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Chinese Special Economic Zones as Clusters

A Case Study of Shenzhen's Modern Service Clusters

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SAMMENDRAG

Spesielle økonomiske soner (SEZ) er et avgrenset geografisk område hvor myndighet tilbyr spesielle tilbøyelighet for å sette opp farten på den lokal økonomisk utviklingen. På den andre siden er klynger, et makets fenomen, der mange bedrifter lokaliserer seg i enkelte geografisk områder for å redusere kostnader og øke profitten på basis av ekstern økonomi mellom bedrifter.

Shenzhen (SEZ), er en kombinasjon av SEZ og en samling av klynger (Clusters). Den var en av de første og mest suksessfulle kinesiske SEZ gjennom de siste 30 årene. Gjennom denne perioden, har mange klynger kommet og forsvunnet innen dette område. Fra tradisjonelle servise klynger til moderne servise klynge, fra produsent klynger til teknologisk og så videre. I dag så er Shenzhen en av de fire etablerings klynger, logistikk klynge, finansielle klynge, egendoms klynger og teknologisk klynger- som har bidrag til mer enn halve Shenzhens GDP

Denne oppgaven undersøker fra ulike synspunkter og med data som eksisterer, om man kan stille spørsmålet om den statlige SEZ i Shenzhen har utnyttet de positive eksterne virkningene som, i en fri marked økonomi, er grunnen til eksistens og stabilitet til klynger.

Bodø May 20th

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ABSTRACT

Special Economic Zones (SEZ) are limited geographic regions where the authorities offer some preferential policies for pushing local economy development. A cluster, on the other hand, is a market economy phenomenon, in which several firms locate themselves in some certain geographical areas for the purpose of reducing costs and, raising profits on the basis of external economies between the firms..

Shenzhen SEZ is a combination of a SEZ and a collection of Clusters. It was one of the earliest and the most successful Chinese SEZ during last 30 years. During this period, many clusters appeared and disappeared within the zone, from traditional service clusters to modern service clusters, from manufacturing clusters to high-tech clusters, etc. Today, Shenzhen's four foundation clusters—logistical cluster, financial cluster, real estate cluster and high-tech cluster—have contributed more than half Shenzhen's GDP.

This thesis examines from several points of view and with the data that can be had the question of whether the state-created SEZ of Shenzhen has exploited the kind of positive externalities that are, in a free market economy, the reasons for the existence and the persistence of clusters.

PREFACE

This Master Thesis is an obligatory final assignment for the two-year Master of Science in Business (Master I Bedriftsøkonomi) program at Bodø Graduate School of Business. The thesis has been written for specialization "BE309E 003 International Business" and counts for 30 credit.

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As author, I take full responsibility for possible errors and deficiencies in the Thesis.

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1.1 Background for the Study:

Chinese economy development is important for the world's economy: China has the largest population all over the world, which gives the world an in creditable potential market. If we assume that every Chinese can earn 500 dollars more per year and then China's consume ability would increase 650 billion dollars which no doubtfully means a huge market for any county in the world. Many people have realized this point, for example, Henry Paulson, the financial minister of USA, said "Chinese economy development accords with American benefit". For Norway, it also gets benefit from China. According to the Norwegian central statistic report (2006), China was the largest trade partner among all Norwegian developing trade partners. China stands for 26% trade of which Norway's export to developing countries and 38% of Norway's import from developing countries. Moreover, many Norwegian companies make a high trading with China.

Chinese Special Economic Zones (SEZs) play a critical role in the country's economy development. Since the implementation of economic reform policy in 1979, China's economic development is quite impressive with her average annual rate of economic growth of over 10%...The establishment of China's SEZs apparently triggered her economic growth together with various growth-oriented schemes. As a result of enhanced economic growth in China after the reform-and-open door policy was launched in the late 1970s, the SEZs entered a new era when the on-going development policy needed to be reconsidered. This accelerated economic development had brought forth at the same time considerable regional disparities, economic and social problems. (Tatsuyuki, 2003).

