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“Economic Development in Taiwan, Korea, Hong Kong  
and Japan: A Critical Examination of Rostow’s Stages of  
Economic Growth”

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## DEDICATION

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### *Abbreviation Table*

|           |                                                      |
|-----------|------------------------------------------------------|
| AID ....  | American Agency For International Development        |
| CST ....  | Council For Science And Technology                   |
| DPP ....  | Democratic Progressive Party                         |
| EIS ....  | Employment Insurance System                          |
| EPZ ....  | Export Processing Zone                               |
| EPB ....  | Economic Planning Board                              |
| ETRI .... | Electronics and Telecommunication Research Institute |
| FDI ....  | Foreign Direct Investment                            |
| GDP ....  | Gross Domestic Product                               |
| GMD ....  | Guomingdang (Chinese Nationalist Party)              |
| GNP ....  | Gross National Product                               |
| HCI ....  | Heavy And Chemical Industries                        |
| HKPC .... | Hong Kong Productivity Council                       |

IRTI .... Industrial Technology Research Institute  
JCRR .... Joint Commission Of Rural Reconstruction  
MITI .... Ministry Of International Trade and Industry  
NP .... National Pension Scheme  
NRP .... Net Regional Product  
OBM .... Original Brand Manufacture  
ODM .... Original Designed Manufacture  
OEM .... Original Equipement Manufacture  
R&D .... Research and Development  
S&T .... Scientific And Technical Research  
SME .... Small and Medium Sized Enterprises  
SOC .... Social Overhead Capital  
STAG .... Science And Technology Advisory Group  
TNC .... Transnational Corporation  
UMC .... United Microelectronics Corporation

## **1. Introduction**

The underlying paper focuses on the economic development in Taiwan, Korea, Hong Kong and Japan. Rostow's stages of economic growth will be taken as analytical tool to answer following research questions (1) "Do Taiwan, Korea, Hong Kong and Japan have the characteristics of Rostow's model for the stages of economic growth?" (2) "Do the four countries have differences in their economic development and in which stage do they belong to?" Furthermore, to provide an in-depth analysis, following question will be covered:

(3) "What kind of criticism does the model of economic growth have?"

In reference to the first question, the approach of Rostow and the features for each stage will be analyzed in the first part of this paper. Rostow's model of economic growth has five stages and belongs to the developmentalist theories of economic development. (See Cypher und Dietz 2004: 149) It includes the traditional society (first stage), the preconditions for take-off (second stage), the take-off (third stage), the drive to maturity (fourth stage) and the age of high-mass consumption (fifth stage). In the first part, each stage and its characteristics will be described. The theory part is also concerned about the criticism, thus the opinion of Supple, Parr, Meier, Kuznets and others will be taken in consideration. The second part covers the case studies of Taiwan, Korea, Hong Kong and Japan. These four countries were chosen, because the central political rule and the social organization had similarities. In addition Taiwan and Korea were colonial areas of Japan. During the colonial time the agricultural sector of both countries were important to Japan, therefore various modernizations were carried out. (See Ho 1978: 25-26 and Chung 2006: 90) Hong Kong was also a colony, and this was because of the trade conflict between China and Britain, which caused the First Opium war and the handover to Britain. For the world trade, the port of Hong Kong was a central one and the trade began to flourish. (See Williams 2009: 533, and Loughlin and Pannell 2010: 50) The cotton spinning and the silk reeling were the first mechanized and developed industries in Japan. Both World Wars had an impact on the economic development. (See Hentschel 1986: 160-162, Yoshika 1988: 14-15 and Flath 2000: 34-35)

To answer of the second question, there will be a third part to summarize of the stages and the countries. The concern then is the comparison of the four countries, where the similarities and the differences will be examined. Another focus of the paper will be the examination of results, and it will also be demonstrated in tables. The last part will be a commentary to the criticism in accordance to the four countries.

## **2. Theory - The Stages Of Economic Growth**

Each stage of Rostow's model for economic growth will be described. As already mentioned the model has five stages, which includes the traditional society (first stage), the precondition for take-off (second stage), the take-off (third stage), the drive to maturity (fourth stage) and the age of high mass-consumption (fifth stage). But first the introduction of the first stage and its features.

### **2.1. First Stage: The Traditional Society**

#### **2.1.a. The Limited Function Of Production**

In the first stage of the model for economic growth, Rostow introduces the traditional society, which includes the increase of agricultural output. At first he characterizes the traditional society as a developed structure, where the function of production is limited. And through the introduction of productive and technical innovation, the acreages can be extended. With such increase, there are positive advantages in the field of trade, industry and agriculture. For example production is able to increase, because of the usage of new crop or newly improved irrigation. In accordance to the limited production, Rostow also mentions, the unavailability or the lack of potentialities for modern science and technology. The central fact is, that the output is not obtainable for everyone. (See Rostow 1990: 4)

*“Generally speaking, these societies, because of limitations on productivity, had to devote a very high proportion of their resources to agriculture, and flowing from the agricultural system there was an hierarchical social structure, ....”* (Citation Rostow 1990: 5)

#### **2.1.b. The Connection Of Family and Clan**

Another feature for the first stage, are the connections between family and clan. These are very important for social organization and its underlying value system was geared to fatalism. Under this term Rostow assumes, for example, that the possibilities for the grandparents are also possible for their grandchildren. The description above is termed as "long-run" fatalism. He also examines the "short-run" option, where individuals have the possibility or legitimacy to pursue their own desires. Rostow takes the Chinese village as an example, where the struggle of holding or losing land was very common.

#### **2.1.c. The Central Political Rule**

The next feature of this stage is the central political rule, where the political power generally remains in the region, or in other words to those who control or own the land. The landowner,

whose entourage is comprised of civil servants or soldiers, usually has a deep influence and his interests prevail over the regions. (See Rostow 1990: 5)

#### **2.1.d. Other Examples Of Traditional Society**

Rostow compares the characteristics of the traditional society with different societies of the world history such as the dynasties of China, the civilizations of the Middle East and Mediterranean, and the medieval times of Europe. He puts these changing societies into the same category because the economic productivity of their technique was very limited. But the focus is on the post-traditional societies, where - as mentioned before - the characteristics like politics, social structure or economy of such traditional societies are changing. (See Rostow 1990: 6) Rostow explained the traditional society with its limited function of production, connection of family or clan and central political rule. He also gave examples of traditional societies from various countries. After this examination, Rostow describes, what kind of characteristic the second stage has.

### **2.2. Second Stage: The Preconditions For Take-Off**

After discussing the first stage of economic growth, Rostow describes the second stage, which is called “the preconditions for take-off“. The first stage is known as the traditional society with the initial limited production function. In the second stage the society is preparing for continuous growth, which can be achieved either by the force within a society or by external force.

#### **2.2.a. Two Cases Of Preconditions For the Take-Off**

Rostow then offers two cases, which are one of the features in the second case. Such differentiation of the cases is important for the precondition of the take-off (See Rostow 1990: 17 ff):

**(1) The General Case:** Is also known as the first case. It needs basic changes in the traditional society, the conditions for the second stage of economic growth are the basic shifts in the social structure, political system and techniques of production. The general case is typical for Europe, the Middle East, Africa and the greater part of Asia.

**(2) The “Born Free” Case:** For the second case, Rostow names the United States, Australia, New Zealand and Canada as examples for the “born free” countries. They are enumerate as “born free” countries, because their growth were primarily of economic and technical nature.

As Rostow mentions above, the understanding of these cases is important, because there are different processes for the preconditions of the take-off. But his focus lies on the general case,

where the traditional society has to create the preconditions for the take-off. Necessary for the preconditions for take-off are the social overhead capital and the economic setting in the field of manufacture. This is why the nations should no longer rely on the economic setting like agriculture and trade. (See Rostow 1990: 16-18)

### **2.2.b. The New Impulses Of The Imperial Power**

Rostow also mentions the colonial areas and the imperial powers as further possible features of the second stage, because the colonial policies could be advantageous for the development. Such policies in the colonial area can introduce modernizations such as the institutional change, the supply of social overhead capital, the building of infrastructure (like ports, docks, roads, railways) and the centralized tax system. The changes are necessary for the expanding export and the agricultural markets of the imperial powers. (See Rostow 1990: 27-28)

### **2.2.c. The Important Role Of Agriculture And The Social Overhead Capital For Growth**

Other factors for the increase of the investment rate are the development and the growth of different sectors. Every society has to deal with two difficulties: (I) the increase of the production in the **agriculture** and (II) **social overhead capital**. (See Rostow 1990: 21)

#### **2.2.c. (I) The Important Role Of The Agriculture For The Growth**

Rostow refers to the (I) first problem, that the increase of the productions is necessary for the supply of food and industrialization, because the modernization of a society needs working capital. Such capital comes from the output of agriculture and extractive industries. At the beginning of this section Rostow provides two cases. One of them was the general case. The agriculture from the traditional societies of the general case has important roles for the successful take-off. (See Rostow 1990: 22- 24)

- The supply of food

The supply of food is necessary for the growing urban population. Another reason for the high output is the foreign exchange, which is crucial for the fixed and working capital. But the agriculture can reach its limit in production. During the transitional process from a traditional society to a successful take-off, this sector has to struggle with several pressures, such as urbanization, high population, as well as the demand for foreign exchange.

- The role of demand and supply

The agricultural sector is an important source of demand for other industry sectors. For example the supply of farm machinery, chemical fertilizers and diesel pumps. Another role is its supply for the governmental sector, which is highly essential for industrial growth. In other words the agricultural sector has the function of a financial supporter. With these examples,

Rostow shows that the agricultural sector has two important roles: on the one hand as the consumer and on the other hand as the supplier.

- The agricultural role of the surplus income

Such agricultural surplus is crucial for the modern sector. It can be used as an investment and the profits can be ploughed back as an output or as a rise in the productivity.

With these three essential roles of the agriculture sector during the second stage, Rostow continues with the (II) second problem for the rise of the investment rate. As mentioned before, each society has to deal with its social overhead capital. (See Rostow 1990: 24-25)

#### **2.2.c. (II) The Important Role Of The Social Overhead Capital (SOC) For The Growth**

For the accumulation and pay-off of the social overhead capital (or SOC) a long period is needed. But its benefit is the advantageous usage for a longer period. Another advantage is that the SOC is beneficial for the whole community. Its pay-off is an indirect one. The government has the responsibility to accumulate the SOC. It needs a great sum of an opening capital. For example the states and local governments of the United States between 1815 and 1840 were important with regard to the SOC. The Erie Canal and the American continental railway networks are such examples for the SOC.

#### **2.2.d. The Rate Of Investments Over 10% Of National Income**

Rostow then takes a closer look at the **characteristics** of the transition time to the take-off. He is of the opinion that a society with an agricultural setting as the dominant field and with a high percentage of workers, should change into a society with modern settings like industry, communications, trade and services. Such a society, with its small economic, social and political setting, is very self-sufficient as a region. Now this region should be able to devote its commerce and thought not only to its own nation, but also to the international field. As mentioned in the first stage before, the connections between families and clans are essential for social organization, but the society now values individual beings. The man as an individual being can fulfill different, specific and specialized functions. After discussing the characteristics of these processes of transition, he now turns to the **analysis**. Here he mentions the rise of “rate of investments“. Regarding to the rate of investments he explains as follows: *“Get the investment-rate up to the point where the increase – to say, a rate of investment over 10% of national income – and the job is done. The difference between a traditional and a modern society is merely a question of whether its investment-rate is low relative to population – let us say under 5% of national income; or whether it has risen up to 10% or over.”* (Citation Rostow 1999: 20) For a high rate of investment, someone in the society should have the ability to make investments into the modern and efficient science. Another

one should take the leadership in the inventions, because with such a risk the capital stock is available. Also, the willingness of a person to lend money for the modern industry is crucial for a high rate of investment. The author comes to a short conclusion that the requirements for the rise in the investment are the changes of the society's attitude towards science, productive technique, risk taking as well as working methods. (See Rostow 1990: 20)

### **2.2.e. Britain As An Example For The First Steps Of The Take-Off**

Rostow thinks, that most of the Western European countries in the late 18<sup>th</sup> century were in the preconditions process of take-off. He then explains why Britain was the only country with the necessary and sufficient methods for the successful take-off. Over the years, post-medieval Europe discovered different countries and areas beyond their borders. Trade was flourishing as new goods like food, textiles and raw materials were being discovered. At the same time shipping and commerce were also developing, as well as the changing attitude of the society. Such kind of innovation also brought about competition among the nations. It was a struggle about the control of the real estate and trade in Europe. Rostow then demonstrates two countries with the failure of a successful take-off. The Dutch's failure for the take-off was due to the lack of economic and military resources, because they didn't have the ability to compete in commerce and trade. The case of France was a different one. The French revolution focused on the political, social and religious field rather than on the economic field. During the civil disturbance in France and the lack of industrial resources in the Netherlands, Britain was the only one in a superior position. Additionally Britain was the leading nation in the cotton industry, coal and iron technology, steam-engine industry. (See Rostow 1990: 31-35)

### **2.3. Third Stage: The Take-Off**

In the second stage the society was preparing for continuous growth, where two cases of societies for the precondition of take-off were explained. The distinction of these two cases (the general and the "born free" case) is very important, because the achievement of changing processes to a successful take-off depends on the conditions of a society. In the second stage Rostow examined the rate of investments and the role of the agricultural sector and SOC for the success of the take-off. Beside the changes in the economy and the role of colonial powers, Rostow showed in the end of the second stage the first steps of the take-off, where he demonstrated the case of Britain. After this detailed introduction into the second stage, it is clear, that there are different kind of societies with their various conditions for the take-off. The third stage and its features will be explained in the next sections.

### 2.3.a. The Take-Off As A Stimulus And Its Definition

Rostow is first speaking about the stimulus, which is an obvious sign for the initial steps of the take-off. The stimulus can be political revolution, new fields like social values, economic institutions or income distributions and innovations. Rostow presents the German revolution as an example of such stimulus. Other examples of political revolution are the Indian achievement of independence and the Chinese Communist victory. But the stimulus also can be a technological innovation, which is very helpful for the modern sectors and external economy. Another form of the stimulus is a new international environment. For example the increase in export prices and new imports of capital in the USA (1840), Canada and Russia (from the mid-1890) or the market opening of France's and Britain's market to Sweden (1860). With the above mentioned examples Rostow showed several kinds of the stimulus, but its form is not important. In fact it is the reaction to the stimulus, and the result of the development should be positive, sustained and self-reinforcing. (See Rostow 1990: 36-37)

### 2.3.b. The Accumulation Of Capital For The Development

The emergence of a political, social and institutional system for further development in the modern sectors and external economy is important. For this condition the mobilization of capital imports is a necessary and important act for the take-off. However, Britain's take-off, where the take-off was possible without the **capital** from domestic sources. Other take-offs occurred with a high amount from **foreign capital**, just like in the United States, Russia and Canada. Countries like Argentina or Venezuela and Belgian Congo had imported large quantities of foreign capital and during this long period they created the preconditions for the take-off without initiating it. (See Rostow 1990: 39)

Rostow mentions, that there were several patterns of the take-off, because the growth of the investment rate depends on various kind of political, social and cultural motivation of the countries. Furthermore he mentions that the **inflation** also made an important contribution to several take-offs, like in the case of Britain (1790) and United States (1850) where the price inflation helped to build the capital formation. This was possible as the resources flew to the profit instead of to the consumption. (See Rostow 1990: 47-48) Rostow suggests that not only the **state** should spend productively, but also the **bank and capital market** have an important role. For the first one Rostow is sure, that the increase of banks during the take-off was responsible for the enlarged supply of working capital. And for the second one, the capital market was more centrally and formally organized than before. Besides the supply of capital from the state and the banking institutions, the plough back of new profits from private and

public entrepreneurs in the growing sectors is another fundamental requirement for the take-off. But the detail for leading and growing sectors will be saved for another section of this stage. (See Rostow 1990: 48-49)

At the end of this section there is a brief summary about the supply of funds during the s take-off stage: *“First, as a precondition, it appears necessary that the community’s surplus above the mass-consumption level does not flow into the hands of those who will sterilize it by hoarding, luxury consumption or low-productivity investment outlays. Second, as a precondition, it appears necessary that institutions be developed which provide cheap and adequate working capital. Third, as a necessary condition, it appears that one or more sectors of the community must grow rapidly, inducing more general industrialization process; and that the entrepreneurs in such sectors plough back a substantial proportion of the profit in further productive investments, ...”* (Citation Rostow 1990: 49-50)

### **2.3.c. The Manufacturing Sector With A High Growth Rate**

Rostow thinks that the formation of manufacturing sectors is another key feature for the take-off, because their growth is a further impulse for the economy. The existence of a manufacturing sector with high growth is a necessary condition. (See Rostow 1990: 39)

### **2.3.d. The Leading Sectors For The Economic Growth**

The leading sectors are responsible for the economic growth, because new functions of production are needed. Rostow provides different examples for the leading sector during the period of take-off.

#### **2.3.d. (I) Two Cases Of Leading Sectors**

##### **(1) The Case of Britain**

The modern factory system of cotton brought Britain into self-sustaining growth. In addition, the requirements for Britain’s take-off were fully matured. During the 18<sup>th</sup> century, cotton textiles, iron, coal and steam powers were needed, and Britain’s cotton industry was the biggest part of the economy. In 1820 Britain’s international output was 60%. The benefit was the domestic substitution for the abroad manufacture, and the raw cotton was a low real cost, which went along with the development for the technology of manufacture. The substitution was a part of the implementation of the modern industrial sector. (See Rostow 1990: 53-55)

##### **(2) The Case Of The Construction Of Railroads**

The construction of railroads was a powerful introduction for the take-off. This played a determining factor for the United States, France, Germany, Canada, Russia, Sweden and

Japan. Rostow then comments on the three functions of the railroad during the economic growth in the phase of take-off (See Rostow 1990: 55):

- (a) The first function is also known as the Smithian function of the wide market, because the railroad is able to reduce transport costs. This also implicates benefits in the form of new areas and products for the market.
- (b) This function is fulfilling the capital for internal development, because the railroads were able to extend the export sectors.
- (c) The last function is the parallel development, on the one hand the development of the railroad and on the other hand the development of the modern industries like coal, iron and engineering. The demand for construction in many countries is responsible for the growth of industrial sectors.

#### **2.3.d. (II) The Characteristics Of The Leading Sectors**

Rostow summarizes the following characteristics (Rostow 1990: 57):

- (a) An increased demand for products, which includes products with a high growth rate, is required.
- (b) The new functions of production and the expansion of capacities are important.
- (c) The society should be able to accumulate capital for such sectors. An increasing rate of plough back from private or public entrepreneurs is necessary.
- (d) The leading sectors should introduce new functions of production for the other sectors.

Rostow demonstrates, that the growth of new manufacturing or leading sectors are the requirements for the changes in the economy. They have several forms of impact and the society should face these impacts. The results are the new functions of production and increased incomes. In the case when a once powerful leading sector is diminishing, the accumulated incomes can be ploughed back for more productive investments or for new leading sectors. (See Rostow 1990: 58)

Rostow explained the third stage as a stimulus with the need of accumulated capital. The manufacturing and the leading sectors were also a part of the take-off. For the conclusion of the third stage, he states the following: *“The take-off is defined as an industrial revolution, tied directly to radical changes in methods of production, having their decisive consequence over a relatively short period of time. This view would not deny the role of longer, slower changes in the whole process of economic growth. On the contrary, take-off requires the massive set of preconditions, going to the heart of a society’s economic organization, its politics, and its effective scale of values, ...”* (Citation Rostow 1990: 57-58) The following stage is the drive to maturity.

## **2.4. Fourth Stage: The Drive to Maturity**

As seen before Rostow explained a detailed instruction to the third stage, and he talked about the definition of the take-off. The capital sources in various forms are typical features for the take-off. The precondition for the take-off was the leading sectors. Two examples of leading sectors were provided in the third stage. The first example was the cotton industry in Britain and the second one the construction of railroads in the United States and others. The growth of manufacturing and leading sectors led to new opportunities for the economy, such as the new functions of productions, the function of plough-back into more productive investments, and the growth of new leading sectors. The fourth stage, which is the drive to maturity, will be examined in the next section.

### **2.4.a. The New Leading Sectors For Economic Growth**

In the fourth stage the society adopts technologies to the hoard of their resources. As mentioned before, the increased incomes of the leading sectors can be ploughed back into a new leading sector, when the once powerful sectors for the take-off are slowing down. This development can be seen as the drive to maturity. (See Rostow 1990: 59)

In the third stage Rostow provided two examples for the leading sectors. One of them was the take-off of the railway construction, there he also noted coal, iron and engineering as major roles for the growing sectors. In the late 19<sup>th</sup> century, the sectors of coal, iron and engineering were replaced by new ones. Steel, new ships, chemicals, electricity and other products from the modern machine tool belonged to the new sectors. Back then they were responsible of maintaining the growth rate in the economy. (See Rostow 1990: 59)

### **2.4.b. The Shift In The Labour Force (The Decrease Of Agricultural Labour Force And The Increase Of Skilled Labour Force)**

The labour force is changing in terms of skills and real wages. Rostow mentions, that the agricultural labour force before the take-off was 75% and at the end of the take-off it was nearly 40%. Later in the fourth stage, it decreased to 20%. At the same time the population in the urban, the skilled labour in the office, the semi-skilled workers, the technicians and the professionals were rising. The labour force of the fourth stage is more skilled and trained than the labour force in the past stages. (See Rostow 1990: 71)

#### **2.4.c. The Cases Of Different Take-Offs To Maturity**

##### **(1) The Case Of Britain**

Rostow demonstrates the process of the take-off to maturity with Britain serving as one of the examples. The major role in Britain's take-off was the result of the extensive use of cotton textile. Simultaneously there were improvements in the cotton, gin and the steam-engine industries, as well as in iron technology. But not only these discoveries brought Britain to the fourth stage of maturity. The railway boom from 1830 to 1840 also helped Britain to reach its maturity in the mid-19<sup>th</sup> century. Contrary to this, the take-off of the United States, France and Germany did not proceed because of the cotton industries. As noted in the section before, they reached their fourth stage with the construction of railways. The low cost and good quality of steel were the stimuli for the modern steel industry. (See Rostow 1990 60-61) *"It was largely from this incentive that the modern steel industry was built, in a sense steel flowed from the railroads, as the railroads had flowed from the requirements and consequences of modern cotton-textile industries. But once cheap, good steel was available, many further uses unfolded, including the efficient boiler and the modern steel ship; the machine-tool; new equipment for heavy chemical manufacture; and new forms of urban construction."* (Citation Rostow 1990: 61)

Rostow thinks that the engineering occupation led to the build up of roads, canals, water-pumps and textile machinery. The generated know-how developed the construction of railroads. It continued with the engineering of mechanics, chemicals, electricity and so on. For that reason, railway engineering was important for the Western world to step towards the fourth stage. Rostow shows that the production of steel was an important foundation for the maturity of the nations in Western Europe and the United States. (See Rostow 1990: 61-62)

##### **(2) The Case Of Sweden**

Between 1870 and 1880 the modern wood export industry and also the railway construction industry were responsible for the take-off in Sweden. In the export of wood, Sweden successfully changed wood to a wood-pulp oriented export. Another change was the shift from the pig-iron to steel and engineering industry. Animal and dairy farming achieved higher growth-rates in agricultural production than grain. In 1890 there was a big emergence of entrepreneurs and technicians in Sweden's society. In 1920 Sweden was able to reach the fourth stage of maturity with its own resources and modern technologies. Rostow thinks that Sweden is ready for the welfare state in the next stage. But the description of the fifth state will be saved for later. (See Rostow 1990: 62-63)

The section above was about the cases of countries such as Britain and Sweden. It shows how they reached the fourth stage. In the next section, a brief summary of other features from the fourth stage will be shown.

#### **2.4.d. The Initial Step Toward Fifth Stage**

For the last feature, Rostow states as follows: *“These changes in the real income, structure, ambitions and outlook of the society, as maturity comes to be achieved, pose a searching problem of balance and choice around the questions: how shall this mature industrial machine, with compound interest built into it, be used? To offer increased security, welfare and perhaps leisure for the citizens as a whole? To offer enlarged incomes, ..., to those who can earn them? ...”* (Citation Rostow 1990: 72)

Rostow notes, that the society fully experienced the industrialization and the societies are moving forward to the next stage. (See Rostow 1990: 72)

### **2.5. The Fifth Stage: The Age Of High Mass-Consumption**

In the fourth stage, the once powerful sectors of the take-off are replaced by other new leading sectors. In the previous stage, Britain and Sweden were taken as examples for countries reaching the maturity. As noted above, the change of the agricultural labour force and the increase of skilled labourers were the characteristics of the fourth stage. Rostow then mentions the aims of the fifth stage. But first the case of how the United States reached the fifth stage will be observed. (See Rostow 1990: 73-74)

#### **2.5.a. The Case Of The United States**

Rostow points out, that the United States was the first society that constantly shifted from the stage of maturity to the age of high mass-consumption. Rostow shows, that the year 1920 was the boom of high mass-consumption. During this time a new middle class emerged, whilst the number of farmers decreased. The number of the urban population was high and in 1920 there was a total population increase of 16%. At the same time the manufacturing output also increased, for example the automobiles, cigarettes, milk and beet sugar. (See Rostow 1990: 76-77) *“Automobiles, single-family houses, roads, household durables, mass markets in higher- grade foods- these tell a good deal of the story of the transformation of American society in the 1920’s, a transformation which supported the boom of the 1920’s ...”* (Citation Rostow 1990: 77) The construction of housing and roads, automobiles, and other consumer goods were the leading sectors in the age of high consumption, because they were available to families. Such boom occurred in 1946 and again in 1956. In 1958, 54% of the American

families owned cars, and later, the number grew to 73%. Many households had electrical appliances like refrigerators, vacuum cleaners and electric washing machines. In spite of these advances, the American society of that period was not an affluent society. Its population was growing and in 1946, it was estimated that the increasing population in 1990 would grow up to 165 million. As a result the American society had to deal with an **increasing population** and it began the strong upgrading of output in the level of private consumption. A society like America had to obligate itself to high-consumption. The utilization of the resources in such a society should be productive and wise. However, it simultaneously constituted the problem of scarcity, choice and allocation. The solution for such problems has not been discovered yet. Rostow points out that the fifth stage in the United States has not been completed yet, just like in some countries in Western Europe and Japan. (See Rostow 1990: 78-90)

#### **2.5.b. The Aims And Characteristics Of The Fifth Stage**

As soon as the society achieves technical maturity, it has the choice to select different aims, which can be seen below. Its choice is dependent on conditions like geography, culture, resources, values and political leadership. The last section of the fourth stage is also related to the aims of the fifth stage (See Rostow 1990: 73-74):

##### **2.5.b. (I) The Growing Awareness Of The Welfare State**

The state wants to fulfil human and social objectives, for example by imposing taxes. The following question about the provision of welfare to the people was already noted in the last section of the fourth stage.

##### **2.5.b. (II) The New Consumption Behaviour**

Besides the consumption of food, housing and clothing, the new consumption of goods and services from the 20<sup>th</sup> century becomes more and more important.

##### **2.5.b. (III) The Rapid Growth Of Population And 2.5.b. (IV) The Expanding Growth Of Urban**

In the case of the United States, the growth of the population and urban were demonstrated by Rostow. In addition, the United States had to handle its increase in population. At the same time it had started the upgrade in consumption. And as mentioned above this consumption is a feature of the fifth stage. (See 5.a. and 5.b. (II))

## **2.6. Criticism**

### **2.6.a. The Aspect Of The Regional, Multiregional And Interregional Level**

After the detailed examination of Rostow's model, the criticism of his model will be analyzed. Authors such as Supple and Parr are of the opinion that the stages of economic growth from Rostow had an enormous influence on developmental economic theories. Although the model inspired further works and ideas, Supple thinks that the empiricism of

Rostow's model is not well worked out in detail. Parr mentions, that the idea of the model is well applied to the developing countries, therefore the work received various critique. (See Supple 1984: 107 and Parr 2001: 2)

Parr is of the opinion that the "stages of economic growth" of Rostow only examines the economic development on a national level. Parr thinks that an examination on a regional and the sub-national level should be included in such a model of economic growth. In his paper Parr analyzed the Rostow's model on three levels, which included (1) the regional (with the focus on one region and the exclusion of other regions), (2) the multiregional (with the aspect of many regions) and (3) the interregional level (with the main focus on the relations of the regions). (See Parr 2001: 2) In accordance to the first one, Parr notes the following: *"The problem of Rostow's definitions of the stages becomes more serious when we consider the take-off stage of the regional economy. The existence of a level of investment of around 11% of net regional product (NRP) can be accepted, as can the emergence of a leading sector. However, Rostow's requirement that this must involve a manufacturing activity which also encourages other indirect effects is simply not always reflected at the regional scale. Many regions achieve take-off (in the Rostow sense of sustained growth) without the leading sector representing manufacturing"* (Citation Parr 2001: 7) Parr points out that Rostow did not consider the economic characteristics of a region as well as the variety in their pattern of development. The stages should be described in a broader way and Rostow excluded that concern. (See Parr 2001: 8) For the next level, which was the multiregional aspect, Parr mentions that each region in the nation will complete the stage at different times. The reasons were that some of the regions were in the leading fronts, while others were still behind. This means that the stage of development was miscellaneous in a certain period. For Parr, the matters about the manifold developmental stage of the regions should be concerned as a component of the nation, and the nation alone should not demonstrate the developmental stage. In other words, the nation is not the sum of its region. Parr thinks that the affair and the impact between the regions are important and the approach of Rostow is a top-down one. (See Parr 2001: 9-10). For the interregional level, Parr states that the preconditions for the take-off of the regions can be different. The reasons are maybe that a region had its take-off before the nation. Also in the other way round, it is possible that the region still lingers in the first stage of the traditional society. The possibility that the developed region received public expenses is higher and at the same time, it is easier for it to expand the private investment. Such process is very disadvantageous for the backward regions. This phenomena is termed as the "backwash effect". In general Parr is of the opinion, that the approach of Rostow should be amended. (See Parr 2001: 12-13 and 17)

### 2.6.b. The Problem Of Detailed Definition

Supple is of the opinion that Rostow's model of economic development is a common one, because the variables and the features of the different stages are under-defined. The identified variables, for example the rate of investment or the leading sectors are misleading. The description about the characteristics of the stages, the transitions of the stages and the qualitative relation were poorly taken into consideration. (See Supple 1984: 114) As an example of the qualitative relation, Meier speaks about the cultural backgrounds of developing countries and developed countries. Meier thinks that values and institutions are associated with the progress of the developed countries of the West. But the values and institutions of the developing countries did not represent the hindrance of improvement. The view of conveying the values or the institutions of the developed countries to the developing countries is wrong, therefore the shift in the cultural background is not necessary to build up new institutions and goals. (See Meier 1976: 96-97) Like Meier, Kuznets thinks that the developing countries and the developed countries lack similarity in terms of economic progress. Kuznets is speaking about the low output per capita of the developing countries, but the developed countries in the present had a different condition at the time when the accomplishments for the growth in modern economy took place. He also mentions that the developed countries already had a sophisticated economy before their movement towards the process of industrialization. But back in the late 18<sup>th</sup> century, they had not been the improved ones in all sectors of the manufacture. (See Kuznets 1971: 254-256)

Furthermore, Supple notes in his work that the society is moving forward, therefore the view of progress in the economy, the pattern of consumption and the shift of technique is changing. (See Supple 1984: 114) *"The stages-of-economic-growth "theory" was after all, less a theory than a language, gaining in its power to invade the discourse of development in measure as it lost precision and specificity."* (Citation Supple 1984: 114)

Crafts thinks that Rostow's idea of the take-off is vulnerable. In his opinion, the increase of the GDP (Gross Domestic Product) needs a continuous growth for a half century and it has its height of three percent per annum. Therefore there is no evidence that the investment rate doubles as Rostow thinks. Also, the leading sectors of the cotton textiles in reference to the GDP or to the output of the industries were overestimated. Crafts also responds to the labour force in the agriculture of Britain, which in 1870 decreased to a level that the other countries in Europe could not reach after the Second World War. Crafts thinks that of Britain's course of progress is an unique one. In other countries, it could not be observed, therefore the model of stages should be dismissed. (Crafts 2001: 313)

