis was correct, that there is a dependance of standarts of living growth with the increase of FDI and scope of openness, as well as with the increase in labor force. The life expectancy did not verified to be a relevant parameter. Due to a large and positive autcorrelation between the variables, the econometric model was found to be not reliable, rather it serves for informative purposes. Therefore, application of Chinese reform on North Korea was done through analysis of the two markets, and applying the trends of Chinese economic growth to North Korea. In the implication, differences in the size of economies, labor force and strong political control over the economy are considered.

Furthermore, a SWOT analysis was used to summarize the findings and evaluate the strengths, weaknesses, opportunities and threats of an implementation of the chosen policy, the Special Economic Zones, which would liberalize the trade and increase Foreign Direct Investment flows of North Korea.

Another purpose of this thesis is to ellaborate the differences between the two approaches toward transitioning the economy from a centrally planned to a market oriented economy and consequently, the lessons that can be learned from both of the approaches are identified.

The procedure of the thesis is captured in the Diagram of Methodology:




# 3. The Concept of Economic Transition

Before understanding what economic transition actually means, it is important to pause for a moment and think about our own interpretation of the economic transition. It is obvious that if the country transitions the economy, it is the result of profitable economy and enterprises. The reason that economies or enterprises are unprofitable is from the economic point of view connected with the comparative advantage. When an enterprise or a state decides what they will produce (the products) and how they will produce (the type of technology), they need to be consistent with the comparative advantage in terms of capital, labor and natural resources; in other words the factor endowments. The opportunity costs to produce the specific product must be lower than the cost of a competing state or an

enterprise. If these factor endowments are not effectively managed, the economy is not profitable and then the term ‘Economic Transition‘ comes to our minds as the solution for the problem (Lin, 2007b).

This notion is aplicable in the modern era since it is well known that all the states had to be developing at one point and pass over the ‘agricultural economy‘ which brought little gains in the progress of the resource’s allocation, yet, it was mostly due to the population increase and the aggregate size of an economy that the economic progress was displayed.

Currently, according to the International Monetary Fund (IMF, 2006), the countries are divided into three groups which are created, based on the countries’ economic performances. There are ‘developed economies‘ (such the United States) which are developed in regard to the economic conditions and resources. In the second group, there are the ‘developing countries‘, also called as the countries in transition who do not yet have strong economic indicators, free market system, democracy or political stability, as for example China. The last group is the ‘underdeveloped countries‘, which are commonly called as the “3rd world“ (parts of Africa). Such countries have big economic problems, political instability, military interventions, big unemployment and high rates of poverty (Blurt, 2006-2011).[2]

## 3.1. Theory of Economic Transition

From the beginning of the modern economics, agreed to be acknowledged by Adam Smith and his work ‘The Wealth of Nations‘, the question of how a country can achieve a prosperity is tackled. Since then, many theories were created, for example Daron Acemoglu, a professor in the Massachusset Institue of Technology, argues in his ‘Rethinking of the Wealth of Nations‘ that the fundamental determinants explaining the development of a country are categorized into geography, culture and commerce. Moreover, the fact is that some countries have ‘positive‘ geography from which they can gain, some have negative, bringing them losses. This can be either due to various aspects

[2] The underdeveloped countries encounter many problems in terms of economic and political stability and their underdevelopment will not change easily or quickly. These countries need to change their usage of resources in order to improve their economic situation, but that is a topic for another research. This paper is aimed to explain the economic transition of developing countries

such as the climate, shortage of rivers, diseases or even the transportation costs. (Acemoglu, 2009).

The differences in a culture explain the attitudes towards wealth which are based on their beliefs and values. Some cultures have an open approach toward accumulating wealth, as for example, the United States. On the other hand, some do not consider the money as the priority, hence preferring other values. An example can be China‘s confucian culture which is based on a “*golden mean*“ which advises people to ‘maintain balance, avoid extremes and achieve harmony with the outside, changing world‘ (Lin, 2007d).

However, before the modern economic era, many of the current not-prosperious countries were prosperious. Therefore, there is another determinant which explains the existent difference and which is considered as the major drive of economic growth: the commerce. The integration of trade is fundamental, still, according to Justin Yifu Lin, the Senior Vice President and Chief Economist of the World Bank and an expert on economic transformation, it remains that the policies adopted by a government are the key factors to the success or failure of country’s economic development.

On top of these, according to other economists that dedicate their work to the development and transition foundings, the primary ground of economic performance and long-term growth are the institutions. Institutions are *“incentives of a society“* that motivates in work performance and gather resources and capital.

Moreover, Arthur Lewis, a nobel prize winner in Economics who is well known for his contribution in devolopment economics, argues that “capitalist“ sector[3] develops through shifting labor from a non-capitalist sectors[4] which is referred to as the structural transition. At the beginning of a country‘ s transition, there is “unlimited“ supply of labor which enables the capitalist sector to expand withouth the need to increase wages. This reallocation of labor is the main focus until the turning point is reached, eg: when the economy becomes fully commercialized (Ranis, 2004). According to Lewis, there is a link between the dual sector economy and dual social structure as they both relate to agriculture

[3] Lewis defines the capitalist sector as “that part of the economy which uses reproducible capital and pays capitalists thereof“ (SOURCE: Mishra, 1969)
[4] Lewis defines the non capitalist sectors as "that part of the economy which is not using reproducible capital (SOURCE: Mishra, 1969)

and industry as well as the rellocation of rural labor force (Mishra, 1969). Lewis also believed the opening up the economy will solve the problem of food scarcity through import. In his work, Lewis clearly supported that private "actors" are necessary to complement the government planners (Ranis, 2004).

Another important contributer to the development economics was Hollis B. Chenery who was a Harvard professor, working for World Bank and the Agency of International Development (Pace, 1994) . Chenery, similarly to Lewis, supported the idea that economic structure matters for the macroeconomics of developing countries. He proposed that the economic structure is measured through "sectoral shares of the labor, consumption patterns and variables measuring income distribution are sectoral shares of the labor" and later included other five variables:" investment,government revenues, education, urbanization, and demographic transition" (Branson, 1998).

A development pattern is a systematic differantiation in significant aspects of the economic and social structure connected with the increase of income and other variables of development (Branson 1998). Each country can decide which of the two options (gradualism or shock) of approaching the transition from a centrally planned to a market economies will choose, based on the historical research and historical implementation results. Each of these two options has its own followers and rejecters, and it is highly important to decide which one can work the best for a given country.

## 3.2. Determinants of Economic Reforms

The main determinant of the economic reforms is the configuration of domestic economic, political and social factors. These factors are different for each of the states. The centralized countries attempting for economic reforms are very often found in the beginning of the exhaustion of resources. Such a situation can be understood as the signal for starting the transition in order to achieve the new growth stage which is the intensive growth achieved through scientific and technological progress. However, based on the different economic, political and social factors, each of the countries has a different timing for trying to achieve that progress through reforms (Kolodko, 1988).

According to Kolodko, key architect of Polish economic reforms who specializes on development strategies, there are three main factors that are required to be met in order to have the reforms succeed.

Firstly, no country can start reform unless its population agrees with it and is ready for it. The social approval is fundamental because without the cooperation of population, no reform can reach its goal.

Secondly, the politicians are required to be willing to enforce systematic changes including the limitation of their powers (Kolodko, 1988). However, not all the countries have the political opportunities to implement the fast, comprehensive and consequent reform tracks. Furthermore, even the country has it, it is a question if it can use it effectively (Dabrowski, 2002).

Lastly, the reforms have a clear goal based on the economists‘ knowledge of what needs to be done. This has been very hard for the post-communist countries at the time of the beginning of transition. The professional team that carries out the reforms must be backed up with the political support (Dabrowski, 2002).

## 3.3. Shock therapy

The model called ‘Shock Therapy‘ originates from January 1, 1990 and it aroused out of the stabilisation and liberalisation program in Poland. It is the “neoclassical model of transition advocating the immediate implementation of the necessary reforms to establish a free market capitalist economy“ (Marangos, 2005a). The main advisor to the Polish government, Jeffrey Sachs, guided the shock therapy reforms in the goal of “ establishing the economic, legal, institutional basis for a private-sector market economy in just one year“ (Marangos, 2005a). The goal is to be achieved by immediate actions in price liberalization, privatization and establishment of an independent central bank. It is also highly important to establish the essentials of free trade and creation of a flexible convertible currency.

Furthermore, all of the reforms must be introduced simultaneously. Anders Aslund, the economic advisor who guided the transition of Russia (November 1991-January 1994) stated: "The idea that there is a choice between doing one radical measure or another is

simply wrong. There is no trade-off but, on the contrary, complementarity" (Popov, 2006). Both Sachs and Aslund believed that the chaos that Russia experienced before 1991 was to be solved only by the implementation of radical and immediate reforms program. The countries which adopted the same approach to transition were Czechoslovakia (later on, Czech Republic and Slovakia) and Bulgaria starting in 1991, Albania and Estonia in 1992 and Latvia in 1993 (Popov, 2006).

The shock therapy that was advocated to Eastern Europe and the former Soviet Union for their transitions from centrally planned to market economies was based on the Washington Consensus. It is a package of 10 policy recommendations, created by John Williamson, serving as a guidance to emerging economies to reform the crisis in their countries. It was agreed to be advisory to implement them by the Washington DC‘ institutions, such the International Monetary Fund, World Bank, and the US Treasury Department. It was created in 1989, a time when it enjoyed the most influence. The purpose of the Washington Consensus was to provide a list of ten specific policy reforms, which were claimed by Williamson to be “desirable in just about all the countries of Latin America, as of 1989“, for which it was originally created (Williamson, 2004). Furthermore, the essential idea of these recommendations was to create an economy that was property based and concentrated on open and competitive markets (Lin, 2007b).

The recommendations included: (GTN, 2003)

- Fiscal discipline
- A redirection of public expenditure priorities toward fields offering both high economic returns and the potential to improve income distribution, such as primary health care, primary education, and infrastructure
- Tax reform (to lower marginal rates and broaden the tax base)
- Interest rate liberalization
- A competitive exchange rate
- Trade liberalization
- Liberalization of inflows of foreign direct investment
- Privatization
- Deregulation (to abolish barriers to entry and exit)
- Secure property rights

Shock therapy has three integral elements that need to be simultaneously implemented in order for countries to encouter the ‘J-curve‘in the growth. This means that after the reforms are carried out, the transitioning economy will experience a recession (short term decline in economic activities) which will be followed by a fast and dynamic growth.

First element is the rapid privatisation because the ownership is the fundamental characteristic of a functioning market system. In order to have a real market competition, the country needs to have a real private sector. Second, the government must loose the influence on price by total price liberalization. The price should be determined by the market (for detailed explanation, see page 35). Lastly, the government needs to tighten the fiscal discipline in order to maintain macroeconomic stability. As a result of such stabilization, the prices will perform as a guide for resource allocation thus the market mechanism can work well.

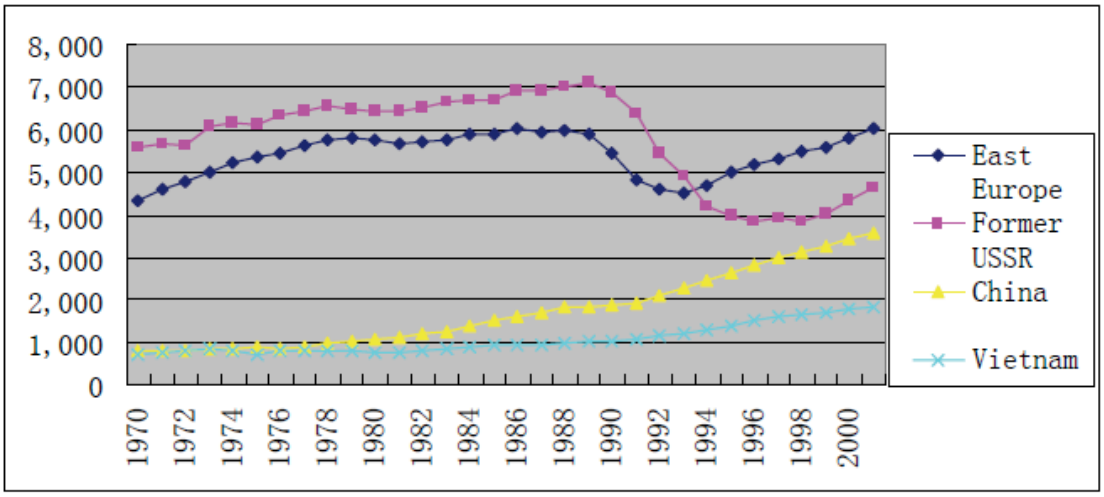
However, based on the history, one can say that in reality, the consequences of the shock therapy reforms work differently. Figure 1 shows what happened in the Eastern European Economies (EEEs) and the former Soviet Union. Apart few exceptions, as for example Slovenia that encountered rapid growth, the EEEs and former Soviet Union experienced deep recessions. It took them ten years to reach their per capita levels to the stage that was reached before the transition. Furthermore, some of the countries of the former Soviet Union have still not reached that level. It is to say, that such implementation and recovery was not fast and thus many economists consider the shock therapy to be a dissapoitment. The remaining question is: “why has it not worked out?“ (Lin, 2011b).

One explanation is offered by Justin Yifu Lin. Lin believes that the drive of a planned economy is the heavy industry. When the country transforms economically, it concentrates on light industry and creation of other industries. Consequently, there is a change in the usage of capital and labor which cannot be used effeciently directly after the “big bang“. The fixed equipment of the heavy industry is not purposed to function in light industry and therefore it must be modified for being efficient, which takes some time. This situation is similar with labor. The workers trained to be employed in heavy industry need a retraining before they can be assigned to new positions and perform well. Moreover, the

establishment of various market institutions takes also some time and resources (Lin, 1996a).

Because the increase in light industry does not compensate the decrease in heavy industry during the initial stage of reforms, the J-curve occurs. It depends on the specific country that how long it takes them to recover, considering how large the gap between light and heavy industry is created and how quickly the essential institutions are created. When the government is not able to handle the consequences of the reforms while concentrating on further growth, the political and economic instability is expected to follow, as it happened in the EEEs and former Soviet Union states (Lin,1996a).

*Figure 1: GDP per capita of China, Vietnam, Eastern European countries and the former Soviet Union, 1970-2000*




Note: GDP is calculated in 1990 international Geary – Khamis dollars

*Source: Lin, 2007b.Page 6.*

## Lesson Learned from the Shock Approach

The leaders of countries that used the shock therapy approach certainly expected high economic growth, stability and higher living standards. Instead of that, the countries experienced stagnation, inflation, economic breakdowns and increase in unemployment. In many cases, the poverty increased which was accompanied with a higher crime rate (Marangos, 2005a).

The reason why such problems arouse was due to the fact that the leaders failed to identify initial conditions of the economies, especially the large amount of non-viable firms. Moreover, the privatization was in many cases conducted with corruption[5] which hurt the economy.

The main objective of the transition is to "eliminate government distortions and interventions" in the transitioning countries and conseqently to create a market competition that will define the prices of different products. However, given this idea, the competition will eliminate those industries, products and technology that are not coherent with the comparative advantage and cannot fully utilise the resources. This is the main problem that the Washington Consensus/shock therapy missed. The comparative advantage defying (CAD) strategy is determined by the endowment structure and therefore it creates an unequal possibilities for certain industries to compete with the same industries in defferent countries (Lin, 2007b). In other words, either due to the lack of know-how, skills, training, resources or technology, certain industries in the transitioning country will not be able to produce the products for the same costs as a competing country in the same industry. Such firms are called 'non-viable' firms and they are not going to survive in the open competition (even if they are well managed) without the government support (subsidies) and protection.

If the number of these non-viable firms is not too significant, the economy will recover quickly from their bankruptcies without big influences on the transition. In the opposite case, when the amount of non-viable firms is significant and their contribution to employment and output value to the economy is fundamental, the shock therapy endangers the economy. It results in economic disturbances, large unemployment and less spending, meaning that the economic cycle is negatively affected as it happened in the EEEs and former Soviet Union. (Lin, 2007b) The limited amount of investment was not satisfactory to keep up with the excessive rate of change in relative prices. Approximately half of the countries industries became non-competitive from one day to another. The output of competitive industries was not enough for suplementing for the loss of inefficient industries which created a bottleneck for the economic growth (Popov, 2006).

[5] It is the Czech Republic who formed the notion *tunelovani,* the special form of a large-scale corruption which occured in privatization and post socialist economicc reforms. Source: Altshuler, 2011.

Shock approach gave a rise to the merchant capitalism and it was characterized by the domination of exchanging rather than producing. Trade was coordinated by the distribution of export quotas, licences and money credits. Based on the Burawoy and Krotow (Marangos, 2002a), in the transitioning countries where shortages took place, the maximization of profits was not stimulated through production but through trade where they buy cheap and sell for a gain. Before the transition, the managers operated in a monopolistic environment and very often, they benefited from illegal transactions. The introduction of market environment could not decrease such practices. Furthermore, the economy was gradually reconstructed as the ”fragmented, anaemic and ineffective liberal democracy” emerged. There were difficulties to implement market economy rules with hard budget constraints. Thinking in short-term rather than in long-term has enriched many managers who enjoyed the “capitalism” and disabled the capitalist class to rise (Marangos, 2002a).