Clusters have long been part of the economic landscape, with geographic

concentrations of trades and companies in particular industries dating back for centuries (Potter, 1998). The geographic agglomeration of firms within industries is a visible fact in many countries and has been recognized many years ago. The auto industries clustered around Detroit in the USA and Turin in Italy are well-known examples. Later, the high-tech industries settled in Silicon Valley at San Francisco and around Boston in the USA whereas Dublin is known as a home for high-tech firms in Europe (Sonobe & Otsuka, 2002). (Draw on Zhang et al, 2004)The first tier of the cluster existed in the late 1970s and early 1980s, when China was first open to the outside world. Taking the advantages of proximity and low labor cost, many Hong Kong textile and apparel companies invested in Pearl River delta, and there appeared a few clusters of textile and apparel firms. These clusters grew fast, as new investments also came from Taiwan and other places, and many local entrepreneurs emerged as well. These clusters include Shenzhen (though later much diluted as it is now one of the largest cities in China), Dongguan (Similar to Shenzhen but to a less degree), and Humen.

Economy development in China depends on developing successful industrial clusters in SEZs. For practices, exploiting a new way to arrange industry clusters is pressingly, and for researchers, through studying a successful area (e.g. Shenzhen Municipality), concluding and analyzing its experience and raising new and feasible cluster strategy is an important and meaningful work.

1.2 The Object of Study

Shenzhen is the most of successful SEZ in China. However, (draw on Ng, 2003), before China's Open Door Policy in late 1978, Shenzhen was just a sleepy border town lying north of the then British colony, Hong Kong, in southern China (Figure 1). Shenzhen now has an area of 2,020 km^2 with six districts housing over 4.69 million populations…in 1993, two Counties (Longgan and Baoan) were turned into Districts

and formally became part of Shenzhen. The city is flanked by the Mirs Bay in the east and the Pearl River Estuary in the west. The coastline extends to about 230 km with many locations suitable for constructing seaports. The Hong Kong Special Administrative Region (HKSAR) lies to its south whereas Dongguan and Huizhou are its northern neighbors. One of the major constraints of the city is a shortage of land resource. Located between longitude 113°46′ to 114°37′ and latitude 22°27′to 22°52′, Shenzhen is a linear city with a moderately hilly terrain. Its east-west span is over 49 km while its north-span is only 7 km. an undulating topography is found in the city, particularly in the southeastern part. The northwestern portion is relatively low lying with sea plains along the west coast. Its hilly topography in the southeastern part shields it from most typhoon attacks in summer. Shenzhen lies in the sub-tropical maritime climatic zone with an average annual temperature of 22.4°C. The rainy season spans from May to September and the annual rainfall is 1,933 cm.

Figure 1 Districts in Shenzhen

Resource from Ng (2002)

Within the Shenzhen area, nearly 80% of households in 1979 were engaged in either agricultural or fishery activities. The industrial base was weak, accounting for less than 20% of GDP and employing about one-fourth of the total labor force.

Manufacturing was highly concentrated in a few items. Infrastructure was virtually nonexistent. The capacity for electric power generation was negligible. Skilled and semi-skilled labors were scarce…other than being next door to some rich neighbors, Hong Kong, Macao, and Taiwan, and holding a bag of unsharpened policy tools in their hands, authorities had few other resources. They faced initial conditions in which the SEZs had to manage, not just to survive, but to succeed (Ge, 1999). The SEZ has been using almost thirty years and right now, it being close to its original goal. Shenzhen's economy has grown 1,800 times over the past 28 years, with its GDP surpassing US$60 billion and export value topping US$100 billion last year. Shenzhen ranks fourth among worldwide container ports, and is third in China, following Beijing and Shanghai, in comprehensive economic strength. One of Shenzhen's pillar industries, the high-tech sector yielded US$32.25 billion in output in the first half of this year, accounting for half of the city's total industrial output.

Manufacture Industrial clusters made a huge contribution to the SEZ's economic development, particularly, in the first 10 to 15 years. When the SEZ was established, it met extremely difficult to create industrial clusters. O' Donnell (2001) points the SEZ was built from scratch, through razing pre-existing villages. The kind of "overseas" industrial activities attracted to Shenzhen during the construction phase were low-value added labor intensive industries from Hong Kong and most outward processing activities such as export processing, assembling and manufacturing which relied on imported material, designs and parts. For instance, up to 1985, there were about 4,696 "foreign" investments and over 76% of these were outward processing activities (Ng, 2003; Shenzhen Museum, 1999). From 1983 to 1985, Shenzhen established linkages with over 2,000 corporations covering agricultural, commercial, food, transport, communication, sanitary and education activities (Shenzhen Museum, 1999).