### **2.6.c. The Problem Of The Developing Countries**

Meier is of the opinion that the capita income of the developing countries is low, and with such a low income they had to push the development forward. But in contrast, the already developed countries in the present had no such problems during their step towards industrialization. The reason is because their income during their improvement stood on a beneficial level, so the development was not difficult. He also points out, that various developing countries did not progress in the agriculture as the preconditions toward the industrialization predicted. Industrialization, without the agricultural advancement and the accomplishments of the other industrial improvements was a challenging attempt. The agricultural productiveness of the already developed countries before their progress of industrialization was in comparison, higher than that of the developing countries. In addition, the population growth of the developing countries was higher than that of the already developed countries during the period of their improvement. The developing countries had to adjust their production to the high growth rate of the population, and the developed countries did not have to face such problems during their process of industrialization. Meier points out, that the stages of economic growth from Rostow should be revised. (See Meier 1976: 95-96)

### **2.6.d. The Precondition Of A Stage**

Kuznets has summarized five preconditions for the stages: (1) The empiricism should be verifiable, (2) the features of a stage should be distinct and exclusive to certain stages, (3) some characteristics of the stage should have a relationship to the former stage, (4) the completed stage should have a connection to the next stage and (5) the classification of the economy to the model. (See Kuznets 1963: 24) Kuznets analyzes the application of the above mentioned preconditions to Rostow's model of economic growth. The first precondition is not fulfilled, because the empirical proof is not revealed, for example the statement of the take-off. For the second precondition there is evidence of the distinct and exclusive feature of the investment from over 10 percent of the national income. In reference to the third precondition, Kuznets notes that the characteristics of the third stage already emerge in the second stage. In accordance to the fourth stage, Kuznets thinks that the isolation between the third and the fourth stage are not distinct. Also for the last precondition Rostow shows no detailed difference of the take-off between the general case and the second case. In general, Kuznets is of the opinion that the preconditions of the stages are not completely applicable to the third stage. (See Kuznets 1963: 26-28 and 35)

### **3. Case Study – Taiwan**

#### **3.1. First Stage: The Traditional Society**

##### **3.1.a. The Limited Function Of Production**

Around 1661, the Ming army commander Guoxingye (国姓爷) arrived in Taiwan and expelled the Dutch army. The new administration introduced several systems for the land holdings of the state, private, and military members. In general, the method for the cultivation and clearance of fields was well known. Due to the the scarcity of labour force and limited technique, crop growing was still carried out on small fields. Because of the new Qing Dynasty in 1683, new measures like the privatization of land holding in Taiwan took place. (See Chang 1984: 37-41) Chang and Ho are speaking about the new developed leasehold system, which included three kinds of members (See Chang 1984: 45-46 and Ho 1978: 13): (1) The great landlord with the highest profit (2) the tenant landlords, who collected their taxes from (3) the subtenants. The last one were originally workers who were allowed to lease land from the tenant landlord. Their incomes were used for seeds, tools, water and fertilizer. The income was not enough to provide for their everyday life and for this reason, the introduction of new crop was not possible. In 1886 the Qing dynasty imposed more strictly controlled tax payments in order to increase the tax revenue. For that purpose, the Qing regime selected civil servants of lower rank from the Mainland to inspect the cultivation. The survey was not easily conducted, because the great landlord rented the land to other tenant landlords and the allocation for its property rights was not clear. The regime wanted to transfuse the property rights of land to the tenant landlord, but the great landlords fought against this approach. They still got their taxes without putting effort neither into investments nor into works, although it was lower than the years before. (See Chang 1984: 46-47)

The methods of agricultural production were taken from the peasants of the Mainland. Although it was traditional, it was nevertheless a great help for the economic development. New, various kinds of rice and sugar cane seeds were planted, and there was no selection of bad seeds. The usage of organic fertilizers and irrigations were well known. The latter was provided by the landlords or it was built in co-operation. (See Ho 1978: 16-17)

*”But, lacking an overland transport system, Taiwan did not become a well-integrated economy but existed as a collection of relatively isolated communities whose social and economic structure reflected their ancestral villages in Fukien and Kwangtung. ... The economy, consisting primarily of an agricultural sector, was operated by Chinese immigrants, mostly on a traditional basis, using techniques brought from the Mainland.”* (Citation Ho 1978: 24) In general, Ho is of the opinion, that there were no changes in technology and

productivity, therefore development during the Qing dynasty remained slow. (See Ho 1978: 17) In reference to the productivity and technology, Chang mentions that the economic development in the Qing dynasty was sluggish because there were no upgrades in the systems of production, transport, social or administration. In addition, the population was growing and they lived isolated from each other. (See Chang 194: 52)

### **3.1.b. The Connection Of Family And Clan**

The section above was about the agricultural production. This section explains the family structure. Cohen thinks that there were some characteristics of the social structure from China reflected in the agricultural organization of Taiwan. Family unity was an important part, because the cultivation of the field was carried out by them and each member had their own duties. In the bureaucracy of Qing, the function of the Chinese peasant family, also like that in Taiwan, was self-adjusting. (See Cohen 1937: 12-13)

### **3.1.c. The Central Political Rule**

As already mentioned above, a part of the agricultural output was given as tax to the government. The government was responsible for the various planning of irrigations or reclamations of land. It also collected rents from the peasant families, but in return it had to assure the belongings and treaties of the families. (See Cohen 1937: 12-13) Compared to the Mainland, the policy of Taiwan was a more freely orientated one, and such an element contributed to making it less centralized. Therefore the life of the families were self-sustained and project or planning for the public was not urgently required. (See Roy 2003: 20)

## **3.2. Stage Two: The Preconditions for Take-Off**

### **3.2.a. Two Cases Of Preconditions For The Take-Off**

Taiwan belongs to the general case, and section 2.2.d.(I). will demonstrate the details. In addition, the greater part of Asia belongs to the general case, where the basic changes in the traditional society are needed. (See Rostow 1990: 17 ff)

### **3.2.b. The Role Of Imperial Power: Its Policy And Colonial Area**

The first Sino-Japanese War brought victory to Japan, and at the same time it was the fall of the Qing dynasty. Another consequence was that Taiwan was under the rule of the Japanese colonial powers. From 1895 on, the imperial power lasted for fifty years. As mentioned in the section before, Taiwan received various transformations in the division of land throughout the Ming and Qing dynasty. Although the traditional production methods were carried out, the development remained slow. With the new colonial power Taiwan experienced different

changes. Economic development was possible because of the new open economy and the large market. It was also in the interest of Japan to trigger a development, therefore productivity increased through the new technological methods. (See Ho 1978: 25-26) The Japanese interest towards Taiwan's development was due to the island's geographical position to China, which was crucial for its intention to conquest China. With such a plan, Taiwan passed through different transformations in the administration, the police department and the economy. Under the colonial power, the modern institution emerged in forms such as banks. (See Fronius 2001: 21) The building of the modern bank in 1899 was one example. Japan subsidized the "Bank of Taiwan" 5 million Taiwan Dollars, which went towards (1) the single currency and (2) the investment for the agriculture, trade and economy. (See Chang 1984: 59)

### **3.2.c. The Important Role Of The Agriculture And The Social Overhead Capital For The Growth**

#### **3.2.c. (I) The Important Role Of The Agriculture For The Growth**

This section is about the major role of agriculture for the colonial power. The first agrarian reform was initiated in 1898, with Japan being the investor. (See Ho 1978: 35) *"The available evidence indicates that the government devoted large amounts of its energy and money to transform agriculture. At least one-third of the government's development expenditures, or 10 percent of its total current expenditures, was spent on promoting agriculture through research, extension, and subsidies."* (Citation Ho 1978: 35) During the colonial rule, Taiwan could approve the Japanese agricultural knowledge and techniques. For the high output in the agriculture, the build up of research establishments and techniques was undertaken. Various changes were carried out:

- (1) The introduction of new and qualitative seeds supported the transformation in the production of rice and sugar. The technical progress for sugar stopped in 1930, but the implementation of the ponlai rice seed (or penglaimi 蓬萊米) was a success because of its endurance against diseases and wind. In addition, its yield was lowering the cost of cultivation.
- (2) Due to the introduction of the new rice, the use of chemical fertilizer was widespread. The chemical fertilizers achieved a higher output of rice. In the 20<sup>th</sup> century the Japanese colony established only a small number of industries for the fertilizers, because Japan wanted to be the main provider of fertilizers.
- (3) In order to expand the usage of artificial irrigation, investments were undertaken.
- (4) The system of advice obligated the peasants to attend and to learn about the techniques of

field cultivation. In 1900, the Farmer's Association (FA) was based in every prefecture. Their objectives in agriculture were the education of technicians, the improvements of seeds, the purchase of seeds, fertilizers and instruments, and the supervision of warehouses. The FA had the assistance of SAU (Small Agricultural Unit) and credit coops. The former was important for the communication between peasants and agricultural experts. (See Fronius 2001: 21, Ho 1978: 28-29, 35 and 58-63, Menzel 1985: 157 and Chang 1984: 61-65)

All these kinds of introductions by the Japanese government were interrelated to each other, like the new utilization of seeds and the demand of fertilizers and irrigation. *"The Taiwanese case also demonstrates that given the complementary nature of the inputs needed to transform agriculture and the structure of traditional agriculture, it is impossible for technology to transform agriculture by itself without extensive restructuring of agriculture institutions."* (See and Citation Ho 1978: 64-65, and 65) All skills of administration, organization and technique for the change in the agriculture was provided by the colony. The economy of Taiwan should be a supplement to the Japanese economy. In addition, Japan wanted to reduce the financial cost of economic transformation, therefore it was important that Taiwan had the ability to support the colonial power. The agricultural sector of Taiwan had an important role because it had to help with the construction of infrastructures such as roads, harbours, railroads and others. Another key role is the supply of food for the Japanese population. (See Fronius 2001: 21 and Ho 1978: 29 and 65) In reference to the increased population and economic growth, Li Denghui states as follows: "1910—56年全部期間內，人口平均年成長率為2，3%，而農業產出的年成長率為2，7%。約略言之，我們可以說，在長期中，台灣人口的年成長率的增加，每十年為0，5%強，或每年0，05%。此種在台灣農業發展過程中，人口年成長率的漸增趨勢，似與一般先進國家在其經濟發展過程中人口成長的趨勢不相一致。因為台灣係一小島，其經濟係在特殊條件下（二次世界大戰前的殖民地經濟及二次大戰後的重建）發展起來，故在人口成長方面可代表一特殊模型。"(Citation 李登輝 民國七十二年: 134- 135)

*"In the period of 1910-56, the growth rate of the population was approximately 2,3%, and the rate of the agricultural output was 2,7%. Generally, in the long-term view it can be said, that the growth rate of the population was increasing, which was 0,5% in every ten years or annually 0,05%. In the process of the agricultural development in Taiwan, the growth rate of the population had an upward trend, which was different in comparison to the developmental progress of the other economies. The reason for this was that Taiwan is a small island and through certain events, for example the economy of the colonial power before World War I, and the reconstruction of the economy after World War II, the economy of Taiwan expanded. As a result, the pattern of*

*the population growth is an unusual one.*“(Citation Li Denghui Republic of China Year 72: 134-135, Own Translation)

In the context of the food supply for Japan, Ho and Menzel describe a mutual exchange of resources. On the one hand there is Taiwan with the production and export of rice and sugar to Japan. On the other hand Japan provided manufactured goods. The goods were sold from the urban to the peasants of Taiwan. Both cases show that the agricultural output supported the non-agricultural sector of goods and services. The expansion of agricultural productivity was a supportive force for economic growth. Taiwan realized an agricultural surplus. It was able to plough back the capacity of production, and its new function was the supplier of resources for other sectors. The other part of the surplus was as mentioned above, the food supply for Japan. From 1911 to 1915 the agricultural surplus was 53 million Yen per year and it grew to 360 million Yen from 1936 to 1940. In the same period the surplus amounted to 54% of the agricultural production and from 1936 to 1940, it was over 70%. Besides Japan, Taiwan obtained a high rate of production at the end of 1930, which surpassed the output of China. Chang calls the colonial time as the ”economy of rice and sugar“, because Japan found many peasants in Taiwan and for the major production was rice and sugar. (See Ho 1978: 28-29 and 65-66, Menzel 1985: 157-158 and Chang 1984: 61) “台灣自荷蘭時代開始種植甘蔗製糖，成為台灣重要的出口商品，日本正是台灣糖的主要貿易對象。日本長期以來偏好台灣砂糖，日治 時代兒玉源太郎任時，即大力發展糖業經濟，推行糖業保護政策，訂定（台灣糖業獎勵規則），由總督府在資金方面提供獎勵補助，。。。，此舉有助日本大財團，卻壓迫到台灣本地的資本。為有效提升糖業，總督府亦實行（原料採取區域制度），目的在於保原料來源及避免各糖廠為爭奪甘蔗原料而提高蔗價。。。 ” (Citation 戴寶村 and 王峙萍 2004: 240) “*The planting of sugar cane and its manufacture started in the era of Holland. The sugar was a significant product for export, and Japan was the main demander. Since a long time Japan had a preference for the sugar of Taiwan. During the Japanese administration and under the governor-general Eryuyuan Tailang, there were various efforts for the rapid expansion of sugar industries, which included the promotion of the protection policy. The governor announced the policy of "the reward-system for the sugar industry in Taiwan" and provided capital allowances for the sugar industry, ... it was helpful for the Japanese financial group, but it constricted the local capital of Taiwan. For the effective enlargement of the sugar industry, the governor achieved "the regional system of distribution for raw material". The aims were the protection of raw materials, the avoidance of competition of raw canes between the sugar-factory and the increasing price of sugar...*”(Citation Dai and Wang 2004: 240, Own Translation)

The Japanese government admitted migration to Taiwan, and their workers were more

skilled. The number of labour forces in the industry enlarged with the aid of the Japanese workers. In 1930, industrialization visibly took place and the shift in the pattern of labour force appeared. The agricultural workers declined, whereas the number of industrial workers increased. As mentioned above, the major sector was the agriculture and in 1940 the employment accounted for 64% and 24% in the industry. In the industry, the Japanese labourer made up more than 35%, whereas the count for the Taiwanese worker was lower. Taiwan learned its lessons in the various fields of agricultural cultivation and production, the construction of roads and railroads and the system of administration and banks. Taiwan became aware of business organization and the advantage of the monetary policy. (See Ho 1978: 80-83 and Chang 1984: 77-79)

### **3.2.c. (II) The Important Role Of The Social Overhead Capital (SOC) For The Growth**

The colonial power also concentrated on the transport system. The reason for the improvement of modern services was to encourage the agricultural progress. The construction of railways was undertaken and through the railroad, both important harbours in the North and South (Jilong and Gaoxiong) were connected. This was the most expensive amount for the Japanese government, and the transport network in Taiwan was no longer restricted to the seas. The railroad and road system at that time were generously constructed, which remained to the end of the colonial power. (See Ho 1978: 28 and Chang 1984: 56)

### **3.2.d. The Rate Of Investments Over 10% Of National Income**

**Table 1 The rate of investment - Taiwan**

| Year | Investment Share of GDP in % |
|------|------------------------------|
| 1950 | Not available                |
| 1951 | 6.94                         |
| 1952 | 7.99                         |
| 1953 | 8.58                         |
| 1954 | 8.60                         |
| 1955 | 6.74                         |
| 1956 | 7.27                         |
| 1957 | 6.81                         |
| 1958 | 7.07                         |
| 1959 | 8.39                         |
| 1960 | 10.19                        |
| 1961 | 9.89                         |
| 1962 | 9.38                         |
| 1963 | 10.26                        |
| 1964 | 10.21                        |
| 1965 | 11.75                        |
| 1966 | 11.62                        |

|      |               |
|------|---------------|
| 1967 | 13.83         |
| 1968 | 14.88         |
| 1969 | 14.91         |
| 1970 | 16.05         |
| 1971 | 16.96         |
| 1972 | 16.96         |
| 1973 | 17.87         |
| 1974 | 23.03         |
| 1975 | 19.84         |
| 1976 | 20.12         |
| 1977 | 19.25         |
| 1978 | 19.46         |
| 1979 | 21.59         |
| 1980 | 21.90         |
| 1981 | 20.84         |
| 1982 | 18.64         |
| 1983 | 17.56         |
| 1984 | 16.87         |
| 1985 | 14.86         |
| 1986 | 14.12         |
| 1987 | 16.34         |
| 1988 | 18.42         |
| 1989 | 18.27         |
| 1990 | 18.24         |
| 1991 | 18.88         |
| 1992 | 20.92         |
| 1993 | 21.61         |
| 1994 | 21.47         |
| 1995 | 21.19         |
| 1996 | 20.63         |
| 1997 | 22.12         |
| 1998 | 22.78         |
| 1999 | Not available |
| 2000 | Not available |

(See CICUP 2002)

The table above demonstrates that the rate of investment is generally over 10%. The data in 1950 is not available. In 1951, the rate of investment accounted for 6,94%, which is under 10%, but it started to grow. Between 1951 and 1959 the rate of investment was under 10%. Since 1960 the rate of investment was over 10%. The rate of investment since then was generally over 10%, with the exception of 1961 and 1962. (See CICUP 2002)

### **3.3. Stage Three: The Take-Off**

#### **3.3.a. The Take-Off As A Stimulus**

After 50 years under the Japanese colonial rule, Japan was defeated during World War II, and Taiwan was given back to China. Because of World War II, the agricultural productivity showed a decrease of 50%. The recovery of the economy from World War II remained slow,

and the early period of the 1950s was marked by the devastation of war. Through the migration of the army and civilians from the Mainland, the population was growing exponentially. The necessity was a sufficient supply of foods and clothes, in addition, the large debt of the armed forces had to be balanced out. Under such conditions industrialization was the solution. The strongest and largest agricultural sector was crucial for such an attempt. Its build up occurred, but its progressive movement remained slow. Nevertheless the agricultural productions gained momentum, the production of rice and sugar accounted for 86% and 40% four years after the end of World War II. (See Ho 1978: 105, Ho 1987a: 237 and Chang 1984: 80) *“Taiwan’s agriculture continued its vigorous growth in the postwar period, helped by the 1949-1953 land reform programme, the improvements in rural infrastructure, and the introduction and increased supply of new inputs and technique that were compatible with its small and intensively worked farms”* (Citation Ho 1982: 983) The agricultural sector still played a crucial part for the economy and various goals were aimed for (See Chang 1984: 85-86): (1) The restoration of the production facilities, (2) the rise of the income and the growth in the production, (3) the supply of food, (4) the flow of resources into the industry, (5) the agricultural surplus to support foreign exchanges, (6) the provision of workers for the industry and (7) the incentive for the awareness of savings. Different implementations were undertaken (See Chang 1984: 86-91):

- The Joint Commission of Rural Reconstruction (JCRR ) was obligated with the increase of the agricultural production and its organization. JCRR as the ministry of agriculture for Taiwan and the source of financial assistance was also responsible (1) for the training of agricultural professionals and (2) the introduction of new kinds of seeds, fertilizers, pesticide and mechanics.
- The new agrarian reforms, which were significant for the progress of industries and living standards were undertaken. The layout of various plans played a major role for the development. The first Four-Year Plan was initiated in 1953, which was known as “The Plan for Economic Rehabilitation“. Its concern was the resources for agriculture, fertilizer and textile. The main focuses were (1) foreign exchange with the devotion for the growth of exports (2) the import substitution and (3) the foreign capital of overseas Chinese. For the latter its first attempt of investment fell through, but in 1956 the investment of the overseas Chinese started to grow. The reason for it was the loosening of controls in foreign exchange. In reference to (2) the import substitution, its growth made a big contribution to the total growth between 1955 and 1960. The import substitution in the sectors of the machinery, the light and heavy industry in the 1950s was the preparation for the export growth. The second Four-Year Plan, which included fiscal and monetary policies, was imposed for rapid growth

of national income and investment, and the share of investment in the growing sectors. From 1958 to 1961 the government was responsible for the capital formation and the investments flew into the sector of transportation, communication, commerce and housing. (See Wade 1990: 81-82 and 84)

### **3.3.b. The Accumulation Of Capital For The Development**

America's aid to assist the production in the industry and agriculture was devoted to the stabilization of the economy. In 1950 large sums of aid were provided, for example from 1949 to 1967 America supported Taiwan with 4.1 billion US Dollars. But the aid decreased in the 1960s, while the economic aid in the early 1950s still accounted for 110 US Dollars. Additionally, America supported Taiwan with military force, and like the economic aid, it slowly diminished in the 1960s (See Ho 1978: 111) *"Foreign aid increased the resources available to Taiwan and thus enabled it to better meet its economic and military needs. In other words, aid permitted Taiwan to grow and to remain relatively stable ... In Taiwan foreign aid facilitated economic development in several ways: it helped to control inflation, relaxed a binding foreign exchange constraint, and permitted a higher level of capital formation."* (Citation Ho 1978: 111) 38% of the economic aid flowed to the import of specific goods such as cotton, yarn, ores, metals and fertilizer. 30% was for food and consumer goods and 19% belonged to capital goods like machineries and tools. The aid had further benefits: (1) the stabilization of the economy, the society and the regime in the 1950s. (2) It also encouraged the local and foreign investors, (3) the easing of inflation, (4) the protection of the income distribution, (5) the assistance of the shift to a liberal economy, where the foreign exchange (like the growth of investment and export) was achieved. (6) The aid of the military, where the delivery of technology was possible. The military was on the one hand conducive to the textile industry, which could make qualitative uniforms. And on the other hand the electronic industry developed the techniques of radars and avionics. (See Wade 1990: 82-83) The investment of America helped with the capital formation in Taiwan. The aid from 1949 to 1953 was very successful for the slowdown of the inflation, in consideration to its decline from 3400% to 9%. Its purpose was the long-term growth of the economy, which should raise the knowledge of engineering projects and the ability of technocracy. Beside all the construction of infrastructure and the stabilization were carried out. (See Amsden 1985: 15-16)

Another kind of the American aid was in the private sectors, which was the "American Aid of Agency for International Development" (AID), but its description will be saved for later. First

few words about the financial role of the agriculture in the 1950s and then the “Export Processing Zone” in the following two sections.

The early period of 1950s was signalized as the time for new arrangements of the property rights in the agriculture, the capital of the agriculture flowed into the manufacture, commerce and finance. The peasants had the opportunities to enlarge their savings, with this precondition they were able to invest and merchandise their surplus. An increased capital investment could be achieved, because of the high increased income. (See Myers 1984: 512-513)

In the 1960s three Export Processing Zones (EPZs) were established to accumulate capital, for example the foreign investments. For the internal and relaxation of investments, the EPZs had various facilities with their employees, who had access to banking and other services. Therefore they had a great success in luring foreign capital, which could also be in the form of the joint ventures. At the same time it was an important channel for the transfer of technology. Similarly through the Investment Commission, the government was able to direct foreign investments into the export sectors, which were involved with the technology transfer. (See Wilkinson 1994: 121-122)

### **3.3.c. The Manufacturing Sector With A High Growth Rate**

In the late period of 1950s the government approved the liberalization of the foreign trade and the expanded export of manufacture. The process of the economic growth maintained as high rated, the export accumulated more than nine times. The market was enlarged and new industrial enterprises emerged in the cities and small towns. As a result the agricultural labour was absorbed by the broadened sectors of manufacturing and services, and it also contributed to the rise of wages. (See Myers 1984: 512-513)

During the 1960s Taiwan could hoard immense capital, and the investments were spent into the infrastructure, the labour-intensive production and the establishment of new industries. For example in the 1960s the manufacture share of the GDP grew from 22% to 37%, likewise the heavy and chemical industries from 1965 to 1975 made a rise from 49,8% to 53,3%. In the meantime the light industries increased their rate in the export. The import substitution did not only proceed in the mentioned sectors, but also in the public owned company of synthetic fibres. They attracted other foreign investors and the process to repatriate profits was implemented. (See Wade 1990: 88-93)

The table below shows the share of the manufacture output from 1952 to 1995. As demonstrated above, in 1952 the manufacturing share in the GDP was 12,9%, in comparison

the share of agriculture accounted for 32,2%, which was the highest share. In the following years the share of manufacturing experienced an increase. Twenty years later the share of manufacturing reached 34,3%, in comparison the share of agriculture amounted 12,2%, which nearly was similar to the manufacturing share in 1952. In 1972 the manufacture output had the highest share among all other sectors. In the years after 1975 to 1993 the share of manufacture was fluctuating. But in general it had share over 30%, with the exception of the decrease of 29% and 28,2% in 1994 and 1995. As shown the lowest share of the table is the agriculture, which only accounted for 3,6% and 3,5% at the same period. The table in general demonstrates, that the share of manufacturing, which was decreasing and increasing, still had the highest rate among other sectors. (See Chen 1999: 233 and 234)

**Table 2 Manufacturing output - Taiwan**

| Year | Total | Agri-<br>culture | Industries |                    |                   |                                  |
|------|-------|------------------|------------|--------------------|-------------------|----------------------------------|
|      |       |                  | Subtotal   | Manu-<br>facturing | Construc-<br>tion | Electricity,<br>Gas and<br>Water |
| 1952 | 100.0 | 32.2             | 19.7       | 12.9               | 3.9               | 0.9                              |
| 1953 | 100.0 | 34.5             | 19.4       | 12.6               | 4.1               | 0.9                              |
| 1954 | 100.0 | 28.0             | 23.9       | 15.8               | 5.3               | 0.9                              |
| 1955 | 100.0 | 29.1             | 23.2       | 15.6               | 4.9               | 1.0                              |
| 1956 | 100.0 | 27.5             | 24.4       | 16.6               | 4.5               | 1.1                              |
| 1957 | 100.0 | 27.3             | 25.3       | 17.4               | 4.1               | 1.3                              |
| 1958 | 100.0 | 26.8             | 24.8       | 16.8               | 3.8               | 1.4                              |
| 1959 | 100.0 | 26.4             | 27.1       | 19.4               | 3.8               | 1.5                              |
| 1960 | 100.0 | 28.5             | 26.9       | 19.1               | 3.9               | 1.7                              |
| 1961 | 100.0 | 27.5             | 26.6       | 18.9               | 3.9               | 1.8                              |
| 1962 | 100.0 | 25.0             | 28.2       | 20.0               | 3.9               | 2.0                              |
| 1963 | 100.0 | 23.3             | 30.0       | 22.0               | 4.0               | 1.9                              |
| 1964 | 100.0 | 24.5             | 30.4       | 22.9               | 3.7               | 2.0                              |
| 1965 | 100.0 | 23.6             | 30.2       | 22.3               | 4.0               | 2.1                              |
| 1966 | 100.0 | 22.5             | 30.6       | 22.5               | 4.0               | 2.1                              |
| 1967 | 100.0 | 20.6             | 33.0       | 25.0               | 4.2               | 2.0                              |
| 1968 | 100.0 | 19.0             | 34.4       | 26.5               | 4.3               | 2.1                              |
| 1969 | 100.0 | 15.9             | 36.9       | 29.1               | 4.2               | 2.3                              |
| 1970 | 100.0 | 15.5             | 36.8       | 29.2               | 3.9               | 2.4                              |
| 1971 | 100.0 | 13.1             | 38.9       | 31.5               | 3.9               | 2.3                              |
| 1972 | 100.0 | 12.2             | 41.6       | 34.3               | 4.0               | 2.2                              |
| 1973 | 100.0 | 12.1             | 43.8       | 36.8               | 4.0               | 1.9                              |
| 1974 | 100.0 | 12.4             | 40.7       | 32.8               | 4.5               | 2.2                              |

Table 2 Manufacturing Output (continued)

| Subtotal | (%)      |                                      |                     |                                      |
|----------|----------|--------------------------------------|---------------------|--------------------------------------|
|          | Services |                                      |                     |                                      |
|          | Commerce | Transport, Storage and Communication | Government Services | Finance Insurance & Business Service |
| 48.1     | 17.9     | 4.2                                  | 9.6                 | 9.6                                  |
| 46.2     | 18.5     | 3.8                                  | 8.8                 | 9.5                                  |
| 48.1     | 17.2     | 3.9                                  | 10.3                | 9.6                                  |
| 47.7     | 16.6     | 4.3                                  | 11.0                | 9.5                                  |
| 48.1     | 17.3     | 4.2                                  | 10.7                | 9.8                                  |
| 47.4     | 16.1     | 4.9                                  | 9.9                 | 10.4                                 |
| 48.4     | 16.6     | 4.6                                  | 10.5                | 10.4                                 |
| 46.6     | 15.8     | 4.5                                  | 10.7                | 9.9                                  |
| 44.6     | 15.4     | 4.7                                  | 10.7                | 9.0                                  |
| 46.0     | 16.0     | 5.3                                  | 11.3                | 8.8                                  |
| 46.8     | 16.3     | 5.3                                  | 11.2                | 9.3                                  |
| 46.8     | 16.4     | 5.0                                  | 11.0                | 9.6                                  |
| 45.1     | 15.6     | 5.1                                  | 10.4                | 9.1                                  |
| 46.2     | 15.8     | 5.4                                  | 10.2                | 9.2                                  |
| 46.9     | 15.4     | 5.8                                  | 11.0                | 9.2                                  |
| 46.4     | 14.5     | 5.4                                  | 11.2                | 9.3                                  |
| 46.5     | 14.2     | 5.8                                  | 11.0                | 9.3                                  |
| 47.3     | 14.7     | 5.9                                  | 11.0                | 9.7                                  |
| 47.7     | 14.5     | 6.0                                  | 11.5                | 9.8                                  |
| 48.0     | 14.5     | 6.2                                  | 11.5                | 9.6                                  |
| 46.2     | 13.8     | 6.1                                  | 10.4                | 9.5                                  |
| 44.1     | 12.3     | 5.9                                  | 9.5                 | 9.6                                  |
| 46.9     | 13.8     | 5.8                                  | 9.3                 | 10.3                                 |

| Year | Total | Agriculture | Subtotal | Industries    |              |                            |
|------|-------|-------------|----------|---------------|--------------|----------------------------|
|      |       |             |          | Manufacturing | Construction | Electricity, Gas and Water |
| 1975 | 100.0 | 12.7        | 39.9     | 30.9          | 5.3          | 2.6                        |
| 1976 | 100.0 | 11.4        | 43.2     | 33.8          | 5.7          | 2.4                        |
| 1977 | 100.0 | 10.6        | 44.0     | 34.2          | 6.1          | 2.5                        |
| 1978 | 100.0 | 9.4         | 45.2     | 35.6          | 6.1          | 2.5                        |
| 1979 | 100.0 | 8.6         | 45.3     | 35.9          | 6.2          | 2.3                        |
| 1980 | 100.0 | 7.7         | 45.8     | 36.0          | 6.3          | 2.5                        |
| 1981 | 100.0 | 7.3         | 45.5     | 35.6          | 5.7          | 3.4                        |
| 1982 | 100.0 | 7.7         | 44.3     | 35.2          | 5.0          | 3.3                        |
| 1983 | 100.0 | 7.3         | 45.0     | 35.9          | 4.6          | 3.7                        |
| 1984 | 100.0 | 6.3         | 46.2     | 37.5          | 4.3          | 3.8                        |
| 1985 | 100.0 | 5.8         | 46.3     | 37.6          | 4.1          | 4.0                        |
| 1986 | 100.0 | 5.6         | 47.1     | 39.4          | 3.8          | 3.5                        |
| 1987 | 100.0 | 5.3         | 46.7     | 38.9          | 3.9          | 3.4                        |
| 1988 | 100.0 | 5.0         | 44.8     | 37.2          | 4.2          | 3.0                        |
| 1989 | 100.0 | 4.9         | 42.3     | 34.6          | 4.5          | 2.9                        |
| 1990 | 100.0 | 4.2         | 41.2     | 33.3          | 4.7          | 2.8                        |
| 1991 | 100.0 | 3.8         | 41.1     | 33.3          | 4.7          | 2.7                        |
| 1992 | 100.0 | 3.6         | 39.9     | 31.7          | 5.0          | 2.7                        |
| 1993 | 100.0 | 3.7         | 39.0     | 30.5          | 5.3          | 2.7                        |
| 1994 | 100.0 | 3.6         | 37.3     | 29.0          | 5.3          | 2.6                        |
| 1995 | 100.0 | 3.5         | 36.3     | 28.2          | 5.2          | 2.5                        |