Before the transition in the EEC countries took place, the foreign trade was limited by the states interventions and restrictions. As the result, the domestic firms did not have to face the foreign competition, and because the domestic firms were owned by the state, there was no domestic competition neither. The companies could not be competitive in the open market environment. Furthermore, the lack of international trade created a big technological gap. In 1980’s, when the EEC begun their transitions, countries slowly started to experiment with foreign trade reforms. Among the general approach in reforms was “linking the domestic and international prices, establishing direct links between firms nad international markets, bypassing foreign trade organizations, reducing the number of exchange rates and devaluing them to more realistic levels“. However, the international trade efficiency was not reached. The main obstacle was the isolation of domestic producers from the changes in relative prices in world markets. The reforms enabled the development of a market environment to some level but they failed to create the fundamental, the “market clearing at single prices free of ex post and ad hoc subsidies and levies“ (Kaminski, 1996).

The transitioning countries in Eastern Europe faced a discriminatory trading because there was no common market and the relative prices were set based on bilateral negotiation and in many cases, the prices differed across countries. As a result of countries

not being used to face competition, the trade liberalization had brought adverse effects to the economy and it took some time to recover (Kaminski, 1996).

## 3.4. Gradual Approach

The gradual approach has its roots in the underlying concept that before it is possible to liberalise, the country must have established the "economic, institutional, political and ideological structures" (Marangos, 2002b). Not before such basis are found, the competitive capitalist system will not be restricted by the radical reform programs.

Furthermore, the reform program expects minimum standards of living in order not to put the society at risk. In consideration of all previously mentioned factors, one can say that the aim of this gradual approach is to create a " preventive therapy" which would avoid the 'shortageflation'. The syndrom of shortageflation explains the fact that the firms operated in an environment created by economic reforms do not strive towards reaching equilibrium prices (based on the supply and demand). The companies bank to the 'cost plus margin formula'which results in locking the satisfactory profits because even though the price is increased (based on the changing market conditions), the profitability is the same since the price includes the "even out" of the increased costs. Shortageflation is harmful to both productivity and equilibrium effecting the aims of the economic reforms (Kolodko, 1988).

Economic reforms implemented gradully ensures that structural changes resulting from reforms can be sustained. Furthermore, the society has a time to get used to the changes. This is an advantage for example in the privatisation. For generations, people in centrally planned economies did not exercise the private ownership and private rights and therefore it cannot be expected that private property rights will be working immediately. The gradual approach provides time to get used to it which is important because a property ownership is fundamental base for a well-functioning market system (Li Wei, 2007b).

Furthermore, Justin Yifu Lin provites characteristics of gradual approach followingly:

- Individual incentives can be improved by government actions through granting partial managerial autonomy and share of a profit to farms and state-owned

enterprises. By this, the incentives will be improved which will enable the economy to move forward to the production frontier resulting in inducing a new stream of output growth.

- A dual track price and allocation system can be implemented by government. The market entry restrictions can be removed creating a room for the non-state sector to allocate resources to the "previously suppressed, more productive industries". At the same time, the state-owned enterprises' and farms' quota are maintained which provides security for adequate resources for subsidizing the existing non-viable enterprises.
- The government recognizes the time needed for implementing full market liberalization in the particular sector when the products in that sector are mostly allocated by the market.
- In order to strengthen the market institutions during the above described process, the government should gradually implement the necessary regulations and laws.

(Lin, 2007b)

## The China's example – lesson learned

The dual track approach to transition in East Asia is often called as micro-first approach ( as oppose to the shock therapy, which is the macro-first approach). The country believes that providing right incentives for people will lead to an ultimate transition, resulting in a well functioning market economy. The government improved the incentives by awarding so called 'partial managerial autonomy' and 'profit-sharing' to both farmers and state-owned companies. This assisted in moving toward the production boundary resulting in a new flow of output growth.

Moreover, the government installed the 'dual-track' price system to alter the old 'single-track' system. By removing the market entry constraints, it was possilbe to expand the allocation of the resources by the non-state sector. These resources were distributed to the previously restrained industries and more productive industries while keeping the quota restraints of state-owned companies and farms. Consequently, the effective resources (as for example the foreign exhange rates, wage and interest rates or the prices of products and services) were secured to subsidise the existing non-viable enterprises. Such an assistance

was likely to help to avoid the problem that arose in the shock therapy as it was explained on page 16.

Given the time, the products and services in various sectors gradually became to be allocated by the market trends. It is only then when the government can introduce the ‘full market liberalisation‘ in the sector. This secures the smooth transition from the planned to the market based pricing and supply. However, the government should gradually present needed regulations which will help to enhance the market institutions during the transition process (Lin, 2007b).

# 4. Impacts of Specific Economic Reforms on Chinese Economy

“*A cat, no matter whether its color is black or white, would be a good one if it catches rats.*”

-Deng Xiaoping (1903-1997)-

China has a significant history, almost 5 000 years old where the Xia dynasty has ruled the region. Throughout the history, there were many dynasties and leaders that contributed to the development of China, however, for purposes of this thesis, we will skip the history of dynasties, the Republic of China and we will concentrate only on the People’s Republic of China - PRC. The PRC was established on October 1 , 1949 and consisted of four social classes: “the workers, the peasants, the petite bourgeoisie and the national – capitalists“ (PRC, 2011). The country was led by CCP whose chairman was Mao Zedong.

In terms of economic history, the history needs to be described in two eras: pre-reform period and post-reform period. Pre-reform period before 1979 is characterized by centrally planned governing that controlled more than 90 percent of trade by “monopolizing the imports and exports of over 3000 kinds of commodities“ (Risso, 2010). The country faced a great obstacle of low inequality which was a strain on economic growth.The leaders had adopted several reforms in order to reduce the role of ideology in

economic policy. The main goal was to improve the productivity which was supported by raising personal income, consumption and implementing new management systems.

The main four reforms that took place before the post-reform period (before China actually achieved the high growth) are:

1) 1949 – 1956: *Revolution and Land reform* with the aim on allocating a bigger amount of land to the poorest peasants and at the same time provide economic benefits in order to preserve the production incentives of the rich peasants (Kung, 2008)

2) 1957 – 1961: *The Great Leap Forward and the Great Famine* which was an economic Five-Year-Plan causing a great misbalance in the economy because the targets were established without real economic calculations and cohesion of economic regulations. It resulted in a great tragedy in which almost 25 million Chinese citizens starved to death (Palese, 2009).
3) 1961 – 1965: *The post Famine recovery* that dealt with the effects of the Great Leap Forward‘ s tragic results.
4) 1966 – 1978: *Cultural Revolution and Transitional Reform* that included political movements, development of economy and S&T system which resulted in even further isolation from the outside world (Goransson, 2011).

After the Chairman Mao’s death, in 1976, Deng Xiaoping had obtained the leadership of Chinese politics. Deng has changed the way China operated under Mao, the country could not be called totalitarian anymore, nevertheless, it could not be called a democratic regime, because of the monopoly power of a single political party. However, the policies were relaxed giving the citizens more freedom, in some sense a power and better living standards (Risso, 2010). The country is today called the economic „tiger“, however, it has been a long way in reaching it.

## 4.1. Reforms of 1980s

1978 marks the time when China started to change from a centrally planned economy to a market economy by introducing several economic reforms. Among the first reforms (late 1970s and early 1980s) was the rural reform consisting of openining trade to the ‘outside‘ world and instituting the *contract responsibility system* (CRS) in agriculture. In the mid-1980s, China continued in reforms by establishing five *special economic zones*. At this time, the country had almost solved its food shortage problem which was viewed as that the reforms lead to a better end and the country craved more. Thus, the next step was to focus on creating the pricing system, which was reached by establishing the *dual track pricing system* and by increasing the presence of the state in the allocation of resources (by the early 1990s). The reforms of the late 1990s dealt with unprofitable companies and insolvency in the banking system. Also, the government introduced the Austerity Plan in order to “cool off“ the economic overheating. Meanwhile, steps to solve the problem of state-owned enterprises were taken, which improved the efficiency of the state sector. All of these reforms had a common goal: “to generate sufficient surplus value to finance the modernization of the Chinese economy“ (Hu, Vicky, 2005 ) which can be evaluated as being reached, based on the following information and data.

### 4.1.1. Rural Reforms

*“ . . . I am of the view that we should allow some regions, some enterprises, some workers and farmers, who because of hard work and good results achieved, to be better rewarded and improve on their livelihood . . . [T]hey will engender powerful demonstrative effects on their neighbors and lead people in other regions, workunits to follow their examples. In this way, the national economy will, wave-like,surge forward, with all the people becoming relatively well-off“.*

-Deng Xiaoping (1903-1997)-

Before the rural reforms took place at the end of 1978, the Chinese agriculture performance has been very poor for two decades. It is important to understand how it was managed at that time in order to clearly see the seeds behind the success.

A common rural community consisted of three segments: *the commune*, *the production brigade* and the *production team* (McMillan, 1989). There were more than 50,000 people's communes, most consisting from approximately 30,000 members. Every commune contained around sixteen production brigades and they were composed from about seven production teams, which corresponded to small villages (having around 30 households, accounting for 100 to 250 members). The communes, brigades and teams were the ones who owned the main rural assets and performed the administrative, social and commercial services in the rural areas (Worden, 1987).

Members of commune were allowed to have small farms and a limited amount of livestock for their personal use (so called private plots). The exchange of different products created on their small farms was possible on the farm markets, however, those were strictly regulated by the government.

These segments had been given an annual production goals, based on which the plan was created, setting the management of land, labor, animals or fertilizers and other necessary actions. The work was allocated either on a daily basis or on long-term fixed work. The work could be assigned to work groups, which was mostly done on a rotating basis. Such assigning was practiced in for example grain production. Another way was to assign a permanent responsibility for the work to small groups of farmers. The income was received from the "shares of net team income", assesed from the amount of work each had contributed to the collective efforts which was estimated based on the points received[6] (McMillan, 1989).

At the end of 1978, the Chinese government, based on the 20 years of poor performance resulting from the previously defined communal system, decided to introduce the *production responsibility system*. The biggest difference was that rather than a production team, an individual farmer was the entity for a decision making process.

[6] For each day in the field, the worker would receive a labour day. Members of teams were divided into different levels, based upon their technicall skills, success in meeting the norms, capacity to work, etc. Each levels had assigned different points.

Furthermore, the individual farmers (households) and production teams signed an agreement, regulating the taxes and delivery quota (payable to the government) and the ‘welfare funds‘ and ‘investment funds‘ (payable to the team). Based on this agreement, the households had to produce an agreed amount of crops on a particular piece of land and sell it to the unit, however, the households could decide what to do with the production which was above the delivery quotas, giving a space to earn profits from selling for non-predetermined price (for more information, see Dual Track Price Reform, page 33). Moreover, the production activities of the private plots were released from most of the government regulations, which resulted in a gradual increase in the amount of private plots (McMillan, 1989).

The Contract Responsibility system was adopted by around 98% of the former production teams by the end of 1984. The production team organization has been restored by approximately 940,000 village committees (Worden, 1987). The reason for such a successful adoption was mostly because, not only that the the effort of farmers was no longer dedicated to the collective production, but they could choose what to produce, specializing in planting crops which are more suitable to their region, temperature, land quality or water access. This was enabled after the government cancelled the ‘grain self-sufficient policy‘ which required that every region is self sufficient in grain production (McMillan, 1989).

The second important part of the rural reforms is the *pricing reform*. Since the beginning of agriculture reforms, the pre-detrmined prices had increased for most of the major products. The prices of major crops had raised on average by 22.1 % (Lin, 1989c). Moreover, as it is possible to calculate from the table in Appendix 1, the above delivery quota prices (premium price) of grain have increased from 130 percent of basic quota price to 150 percent of basic quota price . Moreover, edible oil and pork have increased by 25 percent and the premium price of cotton raised by 30 per cent (McMillan, 1989) .

In Table 1, one can see the results of implementing economic reforms in regard to the growth of agricultural output. The annual growth rate between the period 1952 and 1978 (before the first reforms took place) was 2.9% for the agriculture output, 2.5% for the crop output and 2.4% for the grain output. After 4 years of the initiation of contract responsibility system , the growth between the year 1982 and 1978 for agriculture as a

whole, crop production and grain production was 22.60%, 16.40 %, and 14% respectively. Annualy, the agricultural output nearly doubled as well as the crop output.

*Table 1: Calculation of the growth*

| Year | Agriculture output value (B.yuan) | Crop output value (B.yuan) | Grain output value (M.ton) |
|---|---|---|---|
| 1978 | 180,16 | 138,18 | 304,7 |
| 1982 | 232,76 | 165,26 | 354,5 |
| | | | |
| **Change** | 0,2260 | 0,1640 | 0,1400 |
| | **22,60%** | **16,40%** | **14%** |
| Change per year | **5,65%** | **4,10%** | **3,50%** |

*Source: Author's ellaboration from Appendix 2: Agricultural Output and Poluation Growth.*

It is estimated that 78% of the increase in agricultural productivity between 1978-1994 is attributed to incentive effects of the new responsibility system, 22% to incentive effects of higher prices (McMillan, 1989).

Aside the growth of prices and outputs, the new economic conditions were looser from restrictions prior to 1978 and the rural area offered an increase of several possibilites for profit-making activities. The "rural economic unions", which were the towns, villages and households groups began to set the grounds for small factories, catering services and other non-agricultural services. Consequently, these rural companies became a competition of the same companies in the urban areas, moreover, the cheaper labor gave them a competitive advantage and a chance to create more new jobs. For many workers, it was a sign to move from agriculture to the new sector and yet, stay in the rural area. Statistically, by the year 1985, about 63 percent of the population inhabited the rural areas. In the same year, the percentage of the national labor force employed in agriculture dropped to 63%[7].

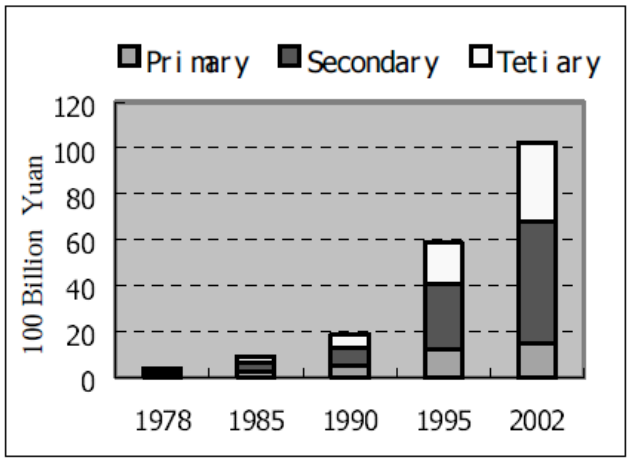
In addition, the same source states that in 1986, 21percent of the rural labour in China was employed in non-agricultural sector in the countryside, producing over half the value of rural output (Worden, 1987).

[7] Prior to the 1978 reforms, four out of five Chinese workers were engaged in agriculture work. By 1994, the amount dropped to one worker out of two. (Source: Hu, Zuliu)

Agricultural share of the country‘ s GDP has dropped from approximately 40 percent in 1970 to less than 20 percent in 1997. This has effected also the share of agricultural export and imports. In 1980, the share was about 30 percent of the GDP while in 1997, it dropped to 10 percent (Carter, 1999) . In the Figure 2, the GDP trend based on sector is illustrated. It is clear that as the reforms were evolving, the GDP was growing, however, the agriculture share (primary sector) was not the main contribute. The table also shows, that prior to the reforms, there was very small, almost no secondary sector, and no tetiary sector. The rural reforms are believed to play a major role in the recontribution of the shares of GDP.

These figures clearly show that the Lewis model of structural reform, where he suggests that the modern industrial sector will be more attractive to workers from the rural area because it can offer higher wages, has been used in China’s transition approach.

*Figure 2: GDP Increase Trend and Structure*




*Source:Lin,2004e*

The main cause of the shift of China from focusing on agriculture sector to focusing on different sectors has been argued, however, one of the main reasons may be linked to the death of the chairman Mao Zhedang in 1978. To elaborate further, in China’s culture, it is believed that when a ruler establishes a certain ideology toward development strategy, it is dishonering him when the strategy is changed. Chairman Mao pushed for agriculture to be the major industry in China, and thus it was very difficult to change this ideology while he was alive. When he passed away, in 1976, Deng Xiaoping replaced both Mao’s

seat and ideology (Lin, 2007b). The new ideology brought a significant improvement of the Chinese economy. When we want to compare it, in 1978, at the beginning of the transformation era, China had the tenth largest economy in the world. The GDP accounted for approximately $150 billion (6 percent of the 1978 USA's GDP). By 2005, China' s economy grew to US $2.2 trillion (17.6 percent of 2005 USA's GDP) which shifted Chinese economy to be the fourth largest economy in the world (Jefferson, 2007).

### 4.1.2. Economic Zones

*"To get rich is glorious"*

- Deng Xiaoping (1903-1997)-

After the successful rural reforms, the Chinese leaders decided to move on with the transition and significantly changed their approach toward foreign investment.

The radically new idea, creating the "Special Economic Zones" (SEZ) arose after thirty years of the Chinese isolation and was very essential. Looking at the economic growth of China since the creation of these zones (since the 1980's), it is clear that this decision was very wise and the country's growth was achieved mostly on account of it.