With an increasing number of manufactures who came and invested here, the Shenzhen Municipality learned from Hong Kong the trick of land leasing as practice

to increase the government's revenue…while the revenue from the infant land market provided the government with much needed revenue to provide for a rapidly expanding population, the transferability of land use rights silently challenged the outward processing industry-based economic structure: rising land and production costs had led to the phasing out of traditional and low-value added industries (Ng, 2003). Then the opportunity to up-graded its industrial clusters had arrived. The following ten years, the SEZ had been changing and developing high-tech industrial cluster rather than low-value added industries. High-tech industries have gained prominence and experienced a phenomenal growth rate. In 2001, production value was 132 billion Yuan, a tenfold increase when compared to 1990 (SSB, 2002 and CAUPD, 2000). After China's accession to WTO (in 2001) and with intensifying competition from other emerging cities in Guangdong and elsewhere in the country, Shenzhen started its way to making financial cluster and logistical cluster, which would be "symbolize the Shenzhen's transformation from a manufacturing zone to a world city (Ng, 2003)"

1.3 Purpose of the Study

The aim of this study is to investigate and try to understand how this fast economic development has come about. There are a lot of researches on how SEZ's establishment and how Shenzhen Municipality improved its industrial clusters, such as Ge (1999) includes the about 10 years (1980-1993) of the SEZ's experience and Ng does a lot of descriptions from a variety of aspects on the Shenzhen SEZ (Ng, 2003). Many scholars recognized that Shenzhen SEZ had been changing and up-grading its industrial since middle 1980s, but it is not so many articles explaining how the modern service clusters rooted and became more and stronger here. Here, **"modern service clusters"** is a relatively concept, including financial and insurance clusters, logistic clusters, real estate clusters etc. which have been existing in the Western World for hundred years, but quite new for China, for example until early 1990s,

China opened its first Stock Exchanges (Shanghai Stock Exchanges).

The interest of the paper is related to how Shenzhen Municipality has been able to develop modern service clusters like financial and insurance clusters, logistical clusters etc, that has been able to achieve such a fast economic development.

1.4 Structure of the Thesis

The paper is constructed in the following way. The entire paper has 7 parts: Introduction, theoretical framework, methodology, empirical part, measuring part, analysis, and conclusion. In chapter 2, I put the relative theories which were used in my paper. In chapter 3, I present the methodology way I adopted for grasping insight into the present phenomena. In chapter 4, empirical part, what Shenzhen SEZ did for pushing its modern service clusters are given. In chapter 5, I give a result that whether Shenzhen SEZ has modern service clusters by a mathematic method. In chapter 6, it analyzes the reality phenomenon. Chapter 7 contains a summary and the conclusions of the thesis; it also gives suggestion for further study.

2. Theoretical Framework

2.1 Introduction

Almost all of areas in inland China want to develop their economy, but at the first beginning, they always face the same problem that is—a lack of capital (in appendix 2, a brief introduction to Chinese bank system can provide some hints for the reason of this lack of capital). Many of inland areas choose to establish SEZ firstly, and hope to be able to bring the first "barrel of money" for them. Some of SEZ succeed but some are inefficiencies and poor performances. When a SEZ is established, normally, it attracts investment more or less and then based on the investment, clusters probably be created. So the theoretical part begins from theory on SEZ and then goes to Cluster Theory.

2.2 Theory for SEZ

2.2.1 General Theory

A SEZ is an enclave of enterprises operating economic activities which are promoted by a set of policy measures that are not generally applicable to the rest of the country. The term SEZ often encompasses types of zones: Border Economic, Cooperation Zone, Economic and Technology Development Zone, Economic Development Zone, Export Processing Zone, Free Trade Zone, High and New Technology Zone, Industrial Estate, Industrial Park, IT and Software Park, Open Economic Zone, Reconstruction Opportunity Zone (more details have been given in appendix 1) (Competitiveness Support Fund, 2007). Institutionally, the existence of a SEZ reflects the fact that the host government conducts its economic policy in such a discriminate manner that certain geographical regions, economic activities, and interest groups are strongly favored over other (Ge, 1999). From angles of law and foreign direct

investment, "Special Economic Zones (SEZs) are specific geographical regions that have economic laws different from and more liberal than a country's typical economic laws. The goal is usually an increase in foreign direct investment (FDI) in the country (http://eng.ifez.go.kr/)".