Table 2 Manufacturing Output (Continued)

| Subtotal | Services |                                                 |                             |                                               |
|----------|----------|-------------------------------------------------|-----------------------------|-----------------------------------------------|
|          | Commerce | Transport,<br>Storage<br>and Com-<br>munication | Govern-<br>ment<br>Services | Finance<br>Insurance<br>& Business<br>Service |
| 47.4     | 13.2     | 6.0                                             | 10.5                        | 10.5                                          |
| 45.5     | 12.5     | 5.9                                             | 9.8                         | 10.5                                          |
| 45.4     | 12.4     | 5.9                                             | 9.7                         | 10.6                                          |
| 45.4     | 12.1     | 6.0                                             | 9.6                         | 10.9                                          |
| 46.1     | 12.3     | 5.9                                             | 9.7                         | 12.1                                          |
| 46.6     | 13.2     | 6.0                                             | 9.7                         | 12.7                                          |
| 47.2     | 13.3     | 6.0                                             | 10.4                        | 13.8                                          |
| 47.9     | 13.3     | 6.0                                             | 11.0                        | 13.7                                          |
| 47.7     | 13.0     | 6.0                                             | 10.6                        | 13.1                                          |
| 47.5     | 13.2     | 6.3                                             | 10.2                        | 13.3                                          |
| 47.9     | 13.3     | 6.4                                             | 10.3                        | 13.8                                          |
| 47.3     | 13.0     | 6.2                                             | 9.4                         | 13.0                                          |
| 48.0     | 12.9     | 6.1                                             | 9.0                         | 13.6                                          |
| 50.1     | 13.3     | 6.3                                             | 9.5                         | 15.1                                          |
| 52.8     | 13.5     | 6.2                                             | 9.7                         | 17.6                                          |
| 54.6     | 14.2     | 6.2                                             | 10.6                        | 18.2                                          |
| 55.1     | 14.6     | 6.2                                             | 11.1                        | 17.9                                          |
| 56.5     | 15.0     | 6.3                                             | 11.0                        | 18.7                                          |
| 57.4     | 15.1     | 6.4                                             | 10.8                        | 19.3                                          |
| 59.2     | 15.4     | 6.6                                             | 10.6                        | 20.9                                          |
| 62.1     | 16.1     | 6.6                                             | 10.5                        | 19.2                                          |

(See Chen 1999: 233 and 234)

### 3.3.d. The Leading Sectors For The Economic Growth

The first and second Four-Year Plans were explained in the section above, and the third Four-Year Plan (1961 to 1964) emphasized the industrialization through the heavy industries, which had to sustain the constant economic growth. Other documents of the 1960s emphasized the sectorial growth of electronics, like transistor radios, electronic components, watches and clocks. (See Wade 1990: 87) Already 1958, Taiwan was moving forward to the policies of liberalization and internationalization. Later in 1960 the foreign exchange was standardized. The export boom brought a beneficial domestic and external environment. Once a year the growth rate of the manufacturing sector was 17% and the labour-intensive sector yearly reached a growth rate of 20% from 1961 to 1970. (See Wu and Xu 2007: 104-105)

*"The 1960s was a period that coincided with rapid demand growth for labour-intensive products that followed trade liberalization and industrial upgrading in the developed world.*

*Productivity gains also came from the exploitation of economics of scale made possible by greater access to the international market. As a result, the pattern of specialization was focused on labour-intensive sectors, ... - activities in which Taiwan enjoyed a comparative advantage in the 1960s“* (Citation Wu and Xu 2007: 105)

In 1961 the government undertook several progress for the automobile industry, which was also conducive for the domestic industry. Its promotion proceeded in the pattern of private firms. This means that the government did not apply the public enterprises or subsidize financial support. It conducted the private firms through import controls and tariffs. (See Wade 1990: 88-93) Wade is of the opinion that public enterprises played an important role during this period of growth, and since the early 1950s Taiwan has had the largest public enterprise sectors. The public enterprises had shares of 30% to 35% in the gross fixed capital formation. It included the industry of petroleum refining, petrochemicals, steel, shipbuilding, heavy machinery, transport equipment, fertilizer, railway, water, gas. These public enterprises were connected to the military, because their integrated production helped with the foundation of the defence industry. The governmental aim was the sales of the public enterprises to the private sector. (See Wade 1990: 176-181)

The AID was already mentioned in the section 3.3.b., and it was liable for the private sectors, because of AID it started to flourish. (See Ho 1978: 117) *”AID helped to create a more conducive atmosphere for economic growth, particularly for the expansion of private industries, by (1) financing government projects with strong external economies, (2) inducing the government to liberalize its economic policies and (3) laying a constraining hand on military expenditures“* (Citation Ho 1978: 117) Between 1951 and 1965 the American aid for the economy in public enterprises was 67% and 27% belonged to the mixed public and private enterprises. A little part of 6% was provided to the private enterprises and for Ho the AID helped a little with the enlargement of the private enterprises. (See Ho: 1978: 117)

### **3.4. Stage Four: The Drive to Maturity**

#### **3.4.a. The New Leading Sectors For Economic Growth**

At the beginning of the 1970s, the political attitude of America was to repudiate Taiwan and so it started the formal proposal to the Mainland. In 1972, Japan followed with the same approach of derecognition. As a result, foreign trade and investment decelerated. Thereupon the government of Taiwan were determined to intensify economic and political leadership. Export was one of the main concerns of the sixth Fourth-Year Plan (1973 to 1976). The state wanted to aid and to sustain the improvement of various industries, such as the petrochemistry, electrical machinery, electronics, machine tools, computer terminals and

peripherals. Its other intention was also the investments in the public sector for the development of infrastructure. Therefore the public sector was enlarged during the 1970s and its gross fixed capital formation of 28% (during the 1960s) grew to 33% (during the 1970s). In consideration of the rise in the oil price there was a transformation toward non-energy-concentrated, non-polluting and technology-concentrated industries (for examples machine tools, semiconductors, computers, telecommunications, robotics and biotechnology). From 1970 and 1980 the government concentrated on the expertise of the “Research and Development” (R&D). (See Wade 1990: 96-98) The electronics industry in the mid 1970s was beside the textiles industry in terms of being the biggest export sector. Philips, for example was one of the numerous “Transnational Corporation” (TNC), its first production was the black and white TVs, and then the colour TVs. Philips prevailed as the biggest TNCs of Taiwan and the TV monitors, compact disc players and several products ranked among to its fabrications. ACER was a part of the small and medium sized enterprises (SMEs), which belonged to the highest technological norm of the 1970s. In 1979 the executive branch established the “Science and Technology Advisory Group” (STAG), its concern was the R&D, the S&T (Scientific and Technical Research) and the collaboration with governmental agencies, schools and enterprises. During the 1980s S&T should be evolved, and the document “Science and Technology Development Programme of the Republic of China” permitted it. Its three purposes were the following: (1) The enhancement of public health and wealth, (2) the advancement of the economic growth in term of technology industries and agriculture modernization and (3) the improvement of the defence industries. These ambitions were carried out through (1) the amendment of science education, (2) the R&D practise in the industries, (3) the initiation of new technology, (4) the applications of R&D projects of overseas Chinese, (5) the construction of science-based industrial park for the enhanced collaboration of universities, research institutes and companies, and (6) the encouragement of international technical cooperation. (See Executive Yuan, Science and Technology Development Programme of the Republic of China in Greene 2007: 139)

The rapid progress of technology development continued during the 1980s to the 1990s. Several small enterprises followed to the professional field of electronics and were entailed to the various manufacture of computers, sub-assemblies, monitors, printed circuit boards, printers and keyboards. Other enterprises devoted their professional competence in the design of electronic chips with the help of the state-aided “Industrial Technology Research Institute” (ITRI). For example the “United Microelectronics Corporations” (UMC) were responsible for semiconductors. The state dedicated itself to the own research laboratories and as mentioned the R&D. In the late 1980s, salaries increased, and engineering was low-priced and high-

valued. (See Hobday 1995: 105-107) In reference to the ITRI the author San shows the “model of spin-off” during the 1980s, where the ITRI placed the successful members of the technology research into the business corporations. The reasons were the intense devotion for the improvement of R&D and technologies. (See San 2001: 283)

Most of the SMEs in Taiwan had their preparations in the “Original Equipment Manufacture” (OEM), because they did not have the competence in marketing. But OEM made progress towards “Own-Designed Manufacture” (ODM), which was very important for export. Some SMEs assembled to “Own-Brand Manufacture” (OBM). On the one hand, they were restrained to OEM and ODM, but on the other hand they were able to expand with the technology and marketing of OEM and ODM. The SMEs were professional firms in the domain of hardware, software and services. (See Hobday 1995: 114 and 132-133) Pohlmann refers to the medium sized enterprises with their domain in the electronics industry. The main sectors of economic growth were the SMEs of the satellite-assemblies. In general they were an active part in the export-field. During the 1990s the private enterprises gained the major part in the industries of Taiwan. (See Pohlmann 2002: 269) The “Committee for Economic Reform” publicized the privatization of public enterprises, which were not fully achieved. But such intentions were initiated after the foundation of a special committee, “Promotion of the Privatization of Public Enterprises“. This was the result of the incident of 1989, where the stock market reached the 10 000 mark and the huge sums of investment in companies. As a result 19 public enterprises were privatized. (See Chu 2001: 106-108)

Generally the state played a major role in economic development, its intervention also occurred in the industry of water and energy in the 1950s. This did not change in 1960 and the output of public enterprises was 48%. Between 1965 and 1981 the output of private enterprises grew exponentially. (See Myers: 1990: 44) In the early period of 1990s the ITRI or others were no longer restraining the maturing of technologies. The private industries were the taking over the accountability for technologies. The law and various administrative affairs were arranged for such undertakings. For example the multiplicity of research plans caused the participations of private sectors in the field of competitiveness and also the responsibility for different projects. (See San 2001: 283) *”Thus, the private sector has already been transformed from passive recipients of the new technologies, to active developers. Such measures have proved to be a very effective measure in promoting the private sector’s R&D activities. In the 1990s, in order to effectively promote such encouragement, the government provided a package of related legislative measures that offered a complete legal framework for the protection of intellectual property rights.”* (Citation San 2001: 283)

### **3.4.b. The Shift In The Labour Force (The Decrease Of Agricultural Labour Force And The Increase Of Skilled Labour Force)**

The occupations of the professionals and managers grew in the 1990s, which means such careers were crucial for a high growth in the economy, and it had a rising trend. For example, 23 researchers out of a population of 10 000 (1991) grew to 33 in 1996. The occupation of professionals and engineers with 770 000 staff had a growth rate of 1,5 fold. The quota of engineering studies was tremendous, which accounted for 28% from 1997 and 1998. In the 1990s the enterprises of electronic industries had the most professionals and graduates. 87,2% of the professionals and managers were in Taipei and 60% of the university graduates had a higher income. In the 1980s and 1990s the trend of high educational background continued for example 25% of the employees in 1998 graduated from college, university and graduate school, comparable to 35% of those, who had a graduation from Junior High, Senior High and Vocational School. The professionals as the capital for the research-intense and the in-depth knowledge had a crucial role in the electronics industry. The old system of family-owned enterprises diminished gradually. Through the introduction of the delegation, project-management or teamwork, the role of the central function in the managerial decisions was relaxed. (See Pohlmann 2002: 276-281) Rural employment in Taiwan had already changed in the 1960s and 1970s, where industrialization and the economic growth were moving forward. Originally in 1956 rural employment accounted for 73% and ten years later it was reduced to 54%. (See Ho 1982: 975)

Table 3 demonstrates the agricultural labour force between 1952 and 2001. The percentage in 1952 was 56,1%. In 1960 it decreased to 50,2% and ten years later it accounted for 36,7%. Also in the 1980s the percentage of the labour force was still decreasing and the same tendency remained in the 1990s. In 2000 and 2001 the labour force only accounted for 7,8% and 7,5%. In general the table shows the decrease of the agricultural labour force over the centuries. (See <http://www.gio.gov.tw/info/taiwan-story/agriculture/edown/table-2.htm>)

**Table 3 The decrease of the agricultural labour force - Taiwan**

| Year | Farm Labor Force (10 000 people) | Percentage of the Total Labor Force |
|------|----------------------------------|-------------------------------------|
| 1952 | 16,4                             | 56,1                                |
| 1955 | 166,7                            | 53,6                                |
| 1960 | 174,2                            | 50,2                                |
| 1965 | 174,8                            | 46,5                                |
| 1970 | 168                              | 36,7                                |
| 1975 | 168,1                            | 30,4                                |
| 1980 | 127,7                            | 19,5                                |
| 1985 | 129,7                            | 17,5                                |
| 1990 | 106,4                            | 12,8                                |
| 1995 | 95,4                             | 10,5                                |
| 1998 | 82,2                             | 8,8                                 |
| 1999 | 77,6                             | 8,3                                 |
| 2000 | 74                               | 7,8                                 |

(See Council of Agriculture, Executive Yuan: 2001)

### **3.5. Fifth Stage: The Age Of High Mass-Consumption**

#### **3.5.a. The Growing Awareness Of The Welfare State**

Pohlman is of the opinion that Taiwan's society altered due to the fact that its economy scaled up in the global economics. The society which had an agricultural structure shifted to a society with industrial facilities. The Chinese Nationalist Party (GMD, 国民党 Guomindang) was able to achieve the ideology of welfare because of the economic growth. However, there was a transformation in the government, state and party. The main topics of the last decade of the 20<sup>th</sup> century were liberalization, democratization and internationalization. The request for the neo-liberal and welfare state in the social and welfare policy were stronger than before. The rapid economic development caused the social inequality of society, therefore there were diverse representation of social validations. For example, the announced topic of election campaign 1992 from the Democratic Progressive Party (DPP, 民主进步党 Minzhujinbudang) was the welfare state of Taiwan. (See Pohlmann 2002: 200-205)

**Table 4 The expenditures for social welfare - Taiwan**

| 會計年度     | Expenditures for Social Welfare |                  |               |                 |           |              |
|----------|---------------------------------|------------------|---------------|-----------------|-----------|--------------|
|          | 合 計                             | 社會保險支出           | 社會救助支出        | 福利服務支出          | 國民就業支出    | 醫療保健支出       |
|          | Total                           | Social Insurance | Social Relief | Benefit Service | Education | Medical care |
| 74年度     | 34,279,484                      | ...              | ...           | ...             | ...       | ...          |
| 75年度     | 40,591,479                      | ...              | ...           | ...             | ...       | ...          |
| 76年度     | 37,085,134                      | ...              | ...           | ...             | ...       | ...          |
| 77年度     | 55,169,160                      | ...              | ...           | ...             | ...       | ...          |
| 78年度 (1) | 65,488,382                      | ...              | ...           | ...             | ...       | ...          |
| 79年度     | 96,207,023                      | ...              | ...           | ...             | ...       | ...          |
| 80年度     | 117,771,908                     | 33,378,237       | 13,581,114    | 46,373,817      | 2,851,351 | 21,587,389   |
| 81年度     | 135,040,121                     | 46,765,305       | 6,333,501     | 53,780,006      | 2,800,759 | 25,360,550   |
| 82年度     | 145,758,829                     | 47,640,393       | 9,607,098     | 57,838,334      | 3,254,224 | 27,418,780   |
| 83年度     | 158,523,241                     | 50,490,710       | 9,745,276     | 65,957,161      | 3,545,353 | 28,784,741   |
| 84年度     | 231,765,959                     | 94,748,863       | 20,967,654    | 83,448,718      | 3,312,578 | 29,288,146   |
| 85年度     | 290,002,141                     | 125,545,340      | 30,221,953    | 100,833,486     | 4,368,643 | 29,032,719   |
| 86年度     | 294,982,386                     | 114,479,778      | 36,000,330    | 111,140,605     | 4,980,913 | 28,380,760   |
| 87年度     | 282,766,789                     | 116,843,162      | 24,999,736    | 110,149,276     | 3,466,247 | 27,308,368   |
| 88年度     | 280,452,253                     | 111,787,882      | 23,603,337    | 114,610,225     | 3,631,358 | 26,819,451   |
| 89年度     | 531,808,684                     | 214,917,147      | 94,368,148    | 179,132,616     | 3,271,125 | 40,119,648   |
| 90年      | 396,980,708                     | 201,574,123      | 39,016,143    | 126,861,977     | 2,899,722 | 26,628,743   |
| 91年      | 323,614,630                     | 153,353,051      | 19,649,324    | 120,266,451     | 2,613,172 | 27,732,632   |
| 92年      | 346,911,365                     | 169,893,108      | 18,179,791    | 120,560,600     | 4,084,280 | 34,193,586   |
| 93年      | 347,557,298                     | 153,324,069      | 19,572,230    | 138,847,875     | 2,673,369 | 33,139,755   |
| 94年      | 357,762,268                     | 162,221,618      | 20,658,490    | 144,470,532     | 2,505,544 | 27,906,084   |
| 95年      | 370,302,873                     | 163,151,663      | 20,295,051    | 153,396,153     | 2,615,018 | 30,844,988   |
| 96年      | 372,202,180                     | 162,548,204      | 23,245,160    | 151,322,244     | 2,479,923 | 32,606,649   |
| 97年      | 367,790,968                     | 147,635,236      | 25,414,203    | 158,072,300     | 2,252,153 | 34,417,076   |

(See Ministry of Finance, Yearbook 2008)

Notes: The period of the table has the measurement of the chinese calender

Table 4 represents the expenditures for social welfare from 1985 to 2008, there were no expenditures between 1985 to 1990. But after 1990 the expenditures in different fields were increasing. (See Ministry of Finance, Yearbook 2008)

### 3.5.b. The New Consumption Behaviour

Table 5 presents the expenditures for the consumption goods. Food as well as cost of rent and water accounted of the highest amount of New Taiwan Dollar. The sum for food is declining in 1999 and 2000. In comparison the amount of rent and water were rising up in the same

period. But both remained as the highest expense among the others, for example, the expenditures for fuel and lights, the health and medical care. They were also were increasing.

**Table 5 The consumption expenditure - Taiwan**

| (Measurement: New Taiwan Dollar)           | 1994    | 1995    | 1996    | 1997    | 1998    | 1999    | 2000    |
|--------------------------------------------|---------|---------|---------|---------|---------|---------|---------|
| <b>食品費</b> Food                            | 130 964 | 139 736 | 148 667 | 151 355 | 154 588 | 153 578 | 149 319 |
| <b>飲料費</b> Beverage                        | 6 205   | 6 046   | 6 401   | 6 849   | 6 891   | 6 332   | 6 021   |
| <b>菸草</b> Tobacco                          | 5 068   | 4 950   | 5 186   | 5 103   | 5 062   | 4 893   | 5 079   |
| <b>衣著、鞋、襪類</b> Clothing and footwear       | 26 769  | 27 213  | 27 584  | 28 540  | 28 948  | 26 729  | 25 399  |
| <b>房地租及水費</b> Rent and water               | 124 366 | 130 722 | 137 832 | 141 474 | 144 962 | 145 365 | 148 204 |
| <b>燃料和燈光</b> Fuel and light                | 15 676  | 16 506  | 17 626  | 17 767  | 18 193  | 17 849  | 18 486  |
| <b>家具及家庭設備</b> Furniture and facilities    | 14 320  | 15 823  | 15 059  | 14 433  | 13 254  | 12 872  | 12 401  |
| <b>保健和醫療</b> Health and medical care       | 46 365  | 61 271  | 60 473  | 63 348  | 66 680  | 71 852  | 73 464  |
| <b>運輸及通訊</b> Transports and communications | 53 894  | 59 089  | 62 457  | 66 111  | 68 493  | 72 828  | 75 370  |
| <b>旅遊費用</b> Traveling                      | 22 844  | 24 041  | 22 922  | 22 768  | 20 688  | 21 438  | 23 570  |
| <b>書報雜誌文具</b> Books and stationeries       | 5 175   | 5 124   | 5 772   | 6 078   | 5 790   | 5 638   | 5 421   |
| <b>教育與研究費</b> Education and research       | 30 952  | 32 884  | 35 159  | 37 069  | 39 031  | 40 599  | 42 848  |

(See: Directorate-General of Budget, Accounting and Statistics, Executive Yuan, R.O.C: Statistics of Average income and expenditure of every household)

### 3.5.c. The Rapid Growth Of Population

**Table 6 The increase of population - Taiwan**

| 年別<br>Year |      | 人口總增加<br>Population Increase                                            |                          |
|------------|------|-------------------------------------------------------------------------|--------------------------|
|            |      | 年底人口總數<br>Total amount of the<br>population (at the end of<br>the year) | 年增加率(‰)<br>Annual growth |
| 民國46年      | 1957 | 9 748 526                                                               | —                        |
| 民國49年      | 1960 | 10 850 685                                                              | 34,90                    |
| 民國54年      | 1965 | 12 698 700                                                              | 30,32                    |
| 民國59年      | 1970 | 14 753 911                                                              | 23,73                    |
| 民國64年      | 1975 | 16 223 089                                                              | 18,58                    |
| 民國69年      | 1980 | 17 866 008                                                              | 18,41                    |
| 民國74年      | 1985 | 19 313 825                                                              | 12,83                    |
| 民國79年      | 1990 | 20 401 305                                                              | 12,14                    |
| 民國84年      | 1995 | 21 357 431                                                              | 8,48                     |
| 民國89年      | 2000 | 22 276 672                                                              | 8,34                     |
| 民國94年      | 2005 | 22 770 383                                                              | 3,58                     |
| 民國99年      | 2010 | 23 162 123                                                              | 1,83                     |

(See: M.O.I)

Table 6 shows the annual growth of the population. At the end of 1960 the total population accounted for 10 850 685 with an annual growth of 34,90‰. In 1990 it doubled to 20 401 305 and the annual growth dropped down to 12,14‰. Five years later the population reached 21 357 431 with a growth of 8,48‰, which is lesser in comparison to five years ago. But in general the table demonstrates, that the population is still increasing.

(See: M.O.I)

### 3.5.d. The Expanding Growth Of Urban

**Table 7 The growth of townships, urban districts and villages - Taiwan**

| 年底別<br>End of Year | 鄉鎮市區數<br>Township<br>Districts | and<br>村里數<br>Villages |
|--------------------|--------------------------------|------------------------|
| 八十六年/1997          | 369                            | 7 569                  |
| 八十七年/1998          | 369                            | 7 755                  |
| 八十八年/1999          | 369                            | 7 755                  |
| 八十九年/2000          | 369                            | 7 756                  |

|           |     |       |
|-----------|-----|-------|
| 九 十年/2001 | 369 | 7 775 |
| 九十一年/2002 | 369 | 7 809 |
| 九十二年/2003 | 369 | 7 809 |
| 九十三年/2004 | 368 | 7 810 |
| 九十四年/2005 | 368 | 7 833 |
| 九十五年/2006 | 368 | 7 828 |
| 九十六年/2007 | 368 | 7 826 |
| 九十七年/2008 | 368 | 7 827 |
| 九十八年/2009 | 368 | 7 834 |
| 九十九年/2010 | 368 | 7 835 |

(See Ministry Of the Interior, Department of Social Affairs)

The amount of the townships and urban districts at the end of the 20<sup>th</sup> century remained almost the same, only a slight difference is noticeable. In comparison, the number of the villages from 1997 to 2005 is increasing. Only once the number of villages is decreasing, like in 2005 the number of 7 833 villages shrinks to 7 828 in the following year. This trend continues to the year of 2008, but after 2009 the number of the villages started to increase again.

## **4. Case study of Korea**

### **4.1. First Stage: The Traditional Society**

#### **4.1.a. The Limited Function Of Production**

Before 1876 Korea had no contact with other countries outside of its borders. Because of the isolation of 300 years the economy was very traditional. The production and technology were very limited. Generally it was static and the level of the output per capita remained constant. In the early period of the 15<sup>th</sup> century there was once the introduction of the casting box of metal printing or the construction guidance for iron-clad ship in the shape of a turtle. Contemporaneously the traditional economy experienced an improvement in irrigation, the cultivable land and production. The biggest sector of agriculture and the others were manually operated. The labour force accounted for 90% and the rice was very important. The cultivation was very simple and remained so over centuries. However, in comparison to other underdeveloped countries, Korea used well-developed farming methods. (See Chung 2006: 8-12) *“Unfortunately, the irrigation systems were neglected, and most fell into disrepair during*

*the last century of Joseon dynasty. Fragmentation of landholdings and disguised unemployment also hindered productivity. In the absence of reliable data, it is impossible to state the level of labor productivity quantitatively, but one outcome is certain. ..., farmers were doomed to a relatively low and stagnant productivity level.*“ (Citation Chung 2006: 12)

As mentioned above, contact to other countries was limited, therefore international trade was very rare. Trade started when a Japanese delegation came to China or Busan and in that year the number of the delegation was limited to forty. Trade inside and outside of the borders was restricted and as a consequence, the system of communication and transportation could not be improved. Therefore Korea could not enhance its economic development in the traditional period. (See Chung 2006: 16-17) In general, following can be applied: *”The reasons for Korea’s underdeveloped economy included the low propensity to work and produce, the lack of capital, and the ineffective and oppressive Korean government. The lack of capital was due to a low level of income, a high propensity to consume, little savings and investment, and the discouragement of entrepreneurial activities. These interdependent and inhibitive forces did not allow for meaningful capital formation and development of the economy in the traditional economy.*“ (Citation Chung 2006: 31-32)

#### **4.1.b. The Connection Of Family And Clan**

The traditional system was the ”Board of works“, where family members were registered in appointed crafts. The father handed his profession to his son. With this system the government was able to control the number of the workforce. Under this condition the traditional social structure could not be shattered. (See Chung 2006: 7-8)

The traditional family in Korea had a patriarchal structure with a labour division between man and woman. The father had several duties to fulfil, including the control over the family and its ownerships. This means that the housings and the fields were the property of the head. The first son had the important function of practicing the ancestral worship. The women’s position by contrast was inferior. Furthermore there were rules in the family structure and each member had to follow a hierarchy, which was also reflected in the society. (See Lee 1998: 252)

The rural population was distinguished into five groups. At first, there were the landlords (yangban), part landowner-cultivators, part landowner-tenants, tenants farmers and farmhands. In feudal times the land was given to the yangban’s officials. After the opening of the country, there were four kinds of distribution of the landownership: (1) the private land property (2) the royal land of the king and his officials. (3) the property of the commune and (4) the monk (See Chung 2006: 13)

#### **4.1.c. The Central Political Rule**

In the middle of the 19<sup>th</sup> century the governmental structure of Korea was centralized and the society was ruled by the yangban, who were an educated and bureaucratic elite and acted in the interest of the land. (See Chung 2006: 7-8)

### **4.2. Second Stage: The Preconditions for Take-Off**

#### **4.2.a. Two Cases Of Preconditions For the Take-Off**

Korea belongs to the general case, because it has the feature of the agricultural sector for the industrialization and take-off (See Rostow 1990: 22-24). This will be examined in the section 3.2.d. (I).

#### **4.2.b. The New Impulses Of The Imperial Power**

After a long period of isolation, Korea opened in 1876 its borders to other countries. This opening was known as “Korea-Japan Treaty of Amity“. The result of the Korean opening was, that the Japanese were the highest number of foreigners. They even established their own communities and lived in the biggest city. In such communities it could be observed, that there was the emergence of industries and trade. Therefore Japan contributed as the major contributor to the modernization process in Korea. (See Chung 2006: 42-43) The opening had an impact on the economic systems because different implementations in the technology, infrastructure, production and business were accomplished. In such cases the government had to keep the political order, which was very crucial for the economic progress and the capital accruements. With the influence of the Western patterns of economic systems and its order, the government announced campaigns and reforms of modernization, for example, the reform of the institution and monetary system. Firstly a foreign office was founded which changed the structure of traditional life and induced new settings of a modern and market-oriented economy. Secondly, in 1894, the reform of the tax systems was introduced. Because of the land tax in the form of money and the construction of “Land Management Office” the grain could be exported. It was the foundation of the national market and amplified trade for goods and capital. There was the possibility to study abroad and after the return to Korea, they brought new impulses from Western institutions, science and industrial technology. The progress toward modernization stepped forward. But the reverse of all the reforms and introductions was the Korean attitude. Not everyone welcomed the newly announced reforms and the majority of the Korean population wanted the isolation of the country. In addition, the Korean despised the Japanese, because the Japanese were the leading role towards

modernization, they seemed to be very barbarian and thuggish. (See Chung 2006: 57-60)

*"When Korean borders and ports were opened to the outside world upon foreign threat, foreign goods and new technologies, as well as Western ideas, penetrated the country as if fresh flood water rushed in through a broken dam. It was an eye-opening, even shocking experience to most Koreans, who had been isolated nearly completely from the outside world and who had thought that the center of the universe was China, which they had been trying to emulate for centuries."* (Citation Chung 2006: 80)

Once when the country was opened up, new goods came into the local market and foreign businesses were organized. Various investments were carried out, but they were not big enough for the improvement of the capital accumulation and the economy. Japan made numerous investments, but the slight amount was transacted in the division of commerce, land and several manufacture. The investments flew into the railroads and communications, which demonstrated the Japanese political reason. The investment for the Korean railroad and communications system permitted Japan to seize and annex Korea. Apart from Japan, foreigners also contributed with small investments. The Korean government was an abortive push of the economic shifting, and the growth was fractional. (See Chung 2006: 80-81)

*"Moreover, a substantial number of young men, and a few women, were educated in new, modern educational institutions within the country. Other Koreans acquired new knowledge through informal educational channels, extension services, and training centers. Notwithstanding some progress in modernization before the Japanese takeover, neither the Korean government nor its citizens invested enough to accumulate much capital to meet the needs of a growing economy."* (Citation Chung 2006: 81)

There were the two vanquished wars of China and Russia in Korea. With these circumstances, Japan could easily infiltrated into Korea and Korea got into the Japanese protectorate of 1905 and later under pressure it signed the annexation of 1910. (See Chung 2006: 90)

In 1920 new regulations for the economic development were set up. The new standard included the tariff and customs system. Due to the new system Korea was able to receive private capital from Japan. The investments were put into the agriculture, like the small-scale and labour-intensive actions. Japan placed a higher amount of investments into the industries of chemistries and fertilizers. (See Wade and Kim 1978: 11)

#### **4.2.c. The Important Role Of The Agriculture And The Role Of Social Overhead Capital For The Growth**

##### **4.2.c. (I) The Important Role Of The Agriculture For The Growth**

From 1910 to 1953, the Korean economy was affected by the Japanese colonial powers. Japan wanted to integrate Korea as a colony, the colonial power carried out various reforms in the

politic system and economy. The financial and monetary system followed the patterns of the Japanese model. Korea served Japan as the supporter of the agricultural surplus. It mainly delivered the rice to the colonial power. For a higher production of rice, Japan introduced new rice seeds, which had a better harvest. Korea did not only serve as the supporter of a high output of rice, but also as provider of raw materials. In the early period of 1910, Japan dodged the contact with the economy of Korea, especially with the yangban, because of its lack of competence. With the annexation of 1910 and the new emerged Government General at the same time, more Japanese immigrated to Korea for business purposes. Due to the fact that the Japanese economy was prospering after the World War I, Korea was an important aid of raw materials and foods. (See Pascha 1996: 26-27 and Chung 2006: 91-93)

At that time as a colony, the Korean economy was not only characterized by the better crops, but also by the improved export of mineral, agriculture and manufacture. Japan was interested in the growth of the economy, because Korea was an important territory next to the puppet government of Manzhouguo (满洲国), which was in the northeast of China and Japan wanted to demonstrate its military force. The aim was the industrialization and the food-support for rapidly increasing population in Japan. The main concern for the manufacture of the export was the rice, the approach was "the parallel growth of agriculture and industry". As a result new applications for the extended production of food were established, for example the utilizations of irrigations, fertilizers and seeds. From 1931 to 1936 Japan placed the emphasis on the heavy and chemical industries, the improvement of agriculture and gold mining. (See McNamara 1990: 34-37 and Chung 2006: 93) The agricultural caused a higher production and export of rice. Because of the Japanese demand for food, the 15-Year Plan was advertised from 1920 to 1935 (See Wade and Kim 1978: 11). *"In 1918, rice production totalled 13,7 million soks; in 1933, 16,3 million. Exports of rice to Japan in 1918 totalled 2,2 million soks; in 1933 8,7 million. The consequences for the rice-dependent Korean population were staggering. ... The realignment of Korean agriculture, from a diversified, self-sufficient system to a one-crop, export-oriented one, confirmed Korea in the classical colonial pattern."* (Citation Wade and Kim 1978: 11) Generally it can be said, that the agriculture in Korea experienced new technical advances, and the operations in a greater field were possible. But however, the new technique for the agriculture was not available to Korean peasants. Therefore the living standard decreased, while the system of tenancy was growing. (See Wade and Kim 1978: 11)