The main purpose of SEZs was to encourage the foreign direct investment (FDI), the country's exports, intensify the low and high level of manifacturing and improve the level of technology. The FDI was encouraged mainly through partnerships between government or chinese nationals who combined their investments into the zones,[8] or the multinational corporations entirely owned the ventures. The idea of attracting the FDI was to offer them incentives in form of for example: cheap labour or generous tax breaks. In return , China received the 'money' and the 'know-how' which was very important for kicking off the economy.

[8] This was possible through the Law of the People's Republic of China Concerning the Joint Ventures with Chinese and Foreign Investment' passed in 1979.

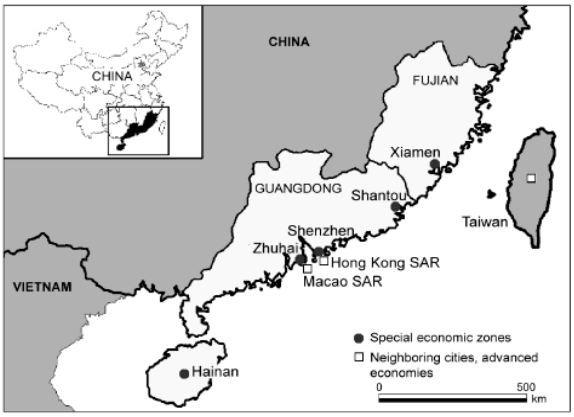
Special economic zones were given flexible policies to conduct better economic performance, however Deng Xiaoping, the *paramount leader*[9] stated that those economic zones should „pursue socialism with Chinese characteristics“ [10] but as it will be demonstrated further on, the only thing that kept being with the Chinese characteristics in the economic zones was the five stars, red flag flying over the factories.

The original four SEZs were set up in 1980, when the 11th Congress of the Chinese communist Party appointed that Guangdong and Fujian provinces will initiate the exchanges with other countries by implementing special policies passed in each of the zones. The SEZs occupied large areas which were different from the other export porcessing zones and similiar special areas in Asia. The zones in the Guangdong Province were *Shenzen, Zhuhai, Shantou* and *Xiamen* in the Fujian Province. In 1988, a fifth economic zone was established, *Hainan* (Yeung, 2009)

Their goal was to obtain development by „testing“ new policies whith the idea that if they are successful, they would be followed up across the country. The zones were situated in coastal areas of Guangdong and Fujian which was beneficial due to a long history of connection with the ‘outside world‘.[11] In addition, as it is possible to see in Scheme 1, the SEZs were close to Hong Kong, Macao, and Taiwan (Yeung, 2009).

[9] The Paramount leader, the highest leader of the party (Communist Party of China), and the state (People's Republic of China", refers to the political leader of the People's Republic of China. Until the mid-1990s, the paramount leader was able to wield power without necessarily holding any official or formally significant governmental position).
[10] Socialism with Chinese Characteristics differs from socialism setting up on the basis of developed capitalism assumed by Marx and Engels, from socialism of the Soviet Model, and from the “Surmounting Stage” socialism in past China. (Jianwu)
[11] The outmigration was very common in this areas.

*Scheme 1: The geographical position of the Special Economic Zones.*




*Source: Yeung, 2009.*

The positions were absolutely beneficial because Hong Kong became the main source of the foreign direct investment.Table 2 desplays the data's of FDI in Shenzhen, the first and most developed of all zones that contains a small part, called Shekou which was the first area specifically assigned to foreign investments.

*Table 2: The distribution of FDI by Source, 1984 ( % of total)*

| Country/Area | Shenzhen SEZ | Shekou |
|---|---|---|
| **Hong Kong** | 92.1 | 45.5 |
| **Singapore** | 3.2 | 4.0 |
| **Thailand** | - | 17.7 |
| **United States** | 1.8 | 21.5 |
| **Germany** | 0.8 | - |
| **Japan** | 0.7 | 5.9 |
| **Australia** | 0.4 | - |
| **U.K** | 0.4 | 5.4 |
| **Others** | 0.6 | 5.4 |

Note: The Schenzen data is based on contract signed and actual investments. The data on Shekou is unspecified.

*Source: Wu, 2009.*

The original goal of the SEZs was not clearly defined by the leaders at that time (Wu, 1985). As the time went on, it was assumed that these zones would:

- Vanish the question of limited resources by receiving the large amounts of investment.
- Improve the increasing level of trade skills
- Appeal to the foreign direct investment on a large scale in order to improve the export growth and decrease unemployment
- Obtain economic liberalization using flexible policies, effecting the institutions, finance and trade sectors. (Yeung, 2009)

In addition, by taking a closer look at the "special" roles in the zones, it is explained that Shenzen was responsible for learning from Hong Kong in terms of global capitalism, modern management methods and raising capital. They did reach most of their goals and become the best performer of the zones. On the other hand, Zhuhai was to learn from Macao (using the geographical proximity) to make a connection with Europe and Portuguese speaking countries. This zone has not been as successful since the relations with Macao stagnated, furthermore, Zhuhai has overbuilt its infrustructure way more than the demand required. Shantou became the second largest city in the province Guangdong and had global links to emmigrated Chinese, however it failed to innovate. Xiamen had a main role in a peaceful relations with Taiwan, while Hainan concentrated on top-down administration and was the first city in China to abandon the dual track reporting on production and simplified procedures for company's registration. However, it experienced a real estate bubble combined with corruption, which significantly slowned down its growth. Shantou and Xiamen achieved average rates of economic growth, yet, the zones failed to avoid scandals in terms of corruption, custom allowance and tax rebates (Yeung, 2009).

The figures in Table 3 shows that the opening to the foreign trade and investment that China has recevied after creating the SEZs had immediate impact. In 1990, the first four zones had accounted for over 629 billion US$. It is important to state that out of the four, Shenzen accounted for more than half of the FDI, confirming what has been previously said, that Shenzen is the most developed zone.

*Table 3: Exports and FDI Inflows in SEZs, 1978-2008*

| Year | Shenzhen | Zhuhai | Shanton | Xiamen | Hainan |
|---|---|---|---|---|---|
| | | | **Exports, billion current USD** | | |
| **1978** | 0.009 | 0.009 | 0.251 | 0.082 | n.a. |
| **1990** | 8.152 | 0.489 | 0.84 | 0.781 | 0.471 |
| **2000** | 34.564 | 3.646 | 2.595 | 5.880 | 0.803 |
| **2006** | 135.959 | 14.843 | 3.484 | 20.508 | 1.376 |
| **2007** | 168.542 | 18.477 | 3.912 | 25.555 | 1.838 |
| **2008** | 163.780 | 19.730 | 3.278 | 26.970 | n.a. |
| | | | **Utilized FDI, million current USD** | | |
| **1978** | 5.48 | n.a. | 1.61 | n.a. | 0.10 |
| **1990** | 389.94 | 69.1 | 98.09 | 72.37 | 100.55 |
| **2000** | 1961.45 | 815.18 | 165.61 | 1031.50 | 430.8 |
| **2006** | 3268.47 | 824.22 | 139.60 | 954.61 | 748.78 |
| **2007** | 3662.17 | 1028.83 | 171.62 | 1272 | 1120 |
| **2008** | 3929.58 | 1138.49 | n.a. | 1955.63 | n.a. |

*Source: Yeung, 2009.*

In Table 4, the economic performance of each of the zones is calculated. It is clear that Shenzhen has been the leading zone from the very beginning, accounting for the biggest share of the GDP in terms of economic performance. Yet, the other zones are slowly improving their shares which is to be considered as a help to reach the Deng‘ s goal of getting rich for the all people.

*Table 4: Economic Performance of Special Economic Zones, 1978 - 2008*

| Year | Shenzhen | Zhuhai | Shanton | Xiamen | Hainan |
|---|---|---|---|---|---|
| | | | **GDP, bill. current RMB** | | |
| **1978** | 0.196 | 0.209 | 1.079 | 0.48 | 2.886 |
| **1990** | 17.167 | 4.143 | 7.245 | 5.709 | 10.242 |
| **2000** | 218.745 | 33.143 | 45.016 | 50.187 | 52.672 |
| **2006** | 581.356 | 74.770 | 73.738 | 116.802 | 105.285 |
| **2007** | 680.157 | 89.590 | 85.010 | 137.526 | 122.96 |
| **2008** | 561.176 | 70.041 | 72.083 | 111.442 | 106.275 |
| | | | **Per capita GDP, current RMB** | | |
| **1978** | 606 | 579 | 366 | 528/n.a. | 510 |
| **1990** | 8.724 | 6.678 | 2.029 | 5.103/n.a. | 1.562 |
| **2000** | 32.800 | 27.693 | 9.741 | 38.233/24.481 | 6.798 |
| **2006** | 69.450 | 52.185 | 14.872 | 72.827/50.130 | 12.654 |
| **2007** | 79.645 | 61.693 | 17.048 | n.a./56.595 | 14.631 |

*Source: Yeung, 2009.*

However, even though the numbers look very positive, the incoming investors did not have it so easy. At first, there were many complaints towards the management of the economic zones. The main complaint was the ‘red tape‘. In order to set up an enterprise in the early 1980s, the company had to obtain many approvals, sometimes up to a hundred were needed. In Tainjin, every application had to contain over 100 official stamps to be approved.

Furthermore, the Chinese labour law was protecting the workers from being fired, even if their performance was low. Consequently, the investors were worried that the productivity and effectiveness would be low. In addition, the salary was not based on a productivity but on a seniority. Thus, it was hard to motivate the workers to give a bigger contribution. The series of complaints resulted into a new labour law, furthermore, in Tianjin, the foreigners were allowed to run business in their way. Having this model functioning, it became clear that the future reforms will follow that direction (Zhang, 2010).

In 1990, Pudong New District was established in Shanghai as well as opening the areas by the Yangtze river to the trade and investment. This was followed by the deeper concept of openness to all capitals of provinces and autonomous regions, and cities by the border areas by 1992. The original goal of creating the economic zones as an “try-out“ for the entire country has been reached and China could continue in reforming. By 1994, the country started nationwide reforms in ‘tax remission, foreign exchange control and foreign trade regulation‘. Furthermore, China has started allocating property rights and coordinated the actions of local governments and companies (Yeung, 2009).

### 4.1.3. Dual Track

When it became clear that the need to reform the China‘ s planned system was approaching because the centrally planned economy had been behind the ecocnomic progress, the Chinese leaders were willing to reform, but not to take big risks. Therefore, they started to reform slowly, moving from one part to another. They chose not to follow the example of the most East European transitioning countries but rather to go they own “way“. The government meant to keep the system of setting production quantity targets

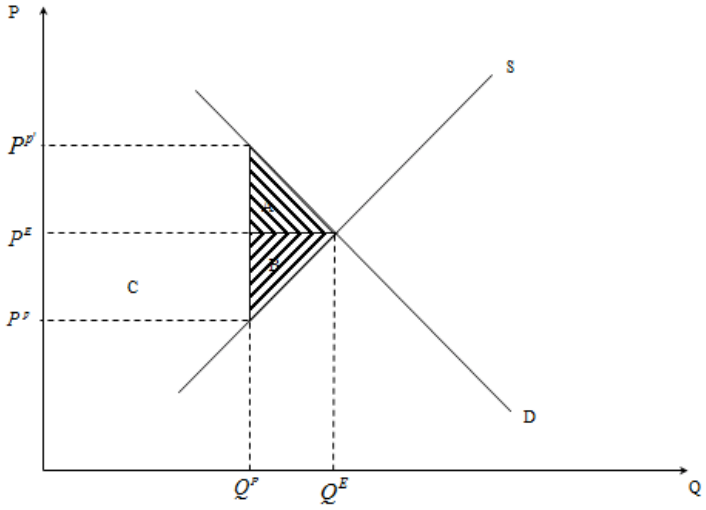
and prices. However, the best road to move towards the market-oriented economy was to move slowly, and only gradually build up a free market system.

The answer to this dilemma was , as it is described in the rural reform on page 23, the implementation of a *Dual-Track system* , which was a coexistence between centrally planned prices and emerging market prices. In other words, the dual track pricing applies to having adopted some characteristics of a market economy while at the same time, having the economy performing under the old planned regime. In the agriculture sector, the quantity targets of production which was given to the government had their own prices, while the above-quotas products could be sold at a price derived from the market, to serve as a personal gain to the market. However, these prices were still regulated and could not exceed the planned prices by more than 20 percent. Starting with the year 1985, when the Dual Track has been implemented to other industries, the government upheld the restrictions (Li Wei, 1999b).

Scheme 2 illustrates the simple functioning of the supply and demand situation, where in the intersection, there is an equilibrium (E). The demand represents how much of the products is desired(the amount that people are willing to buy at a certain price) and the supply shows us the amount that the market is willing to supply (at a certain received price). The equilibrium point explains how much of a quantity of products should be produced (Qe) giving us a corresponding price (Pe). At this point, one can say that the allocation of goods in that particular economy is at the most efficient point, because the amount of goods demanded is exactly corresponding to the amount that is supplied. Such a situtaion is ideal but not very much found.

What China did was, that they changed the traditional model into a model where the quantity demanded by the government (Qp) is at a predetermined price (Pp). However, the products have a second price, that is set up by the market (Pp1) for the above-quota products for which the price is higher. From this, it is visible that the companies and farmers can search for their own profits, but they need to fulfill their obligaiton quotas and deliver it to an appropriate office of the *Material Supply Bureau* at the planned price (Li Wei, 1999b).

*Scheme 2: Supply and Demand principles*




*Source: Author's ellaboration*

This system allowed to develop certain parts of the industries alongside with the unreformed parts, serving as a 'try-out'. If the reforms achieved positive results, more and more of the unreformed could be involved in reforms using the resources of the already functioning components of economy.

Table 5 illustrates the dual track system of production of grain. Since the beginning of the reforms (1978), the production has increased. After three years, the dual track pricing was implemented, enabling 10,6 million tons to be sold at a market price. This amount was slowly increasing, however in 1983, China experienced first difficulties in grain production, cost mainly due to a drastic fluctuation of grain imports and exports (Feng, 1997). However, from the year 1985, the procurements produced at market price have been gradually increasing, reaching almost a half of the total grain production to be sold at market price.

*Table 5: The Dual Tracks in Grain (in million tons)*

| | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **State procurement at plan price** | 47.8 | 54.0 | 50.2 | 52.1 | 56.2 | 91.2 | 102.4 | 59.6 | 53.3 | 56.9 | 50.5 |
| **State procurement at market price** | | | | 10.6 | 17.5 | 7.6 | 9.3 | 19.6 | 32.3 | 42.3 | 43.8 |
| **Total domestic production** | 304.8 | 332.1 | 320.6 | 325.0 | 354.5 | 387.3 | 407.3 | 379.1 | 391.5 | 403.0 | 394.1 |
| **Plan procurement/ Domestic production** | 0.16 | 0.16 | 0.16 | 0.16 | 0.16 | 0.24 | 0.25 | 0.16 | 0.14 | 0.14 | 0.13 |

*Source: Lau, 1999.*

In addition, Table 6 illustrates the percentage of output value of agricultural goods and the progress of moving further from predetermined price to the market prices. The significant change can be seen during the period 1978-1985 when the reforms were taking place.

*Table 6: The Dual Tracks in Agricultural Goods ( % of output value)*

| | 1978 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 |
|---|---|---|---|---|---|---|---|
| **Transactions at plan prices** | 97.0 | 47.0 | 35.0 | 33.7 | 28.9 | 31.3 | 30.0 |
| **Transactions at market prices** | 3.0 | 53.0 | 65.0 | 66.3 | 71.1 | 69.7 | 70.0 |

*Source: Lau, 1999.*

After witnessing a success in the agriculture sector, the dual track price system became a central part of the economic reforms in industrial sector and later extended to foreign trade reform, labor reform, housing and social security reform and ownership

reform (Gang, 1994). The development of retail sales moving from predetermined to market prices is shown in the Table 7.

*Table 7: The Dual Tracks in Retail Sales ( % of sales)*

| | 1978 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 |
|---|---|---|---|---|---|---|---|
| **Transactions at plan prices** | 94.4 | 37.0 | 35.0 | 29.4 | 24.0 | 35.5 | 31.0 |
| **Transactiosns at market prices** | 5.6 | 63.0 | 65.0 | 70.6 | 76.0 | 64.5 | 69.0 |

*Source: Lau, 1999.*

In addition to the success that has been discussed above, it needs to be mentioned that the Dual Track reform came with a negative feature, corruption. The problem arose from both the underpricing of in-plan goods and the shortage of them, resulting in gains for officials who were responsible for allocation of the in-plan goods from the customers who were willing to pay more than the predetermined prices. To say it plainly, officers were deflecting goods from the plan and then resold them for higher (market) prices . It is appraised that almost 30 percent of the plan quotas of industrial output was deflected between 1987 and 1989 (Li Wei, 2002a).

Despite the fact that corruption is difficult to measure, especially in the case of China where not all the information is disclosed and some of it is modified to serve the purpose of being a better example for other countries in terms of transition, the work of Wei Li, the professor of Business Administration at the University Virginia, has proved that corruption took place and it was the biggest downturn of the dual-track system (Li Wei, 2002a)

The corruption took place in form of "guandao" under which the offictial diversion is understood. The allocation of the in-plan products was administered by the Material Supply Bureau. Officials who were responsible for allocation of the in-plan goods often diverted the in-plan resources to the market and kept the profits for their personal gain. Table 8 illustrates the leaks of the allocations. Taking the first commodity, steel, we can

see that the proportion of output that was sold (by the producers) at market price was 22 percent while the proportion of input bought by firms at market price was 55 percent. There is a significant difference of 33 percent that has been allocated by decreasing the allocation of in-plan goods followed by selling it at the market.