Some of the key characteristics of successful zones are that they offer immediate access to high quality infrastructure, facilities, and support services. In addition, streamlined regulatory enforcement, simpler business establishment rules, expedited customs administration, and other special administrative and approval procedures are also offered in such zones. Another key element of zones is the offering of financial incentives packages for both zone developers and zone investors. Over a period of time the SEZ concept has expanded and evolved to encompass larger areas, higher levels of integration within the defined geographical boundaries of the zone, and increased integration with the local economy (Competitiveness Support Fund, 2007).

There is a clear understanding that a well-implemented and designed SEZ can bring about many desired benefits for a host-country: increases in employment, FDI attraction, general economic growth, foreign exchange earnings, and international exposure. Hence, many developing countries are also developing the SEZs with the expectation that they will provide the engines of growth for their economies to achieve industrialization. But for this to be successful their governments need to enact legislation, create a focused administrative infrastructure to govern special economic zones, offer highly attractive incentives and locate zones in the best possible locations. Overall investment climate (infrastructure, governance) in a country matters in the success of its special economic zones in terms of competitiveness (http://eng.ifez.go.kr/guide/org/special-economic-zone.asp, 2007).

(Draw on Aggarwal, 2007) There is little research conducted on technology transfers and technological activities of SEZ units. The implicit assumption seems to be that such activities are either not taking place in SEZs or are negligible at best. Some

argue explicitly that SEZ investment does not bring the same technology as investment in the rest of the economy. The low skill assembly type operations in the SEZs leave little scope for technology transfers (Madani 1999; Heron 2004; Armas and Sadni-Jallab 2002; among many others). However, transition of zones from low value added activities to high value-added technologically sophisticated activities may introduce technology component in the zones. Examples of the success stories (East Asia, Mauritius, emerging Asian economies) suggest that SEZs may contribute to technology transfers and technology creation.

Generally, it is argued that the special economic zone concept is attractive because it is much easier to resolve the problems of infrastructure and governance on a limited geographical area than it is to resolve them countrywide. Such economic zones cannot be insulated from the broader institutional and economic context of the country and be treated as an economy within the economy. Zones are a part of the economy and require overall improvement in the investment climate to ensure success in the long run. They should not, therefore, be viewed as an alternative to the overall development model(http://eng.ifez.go.kr/guide/org/special-economic-zone.asp, 2007).

The promotion of SEZs is an attempt to deal with infrastructural deficiencies, procedural complexities, bureaucratic hassles and barriers raised by monetary, trade, fiscal, taxation, tariff and labor policies. These structural bottlenecks affect the investment climate adversely by increasing production and transaction costs. Since country-wide development of infrastructure is expensive and implementation of structural reforms would require time due to given socio-economic and political institutions, the establishment of industrial enclaves (SEZs) is seen as an important strategic tool for expediting the process of industrialization in these countries (Aggarwal, 2006).

The zones offer numerous benefits such as, (1) tax incentives, (2) provision of standard factories/plots at low rents with extended lease period, (3) provision of

infrastructure and utilities, (4) single window clearance, (5) simplified procedures, and (6) exemptions from various restrictions that characterize the investment climate in the domestic economy (Aggarwal, 2006).

These benefits foster a conductive business environment to attract local and foreign investment, which would not otherwise have been forthcoming. The competitive advantages of zones may also be explained within the framework of the "cluster approach". Zones are industrial clusters where external economies of scale and other advantages help the operating firms in reducing costs, developing competitive production systems and attracting investment, in particular, FDI. As a result of these benefits, many developing countries have been promoting zones with the expectation that they will provide the engine of growth to propel industrialization (Aggarwal, 2006).