#### **4.2.c. (II) The Important Role Of The Social Overhead Capital (SOC) For The Growth**

The government-general and its institutions were responsible for the construction of the transport and finance systems. Both systems represented the intention of the growth for commerce and industry. Step by step the Korean industries, which were related to the military field, were important to the Sino-Japanese War 1937, the World War II, as well as the Pacific War. Korea was able to provide electric power, cheap labour and other resources. (See McNamara 1990: 37, Pascha 1996: 27, Chung 2006: 93)

The investment into the SOC implies the building and expansion of the railroads. As mentioned above, the investments into the railroads (or transportation in general) and communications were a political reason of Japan. Contemporaneously both economic sectors were expeditiously expanding during the colonial period. Before the Annexation of 1910 the Japanese devoted itself to the investments of railroads, and after the Annexation, the sum already reached 96 million Yen, then in 1929 it was almost 300 million Yen. Regarding the investments into the communication, it was an excitatory incentive for the private investment and for the advancement of the economy. In addition the aforesaid industries in the military field was a necessity for Japan and a meaningful investment was the electric industry, and 15% of the investment from the colonial power flew into that sector. It could be observed that the Japanese investments mostly were spent into the industries of electric power, chemistry, metal, textile and mine. They were concentrated in big, capital and technologically industries. Generally, the investment of Japan and Korea differed at that time. The incentives for the Korean investment to fly into commerce and other spending was not really existent. The investment into public utilities was less than 10% in manufacturing, which included raw materials and agricultural goods. The focal point were the industries of light and consumption, because the investments for the modern industries were confined. (Chung 2006: 120, 152-153)

#### **4.2.d. The Rate Of Investments Over 10% Of National Income**

**Table 8 The rate of investment - Korea**

| Year | Investment Share of GDP in % |
|------|------------------------------|
| 1950 | Not available                |
| 1951 | Not available                |
| 1952 | Not available                |
| 1953 | 12.48                        |
| 1954 | 10.08                        |
| 1955 | 9.82                         |
| 1956 | 8.85                         |
| 1957 | 12.53                        |

|      |       |
|------|-------|
| 1958 | 10.74 |
| 1959 | 7.86  |
| 1960 | 8.21  |
| 1961 | 9.84  |
| 1962 | 9.41  |
| 1963 | 17.81 |
| 1964 | 12.36 |
| 1965 | 12.12 |
| 1966 | 18.80 |
| 1967 | 20.25 |
| 1968 | 24.53 |
| 1969 | 22.40 |
| 1970 | 20.27 |
| 1971 | 20.88 |
| 1972 | 18.49 |
| 1973 | 22.14 |
| 1974 | 24.69 |
| 1975 | 23.50 |
| 1976 | 25.36 |
| 1977 | 28.95 |
| 1978 | 31.78 |
| 1979 | 34.16 |
| 1980 | 29.14 |
| 1981 | 28.89 |
| 1982 | 29.58 |
| 1983 | 30.76 |
| 1984 | 31.77 |
| 1985 | 31.03 |
| 1986 | 31.10 |
| 1987 | 32.56 |
| 1988 | 34.06 |
| 1989 | 36.49 |
| 1990 | 38.43 |
| 1991 | 41.10 |
| 1992 | 39.70 |
| 1993 | 38.59 |
| 1994 | 40.71 |
| 1995 | 40.89 |
| 1996 | 41.64 |
| 1997 | 37.06 |
| 1998 | 24.93 |
| 1999 | 28.59 |
| 2000 | 28.02 |

(See CICUP 2002)

As table 8 demonstrates, the data for rate of investment is not available between 1950 and 1952. The rate of investment was generally over 10% of the national income, with the exception in 1955 and 1956, and from 1959 to 1962. The highest amount was 41,64%. (CICUP 2002)

### **4.3. Third Stage: The Take-Off**

#### **4.3.a. The Take-Off As A Stimulus**

The colonial rule under Japan ended in 1945. As a result Korea was divided into the South and North peninsula. The American forces were in the South, whereas the Soviet forces were settled in the North. The division between North and South was likewise the split of the industries. The heavy industries, the mining and the electricity station were located in the North. The agricultural cultivable part and the light industries were settled down in the South, therefore the resources were divided into unequal parts. The new independent country was devoted to the rehabilitation of the country and its economy. Between 1945 and 1948 the American military force wanted to establish the modern market economy system in the South. Therefore the property of Japan, such as the companies and the farmland, were vended. As a result the market economy with private property ownership emerged. However the endeavour for the economic rehabilitation was obstructed by the incidence of the Korea War (1950 to 1953). In addition, the land reform after the World War II could not really be unfolded. In general the agricultural process of Korea was sluggish, and the agricultural productivity between 1947 and 1962 remained small. (See Ho 1982: 983, Menzel 1985: 54-55 and Koh 2010: 10-11)

#### **4.3.b. The Accumulation Of Capital For The Development**

The president Rhee Syngman aimed for the stabilization in the economy. The conditions for such purpose were the depressed rate percent, the price for the grains and the overrated currency. The benefits of the depressed rate percent were the formations of various light industries such as cement, flat glass, textiles, paper, chemical fertilizers and foodstuffs. But with the existence of the low rate percent, the incentives for the savings were absent. Korea further had to contend with the central issue of the funding, because of the lack of capital and trade gap. (See Pascha 1996: 28 and Pascha 2005: 91) *“Korea in the 1950s was a textbook case of financial repression. The real interest rate charged by banks was almost always negative; savers reduced their money holdings, leading to a low ratio of money to GNP; bank credit was a de facto subsidy for licensed importers, mineral exporters, import substitution industries, government agencies and covered government deficits. The financing of the rest of*

*the economy was left in the hands of the private moneylenders*” (Citation Woo 1991: 350)

Korea also received various aid from America. As mentioned above the goal of Rhee was the economic stabilization and his point of view differed from that of America, the objective of which was the East Asian economy with Japan as the centre. Beside that, the foreign aids of America distinguished in the 1950s and 1960s. Korea favoured the aid for the rebuilding, while America supported the country with distributed aid to private enterprises, which was in the utilization of civilians. Another kind of aid was the provision of grain, which could be sold and for that reason the investment could be achieved. The American foreign aid in the pattern of consumer durables took up the greater part of the aid. The imports were as well supported from the foreign aid. (See Pascha 1996: 29 and Pascha 2005: 91-92, Koh 2010: 13)

In the late period of 1950 the “Bank of Korea” had a detailed discount policy with three categories of the loans for the private sector. (1) The first category was the adequate rediscount for the industries of chemistry, textiles, machinery, foodstuff and metal mining. (2) The second category comprehended special terms and conditions. (3) The improper one belonged to the last category, because their manufactures were among the “non-productive ones”. The service industries and the consumer goods like beverages, furniture, cosmetics were such examples. Woo notes, that the government privileged the first category and the allocation was very stern. (Woo 1991: 353)

#### **4.3.c. The Manufacturing Sector With A High Growth Rate**

This section is about the growth rate of the manufacturing and table 9 demonstrates the period from 1800 to 1849, where the growth was 0,3%. Later from 1850 to 1899 it increased to 0,9%. The growth rate of the agriculture was very low. During the 1900s the manufacturing growth rate accounted for 0,9%, and increased to 4,0% in the 1930s. Compared to the 1900s, the 1940s had a relatively low growth of 0,2%. But the rate increased in the 1950s and 1960s. The highest growth rate was in the 1970s with 17,8%, meanwhile the service and the agriculture increased to 11,7% and 4,8%. In the 1990s the manufacturing rate decreased to 7,5%, nevertheless in comparison to the growth rate of agriculture and service, it was the highest growth rate. (See Sabillon 2008: 304)

**Table 9 Manufacturing output - Korea**

|         | Manufacture | Agriculture | Service |
|---------|-------------|-------------|---------|
| 1800-49 | 0,3         | 0,1         | /       |
| 1850-99 | 0,9         | 0,4         | /       |
| 1900-49 | 2           | 1,1         | /       |
| 1950-99 | 11          | 2,9         | 7,7     |
|         |             |             |         |
| 1900s   | 0,9         | 0,3         | /       |
| 1910s   | 2,1         | 1,3         | /       |
| 1920s   | 2,6         | 1,7         | /       |
| 1930s   | 4           | 2,5         | /       |
| 1940s   | 0,2         | 0,3         | /       |
| 1950s   | 1,1         | 0,5         | 1,3     |
| 1960s   | 15          | 4,2         | 10,8    |
| 1970s   | 17,8        | 4,8         | 11,6    |
| 1980s   | 13,6        | 3,3         | 9,2     |
| 1990s   | 7,5         | 1,5         | 5,8     |

(See Sabillon 2008: 304)

#### **4.3.d. The Leading Sectors For The Economic Growth**

In 1961 Park Chung-Hee took over the leading power and the denouncement of the first Five-Year Plan (1962-1966) became generally known. (See Pascha 1996: 29) *"The Korean economy is a market economy in principle, relying primarily on the private sector. During the last two decades, for instance, private firms undertook about 70 percent of total investments. Because of limited resources, however, the government has viewed coordination between public and private sector as an essential ingredient in a successful planning structure. Government policymakers carefully considered and often accepted the opinions and suggestions of business people."* (Citation Kwack 1990: 68) The private sector saw the government as a contact point of incentives, where it encouraged the business. The "Economic Planning Board" (EPB) for example drafted the Five-Year Plans and its responsibilities were the control of expenditures, budgets, capital import projects and the accomplishment of the plans. (See Kwack 1990: 68) The major idea of the first Five-Year Plan was the self-sufficiency of the economy, which included the support of the government in the progress of industrialization, with the focus on the exports, chemical and heavy industries. With the Urban Planning Act, the industrial parks were constructed during the 1960s. The government defined finance resources, therefore its support was directed towards regions with a high growth rate of the industries. Seoul had the cheapest labour forces and resources, as a result the industries parks were highly concentrated in the capital. In the early period of 1960s the government concentrated on the industries of fertilizer, cement, coal and export. The industrialization caused the expedited growth of the urbanization and population.

The consequence of the urbanization were the development projects, which included the construction of housings and infrastructures. The buildings of railroads accounted to the infrastructure projects, which was crucial for the efficient transport of industrial goods such as fertilizers, cement and grains. (See Pascha 1996: 29, Koh 2010: 16-20 and Joh, Kim and Koh 2010: 184-185) *"The amount of goods to be transported rose sharply as a result of the increase in industrial production form the mid-1960s. Railroads accounted for 84 percent of the nation's transportation capacity in 1962, compared with 10 percent for highways and 6 percent for air and maritime services. The railroads were placed under severe strain in transporting goods, when the economy achieved a growth rate of 19 percent in 1966."* (Citation Joh, Kim and Koh 2010: 185) The railroads were the efficient transport for textile, clothing and plywood. These light industries had a high amount of unskilled labour force and the demand in the world market was growing. (See Kwack 1990: 74)

In 1964 new policies were introduced: (1) The complete opening with the purpose of enlarging foreign capital. It was possible to focus on the export in the light industries. Its promotion was supported by the government: with financial assistance and with the foundation of "Korea Trade Promotion Corporation". The government was monitoring the annual compliance of the export. Except the export, the safeguard for the import maintained in the late period of 1960s, which was valid for engine construction, textiles, petrochemistry, iron, steel and non-metallic mineral. (2) The collaboration with the economic elite. (See Pascha 2005: 92-93) In general the technology represented a significant element in the economic growth during the 1960s. The assembly works by receiving investments from America and Japan, and cheap labour forces were required. The foreign direct investment (FDI) prevailed in the 1960s and 1970s, for example the export of the internal manufactured transistor radios already began in 1962. American firms such as Motorola, Signetics and Fairchild installed the chips, the Japanese and Korean-Japanese joint ventures, like the Samsung-Sanyo, Toshiba and Goldstar-Alps Electronics, followed the same path. Because of the strategy of the export, the government provided the incentives of TNC. The export of the electronics then reached 17% in 1965 and 74% in 1973. (See Hobday 1995: 55-58)

In the early period of the 1960s it also could be generally observed that the export articles such as foodstuffs and raw materials accounted for 80%. Then in 1966 such articles only represented 40%. In contrast the export of the light industries rose to 50% and in the early 1970s it accounted for 60%, but it dropped back to 40% later on. The export of food and raw materials simply remained at 10%. The reason was the shift to the new field of the heavy, electronic and chemical industries. (See Menzel 1985: 65)

The heavy and chemical industries such as the steel, machinery, petrochemistry, plastic, non-metallic mineral products, were the focal point of the second Five-Year Plan (1967-1971). Originally, unskilled workforces were needed, but because of the export industries and the change from light to heavy industries, the demand of skilled workforces was emergent, especially in the shipbuilding, electronics and steel industries. (See Kwack 1990: 74-75 and Koh 2010: 20) One important developmental plan of the government was the building of industrial facilities for the petrochemistry. Therefore the foreign technology and capital were needed. After initial hindrances, the building was achieved in the late 1960s and in the early 1970s. (Koh 2010: 20-21)

#### **4.4. Stage Four: The Drive to Maturity**

##### **4.4.a. The New Leading Sectors For Economic Growth**

In 1973 Park concentrated on the advancement of the heavy and chemical industries (HCI). The reasons for the foundation of “HCI Drive Committee” and the aid for the HCI were the aim to reach a per capita income of 1000 Dollars and a export per annum of 10 billion Dollars. The production of the HCIs in 1972 constituted for 35% and the export share amounted for 27%. In 1981 its production grew to 51% and the export reached 65%. (See Joh, Kim and Koh 2010: 186-187 and Koh 2010: 21)

During the 1960s and 1970s, foreign savings, for example the import surplus, was responsible for the industrial progress. As a consequence the agricultural sector relied on the rapid industrialization. (See Ho 1982: 975 and 983) The agriculture was also reliant on technological developments, because the land cultivation and production of grain were diminishing. Due to the technical advancement and higher income level, the agriculture had to modify the food consumption, because demand was rising. During the government of Park, agriculture was abandoned. The new policy in 1969 was the expensive price of grain and rice in the market, while the income of the farmers remained low. The “New Community Movement” of the government wanted to reform the rural life and it invested for the sake of the agricultural improvement. (See Kwack 1990: 77-79) *”To increase income, the movement promoted diversification of production and accelerated the cultivation of commercial crops, vegetables, and fruits. Small-scale rural facturing, using local resources and materials, was also encouraged. To improve rural living conditions, investments in the infrastructure increased, with government support. ... The movement did, to a large extent, assist in raising rural income and improving rural living standards“* (Citation Kwack 1990: 79)

The electronics industry also experienced a growth in the production share in 1970, which was 6% and 17,8% in 1980. Its take-off was due to the back up from local firms and joint

ventures. Its manufacture in 1968 and 1979 rose from 45,9 million US Dollars up to 3,3 billion US Dollars. The export accounted for 20 million US Dollars and 1,8 billion US Dollars. The production of components such as circuits, condensers and transistors was 48% from the total manufacture. Also, consumer electronics such as black and white TVs and tape recorders reached a production share of 42%. The export share had approximately the same rates as the manufacture output. In the mid-1970s, 691 electronic enterprises were established. 480 of them were small Korean-owned companies. It provided the labour-intensive goods to the local market and the services to bigger companies. (See Hobday 1995: 59)

During the 1970s the industries faced an enormous change and the GNP (=Gross National Product) for example had a rate of 9% per annum and the export rate was 28%. The production output of the heavy industries even reached 56% in 1980, whilst the output level in 1971 was 40%. The share of the manufactured exports could even triple. The policy was toward the market, therefore several enterprises put more investments into technological facilities and equipments. The enterprises rapidly developed, which was a good condition to adopt the technologies from abroad. The higher productivity was the result of learning-by-doing. (See Amsden 1989: 152-153)

In the early 1980s the “Korean Fair Trade Commission” and the anti-monopoly law were founded. The interventions of the government were visible. (See Pascha 2005: 95-97) *“Korea embarked on serious liberalization program in 1979-1980, when it was beset by a series of macroeconomic problems. Reforms included an import liberalization program aimed at the reducing restrictions: financial reform, such as privatizing bank ownership, raising interest rates, and sanctioning new financial institutions; and a basic shift towards industrial intervention policies predicted on the presence of market distortions or market failure.”* (Citation Leipziger 1988: 122) A further content of the reform included, the big and basic enterprises did not longer receive support from the government. Instead, small and medium enterprises had the financial support of the government. During the restructuring, the government adopted the Japanese model, where it had the decisions about the decrease in the capacity, the allocation of credits for survivors and the fusion of enterprises. (See Leipziger 1988: 122 and 125) In the 1980s the domestic inflation decreased, while the interest rate was growing. The Ministry of Finance wanted to avoid enormous capital costs, therefore it wanted to encourage more investments. The small and medium-scale received a part of the loan from financial institutions and foreign banks. The government also gave tax reduction to the R&D and supported joint ventures of R&D. (See Amsden and Euh 1993: 380-383)

Furthermore the government recommended national projects of the R&D labs from the private sector and the research institutes from the public sector. In 1983 the national R&D

projects from among 131 industrial enterprises were selected. 182 projects were chosen for the aid of 28 million US Dollars. Special projects in the field of semiconductors and bioengineering had an additional finance of 40 million US Dollar. In general the government resolved the depressed tariff rate for the R&D equipment, hence the advancement of R&D should be unfolded. The technology-orientated enterprises were loaned by the venture capital corporations, which were governmental foundations. (See Amsden 1989: 83-84) The internal ambitions of the R&D companies were the development of new products and the adjust of the improved technologies from the foreign. The reason to invest into R&D was to reduce the dependency from Japanese enterprises, because the local conglomerates (or chaebol) should devise new products. (See Hobday 1995: 69 and 51)

The fourth Five-Year Plan (1977 to 1981) included the improvement of the electronics industry, and the acquirement of technological skills from the private sector. For nearly two decades the electronics industry was the major sector. The “Electronics Industries Promotion Law of 1969 “ was already issued, its purposes were the incentives to invest into assembly activities, such as black and white TVs. Another objective of the forth Five-Year Plan was the hastening of the goods for the import substitution such as semiconductors and computers. For the promotion of commodities with higher level of skills and technologies, the government achieved following goals: (1) The construction of industrial buildings for such commodities, (2) the foundation of the “Electronics and Telecommunication Research Institute” (ETRI) in the industrial buildings and (3) the protection of the domestic market, for example in 1983 there was the restriction to import computers. (4) The last one was the reduction of the foreign direct investment, because of the preferences for joint ventures. (See Amsden 1989: 81-83)

In the 1980s the foreign ownership of the electronics was decreasing, while the skills of the local enterprises were increasing. The OEM facilitated the companies to export goods with foreign trade names. The latecomers the TNCs were connected to OEM, educated the engineers and provided equipments, materials and capital goods. (See Hobday 1995: 67)

*“Within the OEM channel, South Korean firms learned by strenuous in-house efforts, by trial-and-error investments and by on-the-job training. Eventually they mastered much of the production and design know-how for electronics, narrowing the gap with the leaders. OEM allowed more firms to expand into more areas, to overcome barriers to entry and to access Japanese-controlled channels of distribution into Western markets. ... OEM enabled market leaders to compete with each other by reducing costs, particularly after the Yen appreciated in the mid-1980s.”* (Citation Hobday 1995: 67)

The goods under OEM were vended with the trade name, but the ODM stood for improved design skills and sophisticated technologies. The TNCs held the layout of the design and the ODM enterprises were responsible for the

productions and the working process. The OEM and ODM were the channel for the market of technology, which was prospering. (See Hobday 1995: 69)

The new president Kim Young-Sam wanted to revive and liberalize the economy, and the eighth Five-Year Plan was announced with the following goals (See EPB 1993 in Pascha 1996: 74): (1) The breakup of monopolies and the encouragement of small-scale enterprises, for the intensified the growth. (2) The opening of the market and the cooperation of the economies were part the internationalization. (3) The major focus was the welfare.

The economic growth rate increased to 8,3% in 1994, also the export was able to reach the growth rate of 11,2%. The industries for automobile, machinery and electronics were responsible for the part to the growth rates. The upward revaluation of the Japanese Yen and the devaluation of the Won contributed to the attractiveness of the Korean subcontractors for goods. One year later, the growth in the export was 13,6% and the large-scale chaebols invested more than 50%. (See Pascha 1996: 33-35)

#### **4.4.b. The Shift In The Labour Force (The Decrease Of Agricultural Labour Force And The Increase Of Skilled Labour Force)**

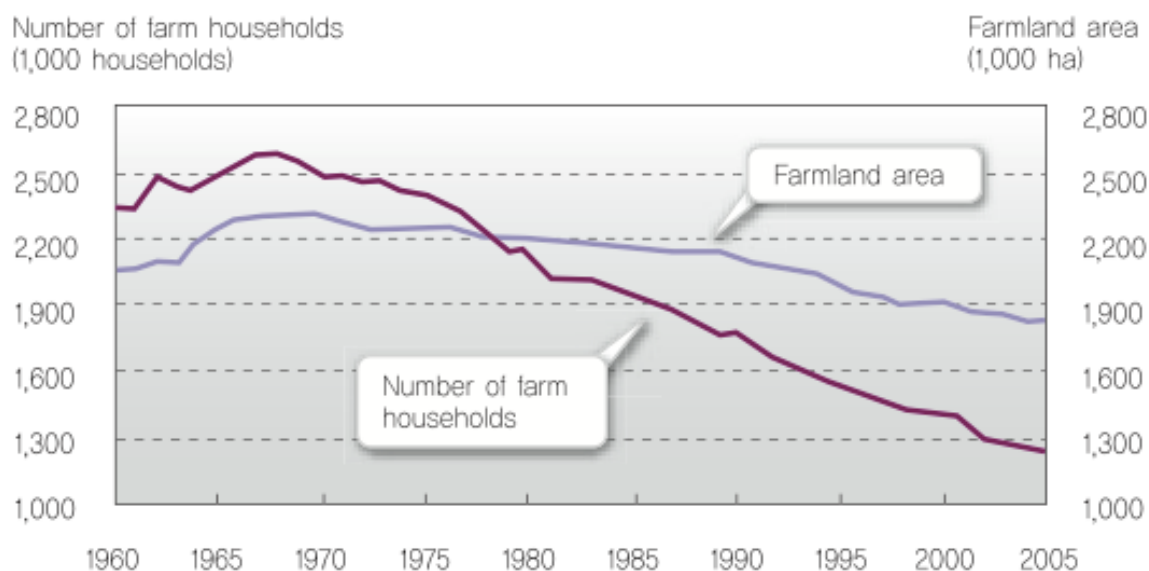
The chaebols were growing and for that reason the management had an important role. In the 1990s the position of managers and professionals in an enterprise became more important. The education with a school- or university-graduation increased and during the 1990s Korea belonged to countries with numerous scientists and technicians. Between 1993 and 1999 there were 2,4 million professionals and technicians, but that amount rose up to 3,4 million. In the colleges and the universities the share of students with a major in engineering was 17% and it reached 28%. In general, enrolled students at colleges and universities increased between 1970 and 1997 from 26,9% to 41%. According to Pohlmann there was a social cultural shift in the middle class, because of the strong emergence of professionals and managers. (See Pohlmann 2002: 240-242)

In addition industrialization was territorially entailed, the share of rural employment was 81% in 1960 and it dropped down to 78%. The manufacturing employment in the agriculture decreased to 21% of the total amount of the manufacturing employment. The food, textiles and wood or bamboo commodities belonged to the traditional industries in the agriculture, where the share of the manufacturing employment diminished from 82% in 1960 to 74% in 1975. (See Ho 1982: 975)

Table 10 demonstrates the trend for a decreasing number of households in the rural area. The period of the statistic is 1960 between 2005, at the beginning, the curve for the households is between 2 200 and 2 500. Between 1965 and 1970 there was an increase of households, which

at the same time was the highest peak between 2 500 and 2 800. After 1970 the curve strongly started to decrease, and 1980 the households remained at 1 900. In 2005 households accounted over 1 000 and under 1 300. With the decrease of the households, it can be assumed, that the labour force was also decreasing. (See Korea Rural Economic Institute)

**Table 10 The decrease of the agricultural labour force - Korea**



(See Korea Rural Economic Institute)

## **4.5. Stage Five: The Age of High Mass-Consumption**

### **4.5.a. The Growing Awareness Of The Welfare State**

The welfare state in Korea is becoming an important one, such tendency has been obvious since the Asian financial crisis 1997. (See Pohlmann 2002: 199-200)

In the 1980s and mid-1990s, new policies, such as the “National Pension Scheme” (NP) in 1988 and “Employment Insurance System” (EIS) in 1995 or the new foundation of universal health insurance in 1989 were introduced. (See Koh et al. 2010: 276-277) The awareness for the need of a better social safety was becoming more visible. It also was reflected in the election of Kim Dae-Jung. Also the successor Roh Moo-Hyun from 2003 to 2008 had his main focus on welfare policies. For example the “Emergency Relief Program” (2006) gave aid to households, which suddenly lost their income, and the “Long-Term Care Insurance” (2008) had advantages for older persons, who are disabled. Workers with less income could apply for the aid for their live-conditions from “The Earned Income Tax Credit” (2008). Under Roh, children in the pre-school age had the supply for their care and education. The aims were the equal educational background for children, and the promotion of child-bearing and work attendance of mothers. (See Koh et. Al 2010: 279-280)

**Table 11 The expenditure for social welfare - Korea**

| Year | Public social exp % GDP | Year | Public social exp % GDP |
|------|-------------------------|------|-------------------------|
| 1980 | /                       | 1995 | 3,2                     |
| 1981 | /                       | 1996 | 3,4                     |
| 1982 | /                       | 1997 | 3,7                     |
| 1983 | /                       | 1998 | 5,1                     |
| 1984 | /                       | 1999 | 6,1                     |
| 1985 | /                       | 2000 | 4,8                     |
| 1986 | /                       | 2001 | 5,2                     |
| 1987 | /                       | 2002 | 5,1                     |
| 1988 | /                       | 2003 | 5,4                     |
| 1989 | /                       | 2004 | 6                       |
| 1990 | 2,8                     | 2005 | 6,4                     |
| 1991 | 2,7                     | 2006 | 7,4                     |
| 1992 | 3                       | 2007 | 7,6                     |
| 1993 | 3                       | 2008 | 8,1                     |
| 1994 | 3                       | 2009 | 9                       |

(See OECD 2011)

During the 1980s there were no expenditures, but expenses started in 1990 with 2,8% and in 1997 it increased to 2,7%. In 1999 it accounted for 6,1%, which was the highest amount during the 1990s. But in 2000 it decreased to 4,8%, and after 2001 it had a growing trend. In 2009 it reached 9%. (See OECD 2011)

#### 4.5.b. The New Consumption Behaviour

**Table 12 The consumption expenditure - Korea**

(Unit in Won)

| Year | Alcoholic beverages | Food and non-alcohol | Clothing and Footwear | Housing, water, electric supply | Health  | Non-consumption expenditure | Education |
|------|---------------------|----------------------|-----------------------|---------------------------------|---------|-----------------------------|-----------|
| 2003 | 23 012              | 255 079              | 112 646               | 168 153                         | 98 102  | 446 873                     | 187 298   |
| 2004 | 26 065              | 270 666              | 113 070               | 174 162                         | 102 886 | 479 624                     | 202 236   |
| 2005 | 28 415              | 273 402              | 118 789               | 183 581                         | 111 376 | 494 534                     | 211 837   |
| 2006 | 29 275              | 275 689              | 123 118               | 192 880                         | 120 224 | 530 281                     | 222 341   |
| 2007 | 28 414              | 277 711              | 128 220               | 195 763                         | 128 186 | 567 776                     | 240 661   |
| 2008 | 28 350              | 298 296              | 131 371               | 205 512                         | 130 425 | 603 829                     | 271 122   |
| 2009 | 26 722              | 297 652              | 131 583               | 210 877                         | 140 743 | 626 375                     | 289 820   |
| 2010 | 27 522              | 316 936              | 145 964               | 230 212                         | 152 150 | 674 018                     | 296 801   |

(See Korean Statistical Information Service, KOSIS)

Table 12 shows as follows: The various expenditures of the households from 2003 to 2010 has been rising, for example housing, water and electric supplies accounted for 168 153 Won and it increased to 183 581 Won in 2005 and 205 512 Won in 2008. Another example is the non-consumption expenditure. In 2003 it accounted for 445 873 Won and in 2006 it

augmented to 530 281 Won and 626 375 Won in 2009. In general the table shows that the expenditures for all different fields have an increasing tendency. (See Korean Statistical Information Service, KOSIS)

#### 4.5.c. The Rapid Growth Of Population

**Table 13 The increase of population - Korea**

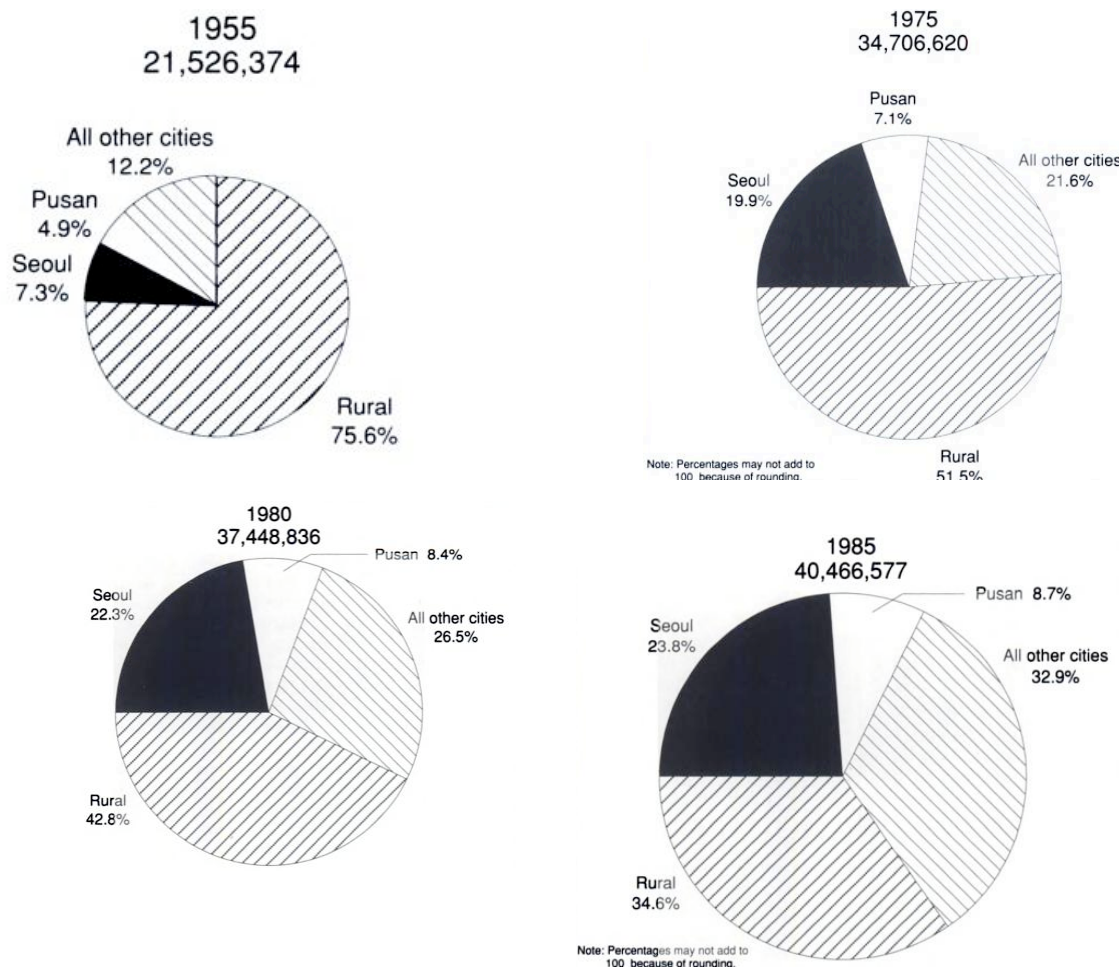
| Year | Population |
|------|------------|
| 1935 | 22 208 102 |
| 1940 | 23 547 465 |
| 1944 | 25 120 174 |
| 1949 | 20 166 756 |
| 1955 | 21 502 386 |
| 1960 | 24 989 241 |
| 1966 | 29 159 640 |
| 1970 | 31 435 252 |
| 1975 | 34 678 972 |
| 1980 | 37 406 815 |
| 1985 | 40 419 652 |
| 1990 | 43 390 374 |
| 1995 | 44 553 710 |
| 2000 | 45 985 289 |
| 2005 | 47 041 434 |