*Table 8: Comparison of market sales and market purchases by state-owned enterprises, 1987.*

| | Proportion of output sold by producers at market prices | Proportion of input bought by firms at market prices |
|---|---|---|
| Steel | 22% | 55% |
| Cement | 66% | 85% |
| Non-ferrous metals | 33% | N/A[1] |
| Aluminum | N/A[1] | 48% |
| Chemical raw materials | 36% | N/A[1] |
| Caustic soda | N/A[1] | 52% |

*Source: Li, 1999b*

Such corruption took place from the introduction of the dual track in the *production responsibility system,* however after the liberalization in 1985 [12] the public perception of corruption has dramatically increased. Even though the public believed that corruption occured from other reforms as well, the Dual Track system was blamed the most by vast majority of the population. It became such an issue that even thought the standard of living had rapidly improved from these reforms, in April, 1989, university students [13] organized a massive demonstration in Tiananmen Square in Beijing. The main purpose of this demonstration was to put an end to the corruption.[14] The demonstration became a threat thus in June 4, 1989, the government ruled the army to stop it. Unfortunately it resulted into a bloody crackdown killing several hundreds of people (Li Wei, 2002a)

[12] Including the limits of diversion between plan prices and market prices could not exceed 20 percen which opend the larger gate towards corruption
[13] Workers, civil servants and journalist joined the students while after the beginning
[14] Also. They the demonstrators wanted democracy carrying banners with: "Long Live Democracy", even though it was unclear for them what it really meant

## 4.2. The Reforms of 1990s

The wide-range of development reforms during the 1980's had significant impact on China's economic growth, however, it caused some further problems, mainly the inflationary pressures of 1993. The prices in the countryside failed to keep up with inflation and the real income of the peasants had decreased. There were three types of exchange rates. The *official rate* was RMP 5.7 to the US dollar, the *swap rate* varied from RMB 8.2 to RMB 10.8 to the US dollar and black market rate was 48 percent higher in the first six months of 1993.(Li, Kui, 2001) The economy was becoming too stretched. Consequently, in order to "cool down" the overheating economy, the government announced the three reforms, Austerity Plan being the first one, then reforms of banking and fininacial institutions and finally the reform of state owned enterprises which were insolvent.

### 4.2.1. Austerity Plan

The economic problems in 1992/93 were caused by industrial bottlenecks and inflation as well as by moving the investments to low-productivity projects, as for example the luxurious real estate development (Li, Kui, 2001). The drastic growth rates, 14.1percent in 1992, 13.1percent in 1993 and 12.6 percent in 1994 were accompanied by the increasing domestic credit. In the period of 1991 and 1995, the domestic credits grew 30 percent per year. The worries were supplemented by the consumer price which had increased by 14 percent in 1994, 24.1 percent in 1994 and 17.1 percent in 1995 (Huang, 2005). This period is marked as the "overheating" and became the background of the 16-point Austerity Plan that was published on July 3.1993. Its main pursposes were to stabilize the economy and the credit supervision by controling the supply of money and investment (Huang, 2005).

There were four main characteristics of the Austerity Plan:

- The use of monetary controls [15]
- Drop in capital fundings in order to limit the amount of loans

[15] Credit restrictions, rise in interest rate, consolidation of banking system

- Redirection of Investment Priorities, mainly promoting the long-term infrustructure development
- Price reform on final products was terminated (Li, Kui, 2001).

The results of the Austerity Plan are reflected in the decrease of domestic loans. In 1992, closely before the plan was put in place, the domestic credit accounted for 48 percent. Three years after the release of the plan, China experienced a significant drop to 8.9 percent of domestic loans (of state-owned enterprises). The decrease had gradually continued, in 1997 it reached 4.5 percent (Huang, 2005).

Due to the success of Austerity plan, China's economy has avoided wider problems during the Asian Financial Crisis in 1997 (Huang, 2005).

### 4.2.2. Banking Reforms

Before the 1983, all of the banking functions and regulations were controlled by the People's Bank of China (PBOC). Due to the rapid growth and changes in the economy, it could not be possible for PBOC to sustain in the mandate and therefore, after 1983 the big four banks were re-established to take over the banking responsibilities from PBOC so it could concentrate on regulation and monetary policy (CBS). However, it did not take long before a new problem arose: the inefficiency of the banks. This became a major problem which could endanger the transformation process, mainly due to the large amount of bad loans. Therefore, in 1994, the tree policy banks were created in order to take over the lending decisions.

The banking system has been extremely important in China. Unlike in many of the developed countries where about 20 to 50 percent of capital is involved in banking transactions, the Chinese have 75 percent of capital mediated through banks (Bihong, 2007). Due to this large dominance of bank inermediation, banking reform evolved into an important strategy to improve private sector savings. However, the main purpose of the reforms remained to improve the bank lending decisions.

The reforms were tackling the seperation of central banking functions from its commercial functions, in other words, replacing the monobanking system with a multilayers system. China‘ s banking system consists of three banking “tiers“. The first “tier“, the main four state owned banks, account for approximately 52 percent of total assets. The main change that bloomed from the reform of 1994 was that each of the four banks was responsible for its own profitability, however, they were still obliged to directly report to the State Council (Bihong, 2007). The reforms was needed because the lending process of these four banks was highly inefficient and it was primarly aimed on state-owned enterprises. The large amount of non-performing loans (NPLs) was calling for reforms in order for the country to continue in growth.

Among the state owned banks are:

- *Industrial and Commercial Bank of China* (ICBC) –the bank was established in 1984 for managing short-term industrial and commercial loans as well as granting loans for working capital. It is the largest provider of loans and second largest in providing NPLs.
- *Agricultural bank of China* (ABC) – the bank was established in 1984 for providing loans to the agricultural sector in order to develop and improve the the industry.
- *Bank of China* (BOC) – Before the reforms occured, the Bank of China was the main foreign exchange bank that was responsible for international accounts and loans, investments and leasing. After the 1994 reform, it was converted into wholly state-owned commercial bank.
- *China’s Construction Bank* (CCB) - the bank was founded in 1954 as People’s Construction Bank of China and in 1996 was transformed to a wholly state-owned bank responsible for administrating state investments and providing loans for capital constructions.

(Bihong, 2007).

There were numerous attempts of reforms, the most important one occured in 1999 when the government transferred a sufficient amount of NPLs from the four state owned banks to asset management companies. The transfer was done at the book value. It is

estimated that the amount of NPL's was approximately RMP 1.4 trillion, which is 14 percent of the total loans of state-owned banks and it is equivalent to 17 percent of 1999 GDP (Podpiera, 2006).

As it is written above, the three policy banks (the second "tier") were created in order to take over the responsibility of policy lending from the four state-owned banks. The main purpose of these new banks was to use the capital for supporting constructions of infrustructure, developing both primary and basic industries and release the bottleneck. [16]

The reform of 1994 also enabled these banks to issue policy F-bonds to commercial banks and other non-banking financial institutions (Bihong, 2007).

Among these banks are:

- *China Development Bank (CDB)* – the bank was established in 1994 for the purpose to be primarily responsible for fund raising for large projects including infrastructure, especially the Three Gorges Dam and Shanghai Pudong International Airoport (CDB,2004)
- *Export and Import Bank of China (Chexim)* – the bank was also established in and its mission is to support "the export and import of Chinese mechanical and electronic products, complete sets of equipment and new-and high-tech products" . Furthermore, to help Chinese enterprises to obtain and sustain comperative advantage, and to promote Sino-foreign relationship as well as the international economic trade (Chexim, 2011).
- Agricultural Development Bank of China (ADBC) – it is the last bank that was established through the 1994 policy, the goal is to promote development of agriculture and development or rural areas through raising the funds for agricultural policy businesses that are based on the state credibility in harmony with the laws, regulations and policies. It also raises special funds for supporting agriculture as an agent of a state. (ADBC, 2005)

[16] Bottleneck is a limitation of performance in the system or industry, caused by the extent of resources

These banks also supported central government projects in form of investment financing and they helped to fulfill the state procurement quota of grain (Podpiera, 2006).

The third "tier" in China' s banking system consists of small regional and main banks of state owned enterprises. These banks are more driven towards the maket with regard of their lending process and more importantly, they are guided by profitability. The loan rates are more flexible since there is no centrally directed lending decision. (Podpiera, 2006). Pudong Development Bank, Shenzen Development Bank, Huaxia Bank or Bank of communications can be ranked among the third "tier".

It is important to note that the above described three types of banks are not the only parts of China' s banking system. [17]

In general, the main objectives of the banking reforms was to seperate the monetary policy from classic banking responsibilities and to turn most of the banks into a independent financial entities. There has been improvement[18], however, the reforms are ongoing and will take more time to reach all the goals that has been set. It is still very difficult for the banks to refuse loans to local government entities for financing government expenditures since they are still under regulated by the central bank, which is regulated by the Finance Ministry of China.

### 4.2.3. Reforms in State-Owned Enterprises (SOEs)

The state-owned enterprises performed several tasks serving as organs, where raw material was turned into industrial products. Similarly to the other plans, SOEs had certain quotas to fulfill given from the government. Furthermore, the choice of products, distribution and supply of resources were also set by the plan.

[17] As it is stated in the research of Bihong Huang, in 2004, China has 4 State Owned Banks, 3 Policy Banks, 12 JSCBs, 4 Asset Management Companies, 111 City Commercial Banks, 723 Urban Credit Cooperatives, 33 965 Rural Credit Cooperatives, 4 Rural Commercial Banks, 10 Rural Credit Cooperatives, 199 Foreign Banks, 59 Trust Investment Companies, 75 Financial Companies, 12 Finance Lease Companies, 4 Auto Financing Companies and thousands of Postal Savings

[18] In late 2003, the government recapitalized two of the four major state-owned banks, implemented some changes in legal structure,corporate governance and risk management. This movement was caused by the fact that since 2006, under the agreement of World Trade Organization the sector faces an increased competition from foreign banks. (Podpiera)

In 1998, it was approximately 118 000 of SOEs in China (Xiaojun, 2002), often regarded as "mini-societies" or units. They were called units because of the Maoist regime, where units were basic urban organization providing life long employment. Furthermore, SOEs provided to its employees and their families housing, health care, education, child care, and/or groceries. In other words, taking care of the entire life of an employee. Sometimes, SOE provided these services for more than 112 million employees and their families (Wang, 2002).

Therefore, when the economy became more market oriented and other sectors started to prosper due to the reforms, it became clear to the Chinese leaders that SOEs will not survive in such a new economic environment. The Contract Responsibility System was implemented similarly as it was done in the rural reforms (page 23). The ability to produce more than the quota and then sell the above quotas products increased the productivity end efficiency of firms. However, the managers started to mislead the real figures of production, revenue and profits resulting in false state' s reports.

In addition, the main determinants of the decreasing value SOEs for the economy since 1980's were:

- By 1992, two-tier price system[19] was gradually abolished which forced the production costs to go up
- The SOEs *debt-equity ratio*, indicating the proportion of debts and company' s equity to finance its assets, rapidly grew from 23 percent in 1980 to 440 percent in 1998. This means that the companies were financed mostly from loans. The accumulated debt is a problem itself, however, it also resulted in large interest payments.
- Because of the weak incentives for managers, they were not motivated to maximize profit resulting in a poor corporate governance. In addition with the government's protectionism of SOEs, the overcapacity and low efficiency followed.

[19] China adopted a two-tier price system during the long period from 1984 to 1992. In this system, an identical good is offered for sale under different prices and availability conditions on two distinct allocation mechanisms: the government institutions and the market (Yu Jinping)

- The reform era enabled the economic environment fill up with increasing competition. This dropped the SOEs dominant position in China‘ s market. In 1996, the SOEs contributed only 28 percent of gross industrial output. [20]
- In 1996, SOEs became the sector which makes loss. The International Monetary Fund has calculated that in 1997, the operating loss has reached RMP 130-140 billion.

(Xiaojun, 2002)

In 1993, the government introduced a reform plan called ‘Coporatization‘, aiming to reorganize the SOEs into modern enterprises. The idea was to seperate the firm from the government, establish property rights and responsibilities. However, due to the lack of a macro environment, the reform was implemented very slowly. The main obstacle was the lack of a social network. This means that restruction of the firms resulted in the situation where many employees got ‘laid off‘, which created further problems.

When a new Premier, Zhu Rongji, was appointed, the Ninth National People’s Congress was held. At that time, he introduced a package of reforms that were to turn the SOEs into profit making enterprises by package of short term and long term strategies.

The short term strategy included so called: *zhuada fangxiao* - “ grasp the big, let go the small“ (Zhigao, 2009). This meant that the government will keep control of the most important and biggest companies and will let the smaller companies to be on their own. The government kept only 2000 of the companies, the others were sold on auctions organized by local officials (Zhigao, 2009). The assets were sold at “rock-bottom“ prices to managers or party leaders. Some SOEs were merged, turned into colelectively owned firms or closed down.

As it was estimated in the research of Frazier, the amount of industrial state-owned enterprises fall to 53,489 by late 2000. This means that during the three years (since the reform started), there was a significant 54.7 percent decline in the SOEs.

[20] Collectively owned accounted for 39 percent, individually owned for 16 percent and other types of enterprises 17 percent

This resulted in thousands of people loosing their jobs, creating a space for protests as for example the Iron Man Square protest in Daqing where thousands of workers from oil industry protested against being laid off and having unfair severance packages. As a consequence, in March 2003, the State Owned Assets Supervision and Administration Comssion (SASAC) was established in order to supervize the SOE's management.

Also, they started to build social security networks to cope with the new unemployment. It was announced that out of the 109.5 million employees that were employed in the state sector in 1995, only 40.3 million sustained in their positions. Furthermore, Table 9 illustrates the changes of employment in industrial enterprises. The largest unemployment rates arose from the state owned enterprises which as it was explained above, was mostly caused by closing down and merging of SOEs in order to improve the overal efficiency (Frazier, 2005).

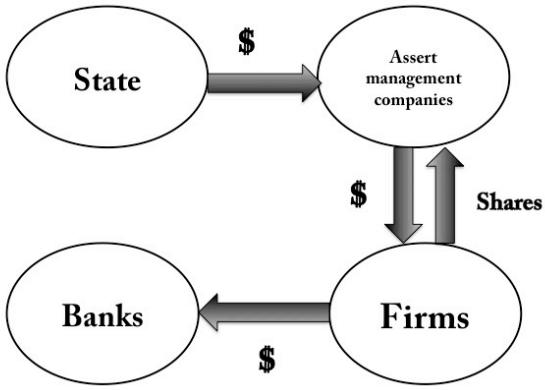
*Table 9: Changes of Employement in Industrial Enterprises*

| Ownership from | 1995 | 2002 | Net employment change | % employment change, 1994-99 |
|---|---|---|---|---|
| State | 44.0 | 15.5 | -28.5 | -64.8 |
| Collective | 14.9 | 3.8 | -11.1 | -74.5 |
| „Other" | 7.1 | 18.0 | 10.9 | 153.5 |
| Private | 3.5 | 6.4 | 2.9 | 82.9 |

*Source: Frazier,2005.*

The government continued to fight the other problem of SOEs and bad loans by forming long term strategies. As it is illustrated in Scheme 3, the government funded a newly created assert management companies through the Ministry of finance. The assert management companies then supplied money to the firms in exchange of shares that were held on behalf of the state. Consequently, the firms had a sufficient amount of money to pay back their bad loans which helped the bank to improve their performance by getting rid of the bad loand and acquiring new supply of money.

*Scheme 3: The cycle of government' s policy to correct the NPLs*

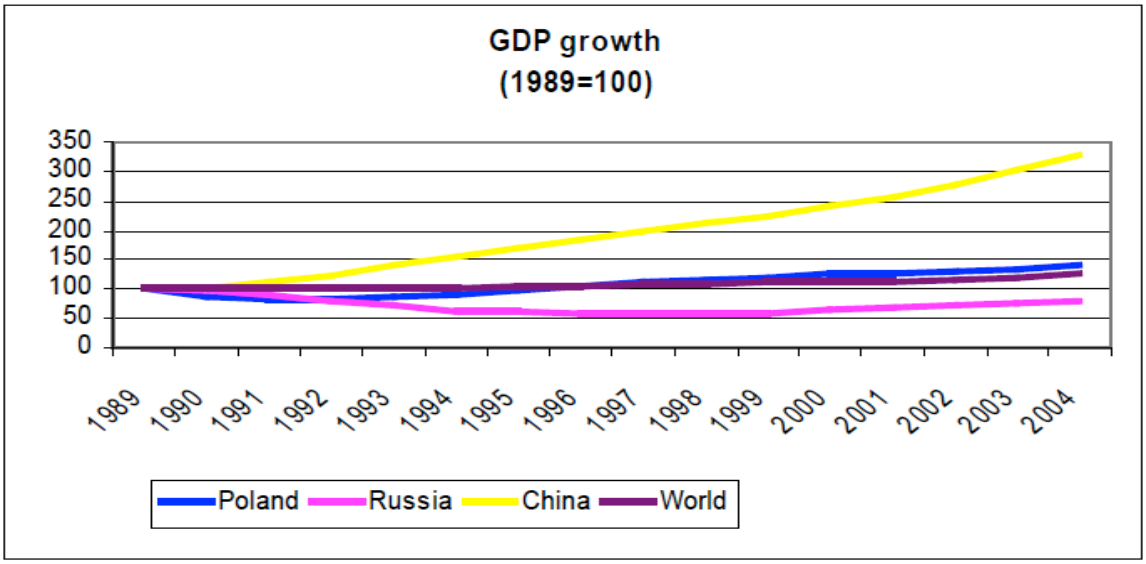



*Source: Author's ellaboration*.