2.2.2 General Picture of Chinese SEZ

China's SEZs were first established in five coastal cities in 1980 (Hainan, Zhuhai Shenzhen, Shantou, Xianmen) and were areas where market economies could exist when the rest of the country was still under a planned economy. Incentives were created to attract foreign investment –Actually, they did—China, the largest recipient of foreign direct investment (FDI) in the developing world, actually had received the cumulative amount of US$128.1 billion of FDI between 1979 and 1995, which accounted for over 40 % of all FDI directed to all developing countries. But the distribution of the FDI flowed into China is geographically concentrated. The coastal areas accounted for over 90% of all FDI received since 1979 (Tatsuyuki, 2003). Building on the successful model, 14 more Economic and Technological Development Zones (ETDZs) were created in 1984. As these zones thrived and as the government increased its focus on economic growth, the SEZ model became popular with local authorities and began to proliferate across the country (Competitiveness Support Fund, 2007).

By 2003, there were thousands of zones developed by provincial and municipal governments, none of which enjoyed the same incentives or level of infrastructure development as national zones that were under the administration of the Central government. Municipal officials who were assessed solely by the volume of investment in their jurisdictions built zones on a "build it and they will come" model that did not consider the need for strategic planning and resource commitment. These officials were also offering tax incentives to companies without authorization, thus depriving the Central government of tax revenue and subjecting investors to scrutiny and penalties by the tax authorities. In 2004, the Central government saw the inefficiencies and waste created by the over-building of SEZs and stepped in to halt development by closing or merging poorly performing facilities (Competitiveness Support Fund, 2007).

Currently, there are 204 national level zones and 1,346 provincial level zones (municipal level zones, of which there are thousands, fall outside of the official SEZ designations and are not eligible for incentives or special treatment). They are primarily concentrated along the more affluent coastal parts of the country, though Western provinces have also been developing zones in order to jump start growth in the interior of the country (Competitiveness Support Fund, 2007).

SEZs have been the main driver for manufacturing growth in China. SEZs have been developed such that they offer available land that is ready for the investors to immediately begin construction. The infrastructure offered is good and most coastal zones have high connectivity to transport logistics. As development continued, clustering became important. Tianjin Economic and Technological Development Area was initially unsuccessful but after attracting some big investors like Motorola, a snowball effect took hold as suppliers to the big investors began to follow their customers to the zone. For many suppliers and component manufacturers now, locating in an SEZ is not a choice, but a necessity because their biggest customers are

there (Competitiveness Support Fund, 2007).

Almost all foreign investment and manufacturing investment has gone into SEZs. As a whole, SEZs account for 68% of China's GDP, or US$ 1.5 trillion and the top 54 national level zones had a GDP of US$132 billion in 2006, 5.9% of China' total. SEZs were the origin of 87% of China's exports. The national level zones attracted US$9.2 billion in FDI in 2004. China is trying to expand the influence of SEZs into the service sector as well. In a new initiative, the SEZs in Tianjin, Shanghai, and Shenzhen are enjoying liberalized regulations on the financial sector in order to build them up as financial centers (China Development Zone Online, www.cadz.org.cn, 2007).

2.3 The Economic Theory of Clusters

2.3.1 Definition

In its literal and most general meaning a "cluster" is simply defined as a "close group of things" (The Concise Oxford Dictionary, 1982). In economics, the cluster concept usually implies a further step from the literal meaning of density by reference to a particular hypothesis, which states that the geographic agglomeration of economic activity may cause improved technological or economic performance of the units engaged (Hutschenreiter, 1994).

What is an industrial cluster and what do different researchers imply when using the concept? Despite substantial research on clusters, there is still much confusion concerning the proper conceptualization of a cluster, except that it is generally conceived as a non-random spatial concentration of economic activities (Ellison & Glaeser, 1997). Porter (1998) describes clusters as geographic concentrations of interconnected companies and institutions in a particular field, encompassing linked industries and other entities important for competition. Clusters also often extend

downstream to channels and customers and laterally to manufacturers of complementary products and to companies in industries related by skills, technologies, or common inputs. Finally, many clusters include governmental and other institutions, such as universities, standards-setting agencies, think tanks, vocational training providers, and trade associations- that provide specialized training, education, information, research, and technical support. A business cluster is a geographical location where: a. enough resources and competences amass and reach a critical threshold; b. giving it a key position in a given economic branch of activity, and c. with a decisive sustainable competitive advantage over others places, or even a world supremacy in that field.