(See Korean Statistical Information Service, KOSIS)

Between 1935 and 2005 the population in Korea has been growing, for example the population in 1935 amounted 22 208 102 and five years later it reached the total amount of 23 547 465. After 1970 it already rose up to 31 435 252 and that tendency was still sustained and in 1985 the population was 37 406 815. The table shows, that the total amount of the population was only once declining in 1949, but in 1955 the growth of the population had an growing trend again. (See Korean Statistical Information Service, KOSIS)

#### 4.5.d. The Expanding Growth Of Urban

Table 14 The growth of urban and rural population - Korea



(See Savada and Shaw 1992: 82-83)

All four diagrams show the distribution of the total inhabitant in the rural and urban areas. In 1955 the inhabitants in the rural area were 75,6%, which was the greater part. The other part of 24,4% represents the inhabitants in the city. Twenty years later, the rural inhabitants decreased to 51,5% and the urban inhabitants increased to 48,6%. In 1980 the rural inhabitants was declining to 42,8% again and this tendency was still remaining, because 1985 the rural inhabitants accounted for 34,6%. In 1985 the inhabitant in the city took up the greater part, which was 57,2%. It can be assumed, that the cities were growing, because of the growth of its citizens. (See Savada and Shaw 1992: 82-83)

## **5. Case Study of Hong Kong**

### **5.1. First Stage: The Traditional Society**

#### **5.1.a. The Limited Function Of Production**

For more than 1000 years, the Chinese Civilization had in terms of economic and technological manufacture, the same development-oriented tendency as the West. In the 16<sup>th</sup> century the two factors remained the same. The cause was the foundation of Ming after the Mongol rule of 100 years, which was responsible for the backwardness. This trend continued for the next 250 years of the Qing dynasty. (See Geiger and Geiger 1975: 34)

Guangdong (Canton or 廣東) originally used the practice of "dry-land farming" in the agriculture. Such improved method did not fully use the labour force or fertilizer, but in comparison the method of irrigation did. It was introduced since the Song dynasty and remained as a basic practice in the Ming dynasty. In the mid-16<sup>th</sup> century the system of the irrigation was common in each prefecture in Guangdong. Its finance was supported by the state and the smaller irrigations were private. (See Marks 1998: 104-107)

The population in Guangdong increased, which was accompanied with several problems, such as unemployment and banditry or the lack of cultivable land, capital and seeds. In 1850 Guangdong faced all these problems at its peak, and the lack of cultivable land was intense. Questions were posed on how to reach high yields with the use of new incentives of chemical fertilizers or how far the increased output through the enhanced technology can nurture more people. (See Marks 1998: 305)

#### **5.1.b. The Connection of Family And Clan**

In the traditional society of China the individual was bonded to its family, which was an unity for the economy. The family worked and lived together with various duties, for example the formulation of taxation, allegiance to the law and other governmental authorities or organizations. There was the lineage organization or clan, where the families had the same surname and some of them had property of land. They have liability for the village, where several peasants lived. The elites were the families with the highest income and status. The elites had the dominance and the influence over the lineage organizations, where the control of the resources belonged to them. But the emperor and the imperial court had the highest status. They had their relation to the bureaucracy of scholar officials. The gentry, the wealthier peasants, the merchants, and the leverage over the local level were also under their control. (See Geiger and Geiger 1975: 36-41)

### **5.1.c. The Central Political Rule**

In the early time of several dynasties, the barbarians were kept outside of the borders. The rule of the emperor and likewise the imperial administration were effective. Also the scholar officials were not corrupt, therefore the taxation was in compliance with the income. (See Geiger and Geiger 1975: 44) *“During such periods, the imperial administration constructed major public works, such as large-scale irrigation and flood-controls systems, canals and roads; encouraged the planting of new crops and the use of more efficient methods; undertook relief measures in regions devastated by war or natural disaster; and assisted education and artistic and literary development.”* (Citation Geiger and Geiger 1975: 44) However, the following dynasties were marked with ineffective imperial administration and increased corruptions, and the taxation was heavier in relation to the low incomes. Because of these incidences, such as the rebelling of peasants or armies and brigands or the invasion from the outside of the borders, the fall of a dynasty was foreseeable. (See Geiger and Geiger 1975: 44-45)

A further typical feature of the imperial China is, that the government was highly centralized in the period of 1870 and 1911. This fact is also related to Guangdong. The imperial government had local recruits at Yamen, which was the seat for magistrate. Through Yamen the imperial government had the local autonomy. The Yamen or gentry and village elders had to encash the tax to them. (See Faure 1989: 14-16)

## **5.2. Stage Two: The Preconditions For Take-Off**

### **5.2.a. Two Cases Of Preconditions For the Take-Off**

Hong Kong is neither an example for the general case, nor for the “born free” case. The general case for the preconditions of take-off needs the agricultural sector for the successful take-off. In addition Hong Kong is not on the list of the “born free” countries from Rostow. (See Rostow 1990: 17 ff)

### **5.2.b. The New Impulses Of The Imperial Power**

The sea-based trade prior to the periods of 1841 were managed in Guangdong, and all ships were first controlled in Macau, which had its facilities from the Portuguese. In the 1830s the major trade partner of China were America and Britain. The reason for British interest towards Hong Kong as the trade centre were the products from China, for example tea, silk and porcelain. In the past the Chinese arrangements for the trade with foreigners were very strict and the trades were carried out in Guangdong. The Chinese did not obtain commercial goods from the East India Company. That matter brought the strain between China and

Britain, which also involved the opium. The affairs of the trade caused the First Opium War, the results of which was the handover of Hong Kong to Britain and four ports of China (where Guangdong was among of it) were made available for the Western trade. The cause for the forceful opening of China was the British intention for free trade and with the “Treaty of Nanjing” (南京 or Nanking) in 1842 the First Opium War ended. At the end of the 19<sup>th</sup> century Britain expanded influence and control over the harbours and the circumjacent waters. (See Loughlin and Pannell 2010: 50 and Williams 2009: 533)

### **5.2.c. The Important Role Of The Agriculture And The Role Of Social Overhead Capital For The Growth**

#### **5.2.c. (I) The Important Role Of The Agriculture For The Growth**

Beginning from 1900 the port of Hong Kong was central for world trade. The shipping and the port facilities were crucial to the outside and they represented the rise of Hong Kong as a colony. The origins of the gate for the Southern China started and the trade flourished. These features from the mid-19<sup>th</sup> century were still present till this day. (See Loughlin and Pannell 2010: 50 and Williams 2009: 533)

*“Owing to the hilly nature of its terrain, Hong Kong’s arable land is very scarce. With no possibility of establishing an agricultural economy, Hong Kong must strive to increase its exports of manufactured products. To attain this aim, Hong Kong must diversify its industry and markets in order to meet foreign competition and avoid economic stagnation.”* (Citation Sutu 1968: 90) Sutu points out, that Hong Kong does not possess natural resources and it is not self-contained for food. Therefore Hong Kong needed to manifold its industries and markets, which were necessary for the foreign competitiveness and for the survival. Because of its location in the South and the facilities of shipping and ports, Hong Kong became the main trader. (See Sutu 1968: 85 and 90) In reference to the cultivable land, Chen also mentions, that the agricultural sector in Hong Kong is hardly existent. Hong Kong does not possess natural resources (like coal, petroleum and mineral reserves) or any raw materials, which beside the foodstuffs were acquired through the import. Chen favourably thinks, that the strategy for the development of industrialization is the export improvement. Therefore the main concern of Hong Kong in the early process of the industrialization was the policy of export for manufactured goods. In comparison Taiwan and Korea had shifted from the import substitution to the policy of export. (Chen 1995: 22-23)

According to Rabusha the approach of its “entrepôt free port” possesses lots of benefits. The constructions of large dock, sugar and rope factory, shipbuilding and repairing and so on, are such examples. At the same time Hong Kong was the headquarter for the important merchant

facilities of the Far East. In addition the port had the characteristics of a free port, which means that there were no tariffs and less restrictions for the imported goods. Further facilities such as bank, insurance institutions or services such as accountancy and legal services were needed. The system of shipping, banking and insurance caused the improvement of manufacturing industries. The export of Hong Kong had its emphasis on these industries. (See Rabushka 1979: 16-17 and Loughlin and Pannell 2010: 50)

Farny analyzed the rise of Hong Kong as the gate and port to China, and determined its reasons (See Farny 1997: 49-50): (1) The improvement of the infrastructure made it possible for bigger ships to enter the port. As Jiulong (Kowloon or 九龍) was obtained by Britain in 1860 the progress for the infrastructure was moving forward. Jiulong provided the extra terrain for storage depot and housing area. (2) The beneficial and general frameworks for the economy, such as the free-trade zone, the building of “Chamber of Commerce”, the entrepreneurial cooperation between Hong Kong and Britain, the approach of the British law system (where the property rights were arranged) and the laissez-faire policy (without the interference of the state into the market). *”The Hong Kong Government has traditionally pursued a laissez-faire style of administration. Generally speaking, economic liberalism applies to all internal and external activities. Hong Kong is a free port and there is no foreign exchange control. ... In general, the system of laissez-faire capitalism in Hong Kong gives freedom and opportunities to businessmen and industrialists to further themselves and the economy. Under these circumstances the Hong Kong economy had the greatest flexibility and vigour to cope with the process of industrialization in the early stages.”* (Citation Chen 1995: 3) The approach of the Crown Colony for the economy was the laissez-faire policy, and more Chinese immigrated to Hong Kong for work. Beside the position as a trade centre, Hong Kong as well was the centre for travel, especially for the Overseas Chinese. (See Gälli and Franzen 1995: 73)

In 1941 the British army and the Hong Kong Volunteer Defence experienced the reverse. The consequences were the removal of the British manufactory and the return of the immigrated population to China. But the role of the entrepôt free port still remained during colonial period of Japan. (See Farny 1997: 51 and 53)

### **5.2.c. (II) The Important Role Of The Social Overhead Capital (SOC) For The Growth**

The sections above included the description about the trade center, industrialization and natural resources of Hong Kong. In reference to the SOC, which the railway belongs to, following citation applies: “1864年，曾在印度發展鐵路初期擔任重要角色的英國鐵路工程師 Macdonald Stephenson 首先提出興建一條連接中港兩地鐵路的構思，可惜當時並未

獲得北京的清政府與及在香港的主要商家支持。有關建議一直被擱置，直至30年後才再次得到認真考慮。” (Citation: History of KCRC) *“In 1864 the initial idea about the construction of the railway was from the English engineer Macdonald Stephenson. But his concept of the railway connection from China to Hong Kong was not really supported by the government of Qing in Beijing as well as from the important business group. The planning remained untouched, though after 30 years the construction for the railway was reconsidered.”* (Citation: History of KCRC, Own Translation) *The reason for such intention during the 1890s was the competitive struggle for power of Europe in China. For the construction and running of the Guangzhou-Jiulong line, Britain got the rights from the government of Qing. After initial difficulties such as collecting funds and the lack of labour force, the Railway of Jiulong-Guangdong line was put into operation in 1910, but it expanded one year later to Guangzhou.* (See History of KCRC)

#### 5.2.d. The Rate Of Investments Over 10% Of National Income

**Table 15 The rate of investment - Hong Kong**

| Year | Investment Share of GDP in % |
|------|------------------------------|
| 1950 | Not available                |
| 1951 | Not available                |
| 1952 | Not available                |
| 1953 | Not available                |
| 1954 | Not available                |
| 1955 | Not available                |
| 1956 | Not available                |
| 1957 | Not available                |
| 1958 | Not available                |
| 1959 | Not available                |
| 1960 | 29.43                        |
| 1961 | 28.85                        |
| 1962 | 30.97                        |
| 1963 | 33.16                        |
| 1964 | 35.56                        |
| 1965 | 34.86                        |
| 1966 | 29.43                        |
| 1967 | 24.25                        |
| 1968 | 21.24                        |
| 1969 | 19.89                        |
| 1970 | 20.68                        |
| 1971 | 23.45                        |
| 1972 | 23.11                        |
| 1973 | 22.93                        |
| 1974 | 22.67                        |
| 1975 | 22.79                        |
| 1976 | 25.39                        |
| 1977 | 25.82                        |
| 1978 | 25.93                        |
| 1979 | 27.20                        |

|      |       |
|------|-------|
| 1980 | 29.02 |
| 1981 | 29.02 |
| 1982 | 27.18 |
| 1983 | 24.43 |
| 1984 | 23.34 |
| 1985 | 21.80 |
| 1986 | 22.29 |
| 1987 | 23.11 |
| 1988 | 23.15 |
| 1989 | 21.68 |
| 1990 | 22.82 |
| 1991 | 23.21 |
| 1992 | 24.15 |
| 1993 | 22.82 |
| 1994 | 26.94 |
| 1995 | 30.57 |
| 1996 | 28.99 |
| 1997 | 31.02 |
| 1998 | 28.03 |
| 1999 | 22.75 |
| 2000 | 25.27 |

(See CICUP: 2002)

Table 15 shows, that the datas for the rate of invesment were not available between 1950 and 1959. But the rate of investment is generally over 10% of the national income and they were even over 20%. Only once in 1969, the rate of investment accounted for 19.89%. (See CICUP: 2002)

### **5.3. Stage Three: The Take-Off**

#### **5.3.a. The Take-Off As A Stimulus**

After World War II, Hong Kong was able to improve its industries, whilst the significance of the entreport free port slowly disappeared. The Chinese Civil War of the Nationalist and Communist in 1949 had an impact on Hong Kong. Under such conditions, the labour force, the capital and the qualification for entrepreneurship from China increased in Hong Kong in the period between 1848 and 1951. (See Chen 1995: 2) *”Those taking refuge in Hong Kong included young and energetic people who were intelligent and willing to work hard, people with much money, capital, and skilled entrepreneurs who were mostly Shanghainese industrialists engaged in the textile industries. This huge inflow of human and capital resources from China formed the basis of subsequent industrialization.”* (Citation Chen 1995: 2) The cause for the decreased tendency of the entreport free port was the victory of the Chinese Communist. China then was starting to trade with Soviet Russia, Eastern European Countries. Additionally there was the Korean War 1950, and America set up an embargo for

the export embargo to China. For these reasons Hong Kong lost its traditional trade partner and at the same time the progress toward industrialization moved forward. (See Chen 1995: 2-3) The shift in the economy began after the World War II and the immigration of the Chinese (especially from the South) expanded. Both factors brought advantages: on the one hand and as mentioned above the experts for enterprises, banks, ships and manufactures with their knowledge, capital and establishments. At that time Hong Kong was able to concentrate on the constructions of light manufacture and logistic industry. On the other hand, it had to deal with the huge population and immigrants. This is why various building plans for housing and infrastructure were set up. Industries such as textiles, clothes, radios, small electronic and electrical devices, plastic manufactured goods, toys and watches belonged to the features of the economy. Such industries were not backed up by the government and public finance, but rather by the private sector. (See Williams 2009: 538-540)

The enterprises such as foodstuffs and drinks, ship-buildings, rubber footwear, flashlights and batteries, were already existent in a small number before the World War II. Some of them were rebuilt and even enlarged after the war, but they only counted for 10% of the GDP and in the export they accounted for 15%. The immigrated entrepreneurs from Shanghai were also related to the conditions for the industrialization. Before the victory of the Communists, they were able to bring their machineries to Hong Kong. With the aid of bank loans, they were able to lease or to construct commercial buildings, where the machinery could be used. Skilled employments were needed in such new enterprises or factories. The wave of refugees where hired for those positions, they were supposed to work and to learn. (See Geiger and Geiger 1975: 68-70) Hong Kong additionally had access to capital and qualification for entrepreneurship of the Western Countries and South-East Asia. Therefore Hong Kong had the best stability in Asia in terms of the economy and politic. (See Chen 1995:2)

In general, the government in Hong Kong did not interfere at all in the development of the economy. It played a minor role in the allocation of resources, for the stabilization of the economy, and the construction of the infrastructure and institutions. It also did not manage the economic advancement in various periods, for example the entrepôt trade in the 1950s, the initiation of the industrialization in the 1960s, the expansion of the finance service for the international environment in the 1970s, and the shift in the economy in the 1980s. The change in the economy in 1980 will be described in the next stage. However, such policy of *laissez-faire* brought a beneficial performance, because the private sector has free hand for the adaptability in the business. (See Chen 1998: 34)

### **5.3.b. The Accumulation Of Capital For The Development**

In the above section, it was already mentioned that there was a big immigration from China, which was beneficial for Hong Kong. Because immigrants were experts with their knowledge, capital and establishments for enterprises, banks, ships and manufactures. (See Williams 2009: 538-540) After the war, Hong Kong was able to restore its currency and credit. The growth of the money supply and the bank deposits were not really a great deal after all, because the refugee hoard their money in Hong Kong, which in result had enough lending funds. (See Geiger and Geiger 1975: 68-70)

### **5.3.c. The Manufacturing Sector With A High Growth Rate**

During the 1960s Hong Kong carried out the industrial revolution, it started to fabricate the light manufactured goods. Industries such as textiles, clothings, plastics and electronics were successful establishments. Taiwan, Korea and Singapore were the other contestants of the light manufactured goods in the international market. Hong Kong was able to resist this situation and carried out the diversifications of goods. In the textile industries the use of cotton was replaced by synthetics, denim or factitious silk. In the case of electronics industries, the production of radios was switched to semi-conductors, electronic watches, incorporated circuits and micro-computers. With the diversifications of goods, the growth in the economy was on a high level. (See Chen 1983: 84-86)

In the 1960s and 1970s the export growth for manufactured goods was 15% per annum. All manufacturing sectors had their financial support from the domestic savings and foreign capital, therefore the debt in the foreign was not questionable. Textiles and clothing industries received domestic capital, and it was possible for them to enhance. The foreign capital flew into the newly established industries such as electronics and others. In the 1960s Hong Kong already devoted its manufacture of TV sets for the export. (Wilkinson 1994: 153-154)

**Table 16 Manufacturing output - Hong Kong**

|         | Manufacture | Agriculture | Service |
|---------|-------------|-------------|---------|
| 1800-49 | /           | /           | /       |
| 1850-99 | 1           | /           | /       |
| 1900-49 | 4           | /           | /       |
| 1950-99 | 10,7        | /           | 10,5    |
|         |             |             |         |
| 1900s   | 2,4         | /           | /       |
| 1910s   | 4           | /           | /       |
| 1920s   | 3,3         | /           | /       |
| 1930s   | 4,7         | /           | /       |
| 1940s   | 5,5         | /           | /       |
| 1950s   | 15,8        | /           | 14,2    |
| 1960s   | 14,4        | /           | 13,8    |
| 1970s   | 10,6        | /           | 11      |
| 1980s   | 8,1         | /           | 8,4     |
| 1990s   | 4,8         | /           | 5       |

(See Sabillon 2008: 306)

Table 16 demonstrates, that there was no record of the manufacturing growth rate between 1800 to 1849. The growth rate of the manufacturing was 1,0% from 1850 to 1899. It increased to 4,0% in the 1910s, but in the 1920s it decreased to 3,3%. From the 1940s it was rising again and in the 1950s it had the highest growth rate of 15,8%. At the same time the growth rate of the service sector was 14,2%. From 1960s on, the growth rate of both sectors were falling to 14,4% and 13,8%. In the 1990s the growth rate for the service sector was little bit higher than that of the manufacturing sector. (See Sabillon 2008: 306)

#### **5.3.d. The Leading Sectors For The Economic Growth**

In the 1950s the first crucial foreign market was Britain, because of (1) the long ties of Hong Kong with the Crown Colony and (2) the cheap import of cotton grey commodities and finished piece products for Britain. In addition the large export market of America was just as much an important market for Hong Kong. The export market of Hong Kong expanded through the market of Japan, Canada and Australia. (See Geiger and Geiger 1975: 68-70)

At the end of the 1950s the export to America was still growing, more and more competitive buyers and sellers were involved. The ambition of Hong Kong was to obtain other markets for their commercial goods. It successfully obtained the flourishing German export market, which was ranked as its third biggest market. Beside the German market, the market of Netherland, Scandinavia, Switzerland and Italy were enumerated to Hong Kong's expanding. In the late 1950s the higher demand for varieties of clothing industries transcended the industries of Hong Kong in size and diversity. At the same time Japan provided bigger and more varied

industries for textile manufacture, where Hong Kong was able to gain quantitative cotton piece commodities, woollen and worsted materials and synthetic fibres. Therefore it was able to manage the higher demand with new goods. Japan also imported materials, components and subassemblies to Hong Kong. In the 1960s the manufacture and export of clothing in Hong Kong accelerated. In 1959 the export was 34,8% and ten years later it reached 36,4%, but the export of textile yarns, fabrics and other articles decreased from 18,1% to 10,7%. The export for internal manufactures increased from 2,282 million Hong Kong Dollar to 10,518 Hong Kong Dollar during the mentioned time period. Comparatively the entrepôt trade accounted for 20%. The manufacture gained a major part. Beside the growth of the export, the employment in the industries increased from 177 000 to 528 000. (See Geiger and Geiger 1975: 74-75)

In the later period of 1950s the Japanese experts for transistor radios were attracted to the well-priced taxation and labour cost of Hong Kong. This was the beginning of the electronics industry. In 1959 the “Champagne Engineering Corporation” was the first established electronic company of Hong Kong, and it installed radios for Sony. The FDI of America supported the electronics industry of Hong Kong, the reason was the attractiveness of the low-priced labour. The American components producers such as Fairchild, Ampex and Teledyne Semiconductor arrived in the 1960s. In the middle of the 1960s American producers for consumer goods and semiconductors had their focus on installation. Also the checking for diodes, transistors, capacitors and other components was emphasized. The TNC was responsible for the instructions of engineers, middle managers and technicians, who were very productive. In the period of 1961 to 1976 the export for electronics was 2,5% and 12,3%. (See Hobday 1995: 164)

#### **5.4. Stage Four: The Drive to Maturity**

##### **5.4.a. The New Leading Sectors For Economic Growth**

At the end of 1960s and at the beginning of the 1970s the financial services in Hong Kong were more important than ever. Its role as an international financial centre was still growing. The GDP share of finance, insurance, real estate and business service grew from 15% in 1979 to 22% in 1980. Through modernization, economy and opening policy of China in the late 1970s, the entrepôt trade in Hong Kong gained its momentousness from the past again. Around 1979 and 1981 the “Special Economic Zone” and the “Joint Ventures” and other draft related to the trade were introduced (See Chen 1983: 86-88)

As aforementioned the opening of China from 1978 had an impact on Hong Kong, because the emergence of the collaboration between Hong Kong and China could be observed. For

example on one hand, Hong Kong had broad exports for producing goods, which were in terms of labour very costly. Its supply of knowledge, financial aid and technology was, in contrast to China, very well developed. On the other hand, China had an enormous resource of labour force, which in 1990 were about 500 million people. Under such conditions the workforce could be used for the world biggest export for manufacture. (See Chai 1983:104-105) *"Industrial co-operation between the two in the manufacturing sector has increased significantly. The main forms of co-operation have been processing, assembly, and medium- and smallscale compensation trade. The main trade of co-operation has been light industry, especially textiles, garments and electronics. ... Mutual trade now makes up an increased proportion of the total trade of the two economies."* (Citation Chai 1983: 149) The intra-industry trade and the specialism of both economies were another example for such collaboration. The industries for clothing and electronics were obviously the characteristics of Hong Kong's economy. Both existed for a long time and could bear up against the trend of the high production costs. The clothing industries maintained a consistent growth in the gross output and during the 1980s, and it still was one quarter of the output of the total manufacture industries. Such growth also applied to the electronics industry in the period before 1988. The clothing industries were able to follow the fashion trend of the market. In comparison the electronics industry did not follow the refining of the improved technology in the production. They were able to find new fashion in the world market without the dependence on development in the technology. They were producing one fashion product to another new one and they did not depend on the technological process. The electronics industry had several low wage workers. (See Chiu, Ho and Lui 1997: 56-59) The laissez-faire policy was reflected in the electronics industries, and various agencies were responsible for the constructive and developmental part of the electronic. One such agency was the "Hong Kong Productivity Council" (HKPC) in 1967, and in the 1980s it supported the technology of the SMEs. In general their responsibilities were the engineering, training and quality enhancement for the economy. The "University of Hong Kong" or the "New University of Science and Technology" were devoted to the improvement of R&D. From 1984 to 1990 the export of electronic increased from 30 billions Hong Kong Dollar to 60 billions Hong Kong Dollar. (See Hobday 1995: 165-166) The wages increased, thus several local enterprises moved to China. In 1992 approximately three million labour forces of China were employed by Hong Kong enterprises. Through the open-door in the early period of 1980s and modernization policy of China, the Hong Kong enterprises were able to invest more, because of the huge supply of low-wage workers. It also has the access to qualified engineers and technicians, which were a profit for Hong Kong. (See Hobday 1995: 170-171)

#### **5.4.b. The Shift In The Labour Force (The Decrease Of Agricultural Labour Force And The Increase Of Skilled Labour Force)**

The activities of the public agencies are the training and education of human resources, therefore the interference of the government was increasing. In 1965 the “Industrial Training Advisory Committee”, which is a governmental consultative body, was founded. Its aim was to support the training or education in these industries. In 1973 the “Hong Kong Training Council” eliminated the Committee, the reason was the vast recommendations. In 1982 the consultative body of the “Training Council” was changed to the statutory body and it was exposed as the “Vocational Training Council”. The merger of the “Industrial Training and Apprenticeship Branches” and the “Labour Department and the Technical Education Division” were the newly established governmental agency “Department of Technical Education and Industrial Training”. It is the operative part of the Council. The duties of the Council were the following: (1) First the consulting service for the governmental arrangements, which were concerned with the system of the education and training for the techniques and industries. Such system should be adequate with the requirement of Hong Kong. (2) The formation, the improvement and the handle of drafts for the training of craftsmen, technicians and technologists, because the industries should be developed. (3) The foundations as well as the maintenance for further industrial training centres and technical institutes.

All three duties of the Council generate the demand of skilled human resources. The skilled human resources should assure the support for the improvement of industries, commerce and services. (See Ng 1987: 467-468) *“They imply a broad range of activities, at the level both of industry and of the economy as a whole, such as assessing manpower demand and training needs in every sector; developing and updating job standards and specifications, model training programmes and trade test guide-lines for the principal jobs; advising employers on training requirements and necessary improvements and encouraging them to enter into apprenticeship arrangements; ...”* (Citation Ng 1987: 468) The Council altogether supervised 19 “Industrial Training Boards”. The responsibility was the supply of skilled human resources for the industries. (See Ng 1987: 468)

In 1971 there was the announcement of the “Final Report”, which replaced the “Industrial Training Advisory Committee”, and it was suggesting that education and training should be taken over by the private sector. The government instead should focus on the supply of facilities for education and training. The response to this was in the report the “Advisory Committee on Diversification of the Economy 1979”. The criticism was about the incapable

management of the industrial training with the high requirements of skilled and trained human resources for the industries and commerce. Its suggestion was, that the sponsor and the funding of the government for the major industries should come from the export. Such approach was assumed from the government. The “Vocational Training Council” in 1982 was the main government body for the human resources. (See Ng 1978: 469)

**Table 17 The decrease of the agricultural labour force - Hong Kong**

(Unit in %)

| Industry section                                                 | 2006 | 2010 | 2011 |
|------------------------------------------------------------------|------|------|------|
| Manufacturing                                                    | 4,5  | 3,4  | 3,2  |
| Electricity and gas supply                                       | 0,2  | 0,2  | 0,2  |
| Water supply, sewerage waste management and remediation services | 0,2  | 0,2  | 0,2  |
| Construction                                                     | 8    | 7,6  | 7,7  |
| Import and export trade                                          | 16,3 | 14,3 | 14   |
| Wholesale                                                        | 2,1  | 1,8  | 1,8  |
| Retail                                                           | 8,3  | 8,7  | 8,6  |
| Transportation, storage, postal and courier service              | 9,4  | 9,1  | 8,9  |
| Accommodation and food service                                   | 7,2  | 7,5  | 7,4  |
| Information and communications                                   | 2,6  | 2,7  | 2,7  |
| Financing and Insurance                                          | 5,4  | 6    | 6,2  |
| Real estate                                                      | 3,1  | 3,4  | 3,5  |
| Professional, scientific and technical service                   | 4,2  | 4,7  | 4,7  |
| Administrative and support service                               | 4,3  | 4,7  | 4,8  |
| Public administration                                            | 3,7  | 3,2  | 3    |
| Education                                                        | 4,9  | 5,4  | 5,5  |
| Human health and social work service                             | 4,4  | 4,7  | 4,8  |
| Arts, entertainment and recreation                               | 1,2  | 1,5  | 1,5  |
| Other social and personal service                                | 9,8  | 10,8 | 11,1 |
| Others                                                           | 0,2  | 0,1  | 0,1  |
| All industry sections                                            | 100  | 100  | 100  |

(See Hong Kong in Figures 2012)

In the second stage it was already mentioned, that Hong Kong had no agricultural sector. (See 5.2.d. (I) The Role Of The Agriculture). In the governmental Census and Statistics Department of Hong Kong there are lists of various figures and the department did not mention the agricultural labour force in its figures of distribution for employment in various industries. It can be assumed, that there is no significant employment in the agricultural sector. (See Hong Kong in Figures 2012)

**Table 18 The increase of professionals - Hong Kong**

|                                                                                            |      |                   |
|--------------------------------------------------------------------------------------------|------|-------------------|
| Professional and technical, administrative and managerial, clerical, and sales occupations | 1980 | —                 |
|                                                                                            | 1981 | 30.8 <sup>a</sup> |
|                                                                                            | 1982 | —                 |
|                                                                                            | 1983 | —                 |
|                                                                                            | 1984 | —                 |
|                                                                                            | 1985 | —                 |
|                                                                                            | 1986 | 37.9 <sup>a</sup> |
|                                                                                            | 1987 | —                 |
|                                                                                            | 1988 | —                 |
|                                                                                            | 1989 | —                 |
|                                                                                            | 1990 | —                 |

Table 18 shows, that the amount of the professionals and others in 1986 was higher than in 1981. Other data was not available. (See Fields 1994: 398)

## **5.5. Stage Five: The Age of High Mass-Consumption**

### **5.5.a. The Growing Awareness Of The Welfare State**

The social spending of the government from 1990 to 1991 was only 6,1% of the total expenditure, which was very low and from 1992 to 1993 it even decreased to 5,9%. In contrast to other countries, the government of Hong Kong contributed little for social welfare. (See Ng 1992: 304) However, it offered various support for social welfare, which included services which took care of the elderly, families, children, youth and medical. The awareness for social welfare is increasing, as can be seen by the governmental expenditure for various programmes expanding since 2000. (See Social Welfare Advisory Committee 2011) *“Over the past two decades, between the 1991-92 and 2011-12 financial years, welfare spending soared from \$6,6 billion to \$42,2 billion. Compared with ten years ago, i.e. 2001-02 financial year (\$28,6 billion), welfare expenditure still registers a notable increase of 47,5%.”* (Citation Social Welfare Advisory Committee 2011) Driven by rights for the individual and self-help groups, the demand for welfare service in generally is growing. (See Social Welfare Advisory Committee 2011)

### 5.5.b. The New Consumption Behaviour

**Table 19 The consumption expenditure - Hong Kong**

|                                       | 一九九九—<br>二零零零<br>1999-2000 |       | 二零零五—<br>二零零四<br>2004-2005 |       | 二零零九—<br>二零一零<br>2009-2010 |       |
|---------------------------------------|----------------------------|-------|----------------------------|-------|----------------------------|-------|
| 食品 Food                               | 5.612HK\$                  | 25.7% | 4.863HK\$                  | 25.8% | 5.859HK\$                  | 27.1% |
| 煙酒 Alcoholic drinks<br>and tobacco    | 226HK\$                    | 1.0%  | 152HKD\$                   | 0.8%  | 133HK\$                    | 0.6%  |
| 衣履<br>Clothing and footwear           | 958HK\$                    | 4.4%  | 812HK\$                    | 4.3%  | 861HK\$                    | 4.0%  |
| 耐用物品<br>Durable Goods                 | 988HK\$                    | 4.5%  | 868HK\$                    | 4.6%  | 886HK\$                    | 4.1%  |
| 雜項物品<br>Miscellaneous goods           | 1.053HK\$                  | 4.8%  | 937HK\$                    | 5.0%  | 920HK\$                    | 4.3%  |
| 交通 Transport                          | 2.009HK\$                  | 9.2%  | 1,793HK\$                  | 9.5%  | 1,792HK\$                  | 8.3%  |
| 雜項服務 Miscellaneous<br>services        | 3.310HKD\$                 | 15.2% | 3.037HK\$                  | 16.1% | 3.449HK\$                  | 16.0% |
| 住屋 Housing                            | 7.009HK\$                  | 32.2% | 5.775HK\$                  | 30.6% | 7.093HK\$                  | 32.8% |
| 電力，燃氣及水<br>Electricity, gas and water | 631HK\$                    | 2.9%  | 646HK\$                    | 3.4%  | 630HK\$                    | 2.9%  |

(See The Government Of The Hong Kong Special Administrative Region, Census and Statistics Department)

Table 19 represents different household expenditures in Hong Kong. The highest spending from 1999 to 2000 was housing with 32,2%, followed by charges for food with 25,7%. The lowest expenses were alcoholic drinks and tobacco with 1,0% and the spending of electricity, gas and water with 2,9%. The miscellaneous goods and services accounted for 4,8% and 15,2%. From 2004 and 2005 the costs for housing declined to 30,6%, while the spending for food increased to 25,8%. Alcoholic drinks and tobacco decreased to 0,8%, while the costs for electricity, gas and water reached 3,4%. In comparison to 2009 and 2010 the expenses for food increased significantly to 27,1%, while the spending for alcoholic drinks and tobacco had a declining rate of 0,6% and the costs for electricity, gas and water had the same trend comparable to that of 1999 to 2000. The expenses for the housing from 2009 and 2010 increased to 32,8% again. In general the spending was fluctuating.