Each of the 1990's reforms was aimed towards the improvement of production and efficiency. The Austerity Plan redirected the investment priorities, reforms in the banking sector promoted financial efficiency while the reforms in state-owned enterprises improved productivity. Their ultimate success, however, has not been achieved yet. There needs to be other reforms continuing in the process.

Nevertheless, this paper will not further examine these reforms nor will it examine the reforms of the 21st century because the main purpose of this paper is to demonstrate the main points of the transition period, not the later improvement (even though it is connected).

*Figure 3: China' s GDP Growth, 1989 – 2004*




Note: 1989= 100%

*Source: Lin, 2004f*

# 5. Can the Chinese reform (Special Economic Zones) be applied to the case of North Korea? – Empirical part

## 5.1. North Korea

### 5.1.1. Political and Economic history of North Korea

When the wall fall down in November 9, 1989, the thousands of people living in Eastern Europe had risen up their hopes for the better lives they had been fighting for. The fall of the wall is viewed as a symbol of the end of a communism. From this date, the communism in Europe and in the Soviet bloc started to "die". Throughout the years 1989 and early 1990's, the death of communism could be seen from all over the eastern part of Europe and later it swept to the Soviet Union leaving the communism to the history books. This date has affected the whole world; the cold war was eventually ending leaving the United States and its citizens as winners, and the Soviet Union as a looser. This meant that the powerful Soviet Union lost its influence and power and could not affect anyone anymore. Almost all of the countries that were under Soviet Union's control for almost three decades begun their transformation into democratic states. Yet, there are countries like China who claimed that the communism did not "die", however, it did approach toward the capitalist features in their own way because the leaders realized the necessity of it, as it was explained in the first part of this report.

The only country that continues in following the Stalin's ideas is North Korea. There is no simple answer why this is so, but the answer certainly lays in the history of the country. Throughout the history, Korea has been invaded many times. The Mongolian occupation had begun in 1231 and lost until the early 14th century. Then, Korea was independent until the late of 19th century, even though it had to face several invasions from Japan in 1592 and 1597. In the late of 19th century, Korea took a more closed approach while China became to fight against the growing influence of Japan, which resulted in Sino-Japanese War of 1894-95 and later on the Russo-Japanese War of 1904 – 05. Japan won both of the wars which enabled it to add Korea into the growing empire. Japanese control was very tight and attempted to supplant Korean language and culture. The Koreans attempted several resistance events but Japan sustained its control until the

end of World War II in 1945. When Japan was defeated, the result of Korea was that the country was split into two zones, where the North Korea was taken over by U.S.S.R and the South by the US (U.S.Department of State, 2011).

Despite the fact that there were attempts to unite North and South Korea into one country, the beginning of the Cold War resulted that in 1948, these two countries were officially established as two separate nations facing completely opposite systems in terms of politics, economy and social system (U.S.Department of State, 2011).[21]

The South Korea followed the West example; it had elections in order to form national government which were held under UN observation and on August 15, 1948 the south part of Korea was established as the Republic of Korea. Few weeks later, on September 9, 1948, North Korea established the Democratic People's Republic of Korea lead by Kim II Sung who was chosen and supported by the USSR and remained in power until 1994 when he died. After his death, he was succeeded by his son, Kim Jong-il (CIA).

Because the North Korea chose the closed door policy, in other words, the "self-reliance" policy that prevented the outside world to intervene to the way Kim II Sung lead the country, there is no data available for years before 1992. However, from the data available in 1940, it is known that North Korean GDP was almost 50 per cent higher than the GDP of South Korea (Maddison, p.208, 2006). In addition, Maddison supposes that by the year 1950 the GDP of North Korea was at least at the same level as the South Korea. It is suggested that North Korea was more productive and developing quicker than the South for "many years after partition" and that the North had also a greater share of military involvements.

Moreover, Maddison assumes that from 1950 to 1973, North and South Korea had the same GDP which North had kept until 1991 with small or no progress. The main reason of the change in GDP in 1991 was the fact that the Soviet Union quit giving aid to

[21] Since that time, North and South Korea did not cooperate, rather guerrilla warfare, border clashes, and naval battles erupted between them. The war started on June 25, 1950 by a massive surprise attack of North Korea. The war took place until 1953 when the North Korea area has been stabilized at the 38 parallel, however, there has been no peace agreement signed. The relationship is very unstable, even though unifying talks had been done, these two countries remain to be on the "iced" peace. (Source: Bureau of East Asian and Pacific Affairs, 2011). The last dispute was on 10 August, 2011 when the North fired three shells on the marine of South Korea, near the maritime line separating the two countries (Source: The Guardian, 2011)

North Korea (as a result of the end of communism in USSR). From 1991 to 1997, it is assumed that the GDP had greatly fallen, and then in the period of 1997 and 1998 did not change (Maddison, p.209, 2006).[22]

### 5.1.2. North Korea‘ Background Information

North Korea is located in Eastern Asia and it is addressed as the northern half of Korean Peninsula located between China and South Korea.[23] The total area is as big as one of the China’s province, around 122.762 km squares. The country operates with 80 per cent of land area, from which a great amount is contained of mountains separated by deep, narrow valleys and small plains. 22.4 percent of the land is arable, 1.66 percent is permanent crops and the rest of the land is used for other purposes. The climate can be characterized as long and cold winters, hot and humid summers (U.S.Department of State, 2011). The country conducts with natural resources such as coal, lead, tungsten, zinc, gold, hydropower, salt and fluorspar.

The population of North Korea is approximately 25 million people, with the population growth rate of 0.538 percent (according to 2011est.). An important information for the purpose of this paper is the literacy and education of the population (that indicates the labor force scope), which is comparable with the more developed states. Based on this information, it can be assumed that the labor force is of a good quality and can create productivity if properly managed and given opportunities (CIA, 2011).

The country is the last Stalinist country, a communist state of a one man dictatorship. The capital is Pyongyang. There are nine provinces[24] and 2 municipalities.[25] (Scheme 4). Economically speaking, the country faces constant problems. The industrial capital stock that has been built here is “beyond repair“because of the many years of underinvestment, lack of spare parts and poor maintenance. The weather conditions are not favorable for the agriculture, and the frequent floods destroy the crops. In addition to the weather, the lack of arable land, collective farming practices, poor soil quality, insufficient

[22] It is important to keep in mind that those numbers were estimates created by an Institute of Economic Research, based on the data from Bank of Korea
[23] : The borders of China is 1416 km long, with South Korea 238 km and with Russia 17.5 km. (Source: CIA)
[24] Chagang-do, Hamgyong-bukto, Hamgyong-namdo, Hwanghae-bukto, Hwanghae-namdo, Kangwon-do, P’yaongan-bukto, P’yongan-namdo, Yanggang-do
[25] Nason-si, P’yonyang-si

fertilization and shortage of operative equipment are causes of the great problem in North Korea, which is the shortage of food (CIA). Since 1995, the international aid has been providing the food deliveries that enabled the population to avoid widespread starvation; however the prolonged malnutrition and poor living conditions remain.

*Scheme 4: Map of North Korea*


*Source: U.S.Department of State, 2011*

An important fact to be taken into account in analyzing the economic performance of the country is that the government imposed secrecy on data, thus, it is very difficult to obtain valid and reliable information.

The economic freedom of a country is scored "1"which means that North Korea's economy is the least free economy in the world in the 2011 Index.

Through central planning and control, the economy is heavily regulated by the government and therefore no entrepreneurial activities are possible. Furthermore, the international trade (the imports and exports) are controlled. The data of North Korea's trade is taken from the trading partners.

Table 10 illustrates that throughout the years, the trading partners of North Korea changed but in 2010, there were two main trading partners: China and South Korea. China is the main trading partners in last 18 years, and the trade between these two countries has doubled in last 8 years.

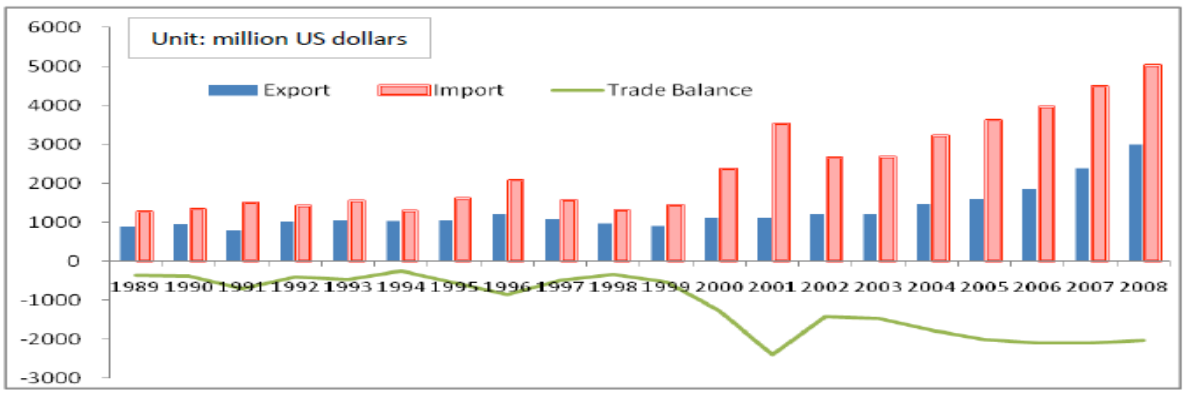
*Table 10: Trading Partners of North Korea (by %)*

| Rank | Country | 1990 | Country | 2000 | Country | 2008 |
|---|---|---|---|---|---|---|
| 1 | China | 22.8 | China | 15.2 | China | 32.5 |
| 2 | Japan | 20.5 | Japan | 13.0 | South Korea | 22.7 |
| 3 | Hong Kong | 6.4 | South Korea | 12.2 | Algeria | 7.3 |
| 4 | Iran | 6.2 | Brazil | 7.2 | Venezuela | 4.1 |
| 5 | Germany | 5.3 | Thailand | 6.3 | Brazil | 3.5 |
| 6 | Tunisia | 4.4 | India | 5.0 | India | 2.6 |
| 7 | Australia | 4.3 | Congo | 4.9 | Russia | 2.1 |
| 8 | Indonesia | 3.7 | Hong Kong | 3.2 | Saudi Arabia | 1.9 |
| 9 | Turkey | 2.5 | Costa Rica | 3.0 | Congo | 1.9 |
| 10 | Singapore | 2.0 | Algeria | 2.7 | South Africa | 1.9 |

*Source: Hyung, 2010.*

However, the unwillingness of the government to implement needed reform creates constrains in inter-Korean trade. China remains the largest source of foreign investment, what makes it to be an exception to the North Korea's refusal of foreign investment. However, it uses economic zones to gain a limited foreign participation. Yet, the trade balance is negative, as it can be seen in Table 11.

*Table 11: Export, Import and Trade Balance of North Korean International Trade.*




*Source: Hyung, 2010.*

Domestic agricultural production is the main component creating consumer price inflation because food is the main item for spending. The prices are also regulated by the government, but because the volatility in the scope of harvests occurs, there is a chance for periods of high inflation (Heritage, 2011).

### 5.1.3. Economic Zones in North Korea

North Korea has been provided with the international aid over past decades because of its inefficient economic system. They have been also advised to change the approach; however the ruler of North Korea declined the idea and continued in his ruling. There were few attempts to reform, especially the introduction of material incentives and independent accounting of state enterprises. However such institutional reforms could not be pushed too far since it could have destabilized the totalitarian rule.

Even though North Korea is viewed as the last totalitarian country, the rulers realize that it is the time to change the inefficient system. The question is how. The proposal to follow the Chinese approach is for the leaders a bit risky, because of the existing problems that the country has with richer South Korea. The reforms could be a pathway to expose the North Korean population to the truth that the South "sparks" (Lankov, 2011a).

The reforms will also result in unavoidable loosening of societal controls which can lead to a crisis of the regime's legitimacy and, perhaps, the collapse of the regime. The rulers certainly do not wish for that. Nevertheless, the leaders certainly want to improve the economic situation and therefore are choosing the "smallest evil" which is the creation of special economic zones (Lankov, 2011a).

The economic zones have been around for some time in North Korea. SEZs are more acceptable to the North Korean leaders because they are relatively easy to control. Moreover, the areas of SEZ have been fenced off with barbed wires and the incoming or outcoming visitors need to be identified through their ID cards. Even though the North Korean government is against capitalism, it hopes that small areas of "controlled capitalism" will earn enough income to make up for the rest of the country (Lankov, 2011a).

There were attempts to create an economic zone in Raseon, but the success did not come. From the planned $2 billion of foreign investment coming to the zone, only $35 million was actually invested by 2000. The main reason of the failure was the underdeveloped area which is even lower than the rest of the underdeveloped country.[26]

In 2001-2002, there have been plans for Om Sinuiju Special Economic Zone that was supposed to be built along North Korean – Chinese border, at the western edge of the Yalu River. This experimental attempt to improve both economic and political relations of North Korea was to be led by a Dutch Chinese citizen, Yang Bin. This head of the SEZ was going to invite in the European judges and legal system. The idea was to build a big wall to "wall off" this zone completely from the rest of North Korea and having only politically correct citizens to work there in isolation. In order to ensure the political stability, these workers would not be allowed to come back to the rest of North Korea. This experiment was terminated by China as a consequence of throwing Yang Bin in prison by Chinese government. The Chinese simply did not want the free-flow European style of unregulated economic activity occurring in North Korea as they were reforming the Northeastern part of China. It would create a competition which would endanger its reform process (GI Korea, 2011).

As the time went on, Soviet Union did not return into the power nor provided more aid to North Korea. Therefore the change in the perception of the outside world became necessary. The disputes between the North and South Korea were in place; nevertheless, the economic underperformance forced North Korea to cooperate with South. Despite of receiving international aid, the better relations with the South became a priority for both sides. It was understood that cooperation would be more effective than just unilateral assistance and it would serve the interests of both sides (Nam Sung, 2001).

The special zone that was created is situated in Kaesong, in the southern part of North Korea. It is strictly controlled by North Korea. The South heavily invests and builds infrastructure there and supplies electricity while the North provides labor and land. This cooperation was chosen as the most effective one, combining the South's capital and technology with North's cheap labor and unoccupied land. This cooperation enabled these

[26] It took around 40 minutes to travel 17 kilometers (Lankov, 2011b)

two countries to produce internationally competitive products. The profit is consequently split (Nam Sung, 2001). From the South Korea's statistics, it is known that by the late 2010, there were approximately 120 companies from South Korea operating in the zone, employing almost 47 000 North Korean workers (Lankov, 2011b).[27]

According to the 2010 statistics, the companies in the Kaesong Economic Zone (KEZ) produced goods worth $323.3 million (Lankov, 2011a). This has been a significant improvement for the North Korea.

At the beginning of June, 2011 the governments of China and North Korea announced that they will develop two new special economic zones in the area of North Korea. The first zone will be situated 20 kilometers from the Chinese borders, in the small port city Raeson. The second zone will be on the island of Hwanggumpyong, which is administered by Sinuiji (Lankov, 2011b).[28]

Jang Song Thaek, the brother-in-low of Kim Jong II and the administrative director of Korean Worker's Party announced that these economic zones will serve as a platform for " trade and economic cooperation with the rest of the world". Thaek expects that China will build new highways, modernize the city's port and supply various infrastructure improvements as well as the electricity (GI Korea, 2011). For exchange, North Korea will provide China with even cheaper labor than in China provides for the international investors. In North Korea, $15 – 20 a month is seen as a good wage to the average citizen, while in China, for the same work, the labor would be paid between $100 and $150 per month (Lankov, 2011b).

According to the GI Korea portal, North Korea is trying to attract the Indian and European investors as well. However, these remain very cautious about coming in because of the political issue between North Korea and USA.[29] Thus, China is currently the only

[27] Most of the workers are women living in the area. They are well educated and hard working, having the work week of 48 hours and earning $60/week. However, they do not receive the money, instead, the North Korea's labor agencies which recruits the employees receive the money. After, they pay to the workers $35/month. (Source: France 24)

[28] The largest North Korean city situated by the borders. Currently, almost 75 per cent of the trade between these two countries passes through Sinuiji

[29] USA has been putting sanctions on North Korea for their military actions and nuclear program

country that is willing to take the risk and cooperate with North Korea, hoping that it will enable them to increase the control over the future of North Korea (GI Korea, 2011).

## 5.2. Quantification of the Chinese Reform concerning the Special Economic Zones

### 5.2.1. The Econometric Model

The whitnessed growth of the economic performance of China is caused by several reforms that are described in the first part of this thesis. This model will aim to illustrate that the standards of living of Chinese citizens, more specifically, the improvement of standards of living, depends on the decrease of unemployement and so on the increase in the labor force. Furthermore, it depends on the amount of incoming foreign direct investment flows and most importantly, on the scope of openess of the country.