The cluster concept in its economic sense originates in Alfred Marshall (1920), who explained the development of industrial complexes by the existence of positive externalities within agglomerations of interrelated firms and industries. These externalities are caused by three major forces: (a) knowledge spillovers between firms, (b) specialized inputs and services from supporting industries, and (c) a geographically pooled labor market for specialized skills (Krugman, 1991).

Among several approaches discussing the spatial clustering phenomena, the cluster concept put forward by Porter (1990, 1998) has been particularly influential in business, government and academia in the past decades. According to Porter (1990, 1998), the competitive advantage of an industrial cluster is influenced by four interrelated determinants, graphically depicted as a "diamond model": factor conditions, demand conditions, related and supporting industries, and firm strategy, structure and rivalry. Porter argues that the geographic concentration of rivals, customers and suppliers tends to amplify innovative ability and competitiveness in a cluster even further.

Krugman's work on economic geography has drawn the interest of economists to the idea of "increasing returns" to proximity in the form of clusters (Krugman, 1991).

Krugman's approach to regional agglomeration involves two basic concepts. First, there is the idea that regional specialization evolves for accidental reasons, and second, the notion that once these regions become established, they are sustained by the external scale economies.

Within the geography and spatial-planning literature, the interest in so-called new industrial districts arose primarily from observations of the spatial organization of production in several key industries such as the electronics industry in California and the clothing industry in northern Italy (Saxenian, 1994; Scott, 1992). Efforts were given to explaining contemporary location patterns of North American industries (Storper, 1995; Storper& Salais, 1997). It was stressed that some newly industrialized areas were characterized by vertically disintegrated production networks based on highly flexible and specialized firms that co-located in order to minimize transaction costs. In recent years, Silicon Valley as cluster for some high tech industries has attracted particular attention of researcher. According to their studies, enterprises in a cluster enjoy external economies of scale by easy access to supply of materials, skilled labor, service, and information on technology and market. They also dynamically benefit from the competitive environment. In addition, industrial clustering stimulates creation of new enterprises, resulting in creation of new jobs. Not only is industrial clustering advantageous for individual enterprises, it also helps improve competitiveness of the industry as a whole. These findings provide insight into the development of industrial clustering, and also have impact on research in this field (Zhang, To & Cao, 2004).

Jacobs and MeMan (1996) presented more in-depth interpretations and definitions of industry clusters, and discussed the related implications for new industry development. Further they generally focused on the geographic and spatial proximity that facilitate social interaction and inter-firm cooperation as key beneficial features that characterized the dynamics of clustered firms. In industrial clusters, firms draw on core competencies and knowledge flow among the existing firms in the clusters and

thus are encouraged for better competitiveness (Gilder, 1989; Storper& Salais, 1997).

In the last decade, the emphasis of spatial clustering theory has shifted from transaction costs towards and increased interest in knowledge spill-over and other interdependencies. Some of the most prominent empirical studies include the work on the British motor industry (Pinch & Henry, 1997), the work on high-tech SMEs located in Oxford and Cambridge (Keeble etal., 1999), and the work on Silicon Valley and Route 128 (Saxenian, 1994). These studies share a concern with tracing the mechanisms by which knowledge is generated and circulated within localized production systems. Paci and Usai (2000) explored the spatial distribution of innovative activity in Europe; the results indicated spatial and sectoral specialization of innovative and productive activities was significantly and positively correlated.

There is a large body of literature on industrial clustering observed in the developed countries and documented, perhaps, in the nomenclature of economic geographic, agglomeration/inordinate economy, or industrial districts. In the United States for example, the steel industry is concentrated in Pittsburg, the automobile industry is in Detroit, the financial industry in New York, and the textile industry in the north and south Carolinas. In the fast development of the high-tech industry in the Silicon Valley has particularly attracted the attention of both the academia and the business community. Much research has been conducted, and there is a large body of literature on the phenomenon of industrial clustering (Zhang, To & Cao, 2004).