### 5.5.c. The Rapid Growth Of Population

**Table 20 The increase of population - Hong Kong**

| 年<br>Year | 人口<br>Population | 平均每年增長率(%)<br>Average annual growth rate (%) |
|-----------|------------------|----------------------------------------------|
| 1996      | 6 412 937        | 1,8%                                         |
| 2001      | 6 708 389        | 0,9%                                         |
| 2006      | 6 864 346        | 0,4%                                         |

(See The Government Of The Hong Kong Special Administrative Region, Census and Statistics Department)

This table demonstrates the population growth and the average annual growth rate in Hong Kong. In 1996 the population was 6 412 937 with a growth rate of 1,8% per annum. In 2001 the population reached 6 708 389, but the growth rate dropped down to 0,9%. Five years later the growth rate of the population is 0,4% and the total population accounted for 6 864 346. Although the population is still growing, the rate at which it is growing is slowing down.

### 5.5.d. The Expanding Growth Of Urban

The period of the table 21 is from 1981 to 2009, and the urban population has been growing since 1981. In 1990 the urban population accounted for 100% and until 2010 it has not changed. (See World Bank)

**Table 21 The growth of urban population - Hong Kong**

| Year      | Urban Population (% of total) |
|-----------|-------------------------------|
| 1981      | 92                            |
| 1982      | 92                            |
| 1983      | 92                            |
| 1984      | 93                            |
| 1985      | 93                            |
| 1986      | 94                            |
| 1987      | 96                            |
| 1988      | 97                            |
| 1989      | 98                            |
| 1990-2010 | 100                           |

(See World Bank)

## **6. The Case Of Japan**

### **6.1. First Stage: The Traditional Society**

#### **6.1.a. The Limited Function Of Production**

In case of a surplus, the rural upper class in traditional Japan spent it on irrigation and on projects for reclamation. Such aims of the rural upper class were supported by the “daimyo” (the local ruler), because of the benefits. For example, the projects of reclamation increased the collected sum of taxes and the production of rice. In the later periods the daimyo supported and invested in various projects of reclamation. The reason was the capital accumulation for the labour force. In the late 16<sup>th</sup> century the irrigation system and flood control was carried out by the daimyo Takeda Shingen in the south of Kofu city, where the two rivers of Kamanashi and Fuefuki were located. The area was crucial for the wet-field rice and it had the highest harvest. Shingen built breakers and in 1750 the introduction of arrangements for riparian was achieved. Japan advanced the arrangements for the riparian and also in the 17<sup>th</sup> century there were many projects of sophisticated reservoirs. (See Furushima 1998: 52-53) During that time, there were different kind of practices in agriculture, which included (1) the slash-and-burn and (2) the self-dependent farming. For the first one, the peasants did not need fertilizers, because the plant was nourished from ashes. After the use of such land into an uneconomic level, it caused the giving-up of the land. Another disadvantage was its location, because it was placed near the mountain, where the harvest was exposed to wildlife. The second exercise was practiced by peasants with a traditional mindset, because their tie was the rite of their antique village. Such practices, for example the restricted use of diverse crops and the running of paddy fields, were very common during the early period of Tokugawa. (See Furushima 1998: 59-63)

The water wheel was a traditional mechanism in Japan. Until the end of the Tokugawa period in 1867, besides the power of humans, it was a widespread method. Its utilization with natural power suppressed the use of querns, where human power was needed. It was also used for the cleanup of rice and for the milling. Because of the trend to eat cleanup rice in the 18<sup>th</sup> century the water wheels became even more popular. Agriculture relied on the adoption of water, therefore there were two influences on the usage of water. In the case of intention for non-irrigation the water was constricted. (See Minami 1978: 25 and 28-29)

The dynasty of Tokugawa generally had the characteristic of the maintenance for the feudal orders. For example contact beyond the border was restricted only to the Dutch and Chinese. The restraint was also found in the agriculture, where the peasants were prohibited from changing occupation, the vending of cultivated land, the shift to another crop, and the regularization of their daily routine. But agriculture and its techniques could enhance, for

instance the fertilizers, the livestock boundary, and the commercial crops such as mulberry, cotton and tobacco. But in term of the geographical conditions they were limited. For these reasons agriculture in Japan in the late Tokugawa period was not well developed at all. (See Miyamoto, Sakudo and Yasuba 1998: 64-65)

#### **6.1.b. The Connection Of Family And Clan**

The society was divided into four classes, which were the samurai, peasant, manufacturer and merchant. The classification into the four classes was very strict and it was based on birth, for example the children of the samurai retained the status of a samurai. There were also no thoughts about individualism, but rather people belonged to “ie” (house). In “ie” the relation of a person was bonded through blood or marriage and the head of such “ie” was the patriarch. (See Flath 2000: 22-24)

#### **6.1.c. The Central Political Rule**

In 1603 the dynasty of Tokugawa was founded by the daimyo or “shogun” (a antique title) Tokugawa Ieyasu. With the title daimyo, Tokugawa Ieyasu had the governmental duties of a “han” (territory) and “bakufu” (warriors and heirs). The centre of Ieyasu was ”Edo“ (since 19th century Tokyo). The income of the daimyo and bakufu were taxes. Rice was -beside other goods- the main source of taxes. (See Flath 2000: 22-24) In the Tokugawa dynasty, the administration was centralized, and the centre of feudalism was the shougun, with its 270 warlords as well as the rural elites in the 65 thousand villages. (See Kwon 2002: 18)

### **6.2. Stage Two: The Preconditions For Take-Off**

#### **6.2.a. Two Cases Of Preconditions For the Take-Off**

Japan is a general case, the role of the agricultural sector was important for the take-off. But its role will be described in the section 6.2.d. (I) The Role Of The Agriculture.

#### **6.2.b. The New Impulses Of The Imperial Power**

In the second stage of Taiwan and Korea, the role of the Japanese colonial power was already demonstrated. Recall that Taiwan was under its rule for fifty years and it experienced various shifts in the economy and introductions of technological methods. (See Ho 1978: 25-26) The reason was the Japanese planned to conquest China. Taiwan, with its beneficial geographical position, should support the Japanese economy. (See Fronius 2001: 21)

Japan invested into the agricultural sector of Taiwan, because of the need for food for its population. (See Fronius 2001: 21 and Ho 1978: 29, 35 and 65) At the same time Japan

vended the manufactured goods to the agricultural sector of Taiwan. (See Ho 1978: 28-29 and 65-66, Menzel 1985: 157-158) Before the Annexation of 1910, Japan with its political reason, already invested in commerce, and the communication and railroads in Korea. (See Chung 2006: 80-81 and 42-43) Japan, with the same intention as in Taiwan, wanted to integrate Korea as a colony. In addition Korea was an important territory next to the puppet government of Manzhouguo (满洲国 or Mandschuko). Therefore it carried out various reforms in the political system and economy. Korea served Japan as the supporter of agricultural surplus, food and raw materials. Its military-oriented industries were also very important for the various wars of Japan. (See Pascha 1996: 26-27, McNamara 1990: 34-37 and Chung 2006: 91-93)

### **6.2.c. The Important Role Of The Agriculture And The Role Of The Social Overhead Capital For The Growth**

#### **6.2.c. (I) The Important Role Of The Agriculture For The Growth**

The isolation of Japan ended with the “American Treaty of Amity and Commerce 1858”. (See Flath 2000: 28) The shogun retreated in 1867, contemporaneously the abolition of the social class was carried out. The government had to face inflation and the difficulty in finance. It responded to these problems with following arrangements (See Minami 1986: 17): (1) Land taxes depended on the value of the land. (2) Taxation was determined as 3% of the value of the land and (3) the charges of taxes were with money. From 1881 to 1885 the government had a saving rate of 28% from income and trade achieved a surplus. The “Bank of Japan” emerged in 1882, because of the stabilization in the financial system. The 1880s were marked with the modernization in the political and the financial system. (See Minami 1986: 16-17)

Prior to 1868 the cotton industries did not contribute that much to the economy, and only a minor part of the population was devoted to the cultivation of silkworms and the spinning of silk. But the government had a disequilibrium in the trade and wanted to establish industries for export. (See Fletcher 1996: 66-67) In the Meiji period, traditional industries still existed, such as cotton and silk, and they also had a significant impetus during that period. In 1878 the government had their factories in Aichi and Hiroshima, where they adopted new methods of spinning. The reeling machines were supported by the government, because the silk was the major commercial product being exported. In the 1880s silk found its buyers in Europe and USA. The output of raw silk reached 7% and the export amounted for 36%, therefore reeling for silk was extremely important. (See Minami 1986: 27)

In addition, agriculture contributed to economic growth. In 1871, the peasants were allowed to sell their rice and to select crops for cultivation. The peasants had the option to devote themselves to both fields of industry and commerce. (See Minami 1986: 25)

Agriculture was very important for the economy and it fulfilled different roles (See Ito 1992: 23-24): (1) The supply of food for the inland (2) the export of traditional goods, for instance tea and silkworm cocoons, were an important help for the economic improvement in the initial phase. (3) The agricultural savings were an aid for the industrial sectors. The taxed commercial goods from the agriculture helped the government. (4) The provision of the labour force for the industrial sectors. It could be observed, that the agricultural labour force moved to the manufacture sector, while the production on the land was still very high, which was enough for the food supply. Such surplus in the productions was possible through the accumulation of capital and the usage of new technology. (See Ito 1992: 22-23) As mentioned before, land taxes were the main source of aid for the government, and beside that the surplus of capital was guaranteed. Different investments were achieved in the private and public sectors. The landlords on the land supported the investments of state bonds, railways, rural industries (for instance the tea and silk or rice-milling) and banks. (See Macpherson 1987: 55)

#### **6.2.c. (II) The Important Role Of The Social Overhead Capital (SOC) For The Growth**

The transport system also improved during the Meiji period and the government implemented the growth of the SOC. For instance the telegraph and the postal service in 1871 and the construction of the railway in 1872. The SOC had a beneficial impact on the economy. In the dynasty of Tokugawa the distance between Tokyo and Osaka was nineteen days and with the railway it only took several hours. For such reasons the cost was reduced by half, and the railways reduced the time spent on travel. Other advancements were the possibility of mobilization, which affected the workforce in the labour market. (See Minami 1986: 22-24) Between 1890 and 1910 the growth of transport, communications and public facilities industries grew from 9% to 10%, which was higher than the industries of mining and manufacture. Their initial capital belonged to the part of SOC, and the present value of railways or electric facilities rose from 4% to 6%. Such capitals were the preconditions for the industrialization. In reference to the railways, their initial capital expanded expeditiously. mentioned, the start of the railways began in 1872, when the “Japan Railways Tokaido Line” was built. It broadened in 1874 and 1877, and its final construction in 1889 was the route between Tokyo and Kobe. The industries of the railways induced a big bulk of investments which had an impact on economic improvement. (See Minami 1986: 113-119)

## 6.2.d. The Rate Of Investments Over 10% Of National Income

Table 22 The rate of investments - Japan

| Year | Investment Share of GDP in % |
|------|------------------------------|
| 1950 | 13.81                        |
| 1951 | 19.24                        |
| 1952 | 15.21                        |
| 1953 | 13.99                        |
| 1954 | 14.97                        |
| 1955 | 16.15                        |
| 1956 | 17.75                        |
| 1957 | 20.19                        |
| 1958 | 18.06                        |
| 1959 | 19.67                        |
| 1960 | 22.62                        |
| 1961 | 25.69                        |
| 1962 | 25.22                        |
| 1963 | 26.10                        |
| 1964 | 27.31                        |
| 1965 | 26.73                        |
| 1966 | 27.41                        |
| 1967 | 29.90                        |
| 1968 | 32.01                        |
| 1969 | 33.29                        |
| 1970 | 35.95                        |
| 1971 | 34.66                        |
| 1972 | 35.18                        |
| 1973 | 36.21                        |
| 1974 | 34.51                        |
| 1975 | 31.71                        |
| 1976 | 31.71                        |
| 1977 | 31.41                        |
| 1978 | 31.94                        |
| 1979 | 32.12                        |
| 1980 | 31.23                        |
| 1981 | 31.06                        |
| 1982 | 30.08                        |
| 1983 | 28.81                        |
| 1984 | 29.13                        |
| 1985 | 29.63                        |
| 1986 | 30.04                        |
| 1987 | 31.21                        |
| 1988 | 33.23                        |
| 1989 | 34.27                        |
| 1990 | 35.13                        |
| 1991 | 34.94                        |
| 1992 | 33.39                        |
| 1993 | 32.12                        |
| 1994 | 31.19                        |
| 1995 | 31.47                        |

|      |       |
|------|-------|
| 1996 | 32.71 |
| 1997 | 32.39 |
| 1998 | 30.83 |
| 1999 | 30.04 |
| 2000 | 30.25 |

(See CICUP: 2002)

As table 22 demonstrates, the rate of the investment is over 10% from the national income. The highest amount in the table was 36.21% in 1973 and the lowest is 13,8% in 1950. The rate of investment is generally very high. In general, the rate of investment since 1960 has been very high and sometimes they also reached the value over 30%. (See CICUP: 2002)

### **6.3. Stage 3: The Take-Off**

#### **6.3.a. The Take-Off As A Stimulus**

The use of the electric power and the contribution of the agricultural sector were important for development. (See Minami 1986: 121-128 and Nakamura 1966: 82-85) Another additional stimulus for the economic development was the World War I, which will be examined later in the section of the leading sectors. (See Hentschel 1986: 160-162)

#### **6.3.b. The Accumulation Of Capital For The Development**

The finance policy of Takashi caused the devaluation of the Yen. The volume of the export accounted for 1% in 1932 and the volume had an amount of 23% in 1935. The disadvantages of the devaluation were increased cost in imports. As a result Japan bought less in 1935 than in 1931. Under this circumstance there was a restriction for imports, and borrowing was avoided. It then had various implementations of (1) the imports for foodstuffs, (2) the import substitution of industries for manufacture and capital goods, and (3) the economical practice of resources. Therefore the production in the 1930s was profitable and efficient. (See Hentschel 1986: 19-21)

The table 24 on page 80 and 81 represents the capital accumulation in the period between 1888 and 1930, which initially was 21 331,8 million Yen. To the end of the 19<sup>th</sup> century the capital accumulation had a stable growth, such tendency was also observed in the 20<sup>th</sup> century. In 1915 it reached 30 001, 4 million Yen and at the end of 1920 it accounted for 33 453,7 million Yen. In the 1920s the increase was still noticeable and 1930 the capital accumulation had a sum of 45 710,9 million Yen. (See Fei and Ranis 1963: 290-291)

### 6.3.c. The Manufacturing Sector With A High Growth Rate

After the explanation about capital accumulation, the growth rate of the manufacturing will be examined. Table 23 below shows, that the growth rate of manufacturing during the 1850s was 1,2% and the growth rate of agriculture accounted for 0,6%. The growth rate for the manufacturing sector continued to grow until to the 1910s with 8,4%. It decreased to 3,1% in the 1920s, also the agricultural growth rate dropped from 2,9% to 1,8%. The declining tendency in the same period can be seen in the service sector. But in the 1930s the manufacturing increased to 8,5% again. Its highest growth rate was in the 1960s with 13,4%, but the following periods of 1980s and 1990s were marked with a decrease of 5,3% and 1,9%. But in general its growth rate was still higher than those of the agriculture and the service. (See Sabillon 2008: 302)

**Table 23 Manufacturing output - Japan**

|       | Manufacture | Agriculture | Service |
|-------|-------------|-------------|---------|
| 1850s | 1,2         | 0,6         | /       |
| 1860s | 1,7         | 1,4         | /       |
| 1870s | 2,5         | 1,1         | /       |
| 1880s | 3,6         | 1,7         | /       |
| 1890s | 6           | 2,1         | /       |
| 1900s | 7           | 2,6         | 6,6     |
| 1910s | 8,4         | 2,9         | 8,2     |
| 1920s | 3,1         | 1,8         | 3       |
| 1930s | 8,5         | 2,5         | 8       |
| 1940s | 4,5         | 1,7         | 2,6     |
| 1950s | 11,1        | 3,8         | 10      |
| 1960s | 13,4        | 4           | 11,7    |
| 1970s | 6,2         | 1,1         | 4,9     |
| 1980s | 5,3         | 0,4         | 3,9     |
| 1990s | 5,3         | 0,4         | 2,3     |

(See Sabillon 2008: 3)

Table 24 The accumulation of capital - Japan

TABLE 1—JAPAN

| Time | Critical Minimum Effort Analysis     |                                                          |                                                                  | Input Ratio Analysis               |                                         | Decomposition Analysis                        |                                               |                                               |
|------|--------------------------------------|----------------------------------------------------------|------------------------------------------------------------------|------------------------------------|-----------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|
|      | Total<br>Population<br>thous.<br>(g) | Industrial<br>Labor<br>Force<br>thous. L<br>( $\eta L$ ) | Agricultural<br>Labor<br>Force<br>thous. $L_a$<br>( $\eta L_a$ ) | Capital<br>Stock<br>K<br>mill. yen | Input<br>Ratio<br>K/L=q<br>( $\eta q$ ) | $\Delta L/\Delta t$<br>thous.<br>( $\eta L$ ) | $\Delta r/\Delta t$<br>thous.<br>( $\eta r$ ) | $\Delta h/\Delta t$<br>thous.<br>( $\eta h$ ) |
|      | 1.                                   | 2.                                                       | 2a.                                                              | 3.                                 | 4.                                      | 5.                                            | 6.                                            | 7.                                            |
| 1888 | 39,362                               | 4,993                                                    | 17,050                                                           | 21,331.8                           | 4,272.34                                |                                               |                                               |                                               |
| 1889 | 39,795<br>(1.10)                     | 5,188<br>(3.90)                                          | 17,124<br>(.43)                                                  | 21,449.9                           | 4,134.52<br>(-3.35)                     | 195<br>(3.90)                                 | 24.5<br>(.49)                                 | 170.5<br>(3.41)                               |
| 1890 | 40,164<br>(.93)                      | 5,385<br>(3.80)                                          | 17,198<br>(.43)                                                  | 21,580.7                           | 4,007.56<br>(-3.19)                     | 197<br>(3.80)                                 | 28.6<br>(.55)                                 | 168.4<br>(3.25)                               |
| 1891 | 40,444<br>(.70)                      | 5,582<br>(3.66)                                          | 17,243<br>(.26)                                                  | 21,738.1                           | 3,894.32<br>(-2.93)                     | 197<br>(3.66)                                 | 32.7<br>(.61)                                 | 164.3<br>(3.05)                               |
| 1892 | 40,772<br>(.81)                      | 5,781<br>(3.57)                                          | 17,304<br>(.35)                                                  | 21,897.0                           | 3,787.75<br>(-2.84)                     | 199<br>(3.57)                                 | 37.3<br>(.67)                                 | 161.7<br>(2.90)                               |
| 1893 | 41,127<br>(.87)                      | 5,980<br>(3.44)                                          | 17,336<br>(.18)                                                  | 22,053.4                           | 3,687.86<br>(-2.73)                     | 199<br>(3.44)                                 | 41.7<br>(.72)                                 | 157.3<br>(2.72)                               |
| 1894 | 41,453<br>(.79)                      | 6,183<br>(3.39)                                          | 17,368<br>(.18)                                                  | 22,216.5                           | 3,593.16<br>(-2.66)                     | 203<br>(3.39)                                 | 47.3<br>(.79)                                 | 155.7<br>(2.60)                               |
| 1895 | 41,883<br>(1.04)                     | 6,384<br>(3.25)                                          | 17,385<br>(.10)                                                  | 22,417.5                           | 3,511.51<br>(-2.35)                     | 201<br>(3.25)                                 | 51.7<br>(.84)                                 | 149.3<br>(2.41)                               |
| 1896 | 42,298<br>(.99)                      | 6,588<br>(3.20)                                          | 17,389<br>(.02)                                                  | 22,649.5                           | 3,437.99<br>(-2.16)                     | 204<br>(3.20)                                 | 57.5<br>(.90)                                 | 146.5<br>(2.30)                               |
| 1897 | 42,765<br>(1.10)                     | 6,803<br>(3.26)                                          | 17,392<br>(.02)                                                  | 22,885.4                           | 3,364.02<br>(-2.23)                     | 215<br>(3.26)                                 | 66.3<br>(1.00)                                | 148.7<br>(2.26)                               |
| 1898 | 43,275<br>(1.19)                     | 7,000<br>(2.90)                                          | 17,382<br>(-.06)                                                 | 23,152.2                           | 3,307.46<br>(-1.72)                     | 197<br>(2.90)                                 | 66.0<br>(.97)                                 | 131.0<br>(1.93)                               |
| 1899 | 43,736<br>(1.07)                     | 7,216<br>(3.09)                                          | 17,356<br>(-.15)                                                 | 23,439.2                           | 3,248.23<br>(-1.85)                     | 216<br>(3.09)                                 | 78.1<br>(1.12)                                | 137.9<br>(1.97)                               |
| 1900 | 44,231<br>(1.13)                     | 7,437<br>(3.06)                                          | 17,331<br>(-.14)                                                 | 23,697.7                           | 3,186.46<br>(-1.96)                     | 221<br>(3.06)                                 | 86.3<br>(1.20)                                | 134.7<br>(1.87)                               |
| 1901 | 44,748<br>(1.17)                     | 7,666<br>(3.08)                                          | 17,293<br>(-.22)                                                 | 23,962.6                           | 3,125.83<br>(-1.96)                     | 229<br>(3.08)                                 | 96.4<br>(1.30)                                | 132.6<br>(1.78)                               |
| 1902 | 45,401<br>(1.46)                     | 7,883<br>(2.83)                                          | 17,239<br>(-.31)                                                 | 24,242.5                           | 3,075.29<br>(-1.66)                     | 217<br>(2.83)                                 | 97.9<br>(1.28)                                | 119.1<br>(1.55)                               |
| 1903 | 45,988<br>(1.29)                     | 8,111<br>(2.89)                                          | 17,187<br>(-.30)                                                 | 24,520.0                           | 3,023.06<br>(-1.75)                     | 228<br>(2.89)                                 | 109.8<br>(1.39)                               | 118.2<br>(1.50)                               |
| 1904 | 46,499<br>(1.11)                     | 8,331<br>(2.96)                                          | 17,105<br>(-.48)                                                 | 24,821.9                           | 2,979.46<br>(-1.73)                     | 240<br>(2.96)                                 | 123.0<br>(1.52)                               | 117.0<br>(1.44)                               |
| 1905 | 46,934<br>(.94)                      | 8,561<br>(2.52)                                          | 17,038<br>(-.39)                                                 | 25,130.4                           | 2,935.45<br>(-1.28)                     | 210<br>(2.52)                                 | 114.1<br>(1.37)                               | 95.9<br>(1.15)                                |
| 1906 | 47,322<br>(.83)                      | 8,787<br>(2.64)                                          | 16,942<br>(-.56)                                                 | 25,480.8                           | 2,899.83<br>(-1.25)                     | 226<br>(2.64)                                 | 129.9<br>(1.52)                               | 96.1<br>(1.12)                                |
| 1907 | 47,828<br>(1.07)                     | 9,012<br>(2.56)                                          | 16,846<br>(-.57)                                                 | 25,842.7                           | 2,867.59<br>(-1.14)                     | 225<br>(2.56)                                 | 136.3<br>(1.55)                               | 88.7<br>(1.01)                                |
| 1908 | 48,407<br>(1.21)                     | 9,234<br>(2.46)                                          | 16,737<br>(-.65)                                                 | 26,245.4                           | 2,842.26<br>(-.91)                      | 222<br>(2.46)                                 | 141.4<br>(1.57)                               | 80.6<br>(.89)                                 |
| 1909 | 49,027<br>(1.28)                     | 9,458<br>(2.43)                                          | 16,627<br>(-.66)                                                 | 26,730.4                           | 2,826.22<br>(-.58)                      | 224<br>(2.43)                                 | 149.5<br>(1.62)                               | 74.5<br>(.81)                                 |
| 1910 | 49,685<br>(1.34)                     | 9,680<br>(2.35)                                          | 16,489<br>(-.83)                                                 | 27,246.9                           | 2,814.76<br>(-.41)                      | 222<br>(2.35)                                 | 155.0<br>(1.64)                               | 67.0<br>(.71)                                 |
| 1911 | 50,396<br>(1.43)                     | 9,907<br>(2.34)                                          | 16,352<br>(-.83)                                                 | 27,792.9                           | 2,805.38<br>(-.34)                      | 227<br>(2.35)                                 | 165.4<br>(1.71)                               | 61.6<br>(.64)                                 |
| 1912 | 51,123<br>(1.44)                     | 10,134<br>(2.29)                                         | 16,213<br>(-.85)                                                 | 28,341.4                           | 2,796.66<br>(-.32)                      | 227<br>(2.29)                                 | 172.3<br>(1.74)                               | 54.7<br>(.55)                                 |
| 1913 | 51,856<br>(1.43)                     | 10,360<br>(2.23)                                         | 16,062<br>(-.93)                                                 | 28,897.4                           | 2,789.32<br>(-.27)                      | 226<br>(2.23)                                 | 178.4<br>(1.76)                               | 47.6<br>(.47)                                 |
| 1914 | 52,574<br>(1.38)                     | 10,590<br>(2.22)                                         | 15,881<br>(-1.13)                                                | 29,427.0                           | 2,778.75<br>(-.39)                      | 230<br>(2.22)                                 | 188.4<br>(1.82)                               | 41.6<br>(.40)                                 |
| 1915 | 53,310<br>(1.40)                     | 10,811<br>(2.09)                                         | 15,716<br>(-1.04)                                                | 30,001.4                           | 2,775.08<br>(-.14)                      | 221<br>(2.09)                                 | 187.5<br>(1.77)                               | 33.5<br>(.32)                                 |
| 1916 | 53,975<br>(1.25)                     | 11,036<br>(2.08)                                         | 15,521<br>(-1.24)                                                | 30,458.1                           | 2,768.04<br>(-.26)                      | 225<br>(2.08)                                 | 197.3<br>(1.82)                               | 27.7<br>(.26)                                 |
| 1917 | 54,588<br>(1.15)                     | 11,263<br>(2.05)                                         | 15,236<br>(-1.26)                                                | 31,189.5                           | 2,769.20<br>(.06)                       | 227<br>(2.05)                                 | 205.6<br>(1.86)                               | 21.4<br>(.19)                                 |
| 1918 | 54,900<br>(.86)<br>(.73)             | 11,486<br>(1.98)<br>(1.99)                               | 15,132<br>(-1.28)<br>(-1.53)                                     | 31,926.5                           | 2,779.61<br>(.38)<br>(.35)              | 223<br>(1.98)<br>(1.99)                       | 208.2<br>(1.85)<br>(1.91)                     | 14.8<br>(.12)<br>(.08)                        |
| 1920 | 55,944<br>(1.05)                     | 12,415<br>(5.98)                                         | 14,848<br>(-.36)                                                 | 33,453.7                           | 2,694.62<br>(-3.59)                     | 701<br>(5.98)                                 | 712.5<br>(6.08)                               | -11.5<br>(-.10)                               |
| 1921 | 56,624<br>(1.22)                     | 12,663<br>(2.00)                                         | 14,835<br>(-.09)                                                 | 34,527.1                           | 2,726.61<br>(1.21)                      | 248<br>(2.00)                                 | 343.8<br>(2.77)                               | -95.8<br>(-.77)                               |
| 1922 | 57,357<br>(1.29)                     | 12,910<br>(1.95)                                         | 14,823<br>(-.09)                                                 | 35,630.1                           | 2,759.88<br>(1.24)                      | 247<br>(1.95)                                 | 363.9<br>(2.87)                               | -116.9<br>(-.92)                              |
| 1923 | 58,331<br>(1.70)                     | 13,159<br>(1.93)                                         | 14,810<br>(-.09)                                                 | 36,651.3                           | 2,785.26<br>(.94)                       | 249<br>(1.93)                                 | 387.6<br>(3.00)                               | -138.6<br>(-1.07)                             |
| 1924 | 58,864<br>(.91)                      | 13,409<br>(1.90)                                         | 14,797<br>(-.09)                                                 | 37,677.5                           | 2,809.87<br>(.90)                       | 250<br>(1.90)                                 | 409.1<br>(3.11)                               | -159.1<br>(-1.21)                             |