Econometric model is used in this thesis to show the direct impact of the "opening-up" of the Chinese economy on standards of living of Chinese citizens. The main assumption is that the trade and foreign direct investment provide a better quality of life. Even though the model is very simplified through the use of particular variables, it is created in order for us to better understand the real life system.[30]

***Hypothesis Statement***

The policy of *Special Economic Zones* which enabled to open up the Chinese economy to the outside world brought a radical improvement in exports and imports what resulted in the increase of GDP. Therefore, this model will aim to illustrate the direct

[30] This econometric research will follow the following steps:

- Creating a hypothesis statement
- Specification of model
- Estimation of parameters
- Calculation of the model
- Statistical verification
- Economic verification

relationship between the standards of living and the scope of openess, the FDI inflows and labor force. In addition, it will also attemp to explain that the life expectancy has also an influence over the standards of living.

Variables X2, X3, X4 and X5 have a positive influence on Y1, therefore, it is assumed that the calculated coefficients will have a positive number. Only then, we can consider this hypothesis valid.

***Specification of a model : One equation model:***

$y_{1t} = \gamma_{11} x_{1t} + \gamma_{12} x_{2t} + \gamma_{13} x_{3t} + \gamma_{14} x_{4t} + \gamma_{15} x_{5t} + u_{1t}$

where:

a) **Endogenous variables:**

y1- Standards of living (GNI in PPP current 100 Bill $)

b) **Exogenous variables:**

x1- unit vector

x2- Labor force (expressed through the unemployment rate, % of total Labor force)

x3- Life expectancy (years)

x4- FDI (Bill $)

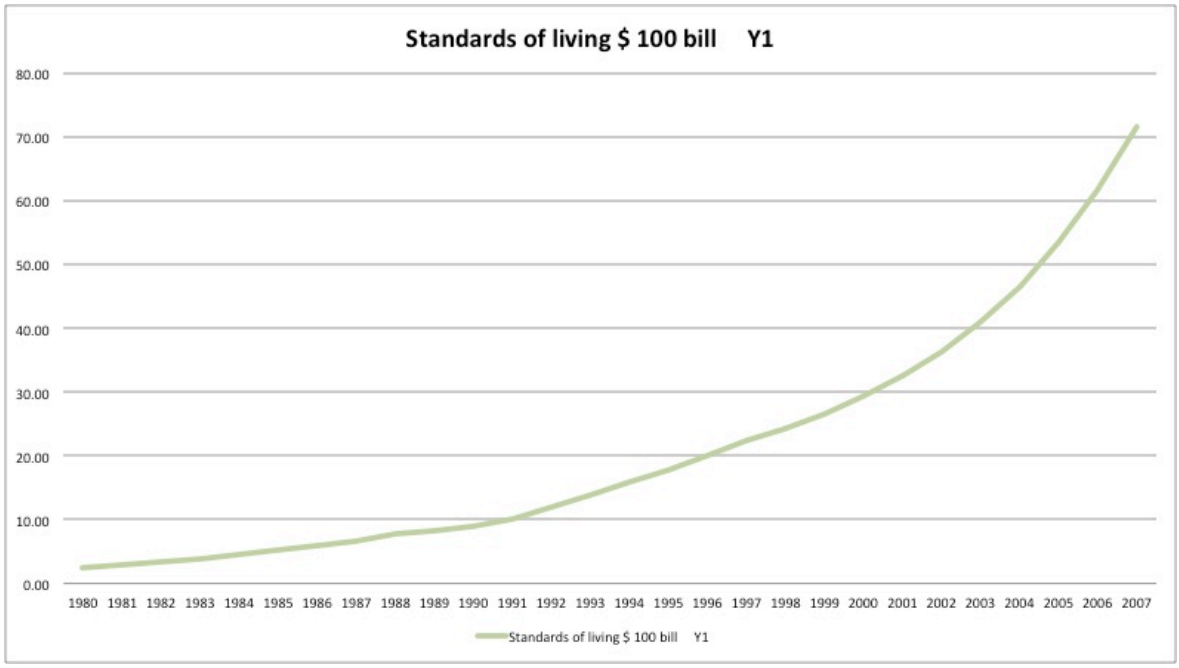
x5- scope of openess [ (Exp + Imp) / GDP ] where all three are measured by Bill $

***Estimation of parameters:***

The data set for this econometric model is found in the Appendix 3.

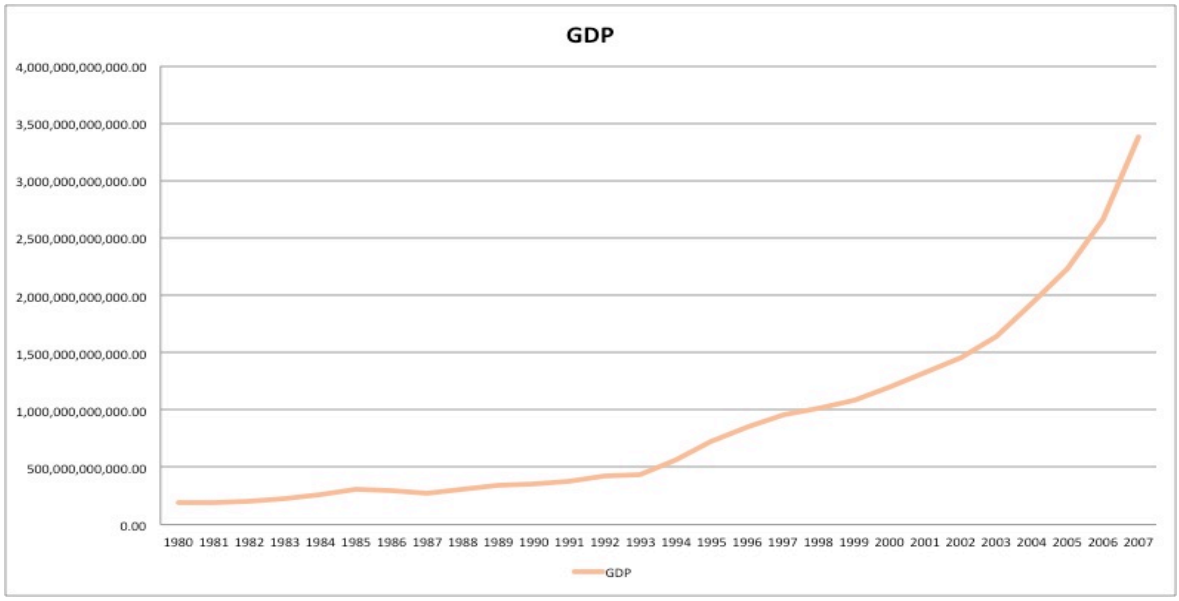
The following figures are based on this data set and they illustrate the trends of the chosen variables in the period of 1980 and 2007 in China.

*Figure 4: The trend of Standards of living in China, 1980-2007*



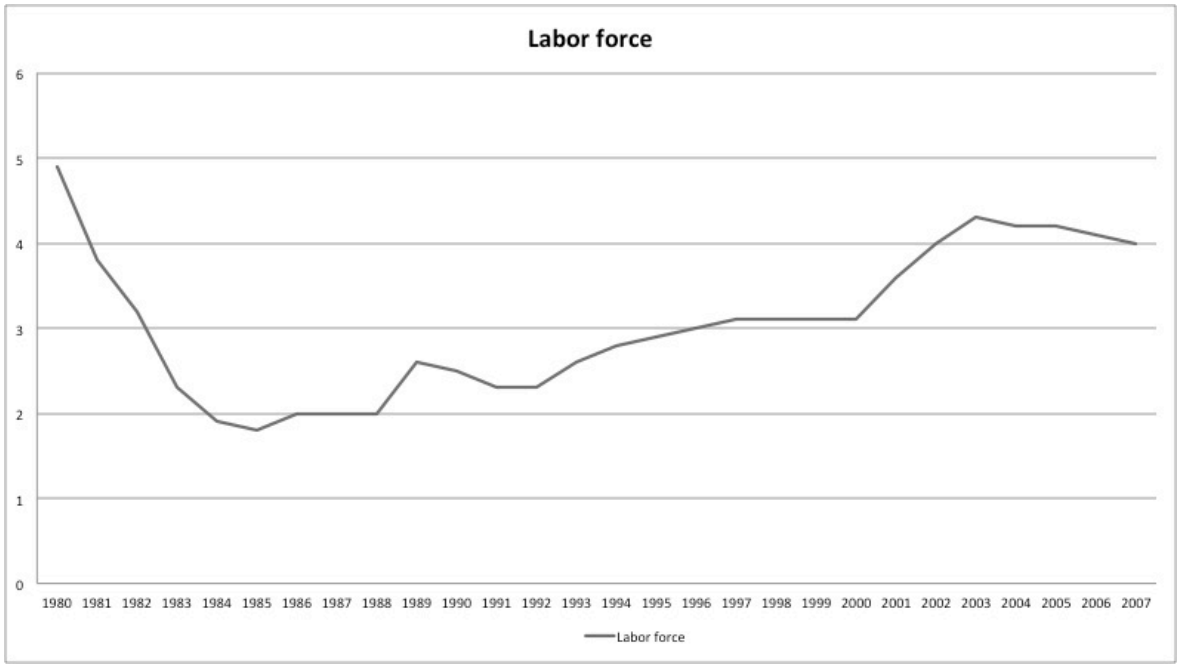

*Source: Author's ellaboration based on the Data set in Appendix 3.*

*Figure 5: The trend of GDP in China, 1980-2007*




*Source: Author's ellaboration based on the Data set in Appendix 3.*

*Figure 6: Trend of Labor Force in China, 1978-2007.*




*Source: Author's ellaboration based on the Data set in Appendix 3.*

***Calculation of the model:***

The author has tried several methods to find the best possible relationship between given variables and finally, the Ordinary Least Square Method (OSLM) was chosen in order to serve the purpose of this model the best.

Before the actual calculation, it is necessary to create the correlation matrix. In a linear regression model, there cannot be a perfect multicollinearity which means that there is no exact linear relationship between two explanatory variables.

This corralation matrix (Table 12) shows the level of correlation between all explanatory variables. The calculated values that are marked red exceeds the value between 0.8 and 0.9, which is the amount that is acceptable.

*Table 12: Correlation Matrix*

| | x2 | x3 | x4 | x5 |
|---|---|---|---|---|
| x2 | 1 | 0,490151967 | 0,584334395 | 0,519184065 |
| x3 | | 1 | 0,869695215 | 0,882499141 |
| x4 | | | 1 | 0,84652832 |
| x5 | | | | 1 |

*Source: Author's calculations based on the data set from Table 10.*

We have obtained multicollinearity between the variables X3 (Life Expectancy) and X4 (Foreign Direct Investment), X3 and X5 (Scope of Openness), and between X4 and X5. This problem will be solved by using differences between the values. Once the problem of multicollinearity is solved (Table 13), it is possible to continue in the calculation.

*Table 13: Modified correlation matrix*

| | x2 | x3 | x4 | x5 |
|---|---|---|---|---|
| x2 | 1 | 0,009381036 | 0,070182839 | 0,082200395 |
| x3 | | 1 | 0,02408222 | 0,073889414 |
| x4 | | | 1 | -0,11174594 |
| x5 | | | | 1 |

*Source: Author's calculations based on the data set from Table 10.*

Because X3 is causing a high multicollinarity, there will be two models done: one with the variable X3 and second without the variable X3. As previously mentioned the OLS method will be used.

By using the OLS method, we have obtained the following model:

*Table 14: OLS, using observations 1980-2007 (T = 28)*

Dependent variable: Y1

| | coefficient | std. error | t-ratio | p-value |
|---|---|---|---|---|
| const | -146.444 | 80.0761 | -1.829 | 0.0804 * |
| X2 | 2.46391 | 1.12856 | 2.183 | 0.0395 ** |
| X3 | 1.95886 | 1.18551 | 1.652 | 0.1121 |
| X4 | 0.301460 | 0.0550846 | 5.473 | 1.46e-05 *** |
| X5 | 37.6229 | 12.9139 | 2.913 | 0.0078 *** |

Note: * - ss 0.1 ** - ss 0.05 *** - ss 0.01

Source: Author‘ s ellaboration from the Appendix 3

From the Table 14, it is shown that the variable X3(Life Expectancy) was not found to be statistically significant. This mathematical finding can furthermore be supported with theoretical ellaboration. Life expectancy does not only depend on the economic performance of a particular country, but it also includes values such infant mortality, deaths caused by accidents, wars or/and environmental disasters. All of these significantly influence the life expectancy (AIHW, 2011).

This model is not adequate because one variable is not relevant to the model which can influence the results. This means that the hypothesis was not proved with the first model, thus, a second model will be created in which the variable X3 is withdrew.

*Table 15: OLS, using observations 1980-2007 (T = 28) without X3*

Dependent variable: Y1

| | coefficient | std. error | t-ratio | p-value |
|---|---|---|---|---|
| const | -14.3040 | 4.23618 | -3.377 | 0.0025 *** |
| X2 | 2.28863 | 1.16336 | 1.967 | 0.0608 * |
| X4 | 0.346449 | 0.0495810 | 6.988 | 3.17e-07 *** |
| X5 | 49.4177 | 11.1429 | 4.435 | 0.0002 *** |

Note: * - ss 0.1 ** - ss 0.05 *** - ss 0.01

Source: Author‘ s ellaboration from the Appendix 3

In this model, all of the variables are statistically significant. Therefore, it can be concluded that the hypothesis can be accepted.

However, the statistical verification (found in Appendix 5) shows that there is an existance of positive autocorrelation.[31] This means that not all of the assumptions were fulfilled. In addition, there is no data available for North Korea and therefore it is not possible to create a model where the findings would be applied. Consequently, this econometric model should not be used as the base in applying the reform of Special Economic Zones to North Korea. It should only serve the informative purposes.

***Economic Verification:***

By using the coefficient calculated from the model, the following equation is obtained:

$$y_{1t} = -14{,}304\ x_{1t} + 2.288\ x_{2t} + 0.346 x_{4t} + 49.417\ x_{5t} + u_{1t}$$

The equation shows us the relationship between variables as follows:

- When the Chinese labor force increases for a unit, the standards of living in China will consequently increase by 2.288 units
- When the foreign direct investment flow to China increases for a unit, the standards of living in China will increase by 0.346 unit
- When the scope of openess of Chinese economy increases for a unit, then the standards of living in China will increase by 49.417 unit.

For being able to create a better evaluation, the elasticity is used:

*Elasticity calculation based on the data set from Table 10:*
X2= (2.288 x average X2) / Average y = 0.03988 %
X4= (0.346 x average X4) / Average y = 0.00603 %
X5= (49.417 x average X5) / Average y = 0.86148 %

[31] Even though there are other results, such $R^2$ which has a high value.

Elasticity enables us to explain the change of endogenous variables and exogenous variables in percentage relationship. Based on the calculations of elasticity we can illustrate that when the labor force increases by one percent, then the standards of living in China will increase by 0.03988. Furthermore, when the foreign direct investment investment increases by one percent it will increase the standards of living by 0.00603 percent. The strongest change can be seen in the case when the scope of openness increases by one percent, in other words, the imports and exports in relations to the GDP increase by one percent, the standards of living increases by 0.86148. This clearly show that trading has helped China to improve the economic situation in China, which has direct effects on the standards of living of the population.

### 5.2.2. Application of the Model on North Korea

The results of the econometric model showed that there is a dependancy between the increase of standards of living and the openness of a country, FDI inflows and labor force. However, we can not apply the econometric model directly, due to the lack of efficient information from North Korea [32] and the positive autocorrelation between the variables.

The main question that still remains is whether it will be possible for North Korea to follow the China‘s example and achieve a radical economic improvement. The facts against such prognosis are that North Korea has a small land area, scarcity of resources, 50 years of autocratic inefficient government and poor infrastructure which makes it to be unattractive market (Nam Sung, 2001). On top of these, there is the strong unwillingness of the government to undergo the transition process.

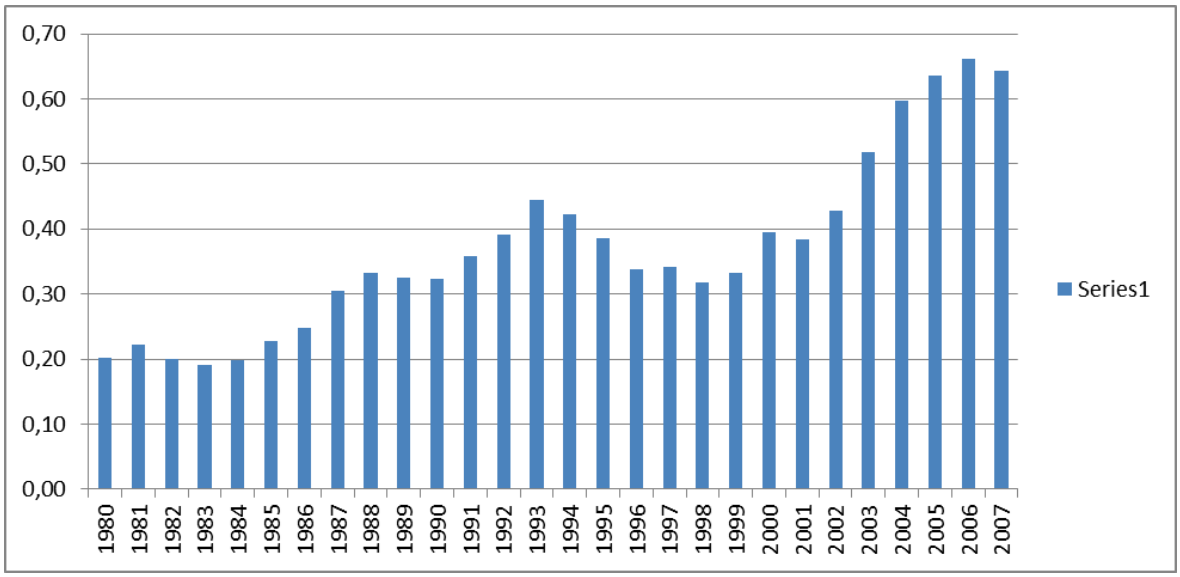
However, for the purposes of this thesis, we will assume that North Korea follows the reform of Economic Zones in the way China implemented; furthermore, we will assume that there will be willingness of other countries to come and invest in North Korea. Then, the result of econometric model can be implemented on North Korea, showing that the reform can be implemented to other countries aside China.