Table 1c The Accumulation Of Capital (Continued)

| Time | Critical Minimum Effort Analysis     |                                                          |                                                                  | Input Ratio Analysis               |                                           | Decomposition Analysis                        |                                               |                                               |
|------|--------------------------------------|----------------------------------------------------------|------------------------------------------------------------------|------------------------------------|-------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|
|      | Total<br>Population<br>thous.<br>(g) | Industrial<br>Labor<br>Force<br>thous. L<br>( $\eta L$ ) | Agricultural<br>Labor<br>Force<br>thous. $L_a$<br>( $\eta L_a$ ) | Capital<br>Stock<br>K<br>mill. yen | Input<br>Ratio<br>$K/L=q$<br>( $\eta q$ ) | $\Delta L/\Delta t$<br>thous.<br>( $\eta L$ ) | $\Delta r/\Delta t$<br>thous.<br>( $\eta r$ ) | $\Delta h/\Delta t$<br>thous.<br>( $\eta h$ ) |
|      | 1.                                   | 2.                                                       | 2a.                                                              | 3.                                 | 4.                                        | 5.                                            | 6.                                            | 7.                                            |
| 1925 | 59,757<br>(1.87)                     | 13,657<br>(1.85)                                         | 14,785<br>(- .08)                                                | 38,781.6                           | 2,839.69<br>(1.08)                        | 248<br>(1.85)                                 | 424.6<br>(3.17)                               | -176.6<br>(-1.32)                             |
| 1926 | 60,522<br>(1.28)                     | 13,904<br>(1.81)                                         | 14,772<br>(- .09)                                                | 40,067.3                           | 2,881.71<br>(1.51)                        | 247<br>(1.81)                                 | 440.4<br>(3.22)                               | -193.4<br>(-1.42)                             |
| 1927 | 61,317<br>(1.31)                     | 14,153<br>(1.79)                                         | 14,760<br>(- .08)                                                | 41,423.9                           | 2,926.86<br>(1.60)                        | 249<br>(1.79)                                 | 460.7<br>(3.31)                               | -211.7<br>(-1.52)                             |
| 1928 | 62,122<br>(1.31)                     | 14,402<br>(1.76)                                         | 14,746<br>(- .09)                                                | 42,783.9                           | 2,970.69<br>(1.52)                        | 249<br>(1.76)                                 | 476.5<br>(3.37)                               | -227.5<br>(-1.61)                             |
| 1929 | 62,938<br>(1.31)                     | 14,650<br>(1.72)                                         | 14,734<br>(- .08)                                                | 44,093.9                           | 3,009.82<br>(1.34)                        | 248<br>(1.72)                                 | 489.2<br>(3.40)                               | -241.2<br>(-1.67)                             |
| 1930 | 64,450                               | 14,898                                                   | 14,721                                                           | 45,710.9                           | 3,068.26                                  | 248                                           | 502.9                                         | -245.9                                        |

(See Fei, John C.H. and Ranis, Gustav 1963)

#### 6.3.d. The Leading Sectors For The Economic Growth

The Boren, a trade association of the nation, was founded in 1882. Its aims were the mutual collaboration and the strategy of the wealth for industries. Due to Boren the spindles of the spinning industries quadrupled and in total there were 23 companies. Companies such as Osaka Spinning or Tamashima Spinning were the biggest enterprises, which had the greatest influence. Their concern was the stabilization of the labour force and the fight against the imports from the foreign market. (See Fletcher 1996: 70-71) In 1883, the Osaka Spinning company was founded and the latter was the first one to adopt modern technology for the commerce of the spinning mill. In their large enterprises, they had plenty of trained engineers and they were equipped with the steam engine. In addition the new shift systems in the workforce lowered the production cost. For these reasons they had an efficient and dependable production, which encouraged the emergence of other modern and large mills, such as Tenman Spinning, Tokyo Spinning and so on. (See Minami 1980: 22-23) *"By the late 1890s the government and executives had fashioned an industrial policy toward cotton spinning. The elimination of the export tax on yarn and the tariff on imported raw cotton aimed at increasing the industry's productivity and promoting its competitiveness on the world market. The relationship proved durable and productive. The state offered indirect support, while Boren gained considerable autonomy to govern the affairs of the spinning sector."* (See Fletcher 1996: 89)

The industries of cotton spinning improved in the 1880s and the amount of spindles in 1897 reached 970 567 in comparison to 76 600 in 1887, likewise the labour force had a 19-fold rise. (Saxonhouse and Kiyokawa 1998: 184) Cotton spinning and silk reeling in general were

the first mechanized and developed industries. In the 1890s 40 cotton industries were established, and had a share of one-tenth from the internal labour force. Cotton spinning was the first joint-stock enterprise and it increased in later decades. Both cotton spinning and silk reeling were still labour intensive in the 1880s and 1890s. In case of the silk industry, the silkworm plagues in Europe, France and Italy, pushed its world price to a high amount. Japan gained from that incident, because it had the establishment of specialized silk industries with the mechanized reeling in the world market. (See Flath 2000: 34-35) The case for the growing of silk worms in Japan was a successful one. For the advancement of such growing or new culture of worms, the government constructed several facilities in Tokyo and Kyoto. In the beginning and ending period of the Meiji, the manufacture of raw silks was one ton and then three tons, the rate of expansion was 5,7% per annum. (See Hentschel 1986: 131)

In 1886 the “Tokyo Electric Light Company” was founded. Its original purpose was the provision of electric lights from thermal plants. During industrialization, the use of electric power was higher than the electric lights. In the 1920s the utilization of electric power was very high, while its price was decreasing. Electric power itself was a driver for the chemical industry, which exported ammonium sulphate and electrolysis sodas for the main demander German and China. Electric power replaced the steam engine, because its turning off and on were simple to control, and its mechanical problems were not complicated. The augmented usage of electric motor also induced the mechanization of factories. Japan experienced the shift from steam engine to electric power faster than the Western countries. The electric power was the prime power for the small and the large scale manufacturing industry. (See Minami 1986: 121-128)

Agriculture was a crucial sector for industrialization, and it contributed its part for the accumulation of capital. Another role was the supply of labour for the industries, trades and services, - five millions agricultural workers were available between 1885 and 1915. In 1881 the government implemented various efforts for the improvement of agriculture, for instance (1) the agricultural exhibitions, (2) the encouragement through flyers and (3) the foundations of facilities with teachers, which was very effective for the right instruction to adopt fertilizer and seed on the right ground. Since 1893 the government additionally helped with the construction of experimental facilities, where the best seeds, such as rice, cotton and sugar, with their adaptation to the fertilizers were selected. (Hentschel 1986: 126-127) During the 1890s Japan was the nation for the import of foods, because of the increased production of the agricultural sector: (1) The extended utilizations of fertilizers, (2) the introduction of better seeds and (3) the expansion of technique for agricultural economics. It was observed that the expanded application of the fertilizers reached from 3% to 9% from 1903 to 1907. In

comparison the number of paddy field for rice was higher before 1903 and 1907. The reason for the expanded use of fertilizers was to adopt high qualities of crops. In 1910 Japan had plant-growing stations for the experimental work of seeds. From 1912 to 1926 (Taisho period), such governmental stations were sophisticated and the selective culture was carried out. Later it was replaced by the crossbreeding, which had fine diversities of rice. In the prior and post period, as well as during the Taisho period, the utilizations of fertilizers and selective cultures of seeds caused the augmentation in the harvesting. (See Nakamura 1966: 82-85)

As mentioned before another stimulus for the economy was World War I and the heavy and manufacturing industries, matured to capable and competitive levels. The demand of America, England and France for munitions and ships from Japan were very high. The constructions of ships triggered the growth of the steel and iron industries. After the war, Japan was the third greatest country for the construction of ships. Beside the heavy industries, the textile industries also had voluminous and profitable demand from foreigners. The manufacturing of raw silk was two-thirds, the reason for it were the pullback of Britain from the selling market and the new possibilities for the Japanese cotton fabric. Furthermore the export price for it was very high. During the war the private investments for the facilities and armament in the GNP rose from 6% to 15%. Except for various investments, there was a boom in the export between 1914 and 1918. The GNP expanded by one-third and the production in the manufacturing enlarged by a half. (See Hentschel 1986: 160-162) *“During the boom, Japanese entrepreneurs rushed to expand production of exportables including metals, machinery, and raw silk, and also to expand production of goods that substituted for the now higher priced imports, including dyestuffs, ships, iron and steel, and finished textiles. The government-owned Yawata steel works continued to account for the major part of Japan’s domestic steel output, but now Japan’s private shipyards expanded at a rapid clip as did the private production of chemicals for industrial use... .”* (Citation Flath 2000: 46) The enhanced technology encouraged the high output during World War I. The distribution network of the electric power altered through the private investments and the loans from the government-associated “Industrial Bank of Japan”. As mentioned in the section before the Tokyo Electric Light fabricated the electric power, and in the next two decades 50 enterprises were established. However, in 1920 five private enterprises with hydroelectric produced the highest output of electric power, which was distributed to other enterprises. Because of the disposability of the electric power the cost for the manufacture declined. Obviously the improved technology was adopted from the biggest enterprises of manufacturing and commerce, but without the withdrawal of the small ones. (See Flath 2000: 46) Both the war and the boom ended at the same time, and the incidences like the new competitive export

environment and the revival of the absent import of Europe during the war caused a deficit. Likewise the share holdings of gold and the foreign exchange were decreasing. The attempt to return to the gold standard restricted the Japanese economy in the 1920s. This situation was a challenge for the heavy and chemical industries, the agricultural sector (the reason was the import of cheap rice from Taiwan and Korea) and the newly established enterprises during the war. (See Nakamura 1998: 99 and 102-103) The Minister of Finance Takahashi solved the problems of the foreign economy, and the demand and investment in the domestic market. The solutions were the devaluation of the currency, the decrease of the interest rate and the increased public expenditures. (See Hentschel 1986: 16) Such policies helped to revive the economy. The re-awakening of the exports and the inducement of intensified fiscal spending were responsible for the economic development. In 1932 the commercial goods from the chemical and the heavy industries had higher tariffs and the low exchange rates between 1931 and 1933 caused an increase of 80% in the import prices. With these conditions the chemical and heavy industries dominated the domestic markets. Also the automobile industries had several premium wages, and the post period of 1936 had extensive protection for the manufacture of munitions. All these industries had their consistent revival and the chance for their advancement. (See Nakamura 1998: 116-119)

#### **6.4. Stage Four: The Drive to Maturity**

##### **6.4.a. The New Leading Sectors For Economic Growth**

In 1937 Japan faced the beginning of the war. Its break-out was 1939 and it continued as the Pacific War in December 1941. The war was a driver for the Japanese economy to participate in the manufacture of war machines. The mining and the manufacture industries were responsible for the production of munitions. Their share in the national income in 1937 was 30% and rose up to 40% in 1939. Under this condition agriculture had to be self-sufficient, because it had to provide food and labour force. During the early period of the war, and the higher usage of fertilizers, the outcome of the agriculture was growing. The output of 1939 was 16%. But the lack of labour force and the material for the manufacture in the agriculture showed their downside, which led to scarcity of foods. Also the labour force in the interwar period showed a decline, which only amounted for 4 to 5 million workers. (See Yoshioka 1988: 14-15)

The economic focus during the war was the industries for defence and munitions, the other industries had to provide labour force. Such accomplishment caused the growth of 80% for the defence and munitions industries, whereas the consumer goods faced a slump. (See Hentschel 1986: 44) The economy did not have enough raw materials after the war, therefore

manufacture in the industries was stopped and the output was similar to that in 1926 to 1927. But the production of electric power, gas and coal did not diminish completely, and it was enough for coal and steel industries. Through the system of “preference manufacture”, both industries were supported with few resources and material. The textile industries had their resumption through the reconstruction of the facilities and the American import of raw cotton. Its high output was accomplished after 1955. Such similarity of recovery was observed in the industry of the steel and machinery. (See Nariai 1997: 28) *“The Economic Stabilization Board was therefore established in August 1946 with a view to carrying out steps to revive production and stabilize the economy, and almost all sectors of the national economy - commodities, prices, transport banking and so on- were placed under systematic control. Also, the Law for the Establishment of the Reconstruction Finance Bank was promulgated in October of the same year, ... The government thus took a series of positive measures toward the gradual revival of production activity.”* (Citation Nariai 1997: 30) The aim of the above mentioned system was the promotion of the main industries of iron and steel, because they were supposed to revive the other industries. The “Reconstruction Finance Bank” also supported that system, by providing loans to the coal, steel and chemical fertilizers industries. Through the Korean War in 1950 the establishment of various industries and technology experienced a boom again. Furthermore Japan adapted the resignation of the armaments, therefore the concentration was focused on the production of goods for civilians, where expenses were low in comparison. (See Nariai 1997: 30-33)

In the 1950s and 1960s the industrial policy had a crucial role for the catching up process of the industry. For such intention the government decided as follows: (1) the concentration on preferred sectors, as mentioned above the steel and iron industries (2) the rapid progress with the concern of the mobilization of resources (3) the protection of infant industries (4) the distribution of foreign exchange credits (5) the import and export of the technologies (6) the publication of various papers about the developmental structure for the industries. With these efforts, the economy should be able to prosper, as a result market forces were stimulated and controlled. (See Okimoto 1989: 372)

In the 1960s a bundle of new industries and the export sector were flourishing. For example tape recorders, audio equipment, colour televisions, watches, machine tools, ceramics, robots, and machines for the agricultural sector. They advanced by themselves, and did not rely on the protection and encouragement policies of the industries. Their development began after the periods of the war or started as small enterprises without the system of “preference manufacture”. (See Ryutaro 1986: 60)

The index of production for manufacture post war was higher than before and during the war. Its rate accounted for 14% to 16%. From 1955 to 1980 the output of light industries declined from 35% to 15%, in comparison the output of heavy industries had a growth of 39% to 71%. The metal, chemical and machinery industries as sub-industries belonged to the composition of heavy and chemical industries. Among the sub-industries, the industries for machinery had the largest rate of increase. The expansion of heavy and chemical industries contributed their part to the economic progress, because the output of such industries was able to achieve the raise in the GNP. On the other hand such industries might give the right impulse for the growth in other industries, such as iron ore, coal and electric power. But they might as well initiate the improvement of automobile industries. (See Minami 1986: 136-138)

The era from 1951 to 1954 was marked by the self-contained innovation of technology, which lingered to the 1960s. Other features of that period were the modernizations of the industries and the enlargement of export: (1) the industries of steel and electric power encouraged the investments for the improvement of other industries. (2) The knowledge of foreign technology stimulated export, and the national consumption was advanced through the modernization and the newly emerged industries. (3) The sophisticated technology was applied in the synthetic fibres and petrochemicals industries. (4) Both the government and the “Japan Development Bank” contributed to the modernization with equipment and financing. (See Nariai 1997: 33-34) The government wanted to concentrate on the technology from abroad, because of internal requirements. In 1956 the “Science and Technology Agency” was founded, its purpose was the direction of technological enhancement. The “Ministry of International Trade and Industry” (MITI) as well prohibited the extreme competitive attitude towards the imports of technologies. For this reason Japan was able to develop the technologies and to approve the new aims from the technologies. (See Karan 2005: 343) The encouragement of science and technology had already emerged during the 1960s, because of the expeditious growth in the economy. In addition, the private sectors engaged their efforts in the R&D. Beside the foundation of the “Science and Technology Agency” and MITI, there was the “Council for Science and Technology” (CST), which was the consulting service of the Prime Minister and the high-performance organization. (Tsukahara 2006: 78)

#### **6.4.b. The Shift In The Labour Force (The Decrease Of Agricultural Labour Force And The Increase Of Skilled Labour Force)**

The economic Five-Year Plan of 1957 emphasized the need for more scientists and engineers. Hence, there should be more training possibilities for such domains, because the reason was the lack of 8,000 scientists and engineers. Such problem was noted by the “Central Education

Council” and the Ministry of Education complied with that demand. The purpose was the rapid growth of students per annum in the fields of scientists and engineers. The Fourth-Year Plan from 1958 to 1961 fulfilled the intention. Between 1957 and 1960 the number of students for science and technology at universities and junior colleges grew from 21 000 to 29 000. (See Arai 2006: 124-125) Japan introduced foreign technologies and Japan at first was under the direction of the engineers from abroad. But later the engineers from the Japanese manufacturing and educational establishments substituted the foreign engineers. Another reason for the adoption of the technologies was the R&D, which developed during the World War II. With the advancement of education, numerous engineers with their high level of education could be trained. (See Minami 1986: 143-144)

While there were numerous engineers with a high education background, there was a decreasing labour force in the agricultural sector. Table 25 shows the increase and decrease of the labour force in the non-agricultural and agricultural sector. The numbers are in millions. 1888 to 1900 there was a decrease of 1,5 millions workers in the agriculture, meanwhile the non-agricultural sector had an increase of 2,3 million labourers. The periods 1900 to 1920 and 1920 to 1940 also had a decrease of 3,7 million workers, but the increase of the non-agricultural sector had a strong tendency, which was 4,7 and 7,3 million workers. (See World Development Report 1986)

**Table 25 The decrease of the agricultural labour force - Japan**

| Period    | Outflow of agricultural labour force (millions) | Increase in nonagricultural labour force (millions) | Agricultural contribution (percent) |
|-----------|-------------------------------------------------|-----------------------------------------------------|-------------------------------------|
| 1888-1900 | 1,5                                             | 2,3                                                 | 67                                  |
| 1900-1920 | 3,7                                             | 4,7                                                 | 79                                  |
| 1920-1940 | 3,7                                             | 7,3                                                 | 51                                  |

(See World Development Report 1986)

## **6.5. Stage Five: The Age Of high Mass-Consumption**

### **6.5.a. The Growing Awareness Of The Welfare State**

The development of the Japanese welfare state already occurred before the World War II, and its system was comprehensive. At the same time various laws for the public security were passed. The state is responsible for the social security and the “Constitution of Japan” on the field of the social welfare and public health is very well developed. Because of the experience of war and its consequence, the importance for security of the public was increasing. This was reflected in the political motivation, and the highest expenditure for social security was in 1954 with the growth of 49% per annum. (See Chandoevwit, Japan Center for Economic Research 2007)

### 6.5.b. The New Consumption Behaviour

Table 26 The consumption expenditure - Japan

| 年次<br>Year | ベッド<br>Bed | 電気冷蔵庫<br>Refrigerators | 電子レンジ<br>Microwave ovens | カラーテレビ<br>Colour TV sets | 乗用車<br>Cars | ルームエアコン<br>Room air conditioners |
|------------|------------|------------------------|--------------------------|--------------------------|-------------|----------------------------------|
| 1959       | ...        | ...                    | ...                      | ...                      | ...         | ...                              |
| 1960       | ...        | ...                    | ...                      | ...                      | ...         | ...                              |
| 1965       | ...        | 51,4                   | ...                      | ...                      | ...         | ...                              |
| 1970       | 23,9       | 89,1                   | ...                      | 26,3                     | 22,1        | 5,9                              |
| 1975       | 37,8       | 96,7                   | 15,8                     | 90,3                     | 41,2        | 17,2                             |
| 1980       | 46,1       | 99,1                   | 33,6                     | 98,2                     | 57,2        | 39,2                             |
| 1985       | 44,7       | 98,4                   | 42,8                     | 99,1                     | 67,4        | 52,3                             |
| 1990       | 48,9       | 98,2                   | 69,7                     | 99,4                     | 77,3        | 63,7                             |
| 1995       | 53,1       | 97,8                   | 87,2                     | 98,9                     | 80,0        | 77,2                             |
| 2000       | 56,7       | 98,0                   | 94,0                     | 99,0                     | 83,6        | 86,2                             |
| 2004       | 60,5       | 98,4                   | 96,5                     | 99,0                     | 86,0        | 87,1                             |

(See Statistical Survey Department, Statistics Bureau, Ministry Of Internal Affairs And Communications)

As shown in table 26, in 1970 the durable goods, for example the refrigerators and the colour TVs in the households accounted for 89,1% and 26,3% in 1970. Five years later the households with refrigerators and colour TV's rose up to 96,7% and 90,3%. For instance in 1970 the ownership of cars in the households accounted for only 22,1% and five years later it amounted for 41,2%. But in 1990 and 2000 the possessing of cars expanded to 77,3% and 83,6%. In general it can be said that the possession of durable goods in the households has had an increasing tendency.

### 6.5.c. The Rapid Growth Of Population

Table 27 The increase of population - Japan

| 年次<br>Year | 全国<br>Japan | 千葉<br>Chiba | 東京<br>Tokyo | 長野<br>Nagano | 京都<br>Kyoto | 大阪<br>Osaka | 北海道<br>Hokkaido |
|------------|-------------|-------------|-------------|--------------|-------------|-------------|-----------------|
| 1940       | 71 933 000  | 1 561 400   | 7 283 700   | 1 683 200    | 1 705 400   | 4 736 900   | 3 229 100       |
| 1945       | 71 998.104  | 1 966 862   | 3.488.284   | 21 21 050    | 1 603 796   | 2 800 958   | 3 518 389       |
| 1950       | 83 199.637  | 2 139 037   | 6 277 500   | 2 060 831    | 1 832 934   | 3 857 047   | 4 295 567       |
| 1955       | 89 275 529  | 2 205 060   | 8 037 084   | 2 021 292    | 1 935 161   | 4 618 308   | 4 773 087       |
| 1960       | 93 418 501  | 2 306 010   | 9 683 802   | 1 981 433    | 1 993 403   | 5 504 746   | 5 039 206       |
| 1965       | 98 274 961  | 2 701 770   | 10 869 244  | 1 958 007    | 2 102 808   | 6 657 189   | 5 171 800       |
| 1970       | 103 720 060 | 3 366 624   | 11 408 071  | 1 956 917    | 2 250 087   | 7 620 480   | 5 184 287       |
| 1975       | 111 939 643 | 4 149 147   | 11 673 554  | 2 017 564    | 2 424 856   | 8 278 925   | 5 338 206       |
| 1980       | 117 060 396 | 4 735 424   | 11 618 281  | 2 083 934    | 2 527 330   | 8 473 446   | 5 575 989       |
| 1985       | 121 048 923 | 5 148 163   | 11 829 363  | 2 136 927    | 2 586 574   | 8 668 095   | 5 679 439       |
| 1990       | 123 611 167 | 5 555 429   | 1855 563    | 2 156 627    | 2 602 460   | 8 734.516   | 5 643 647       |
| 1995       | 125 570 246 | 5 797 782   | 11 773 605  | 2 193 984    | 2 629 592   | 8 797 268   | 5 692 321       |
| 2000       | 126 925 843 | 5 926 285   | 12 064 101  | 2 215 168    | 2 644 391   | 8 805 081   | 5 683 062       |

|      |             |           |            |           |           |           |           |
|------|-------------|-----------|------------|-----------|-----------|-----------|-----------|
| 2005 | 127 767 994 | 6 056 462 | 12 576 601 | 2 196 114 | 2 647 660 | 8 817 166 | 5 627 737 |
| 2009 | 127 510 000 | 6 139 000 | 12 868 000 | 2 159 000 | 2 622 000 | 8 801 000 | 5 507 000 |

(See Statistical Survey Department, Statistics Bureau, Ministry Of Internal Affairs And Communications)

Table 27 above shows the population growth of every five years from 1940 to 2009. For example prior to the World War II the population of Tokyo was 7 283 700, which decreased to 3 488 284 in 1945. In 1950 the total population of Tokyo was 6 277 500, and it increased to 9.683.802 in 1960 and 11.408.071 in 1970. Between 1975 and 2009 the population in Tokyo was still rising. The other prefecture in the table also experienced the increase in the population. As shown in the table, Japan had in the period of 1940 to 2009 a continuous growth of its population.

#### 6.5.d. The Expanding Growth Of Urban

**Table 28 The growth of townships, urban districts and villages - Japan**

| 年次<br>Year | 市数<br>Cities | 町 村 数<br>Villages and<br>Towns | 年次<br>Year | 市数<br>Cities | 町村数<br>Villages and<br>Towns |
|------------|--------------|--------------------------------|------------|--------------|------------------------------|
| 1888       | 37           | 70 435                         | 1945       | 206          | 10 330                       |
| 1889       | 39           | 13 347                         | 1950       | 254          | 10 246                       |
| 1893       | 43           | 15 101                         | 1955       | 496          | 4 381                        |
| 1898       | 52           | 14 726                         | 1960       | 561          | 3 013                        |
| 1903       | 60           | 13 472                         | 1965       | 567          | 2 868                        |
| 1908       | 66           | 12 387                         | 1970       | 588          | 2 743                        |
| 1913       | 69           | 12 279                         | 1975       | 644          | 2 613                        |
| 1918       | 79           | 12 172                         | 1980       | 647          | 2 609                        |
| 1920       | 83           | 12 161                         | 1985       | 652          | 2 602                        |
| 1925       | 101          | 11 917                         | 1990       | 656          | 2 590                        |
| 1930       | 109          | 11 755                         | 1995       | 665          | 2 568                        |
| 1935       | 127          | 11 418                         | 2000       | 672          | 2 558                        |
| 1940       | 168          | 11 022                         | 2005       | 751          | 1 466                        |

(See Statistical Survey Department, Statistics Bureau, Ministry Of Internal Affairs And Communication)

As shown in the table 28 above, between 1888 and 2005 the numbers of cities in Japan were growing, the cities increased from 1888 to 1925 by the amount of 64. Only twenty years later and after the war the numbers of the cities doubled. Still after 1945 the cities manifolded to 751 cities in 2005. The tables shows, that the highest account of the villages and towns was 70 435 in 1888, after only one year it dropped down to 13 347. The amount of the villages and towns was decreasing, while the numbers of the cities were rising. For example in 1950 there were 254 cities and 10 246 villages. After twenty years the cities enlarged to the amount of 588 and the towns and villages declined to 2.743. In 2005 the total numbers of the cities

were 751, while the towns and villages only remained for 1 466. (See Statistical Survey Department, Statistics Bureau, Ministry Of Internal Affairs And Communication)

## **7. Summary and Comparison**

**Table 29 Summary of the stages and their features**

| <b>Stages Of Economic Growth</b>              | <b>Characteristics</b>                                                                                                                                                                                                                                                                                   |
|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| First Stage: The Traditional Society          | (I) The limited function of production<br>(II) The connection of family and clan<br>(III) The central political rule                                                                                                                                                                                     |
| Second Stage: The Preconditions For Take-Off  | (I) Two Cases Of Preconditions For the Take-Off (General case or born free)<br>(II) The new impulses of the imperial power<br>(III) The important role of the agriculture for the growth<br>(IV) The important role of the SOC for the growth<br>(V) The rate of investments over 10% of national income |
| Third Stage: The Take-Off                     | (I) The take-off as a stimulus<br>(II) The accumulation of capital for the development<br>(III) The manufacturing sector with a high growth rate<br>(IV) The leading sectors for the economic growth                                                                                                     |
| Fourth Stage: The Drive to Maturity           | (I) The new leading sectors for economic growth<br>(II) The shift in the work force (the decrease of the agricultural labour force)<br>(II) The shift in the labour force (the increase of skilled labour force)                                                                                         |
| Fifth Stage: The Age of High Mass-Consumption | (I) The growing awareness of the welfare state<br>(II) The new consumption behaviour<br>(III) The rapid growth of population<br>(IV) The expanding growth of urban                                                                                                                                       |

## **7.1. Summary Of The First Stage:**

Table 30 The first stage

| Stages Of Economic Growth            | Characteristics                                                                                                      |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| First Stage: The Traditional Society | (I) The limited function of production<br>(II) The connection of family and clan<br>(III) The central political rule |

The first stage is introduced as the traditional society, where (I) the first feature is the limited function of production, because of the unavailability and lack of modern science and technology. (II) The second feature is the social organization with the important connections between family and clan. (III) The last typical feature is the central political rule.

### **7.1.1. Summary Of Taiwan**

In general the method for the cultivation of fields was well known, but (I) because of the scarcity of labour force and limited technique, crop growing was carried out on small fields. The traditional methods of production in agriculture were from China, and it was not a great help for the economic development in the Qing dynasty. In addition there were no systems of production, transport, social and administration. (II) The family with its duties was an important unit for cultivation on the field. (III) Taiwan was less centralized in comparison to China.

### **7.1.2. Summary Of Korea**

The Korean economy, due to the isolation, was very traditional, therefore (I) the production and technology were very limited. The biggest sector was agriculture, where the labour force accounted for 90%. The arrangements for cultivation were simple and manually operated. (II) The traditional family had a patriarchal structure, where housing and field belonged to the property of the head. (III) The governmental structure was very centralized, where the yangban ruled the society.

### **7.1.3. Summary Of Hong Kong**

(I) Originally the economic and technological manufacture of China had the same development-oriented tendency as the West. But due to the foundation of Ming after the Mongol rule, the two mentioned factors remained the same. This backwardness continued to the next dynasty. Guangdong faced the same problem and the lack of cultivatable land was intense. (II) The traditional family was known as the lineage organization or clan, where the

families had the same surname. Such unity was important for the economy. (III) Imperial China was highly centralized, where the emperor and the imperial court had the highest status.

#### 7.1.4. Summary Of Japan

(I) Two kinds of practices, such as the slash-and-burn or the self-dependent farming, were well-known in Japan. Agriculture and its technique such as the use of fertilizers, the system of irrigation and flood control enhanced under the support of the daimyo. But the geographical conditions of cultivable land was very limited, therefore agriculture was not well-developed.

(II) The individual belonged to “ie” and the head of it was the patriarch. The person was bonded through blood or marriage. (III) The administration of the Tokugawa, which was founded by the daimyo Tokugawa Ieyasu, was centralized.

#### 7.1.5. Comparison And Conclusion

**Table 31 The comparison of the countries**

| Stages Of Economic Growth And Its Characteristics<br>First Stage - The Traditional Society: | Countries: |       |           |       |
|---------------------------------------------------------------------------------------------|------------|-------|-----------|-------|
|                                                                                             | Taiwan     | Korea | Hong Kong | Japan |
| (I) The limited function of production                                                      | ✓          | ✓     | ✓         | ✓     |
| (II) The connection of family and clan                                                      | ✓          | ✓     | ✓         | ✓     |
| (III) The central political rule                                                            | ✓          | ✓     | ✓         | ✓     |

Rostow mentions (I) the limited function of production as the first feature in the first stage. In reference to (I) Taiwan and Korea share the same pattern of the limited technique in the agricultural sector. The agriculture in Hong Kong and Japan are also not well-developed. In addition, both have the same problem of the lack of cultivable land. The methods for cultivation were generally well-known in all countries, but the techniques were limited. (II) The second feature is the connection between family and clan. The family with its duties and function in the social organization can be observed in all four countries. The family in Taiwan and Hong Kong united the economy. The head of the Korean family had the property of housing and field. In the Japanese system of ie, the person was bonded through blood or marriage. (III) The last feature of the stage is the central political rule and all four countries were centralized. Taiwan and Hong Kong were ruled by the emperor and imperial court. Korea had the yangban and Japan the daimyo.

## **7.2. Summary Of The Second Stage**

**Table 32 The second stage**

| <b>Stages Of Economic Growth</b>             | <b>Characteristics</b>                                                                                                                                                                                                                                                                                                   |
|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Second Stage: The Preconditions For Take-Off | (I) Two cases of preconditions for the take-off (general case or born free)<br><br>(II) The new impulses of the imperial power<br><br>(III) The important role of the agriculture for the growth<br><br>(IV) The important role of the SOC for the growth<br><br>(V) The rate of investments over 10% of national income |

(I) The distinction between the general case and the “born-free” case in the second stage are very important, because they have different processes for the preconditions for take-off. Rostow mentions, (II) the role of imperial powers and its new policy as the second feature. Through the imperial power the colonial area can face various developments, such as the expanded export and agricultural market, the modernization, the infrastructure and the supply of SOC. (III) The third feature is the willingness of a person to lend money for the modern industry, which is crucial for a high rate of investment. (III) The important role of agriculture in the general case is also essential for take-off, because of the increasing production in food supply and industrialization. (IV) The SOC as the last feature needs a longer time for its accumulation, but its benefit is the advantageous usage for a long period, where the American continental railway networks was demonstrated as an example. (V) Rostow thinks, that the transition from a traditional to a modern society can be seen from the the investment rate over 10% of the national income.

### **7.2.1. Summary Of Taiwan**

(I) Taiwan was a traditional society where it has to create its precondition for take-off. (II) Under the colonial rule it experienced various transformations, because it had to support the Japanese economy. (III) Taiwan used the Japanese agricultural knowledge and technique at the same time Japan was the investor in this sector. The role of this sector was to aid the construction of the infrastructure and the supply of food. In addition it was helpful for the economic growth and Taiwan even realized a surplus. (IV) During the colonial period the construction of modern services, such as the railway were carried out with the intention to encourage progress in agriculture. (V) The share of investment rate of the national income

since 1960 is over 10% in Taiwan, but the rate of investments between 1951 and 1959 were under 10% of the national income.

#### **7.2.2. Summary Of Korea**

(I) Korea belongs to the general case, because the agricultural sector was important. (II) Before the annexation, Japan was already the main player for the modernization process of Korea. (III) After the annexation, Korea was very important for the imperial power, because of its role as agricultural supporter. During this time Korea had a lot of improvement in the export of mineral, agriculture and manufacture. The main export was rice, therefore the agricultural sector experienced new technical advances. (IV) Japan invested in the railroad and communication systems, and both sectors were expeditiously enlarging at the colonial time. (V) The share of investment rate of the national income was over 10% of the national income, with the exception of 1955 to 1956, as well as from 1959 to 1962.

#### **7.2.3. Summary Of Hong Kong**

(I) Hong Kong does not belong to the general case nor to the “born free” countries. (II) Hong Kong as the trade centre was involved in the trade conflict between Britain and China. After the First Opium War, it was handed over to Britain. (III) Hong Kong does not have cultivable land and natural resources, the agricultural sector is non-existent. But it has the important role as the “entrepôt free port”, where the tariffs and restrictions of importing goods were absent or less strict. Hong Kong also adopted the laissez-faire policy, which means no interference of state into the market. (IV) After former struggles with the construction of the railway, the Jiulong-Guangdong Line was put in operation in 1910 and expanded one year later to Guangzhou. (V) The rate of investment of Hong Kong was not available between 1950 and 1959. But in general the rate of investment is over 10% and they were even over 20%.

#### **7.2.4. Summary of Japan**

(I) Japan is a general case. (II) It was the imperial power of the colony, such as Taiwan and Korea. Both colonial areas had to support the Japanese economy. Japan wanted to integrate both economies. In addition, the agricultural sector was crucial for the supply of food. (III) The agricultural sector of Japan was very important for the growth of the economy and fulfilled different roles, such as the supply of food, capital and labour force for other industrial sectors. Therefore various investments were carried out in the public and private sectors. (IV) The SOC such as the railway had a beneficial impact on the economy, and it induced a big bulk of investment and into the development. (V) The rate of investment is over 10% of the national income and its value sometimes reached the value over 30%.

### 7.2.5. Comparison And Conclusion

**Table 33 The comparison of the countries**

| Stages Of Economic Growth And Its Characteristics<br>Second Stage- The Preconditions For Take off: | Countries |       |           |       |
|----------------------------------------------------------------------------------------------------|-----------|-------|-----------|-------|
|                                                                                                    | Taiwan    | Korea | Hong Kong | Japan |
| (I) Two cases of preconditions for the take-off (General case)                                     | ✓         | ✓     | ✗         | ✓     |
| (I) Two cases of preconditions for the take-off (born free)                                        | ✗         | ✗     | ✗         | ✗     |
| (II) The new impulses of the imperial power                                                        | ✓         | ✓     | ✓         | ✗     |
| (III) The important role of the agriculture for the growth                                         | ✓         | ✓     | ✗         | ✓     |
| (IV) The important role of the SOC for the growth                                                  | ✓         | ✓     | ✓         | ✓     |
| (V) The rate of investments over 10% of national income                                            | ✓         | ✓     | ✓         | ✓     |

(I) Rostow mentions the distinction between the general case and the “born-free case”, where the cases have different preconditions for take-off. Taiwan, Korea and Japan belong to the general case. The classification of Hong Kong is not clear. It does not belong to the general case under the premise that agriculture is an important role for take off; yet Rostow’s definition of the general case also states that Asia belongs to the general case.

(II) The next feature of the second stage is the imperial power or the colony, where the latter experienced different developments. Taiwan and Korea were the colony of Japan, and Hong Kong was the colony of Britain. During the time as imperial power or colony, all four countries achieved modernization and development. (III) The successful take-off has the support from agriculture, because it should promote the industrialization and the food supply. The agriculture of Taiwan and Korea were crucial for the supply of food for the Japanese population and both carried out various developments in the agricultural technique. Also the agricultural sector in Japan contributed to the development in its economy, it has the role of the supply for food, capital and labour force. In comparison to the three countries, Hong Kong does not have any agricultural sector and natural resources, but it has the important role of the “entrepôt free port” with its laissez-faire policy. (IV) Rostow notes the SOC as the last feature, and its benefit is the advantageous usage for a long time. An example is the railway in the United States. Also in all four countries the construction of the railway was carried out in the second stage. (V) Rostow thinks, that the transition from a traditional to a modern society can be seen from the investment rate over 10% of the national income.

In all observed countries of this paper it was demonstrated, that they reached the investment rate over 10% of the national income in different periods. All four countries had a successful transformation to a modern society.

### **7.3. Summary Of The Third Stage**

**Table 34 The third stage**

| <b>Stages Of Economic Growth</b> | <b>Characteristics</b>                                                                                                                                                                               |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Third Stage: The Take-Off        | (I) The take-off as a stimulus<br>(II) The accumulation of capital for the development<br>(III) The manufacturing sector with a high growth rate<br>(IV) The leading sectors for the economic growth |

In the third stage Rostow provides (I) the German revolution, the Indian independence, the Chinese Communist victory or the innovation of the technology in the economy as examples for the stimulus. But its pattern is not important, the answer to it, should be the self-reinforcing and sustained development. (II) The take-off is possible, because of the accumulation of capital or the foreign capital. Other possibilities for it were the state, the bank or capital market and inflation. (III) The third feature of this stage is the manufacturing sector with a high growth rate as an impulse for the economy. (IV) Also a typical feature for this stage is the role of the leading sectors for the economy and the new function of production.

#### **7.3.1 Summary Of Taiwan**

(I) After the defeat of Japan in World War II, Taiwan was given back to China. The economic recovery was very slow, as the beginning of 1950s was marked by the destruction of the war. The expanding population needed a sufficient supply of food, under such conditions industrialization was the solution. Agriculture also contributed its part to such intention. (II) The capital aid of America was a great help for the stabilization of the economy, society and regime, the attraction of local and foreign investors and the easing of inflation. The other possibility for the accumulation of capital was through the foreign capital, therefore the EPZs were established. (III) The table of manufacturing showed, that it was increasing and decreasing, but out of all shares it was still the highest. And the labour force of the agriculture was absorbed by the manufacturing sector. (IV) The third Four-Year Plan emphasized the industrialization and the economic growth through the heavy industries. Other documents were concentrated on the growth of electronics industries. The 1960s were marked by the demand of labour-intensive products for the trade liberalization and industrial development.

#### **7.3.2. Summary Of Korea**

(I) After the end of the Japanese colonial rule, Korea was divided into the South and North peninsula, such division was at the same time the split of the industries. Therefore the distribution of resources were not equal, and the South devoted its effort to the rehabilitation of the economy. (II) Under Rhee Syngman there was the introduction of depressed rate percent and overrated currency. Under the policy of the depressed rate percent various light

industries were established. Korea received American aid for private enterprises and the Bank of Korea had three kinds of discount policies for the loans of the private sector. (III) In the 1900s the manufacturing growth rate accounted for 0,9%, which increased to 4,0% in the 1930s, but the 1940s had a low growth rate. It increased later and its highest account was in the 1970s with 17,8%, Its rate in general is higher than that of the agriculture and service. (IV) The main concern of the Five-Year Plan was the self-sufficiency of the economy and the support of industrialization. There was a shift from the light to heavy industries, where skilled workers were needed.

### **7.3.3 Summary Of Hong Kong**

(I) After the World War II Hong Kong was able to improve its industries and the significance of the entreport free port slowly diminished. (II) In addition the Chinese Civil War of the Nationalist and Communist in 1949 had an impact on Hong Kong. Through the immigration from South China, Hong Kong had access to capital and knowledge, its main focus was the light manufacture and logistic industries. Hong Kong was able to restore its currency and credit, therefore the money supply and the bank deposits were growing. Hong Kong had enough lending funds, because of the hoard of money from refugees. (III) The manufacturing growth rate in the 1950s had the highest growth rate of 15,8%, and it accounted in the 1960s for 14,4%. (IV) In the late 1950s there was a high demand for the variety of clothing industries, which caused the change of their size and diversity. The manufacture of clothing and its export were accelerating. Also in the same period the electronics industry started to flourish.

### **7.3.4. Summary Of Japan**

(I) The extended use of electric power and the contribution of the agricultural sector were very important for the development of Japan, and another stimulus was the World War I. (II) The accumulation of capital contributed to a stable growth during the 19<sup>th</sup> and the 20<sup>th</sup> century, the table in the empiricism demonstrated its increase. (III) The growth of manufacturing in the 1850s was 1,2% and it was still growing to 8,4% until 1910s. It decreased in the 1920s and after 1930s it started to increase again. In general it had a high growth rate in comparison to agriculture and service. (IV) Cotton spinning and silk reeling were the first mechanized and developed industries, and this was due to the usage of electric motor. In addition, the world price for silk was very high, because of the plague for silkworms. In Japan the rate expansion of silk was 5,7% per annum. Agriculture was an important provider for capital and the labour force, and its expanding production was responsible for the import of food. World War I had an important impact on the heavy and

manufacturing industries, and the demand of America, England and France for munitions and ships in Japan were very high. The heavy and textile industries had a profitable demand.

### 7.3.5. Comparison And Conclusion

**Table 35 The comparison of the countries**

| Stages or Economic Growth And Its Characteristics:<br>Third Stage - The Take-Off: | Countries |       |           |       |
|-----------------------------------------------------------------------------------|-----------|-------|-----------|-------|
|                                                                                   | Taiwan    | Korea | Hong Kong | Japan |
| (I) The take-off as a stimulus                                                    | ✓         | ✓     | ✓         | ✓     |
| (II) The accumulation of capital for the development                              | ✓         | ✓     | ✓         | ✓     |
| (III) The manufacturing sector with a high growth rate                            | ✓         | ✓     | ✓         | ✓     |
| (IV) The leading sector for the economic growth                                   | ✓         | ✓     | ✓         | ✓     |

The first feature of the third stage was (I) the stimulus, whose pattern is not important, but the answer to it should be self-reinforcement and sustained development. Taiwan was given back to China after the World War II and agriculture had an important role for the economic recovery. At the end of the colonial rule, Korea was divided and its devotion was the rehabilitation of the economy. Also after the World War II Hong Kong was able to improve its industries, in addition there was the Chinese Civil War. Japan had its stimulus through electric power, the agricultural sector and World War I. All four countries successfully responded to the stimulus. (II) Successful take-off needs capital. Taiwan and Korea received their aid from America. In comparison Hong Kong had gained the access of capital through the immigrated entrepreneur. Also Japan was able to accumulate capital, which was increasing. (III) The next feature is the manufacturing sector with a high growth rate, which is an impulse for the economy. In Taiwan, Korea, Hong Kong and Japan the manufacturing sector had the highest growth rate in comparison to other sectors. (IV) Rostow notes, that the leading sectors were important for the new function of production. Taiwan and Korea concentrated on the industrialization and growth of heavy industries. Hong Kong had a high demand in the clothing industries and the electronics industry started to flourish. In Japan the silk industries first gained its momentum, and then agriculture was important for the economy. Through World War I, Japan had a high demand in the heavy and textile industries. The heavy industries were important for Taiwan, Korea and Japan. Hong Kong and Japan had a supply from the clothing industries.

## **7.4. Summary Of The Fourth Stage**

Table 36 The fourth stage

| Stages Of Economic Growth           | Characteristics                                                                                                                                                                                                  |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Fourth Stage: The Drive to Maturity | (I) The new leading sectors for economic growth<br>(II) The shift in the work force (the decrease of the agricultural labour force)<br>(II) The shift in the labour force (the increase of skilled labour force) |

(I) The increased income of the leading sectors can be ploughed back into new leading sectors, and this development can be seen as the driver to maturity. (II) The labour force in reference to the skill is changing. The agricultural labour force is decreasing in the fourth stage, while the skilled and trained labour forces are rising.

### **7.4.1. Summary Of Taiwan**

(I) The rise in oil prices caused the shift to non-energy-concentrated, non-polluting and technology-concentrated industries, such as machine tools, semiconductors, computers, telecommunications, robotics and biotechnology. From 1970 and 1980 the government concentrated on the R&D. The electronics industry next to the textiles industry was the biggest export industry. The rapid improvement of technology continued during the 1980s to the 1990s. Salaries increased and engineering was low-priced and high-value. (II) The occupations of professionals and managers were growing, also the quota of engineering studies amounted for 28% in the period of 1997 and 1998. In the 1990s the enterprises for electronics industries had the most occupations of professionals and graduates. The in-depth and research-intense knowledge of the first one had a crucial role for the electronics industry. The table in the empiricism showed the decreasing tendency of the agricultural labour force from 56,1% in 1952 to 7,5% in 2001.

### **7.4.2. Summary Of Korea**

In 1973 Park concentrated on the advancement of the heavy and chemical industries, also the agricultural sector relied on rapid industrialization, because of the technological developments. The electronics industry in 1970 had a share of 6% in production and it rose to 17,8% in 1980, and its export accounted for 20 million US Dollars and 1,8 billion US Dollar. The production of components such as circuits, condensers and transistors was 48% of the total manufacture. For nearly two decades the electronics industry was the major sector. The government gave tax reduction for R&D, and supported its national projects of the private and

the public sector. (II) The position of managers and professionals in enterprises became more important in the 1990s, and those educated up to university level increased. Korea in the 1990s had the most scientists and technicians, for example the 2,4 million professionals and technicians rose up to 3,4 million between 1993 and 1999. The statistics in the empiricism demonstrate the decreasing trends of the number of the households in the rural area, it can be assumed that the labour force was declining.

#### **7.4.3. Summary Of Hong Kong**

(I) Hong Kong 's importance as the financial centre was growing, and the collaboration of Hong Kong and China can be observed. Hong Kong has the laissez-faire policy for the electronics industries, which did not follow the refining of improved technology in production. Instead they were producing one fashionable product to another new one. The electronics industry were able to find new fashions in the world market and production did not depend on the research and development of technology. Aside from the electronic industry, the clothing industry was important for Hong Kong, and it was able to compete against the trend of high production costs. The output of the clothing industry was one quarter of the total of the manufacturing industry in the 1980s and the electronics industry had a similar growth before 1988. (II) As mentioned in the second stage, Hong Kong hardly had an agricultural sector, and the governmental Census and Statistics Department of Hong Kong also did not mention this sector, therefore it can be assumed, that there was no significant agricultural employment. The percentage of professionals and other occupations were higher in 1986 than 1981, other data was not available.

#### **7.4.4. Summary Of Japan**

(I) The war was an impulse for the Japanese economy, the mining and manufacturing industries were responsible for the high output of 40% in 1939. The focus was on the industries of defence and munitions, whilst other industries had to provide the labour force. After the war, Japan did not have enough raw materials and therefore the manufacture in the industries stopped. The system of "preference manufacture" was established, where electric power, gas and coal should assist the iron and steel industries. Both industries belonged to this system and they were supposed to revive the other industries. The Korean War caused the boom of technology, and the period from 1951 to 1954 was marked by the self-contained innovation of technology. It lingered to the 1960s and at the same period new industries were flourishing, for example the heavy and chemical industries contributed to the economic development. The economy was growing, therefore the investment in science and technology began to take place. In addition the private sector also engaged its effort in R&D. (II) The Five-Year Plan of 1957 emphasized the need of more scientists and engineers. The aim was

fulfilled, and the number of students for science and technology at the universities and junior colleges enlarged between 1957 and 1960. Furthermore numerous engineers with high degree qualifications were trained. The agricultural labour force at the same time was decreasing.

#### 7.4.5. Comparison And Conclusion

**Table 37 The comparison of the countries**

| Stages or Economic Growth And Its Characteristics:<br>Fourth Stage - The Drive to Maturity: | Countries |       |           |       |
|---------------------------------------------------------------------------------------------|-----------|-------|-----------|-------|
|                                                                                             | Taiwan    | Korea | Hong Kong | Japan |
| (I) The new leading sectors for economic growth                                             | ✓         | ✓     | ✓         | ✓     |
| (II) The shift in the work force (the decrease of the agricultural labour force)            | ✓         | ✓     | ✗         | ✓     |
| (III) The shift in the labour force (the increase of skilled labour force)                  | ✓         | ✓     | ✓         | ✓     |

Rostow notes, that (I) the increased income of the new leading sector can be ploughed back to new ones. Taiwan concentrated on R&D, and electronics and textiles were the biggest export industries, and improvement of technology continued during the 1980s and 1990s. Korea focused on the development of the heavy and chemical industries. The electronics industry was the major sector for two decades, and the government supported national R&D projects in the private and public sector. Both countries had their main concern in R&D, and the electronics industry played an important part too. The electronics industry as well were a crucial part for the economy of Hong Kong. But the productions did not depend on the research and development, because they were producing one fashion to another. Like in Taiwan, the textile industries in Hong Kong were crucial and in the latter one accounted for one quarter of the total manufacture. The Japanese industries of defence and munitions had their boom during the war. Then Japan, like Taiwan and Korea, concentrated on the R&D, because the heavy and chemical industries were able to carry out the economic development. Their flourishing was due to the system of “preference manufacture”, where after the war the electric, gas and coal assisted the iron and steel industries with their resources. (II) The labour force in reference to the skill is changing and the last typical feature for the fourth stage is the decrease of the agricultural labour force, while the skilled and trained labour forces are rising. The electronics industry of Taiwan in the 1990s had the most professionals and graduates, and the number who studied engineering was 28%. During the 1990s Korea had the most scientist and technicians, and the education level at school or university increased. Japan also trained numerous engineers with their high education. The number of students for science and technology also increased. Hong Kong also had an increase in the number of professionals. All countries show a similar pattern for the increase of a skilled labour force. In contrast, the

agricultural labour force in all countries, except Hong Kong with no agricultural sector, were decreasing.

### **7.5. Summary Of The Fifth Stage:**

**Table 38 The fifth stage**

| <b>Stages Of Economic Growth</b>              | <b>Characteristics</b>                                                                                                                                             |
|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Fifth Stage: The Age of high Mass-Consumption | (I) The growing awareness of the welfare state<br>(II) The new consumption behaviour<br>(III) The rapid growth of population<br>(IV) The expanding growth of urban |

One of society's concerns in the fifth stage is (I) the welfare state, where the state wants to carry out social and human objectives. (II) The consumption of goods and services from the 20<sup>th</sup> century are becoming more important. (III) In addition the growth of the population and (IV) urbanism increasing.

#### **7.5.1. Summary Of Taiwan**

(I) Because of the economic growth the request for the welfare state in the social and welfare policy were stronger than before. The society of Taiwan was changing, and the welfare state was also becoming a crucial topic for the parties' election. It was also shown, that the expenditure for the welfare state was starting to increase after 1990. (II) Similar patterns of spending was seen in consumption. (III) The growth of the population between 1957 and 2010 had an increasing trend. (IV) The number of townships and urban districts was not really changing at all, but in comparison the number of the villages was expanding.

#### **7.5.2. Summary Of Korea**

(I) The welfare state after the financial crisis in Korea was becoming an important topic. The need of better social safety was more evident, which was also reflected in various election campaigns. The expenses for the welfare only started after 1990, but it had an expanding trend. (II) In the empiricism it was shown, that the expenditures for goods and others were rising. (III) The population in the period 1935 to 2005 was also increasing. (IV) The diagrams were demonstrating, that the rural inhabitants were declining, while the urban inhabitants was growing. With such tendency it can be assumed, that the urban areas were growing.

#### **7.5.3. Summary Of Hong Kong**

(I) Originally the contribution of the government to the social welfare was little, but with the growing awareness of the expenditure for various programmes this has been expanding since 2000. Therefore the expenses were rising. (II) The expenditures of the household for the

consumption were fluctuating. (III) The total population is also growing, but the annual growth rate is declining. (IV) The urban population was continued to enlarge, but after 1990 till 2010 it still accounted for 100%.

#### 7.5.4. Summary Of Japan

(I) The welfare state in Japan developed since World War II, and the “Constitution of Japan” for the social welfare and public health is very well-developed. Because of the experience of war, the awareness for security was increasing, which reflected in the political motivation. The highest expenditure was 1954 with 49% per annum. (II) In households the possession of durable goods was rising. (III) The population between 1940 and 2009 was growing. (IV) The same pattern was observable in the growth of cities, and in comparison the villages were declining.

#### 7.5.5. Conclusion And Comparison

**Table 39 The comparison of the countries**

| Stages or Economic Growth And Its Characteristics:<br>Fourth Stage-The Drive to Maturity: | Countries |       |           |       |
|-------------------------------------------------------------------------------------------|-----------|-------|-----------|-------|
|                                                                                           | Taiwan    | Korea | Hong Kong | Japan |
| (I) The growing awareness of the welfare state                                            | ✓         | ✓     | ✓         | ✓     |
| (II) The new consumption behaviour                                                        | ✓         | ✓     | ✓         | ✓     |
| (III) The rapid growth of population                                                      | ✓         | ✓     | ✓         | ✓     |
| (IV) The expanding growth of urban                                                        | ✓         | ✓     | ✓         | ✓     |

Rostow is of the opinion that the state wants to carry out the (I) social and human objectives, which is one of the features for the fifth stage. In Taiwan and Korea the awareness of the welfare state was growing, and the expanding expenses started after 1990. In comparison to Hong Kong the contribution of the welfare state was at first less, but with the growing awareness the expenses started to rise after 2000. The development of the welfare state in Japan was already in the early period after World War II, and the highest expense was 1954 with 49%. All countries had their efforts for the welfare state, even if the awareness for social welfare was created at different times. Of all Japan was the first one. Taiwan and Korea were the next one, and Hong Kong contribution to welfare was the latest one. (II) The second feature was the consumption of goods and service from the 20<sup>th</sup> century, and this was reflected in all four countries. (III) The population and (IV) the urban areas were growing in the fifth stage, where the first one was observable in all four countries. In Taiwan the amount of cities were not changing at all, but in Japan the cities were growing. The urban population of Hong Kong did not change since 1990 to 2010 and Korea had a decrease in the rural population.

## 8. Conclusion

Table 40 The overview of the observed results

| Stages Of Economic Growth                                                        | Countries |       |           |       |
|----------------------------------------------------------------------------------|-----------|-------|-----------|-------|
| <b>(1.) First Stage: The Traditional Society</b>                                 |           |       |           |       |
| <i>The Characteristics:</i>                                                      | Taiwan    | Korea | Hong Kong | Japan |
| (I) The limited function of production                                           | ✓         | ✓     | ✓         | ✓     |
| (II) The connection of family and clan                                           | ✓         | ✓     | ✓         | ✓     |
| (III) The central political rule                                                 | ✓         | ✓     | ✓         | ✓     |
| <b>(2.) Second Stage: The Preconditions For Take-Off</b>                         |           |       |           |       |
| <i>The Characteristics:</i>                                                      | Taiwan    | Korea | Hong Kong | Japan |
| (I) Two cases of preconditions for the take-off                                  | ✓         | ✓     | ✗         | ✓     |
| (II) The new impulses of the imperial power                                      | ✓         | ✓     | ✓         | ✗     |
| (III) The important role of the agriculture for the growth                       | ✓         | ✓     | ✗         | ✓     |
| (IV) The important role of the SOC for the growth                                | ✓         | ✓     | ✓         | ✓     |
| (V) The rate of investments over 10% of national income                          | ✓         | ✓     | ✓         | ✓     |
| <b>(3.) Third Stage: The Take-Off</b>                                            |           |       |           |       |
| <i>The Characteristics:</i>                                                      | Taiwan    | Korea | Hong Kong | Japan |
| (I) The take-off as a stimulus                                                   | ✓         | ✓     | ✓         | ✓     |
| (II) The accumulation of capital for the development                             | ✓         | ✓     | ✓         | ✓     |
| (III) The manufacturing sector with a high growth rate                           | ✓         | ✓     | ✓         | ✓     |
| (IV) The leading sectors for the economic growth                                 | ✓         | ✓     | ✓         | ✓     |
| <b>(4.) Fourth Stage: The Drive to Maturity</b>                                  |           |       |           |       |
| <i>The Characteristics:</i>                                                      | Taiwan    | Korea | Hong Kong | Japan |
| (I) The new leading sectors for economic growth                                  | ✓         | ✓     | ✓         | ✓     |
| (II) The shift in the work force (the decrease of the agricultural labour force) | ✓         | ✓     | ✗         | ✓     |
| (II) The shift in the labour force (the increase of skilled labour force)        | ✓         | ✓     | ✓         | ✓     |
| <b>(5.) Fifth Stage: The Age Of High Mass-Consumption</b>                        |           |       |           |       |
| <i>The Characteristics:</i>                                                      | Taiwan    | Korea | Hong Kong | Japan |
| (I) The growing awareness of the welfare state                                   | ✓         | ✓     | ✓         | ✓     |
| (II) The new consumption behaviour                                               | ✓         | ✓     | ✓         | ✓     |
| (III) The rapid growth of population                                             | ✓         | ✓     | ✓         | ✓     |
| (IV) The expanding growth of urban                                               | ✓         | ✓     | ✓         | ✓     |

The first question of this work is “Do Taiwan, Korea, Hong Kong and Japan have the characteristics of Rostow’s model for the stages of economic growth?” The table shows in general, that all observed countries had the features of Rostow’s five-stage-model of economic growth. The four countries had all features of (1.) the first stage. But in comparison

to the other three countries in (2.) the second stage, Hong Kong did not fulfil the first and the fourth characteristics. Each country had a successful take-off, because all were possessing the features in (3.) the third stage. All features of (4.) the fourth stage were observed in Taiwan, Korea and Japan. The exception is Hong Kong, where the second feature of the fourth stage is absent. (5.) Taiwan, Korea, Hong Kong and Japan furthermore demonstrate all features of the last stage. With these results, it can be said, that all countries have the characteristic of the model for the stages of economic growth, and only Hong Kong has a small deviation.

In reference to the question, in which stage they belonged to, it can be assumed, that they all are in the fifth stage, because of the characteristics of the awareness for welfare state, the new consumption behaviour, the population and the urban are growing.

The last question of this work is “What kind of criticism does the model of economic growth have?” In the theory part, the opinion of Parr was, that the model of Rostow only analyzed the development on the national level and the stages should be defined in a broader way. For Parr it is important, that the regional level, the multiregional level and the interregional level are included in the examination of the economic development. The reasons were the different patterns of development and the completion of a stage at different times. In accordance to the empiricism of Taiwan, Korea, Hong Kong and Japan, the countries were also analyzed as a whole nation and all three mentioned aspects were excluded. In addition it is noteworthy to bear in mind, that Hong Kong is a part of the Peoples Republic of China and through Britain it experienced a different path to economic development.

In view of Supple, concerning the qualitative relation in section 2.6.2., Meier was speaking about the cultural backgrounds of the developing countries and the developed countries, and the values and institutions were associated with latter one in the West. For example, in reference to Hofstede's five cultural dimension, Western countries differ from the Eastern countries in most of the dimension. Taiwan, Korea and Japan are less individualistic than their Western counterparts. However, the former ones were nevertheless able to develop with their own values. (See Hofstede: <http://www.geert-hofstede.com/index.shtml>)

Meier notes, that various developing countries did not have the improvement in agriculture as the precondition for the movement toward industrialization. Related to this fact is, that Hong Kong really did not have an agricultural sector and cultivable land was absent. Thus it reached the following stages with other leading sectors.

The topic was about the economic development in Taiwan, Korea, Hong Kong and Japan. As already demonstrated, all four countries can be applied to Rostow's model, where each stages were reached with various conditions. The differences and similarities in their economic development were shown in the section above. Additionally their overview were summarized

as tables. As it can be seen the model inspired other works on the one hand, and on the other hand it encountered criticism. The criticism was taken into consideration to give a holistic understanding of Rostow's model. The author of this paper shares the same opinion like Parr, Supple and Meier. They pointed out, that certain aspects (such as the regional level and cultural values and so on) were neglected. The author of this paper also thinks that these aspects are a substantial part for a thorough analysis, but all in all Rostow's model is a logical tool to describe the economic development of a country.

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## **11. Appendix**

### **Abstract**

Die vorliegende Arbeit befasst sich mit folgenden Fragestellungen: (1) „Weisen Taiwan, Korea, Hong Kong und Japan die Merkmale von Rostows Stufenmodell der wirtschaftlichen Entwicklung auf?“, (2) „Welche Unterschiede gibt es in ihrer Entwicklung und in welcher Stufe befinden sie sich?“ und (3) „Welche Kritiken bringt das Modell mit sich?“.

Das Modell von Rostow mit all seinen Kritiken und Anregungen für andere Thesen dienen dabei als theoretische Basis. Die wirtschaftliche Entwicklung der oben vier genannten Länder werden nach den Merkmalen des Modells untersucht und anschließend miteinander verglichen.

The questions of this thesis are as follows: (1)“Do Taiwan, Korea, Hong Kong and Japan have the characteristics of Rostow’s model for the stages of economic growth?” (2) “Do the four countries have differences in their economic development and in which stage do they belong to?” (3) “What kind of criticism does the model of economic growth have?”

Rostow’s model with its criticism and inspiration for further works will be taken as basis for the analysis. The economic devolopement of the four above mentioned countries will be examined and compared.

## PERSONAL DATA

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JIN YI HUANG



## EDUCATIONAL BACKGROUND

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|                   |                                                               |
|-------------------|---------------------------------------------------------------|
| 09/1992 – 07/1996 | Elementary School in Salzburg                                 |
| 09/1996 – 07/2000 | Private Secondary School in Salzburg                          |
| 09/2000 – 07/2004 | Private Upper School in Salzburg                              |
| 09/2004 – 09/2009 | Sinology at Vienna University                                 |
| 09/2009 – to date | Master in East Asian Economy and Society at Vienna University |

## WORK EXPERIENCE

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|                   |                                                                                                                                                                                                                               |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5/2012 – to date  | <b>Your Office – Managed Business Service:</b> Supply Chain Management, Accounting and Event Management                                                                                                                       |
| 11/2009 – 5/2012  | <b>ÖH (Austrian Student Union):</b> counselling upper school students in various fields, including the visit of classes and universities as well as the introduction to various universities and vocational training colleges |
| 11/2009 –12/2009  | <b>Research Employee at German Academy:</b> Linking the German Academy Homepage to other homepages in Taiwan and China; Translating the German Academy homepage into Chinese                                                  |
| 11/2010 – 12/2012 | <b>Waitress at Restaurant Seven Heaven</b>                                                                                                                                                                                    |
| 10/2009 – 05/2010 | <b>Waitress at Vienna Rathauskeller</b>                                                                                                                                                                                       |
| 05/2009 – 08/2009 | <b>German Tutor at the Private Language Institute:</b>                                                                                                                                                                        |

German lessons for small groups or private tutoring; Including preparation of teaching materials for the class

03/2009 – 05/2009

**German Tutor at the National Chengchi University in Taiwan:** German lessons for small groups or private tutoring, including preparation of teaching materials for the class

10/2007 – 06/2008

**Waitress at Kiang-Rochusmarkt, Vienna**

07/2005 – 06/2008

**Sellinxx Vienna - Agency for Consumer Promotion**  
Employment for promotion

1999 – to date

**Waitress at Tien Tsu – Salzburg**

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## FURTHER SKILLS

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|          |                             |
|----------|-----------------------------|
| German   | Mother tongue               |
| Chinese  | Mother tongue               |
| English  | Fluent, oral and in written |
| French   | A-Level degree              |
| Japanese | Basic Knowledge             |
| Computer | Excel, Word, Powerpoint     |

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## CERTIFICATIONS OF LINGUISTIC SKILLS

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|                       |                                                           |
|-----------------------|-----------------------------------------------------------|
| 10.07.2007-11.08.2007 | Language Course at Tamkang University, Taiwan             |
| 02.08.2007-29.08.2007 | Language Course at Peking University, China               |
| 01.09.2008-31.08.2008 | Exchange Semester at the National Chengchi University     |
| 18.11.2006            | HSK Certificate (Certificate of Chinese Proficiency)      |
| 02.05.2009            | Test of Proficiency Chinese (Test of Proficiency – Huayu) |

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## INTERESTS

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|                     |                                                                   |
|---------------------|-------------------------------------------------------------------|
| Sports:             | Running, Swimming, Playing Volleyball, Biking and Cycling         |
| Travel:             | Italy, Czech Republic, Korea, Singapore, Taiwan, China, Germany   |
| Movies and Soaps:   | I love all kind of movies and soaps from USA, Germany and Asia    |
| Family and Friends: | They are very important for me, I spend my leisure time with them |