[32] North Korea does not disclose information and therefore the are only estimations, that are gathered from different sources, eg: from trading partners (in regards to Import and Export data).

There are several reasons of proposing that a change in North Korea's system, more specifically in opening up to the world will result in the improvement of economic and social conditions in the country. Firstly, it is the history fact; that before North Korea closed their borders, it had a more functioning economy than the South. After few decades, the situation changed. North Korea could not sustain on their own which resulted in a great dependence of the international aid in order to feed its population (CIA, 2011). On the other hand, South Korea followed the West example, opened up to trade and investment and overtook the North.

The Scope of openness is interpreted in terms of a total value of exports and imports devided by the total value of GDP. The Table 16 shows the progress in scope of openness in China, from we can see that the value tripled in three decades.

*Figure 7: The Scope of openness in China, 1980-2007.*




*Note: The vertical axes is measured as (Total value of Exports+Total value of Imports)/Total value of GDP.*

*Source: Author's ellaboration based on the data set in Appendix 3*

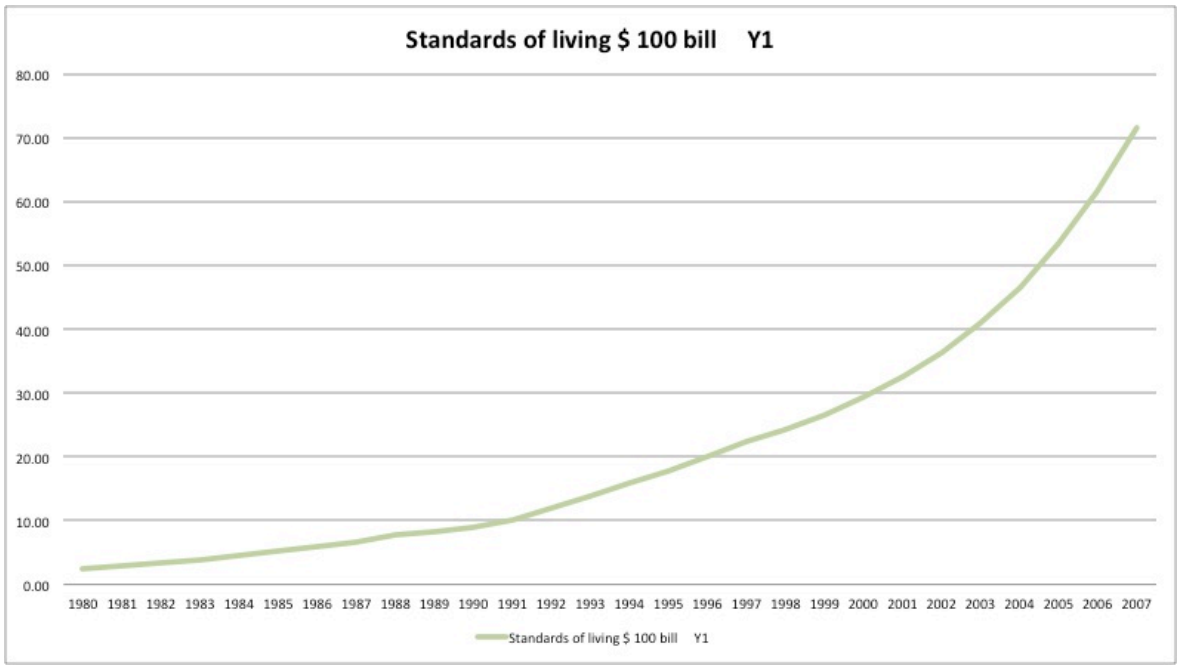
In addition, China has self-reliance policy until 1978 when the reforms begun to take place, as a result of several decades of poverty. After few reforms, including the establishment of economic zones, the GDP grew significantly and China experienced the 'miracle'.

The economic situation of China before 1978 is similiar to the current economic situation of North Korea. The Chinese economy was stagnating and inneficient which was a result of central governing of the economy. The firms, workers and farmers had no incentives for efficient productivity. There was no competition, the foreign trade and investments were limited to Soviet bloc countries (Morrison, 2011).

When we look at the data of China and its GNI growth (Table 17) after implementing the reforms, we can see the gradual growth starting in 1980 when the SEZ were implemented.

Following the period 1988-1990, when the last SEZ was created, we can see the radical growth of GNI, increasing from $1Trillion in 1990 to $10.132 Trillion in 2010.

*Figure 8: GNI growth of China, 1980-2010*




*Source: Author's elaboration based on the data from Appendix 3*

*Note: The GNI is measured in PPP, current international $ 100 bill.*

However, it is important to take into consideration that there are various aspects that effect the success of reforms apart the reform itself. The success in transition depends on the richness of a pre-socialist commercial legal tradition, the macroeconomic stability and the existence of a large, labor-intensive agriculture sector.

a) Richness of a pre-socialist commercial legal tradition

As it was described on previous pages, North Korea had been invaded by Japan for few decades. There is a chance to assume that this will help North Korea towards successful transition as it can reach back to the commercial system that Japanese set up. During this time, Japan replaced the Choson dynasty regime by a developmental regime. The infrastructure improvement took places resulting in railway lines extension, improvements of roads, harbors and communication networks which together resulted in integration of factor markets both nationally and internationally. Furthermore, there was a massive health campaign concentrating on improvement of public hygiene, introducing modern medicine and building hospitals. Lastly, the traditional education system was modernized and property rights were legalized which resulted in better efficiency of the land use and tax revenue from the owners (Myung).

b) The degree of Macroeconomic stability

The degree of the macroeconomic stability is important at the time when the reforms are implemented. The chance of a success is dependent on the stability of macroeconomic environment.[33]

c) Agricultural sector

The existence of a large, labor-intensive agricultural sector creates the opportunity to release a labor into the non-stated manufacturing sector. The basic idea is that farmers‘ income increases because the marginal and average value of a product increases (as there will be less farmers), the farmers that left the farms awaits higher wages when they enter into the manufacturing sector (Noland.)

[33] unemployment, national income, rate of growth, gross domestic product, inflation and price levels

According to the CIA's data, only 35 per cent of the population is engaged in agriculture, which is a significant difference from China, where there was approximately 75 per cent of labor force engaged in the agriculture before the reforms started. The remaining 65 per cent of North Korea's labor force occupies industry and services. From this, it can be assumed that the country does not necessarily need the movement of people into other sector, as China did. The main problem in North Korea is to effectively manage the labor force.

On top of these, another important measure needs to be considered in order to have the transition succeed. It is the willingness of the country to transition. Even though, it can be argued that North Korea does not show any signs of willingness to transition, according to the Suk Hi Kim (2011), North Korea "understands the necessity of having enough managers and administrators who understand the fundamentals of a market economy and will be able to practice them in order to successfully transform". Consequently, the country gradually allowed various foreign organizations and individuals to train its professionals. Furthermore, the country sends several young students abroad to study and to attend international conferences in various areas (Suk, 2011).

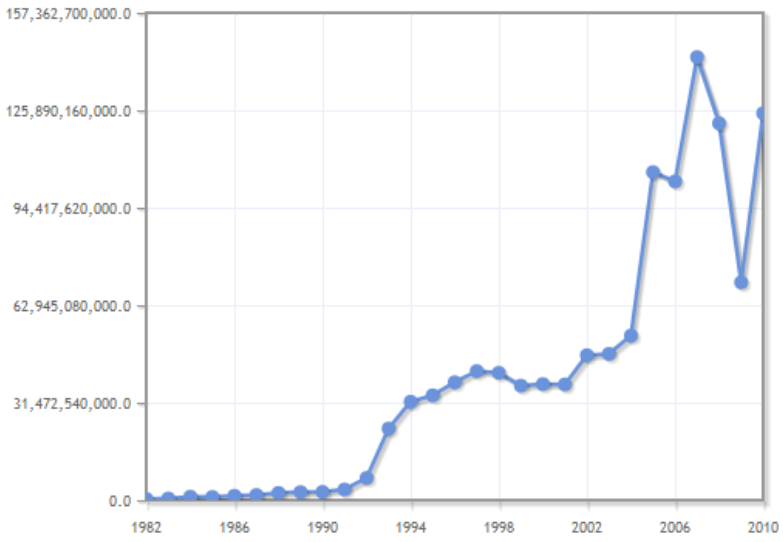
North Korea already established "market liberalization" reforms in July 2002 that included four measures. First measure was to abolish the coupon based public distribution system, having the supply and demand to determine the prices. Second, the artificially high value of currency (the North Korean won) was abandoned, depreciating from 2.2 Won to $1 US, to 150 Won to $1 US. The goal of the depreciation was to encourage foreign investment and provide export incentives for domestic firms. The third measure was decentralizing the government economic decisions in form of cutting the government subsidies, transferring the managerial decisions of agriculture and for the industry into the responsibility of production unit and allowing farmers market to operate more freely. Lastly, the government had begun to take steps in creating the special zones to attract foreign investment (Cha, 2004).[34]

[34] The Sinuiju Special Administrative District was proposed for foreign businesses that would exist completely outside DPRK regular legal structures. The Kaesong Industrial was designed to attract small and medium-sized South Korean businesses, and the Kumgang Mountain site provides hard currency from tourism.

These reforms have a great significance because they serve as a reason to believe that the country is getting ready to integrate with the outside world (Suk, 2011).[35]

The model can be therefore be applied, and as it was seen in the case of China, the FDI has rapidly grew in 1990s, partly as a result of creating the Special Economic Zones, which enabled to keep the separation of the "capitalist markets" in the country from the "socialist" part of China and thus the leaders were more open to support this reform.

*Figure 9: Net FDI flows of China, measured in current $*

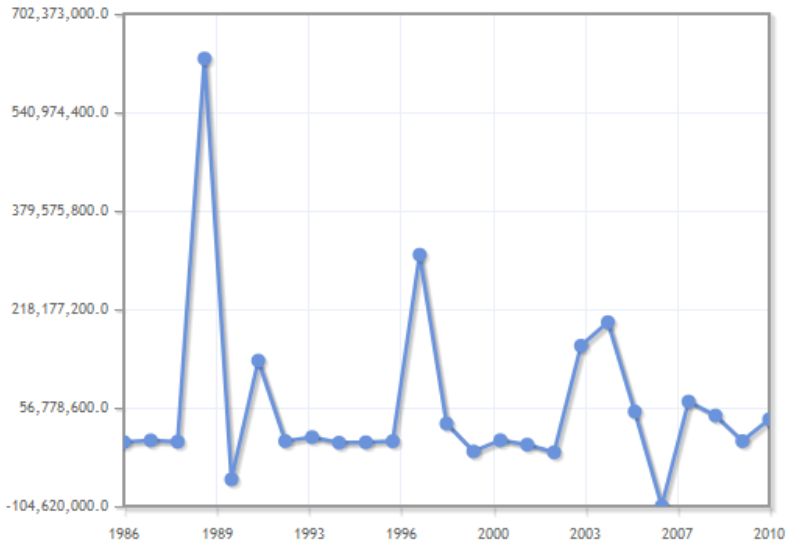



*Source: Index Mundi. 2011.*

The growth of FDI can be expected in North Korea as well even though it will not be the same amount, considering the significant differences in the size of the countries and the amount of labor force. The current FDI growth in North Korea is shown in the figure 8; it illustrates that the growth of FDI in the country is small and not steady. The biggest FDI was made before 1989. One explanation is that the FDI was made by USSR before it lost its power. Due to the significant amount of FDI, North Korea may have had a motivation to sustain the loyalty to USSR.

[35] Intervene with the outside world but not give up the dictatorship in the country. The idea is to only use the cooperation for economic gains while maintaining the anti-capitalistic rhetoric.

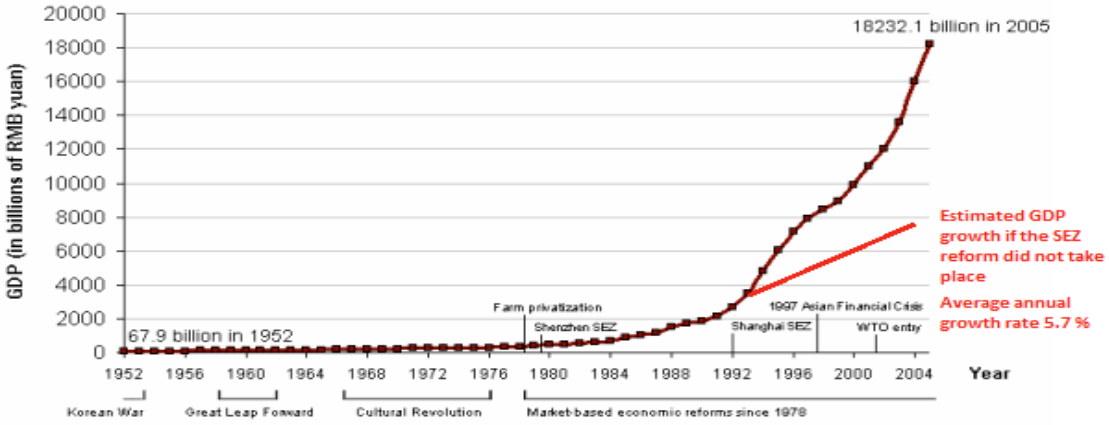
*Figure 10: Net FDI flows of North Korea, measured in current $*




*Source: Index Mundi. 2011*

The annual rate of GDP of China before the reform took place was 5.7 % (based on the data from the Chinability) and after the reform, China experiences annual growth of 9.6 % (December, 2009). There is 3.9 % annual growth difference that is caused due to the transition (Figure 11). Therefore, it can be predicted that a similar growth will happen in North Korea also, as it is shown in Figure 12.

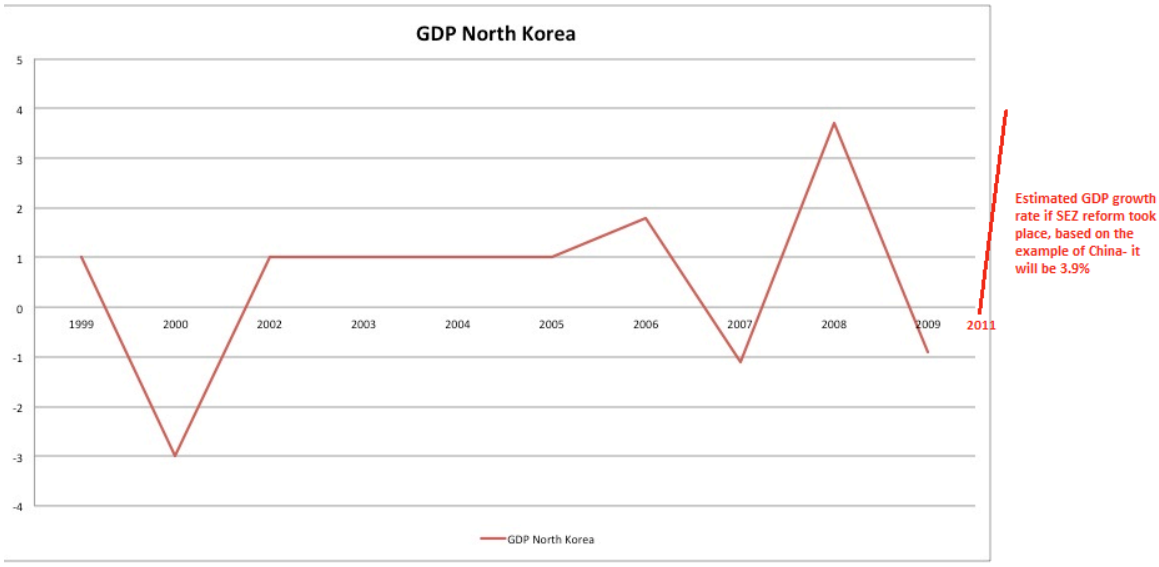
*Figure 11: The GDP growth of China*




*Source: Author's elaboration*[36]

[36] This figure was ellaborated from the figure gained from http://www.billcara.com/archives/2006/08/china_gdp_growt.html

*Figure 12: GDP growth of North Korea*




*Source: Author's elaboration, based on the data from Index Mundi.*

### 5.2.3. North Korea's possible success

Since the econometric model could not be applied, Swot analysis is used in order to summarize findings about North Korea and evaluate the possible effects of implementing the Special Economic Zones there.

| Internal | |
|---|---|
| **Strengths** | **Weaknesses** |
| 1. Absorption of the market<br>2. Some infrustructure built by USSR, Japan and China<br>3. Cheap educated labor<br>4. Big share of yet unutilised land<br>5. Tax-friendly policy for FDI<br>6. Good geographical position<br>7. Domination of industry | 1. Poverty – economic dependance<br>2. Lack of current economic stability<br>3. International conflicts and disputes<br>4. Inefficient legal system<br>5. Poor infrustructure in comparison with other countries<br>6. Strong political control<br>7. Poor human rights system |

| | |
|---|---|
| External | |
| **Opportunities** | **Threats** |
| 1. Global recovery - increased markets<br>2. Scope of entry of private firms in various sectors for businesses | 1. Intense world competition<br>2. Focus on more investor-friendly emerging economies |

North Korea, as a developing country has absorption of the market which gives a larger possibility for foreign investors to develop their businesses in various fields. As it was in a case of China, different production factories were set up throughout the country using the abundant production resources as land and labor. This scenario is likely to happen also in North Korea, even though the size of North Korea and its population (and the labor force) is smaller. Due to the cheap land and labor (the average salary in North Korea is $47 per month)[37], North Korea makes an attractive market for FDI.

Because of the Janapese occupation, the influence of USSR and constant trade relationship with China and South Korea, North Korea has infrustructure extensive infrustructure. The railway network is 5,000-kilometers long, built by the Japanese and it provides the main source of transportation. It carries about 90 percent of the annual freigh transport, and 70 percent of the passanger transport. The country has approximately 31 thousand kilometers of road system, however it is limited and unpaved. The infrustructre needs to be modernized and expanded, but it is a strength for North Korea to have this level of infrustructure in comparison with other developing countries (EoN, 2011).

The geographical position enables North Korea to trade with China for a lower costs than the rest of the world. As already mentioned, together with the cheap labor (cheaper than in China) and tax friendly policy, it is a good incentive for China to build factories in North Korea, as outsorcing for its own production for later export to the world.

[37] Source: Waris Peace. 2010.

Furthermore, North Korea is specialized in industry (domination of 43%), which is essential for development and it has a positive impact on other sectors such as constructions and services (Guisan, 2002)

On the other hand, the strong political control and lack of economic stability makes it risky for FDI inflows. The high dependance on international aid, poor human rights and big poverty creates obstacles that can be solved based on a long-term solutions which are hazardous for the potential investing companies. Another weakness is the fact that North Korea is involved in many international conflicts and disputes, including the UN sanctions for nuclear program or/and the bad relationship between the USA. A larger interference with North Korea can result in diplomatic issues for the domestic country of the investing company.

Furthermore, the dictatorship in this country should be underlined, because it differs from the leadership in China. Unlike Chinese leaders whose main goal is to develop the economy, Kim Jong II attempts to develop the country without loosing his political position and his dictatorship over the North Korean citizens.

There are external opportunities that can help this reform reach the success, especially the fact that the world economy is recovering from the economic crisis. Therefore a new market with a big scope of entry for private firms into various sectors is likely to be welcomed.

However, the fact that there is an intense competition in the world market and that companies search for stability and less risk, there is a threat that investors will turn to more-friendly emerging markets.

Based on the SWOT analysis, we could have a closer look at the possible issues that would aid or constrain the success of the policy *Special Economic Zones*. It can be concluded that this policy will help to improve the North Korean‘ economy if correctly implemented. The econometric model has proved that this policy has improved the standards of living in China, however, it must not be forgotten that it was not solely this policy that resulted in such “miracle“. If North Korea wishes to follow the example of China, it must work on its weaknesses firt because the current strenghts are not sufficient.

# 6. Conclusion

Following the detailed explanation of the process of transitioning the economy from a centrally planned to a market oriented economy, the two approaches, the Washington Consensus and Gradual Approach were ellaborated. The differences were illustrated on the recent transitioning countries: the Eastern European countries and Asian countries. It was argued that the **Washington Consensus approach failed to take into consideration the initial conditions of the economies and the amount of non-viable firms**. Consequently, with the radical reforms, the expectations of high economic growth and stability were replaced by the actual experience of stagnation, inflation, economic breakdowns of several countries and increase in unemployment.

On the other hand, without any clear vision, China has approached to transition gradually, reforming one part of the economy after another**. By providing right incentives for people, it achieved an ultimate transition that resulted in well functioning market economy.** China managed to create a "capitalist system with communist features" and in several years, it became the fastest growing country in the world. In order to achieve this success, China implemented several reforms that were also analysed in this thesis. The reforms of 1980's included: rural reforms, creation of Special Economic Zones and implementing the dual truck system. Then, the reforms of 1990's followed, concentrating on analysing the Austerity Plan, banking reforms and the reforms of state-owned enterprises.

The main lesson that was encountered from the detaily examined reform era is that the country needs time to gradually move towards allocating products and services by a market. The time allows the citizens and companies to learn the systems, to get used to the competition practices and to develope the comparative advantage.

A Special Economic Zone policy was examined in more detail by using the econometric model in order to support a hypothesis. **The hypothesis is that by opening up the economy, which means the increase of exports and imports (and so loosing the socialist feature of 'close-door economy'), together with the increase in labor force and foreign direct investment results in the improvement of the standards of living**. This hypothesis was verified by the estimation of the econometric model by using the

Ordinary Least Square method. It was used to compute the relationship between previously mentioned variables, based on a data set from China that consists of data from 1980 - 2008. The econometric model confirmed the hypothesis that China‘ s standards of living improved over the time, caused by the increase in labor force, increase in foreign direct investment inflows and increase in the trade (increase in the scope of openness). The life expectancy proved to be inrelevant to the model and thus it was withdrew in order to achieve a more correct calculation. However, **we could not apply the econometric model directly, due to the lack of efficient information from North Korea and the positive autocorrelation between the variables.**

Therefore, the application of Chinese reform on North Korea was done through economic analysis of the two markets, and **applying the trends of Chinese economic growth to North Korea, in terms of GDP, FDI and scope of openness.** In the implication, differences in the size of economies, labor force and strong political control over the economy are considered.

The application was supported through SWOT analysis from which it was found that SEZ reform could be applied to North Korea. The country has a market with good absorption for various businesses. The infrustructure, even though it needs to modernized and expanded, provides a good incentive for investors. A significant strength of North Korea is its geographical proximity to China that can expand their production to North Korea.

However, **the policy should be correctly implemented through a change of certain current ideology**, as for example the leader’s strong dictatorship, a strong control of production and trade; and control to keep the country away from the outside world. The lack of economic stability makes it risky for FDI inflows and the high dependance on international aid, poor human rights and big poverty creates obstacles that can be solved based on a long-term solutions which are hazardous for the potential investing companies. Moreover, without changing their approach towards international cooperation, especially in regards to its nuclear program the country will loose its attractiveness.

It is necessary for them to have the effort to intervene with the countries on more than just economical level because the possible **foreign direct investment will not be**

**invested in the country because of lack of trust, high risk and economic instability**. It would be a waste because **North Korea has a competitive advantage in production factors**, especially in cheap labor and land, and has a large scope of entry of private firms into various fields from which the economies, both domestic and international, can highly benefit.

There was no space, in this thesis to analyse the reasons of the large involvement of North Korea‘ s leaders in the nuclear program despite the fact that the international sanctions resulted from it hurt its economy. Furthermore, it would be very interesting to make an analysis of the scenario where North Korea stops receiving international aid as a consequence of its nuclear program. It will be appealing to see if it would force the leaders to open up the economy and what would be the consequences on the standards of living and FDI.

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# 8. Supplements

*Appendix 1: Price Index and Grain Price*

| Year | State Above-quota/ Contract Price Index (1978=100) | Rural Market Consumer Price Index (1978=100) | State Grain[1] Above-quota/ Contract Price (Yuan/100jin) | Market Fair[2] Grain Price (yuan/100jin) |
|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) |
| 65 | 84.1 | 78.2 | 12.61 | 20.99 |
| 70 | 97.2 | 80.4 | 13.61 | 19.48 |
| 71 | 98.4 | 87.4 | 13.61 | 17.86 |
| 72 | 98.4 | 94.6 | 13.48 | 24.35 |
| 73 | 98.1 | 99.6 | 13.57 | 24.35 |
| 74 | 98.4 | 101.4 | 13.60 | 25.16 |
| 75 | 98.7 | 105.5 | 13.78 | 25.97 |
| 76 | 99.4 | 109.7 | 13.77 | 30.03 |
| 77 | 100.0 | 107.0 | 13.64 | 30.84 |
| 78 | 100.0 | 100.0 | 14.01 | 25.97 |
| 79 | 140.7 | 95.5 | 17.04 | 21.91 |
| 80 | 140.4 | 97.4 | 19.63 | 20.29 |
| 81 | 145.1 | 103.0 | 19.65 | 22.72 |
| 82 | 144.3 | 106.5 | 19.80 | 21.91 |
| 83 | 144.9 | 110.9 | 19.95 | 22.72 |
| 84 | 142.5 | 110.5 | 20.11 | 19.48 |
| 85 | 129.4 | 129.5 | 18.13 | 20.28 |
| 86 | 130.1 | 140.0 | - | 22.72 |
| 87 | 130.2 | 162.8 | - | - |

Note: 1. The grain price series given in Chui's paper is the weighted average basic quota price for wheat, rice, millet, corn, sorghum, and soybean, using the quantities sold as weights. This series is converted to the above-quota price as follows. The above-quota price for grain was introduced in 1965 and was set to 130 percent of basic quota price. After 1979, the above-quota price was raised to 150 percent of the quota price. The contract price was introduced in 1985, which was the weighted average of basic quota price (30 percent) and above-quota price (70 percent). The adjustments are made accordingly.

2. The market fair prices were the average prices in Hunan Province.

*Source:Li, 1989c*

*Appendix 2:*

Agricultural Output and Population Growth, 1952-1987

| Year | Agri. Output Value (B. yuan)*,** | Crop Output Value (B.yuan)* | Grain Output (M. ton) | Cotton Output (1000 ton) | Oilcrops Output (1000 ton) | Population (million) |
|---|---|---|---|---|---|---|
| 52 | 85.71 | 71.23 | 163.9 | 1304 | 4193 | 574.8 |
| 57 | 106.97 | 86.22 | 192.7 | 1640 | 4196 | 646.5 |
| 62 | 85.63 | 67.56 | 147.5 | 750 | 2003 | 673.0 |
| 65 | 117.51 | 89.07 | 187.5 | 2098 | 3625 | 725.4 |
| 70 | 142.62 | 106.54 | 239.9 | 2277 | 3772 | 829.9 |
| 71 | 146.91 | 114.44 | 250.1 | 2105 | 4113 | 852.3 |
| 72 | 145.37 | 111.21 | 240.5 | 1958 | 4118 | 871.8 |
| 73 | 157.54 | 121.94 | 264.9 | 2562 | 4186 | 892.1 |
| 74 | 162.94 | 126.44 | 275.2 | 2461 | 4414 | 908.6 |
| 75 | 167.99 | 130.19 | 284.5 | 2381 | 4521 | 924.2 |
| 76 | 167.39 | 127.72 | 286.3 | 2055 | 4008 | 937.2 |
| 77 | 166.54 | 126.40 | 282.7 | 2049 | 4017 | 949.7 |
| 78 | 180.16 | 138.18 | 304.7 | 2167 | 5218 | 962.6 |
| 79 | 193.71 | 147.99 | 332.1 | 2207 | 6435 | 975.4 |
| 80 | 196.45 | 141.44 | 320.5 | 2707 | 7691 | 987.1 |
| 81 | 209.14 | 149.95 | 325.0 | 2968 | 10205 | 1,000.7 |
| 82 | 232.76 | 165.26 | 354.5 | 3598 | 11817 | 1,015.9 |
| 83 | 250.82 | 178.83 | 387.3 | 4637 | 10550 | 1,027.6 |
| 84 | 281.56 | 196.53 | 407.3 | 6258 | 11910 | 1,038.8 |
| 85 | 291.22 | 192.79 | 379.1 | 4147 | 15874 | 1,050.4 |
| 86 | 301.08 | 194.50 | 391.5 | 3540 | 14738 | 1,065.3 |
| 87 | 318.51 | 204.80 | 404.7 | 4245 | 15278 | 1,080.7 |
| Average annual growth rate: | | | | | | |
| 52-78 | 2.9% | 2.5% | 2.4% | 2.0% | 0.8% | 2.0% |
| 78-84 | 7.4% | 5.9% | 4.8% | 17.7% | 13.8% | 1.3% |

* Measured at the prices of 1980.
** The output value of village-enterprises is not included.

*Source:Li, 1989c*

*Appendix 3: Data Set for the Econometric Model*

| Year | Y1 | X1 | X2 | X3 | X4 | X5 |
|---|---|---|---|---|---|---|
| 1980 | 2,45 | 1,00 | 4,90 | 67,70 | 0,06 | 0,20 |
| 1981 | 2,82 | 1,00 | 3,80 | 67,70 | 0,27 | 0,22 |
| 1982 | 3,27 | 1,00 | 3,20 | 67,70 | 0,43 | 0,20 |
| 1983 | 3,79 | 1,00 | 2,30 | 67,70 | 0,64 | 0,19 |
| 1984 | 4,53 | 1,00 | 1,90 | 67,70 | 1,26 | 0,20 |
| 1985 | 5,28 | 1,00 | 1,80 | 68,90 | 1,66 | 0,23 |
| 1986 | 5,86 | 1,00 | 2,00 | 68,90 | 1,88 | 0,25 |
| 1987 | 6,71 | 1,00 | 2,00 | 68,90 | 2,31 | 0,31 |
| 1988 | 7,73 | 1,00 | 2,00 | 68,90 | 3,19 | 0,33 |
| 1989 | 8,36 | 1,00 | 2,60 | 68,90 | 3,39 | 0,32 |
| 1990 | 9,04 | 1,00 | 2,50 | 69,90 | 3,49 | 0,32 |
| 1991 | 10,21 | 1,00 | 2,30 | 69,90 | 4,37 | 0,36 |
| 1992 | 11,90 | 1,00 | 2,30 | 69,90 | 11,16 | 0,39 |
| 1993 | 13,83 | 1,00 | 2,60 | 69,90 | 27,52 | 0,44 |
| 1994 | 15,99 | 1,00 | 2,80 | 69,90 | 33,79 | 0,42 |
| 1995 | 17,84 | 1,00 | 2,90 | 70,80 | 35,85 | 0,39 |
| 1996 | 20,03 | 1,00 | 3,00 | 70,80 | 40,18 | 0,34 |
| 1997 | 22,33 | 1,00 | 3,10 | 70,80 | 44,24 | 0,34 |
| 1998 | 24,22 | 1,00 | 3,10 | 70,80 | 43,75 | 0,32 |
| 1999 | 26,51 | 1,00 | 3,10 | 70,80 | 38,75 | 0,33 |
| 2000 | 29,40 | 1,00 | 3,10 | 71,60 | 38,40 | 0,40 |
| 2001 | 32,53 | 1,00 | 3,60 | 71,60 | 44,24 | 0,38 |
| 2002 | 36,27 | 1,00 | 4,00 | 71,60 | 49,31 | 0,43 |
| 2003 | 40,97 | 1,00 | 4,30 | 71,60 | 47,08 | 0,52 |
| 2004 | 46,54 | 1,00 | 4,20 | 71,60 | 54,94 | 0,60 |
| 2005 | 53,40 | 1,00 | 4,20 | 72,70 | 79,13 | 0,64 |
| 2006 | 61,53 | 1,00 | 4,10 | 72,70 | 78,09 | 0,66 |
| 2007 | 71,54 | 1,00 | 4,00 | 72,70 | 138,41 | 0,64 |

*Source: Index Mundi, Chinability, UN Data, 2011*

Note:

Y = Standards of living, measured through GNI in PPP current 100 Bill $

x1- unit vector

x2- Labor force (expressed through the unemployment rate, % of total Labor force)

x3- Life expectancy (years)

x4- FDI (Bill $)

x5- scope of openess [ (Exp + Imp) / GDP ] where all three are measured by Bill $

*Appendix 4: Statistical verification of the First Model*

| | |
|---|---|
| Mean dependent var | 21.24649 |
| S.D. dependent var | 19.03005 |
| Sum squared resid | 383.0361 |
| S.E. of regression | 4.080900 |
| R-squared | 0.960826 |
| Adjusted R-squared | 0.954013 |
| F(4, 23) | 141.0316 |
| P-value(F) | 7.95e-16 |
| Log-likelihood | -76.35323 |
| Akaike criterion | 162.7065 |
| Schwarz criterion | 169.3675 |
| Hannan-Quinn | 164.7428 |
| rho | 0.690442 |
| Durbin-Watson | 0.589228 |

*Source: Author's ellaboration based on data from Appendix 3.*

*Appendix 5: Statistical Verification of the second model*

| | |
|---|---|
| Mean dependent var | 21.24649 |
| S.D. dependent var | 19.03005 |
| Sum squared resid | 428.5045 |
| S.E. of regression | 4.225441 |
| R-squared | 0.956176 |
| Adjusted R-squared | 0.950698 |
| F(3, 24) | 174.5484 |
| P-value(F) | 1.98e-16 |
| Log-likelihood | -77.92363 |
| Akaike criterion | 163.8473 |
| Schwarz criterion | 169.1761 |
| Hannan-Quinn | 165.4763 |
| rho | 0.649436 |
| Durbin-Watson | 0.661702 |

*Source: Author's ellaboration based on data from Appendix 3.*