Most of the studies on industrial clustering have been conducted for and in the developed countries. However, industrial clustering also exists in the developing countries, especially in some Asian and South American countries, and has attracted the attention of some researchers (Porter, 1998). Porter (1998) claims that clusters have the potential to affect competition in three ways: by increasing the productivity of the companies in the cluster, by driving innovation in the field and by stimulating new businesses in the field. It has been noted that some of the industrial clusters of the

developing countries grew in urban areas, while some others were the result of industrialization of the countryside; some were formed by themselves, while others were formed under the auspices of the government policies. While lacking the dynamic vigor and quality as those in the developed countries, these clusters nevertheless enhance the competitiveness of the countries. Many times these industrial clusters are export oriented. The extent to which these export-oriented clusters in the developing countries can achieve industrial upgrading objectives and positive developmental outcomes depends on the way in which firms in these become incorporated into global chains (Zhang, To & Cao, 2004)

An important question is how the industrial cluster achieved the quality improvement. It is found in the cluster literature that vertical co-operation through the specialization and division of labor among enterprises is strengthened when the quality of products, as well as speed and flexibility of production, is improved (Schmitz, 2000).

According to Humphrey and Schmitz (1996), the establishment of marketing channels capable of responding to changes in the outside market is important in the cluster development. Knorringa (1999) points out that outside traders are the prime sources of demand information for producers in the cluster. Furthermore, the role of global buyers in the upgrading of manufacturers in the cluster is hotly debated in the recent literature on industrial cluster (Schmitz and Knorringa, 2000; Humphrey and Schmitz, 2000). Thus, it will be of interest to explore how the structure of the garment cluster in China interacted with the emergence of marketing opportunities brought about by out side traders. A major new finding of this study is that local entrepreneurs, who had previously been local traders or engaged in marketing activities, have superior abilities to produce and sell higher-quality products directly to urban traders. This finding suggests that industrial clusters that have internal capacity to respond to outside market opportunities tend to expand (Zhang, To & Cao, 2004).

A variety of factors have been identified which trigger the emergence of clusters

(Krugman, 1991; Porter, 1998).These include local demand, prior existence of supplier industries including natural resources, innovative firms, and chance events. Once a cluster is formed a self/reinforcing cycle promotes its growth, especially with the support of local public and private institutions. Often as a result, initial transitory advantages get "locked in" within the cluster. This "lock in" effect is due to a variety of agglomeration economies attracting new specialized firms to locate within the cluster and gain from increasing returns to scale. A cluster's boundaries are defined by the linkages and complementarities across industries and institutions that are most important to competition. Although clusters often fit within political boundaries; they may cross state or even national borders (Porter, 1998).

2.3.2 Types of Cluster

Whatever type of cluster, the phenomena of industrial clustering is evidence of the pervasive influence of interdependently increasing returns (Krugman, 1991). Typical for clusters is the existence of one or several forms of direct and/or indirect interaction between economic agents. External increasing returns obtain, when such interaction generates positive externalities for the economic agents belonging to the cluster.

The traditional analysis of location and clustering emphasis the relative abundance of resources "trapped" in a functional region (Ohlin, 1993). This approach is a resource-based theory of location and clustering (and trade). The critical resources have the character of durable capacities, which on the one hand, consists of natural resources and on the other hand, of the supply of infrastructure in the form of facilities and networks, R&D organizations, existing production capacities with specific techniques, and the supply of different immobile labor categories. Modern resource-based models often emphasize the supply of knowledge-intensive labor as a primary location factor. The durable capacities generate comparative advantages in the sense of Ricardo and influence the potential specialization profile of a functional region. Although these characteristics are more or less exogenously given in the short

and medium term, a major part of the durable characteristics (except natural resources) change gradually over time and are to a large extent created by investment and migration-like processes (Karlsson,2007) .

The resource-based approach has been challenged in recent decades by scale-based models (Dixit & Norman, 1980; Lancaster, 1980; Krugman, 1979, 1980 & 1981; Ethier, 1982; Helpman, 1984). However, this point was explicitly made already by Ohlin (1933). They explain location and clustering (and trade) in a context of internal and external economies of scale and local and external market potentials, where the dynamics of the interdependence between market size and economies of scale is essential. In the short and medium term, the properties of markets are durable phenomena, which create comparative advantages in pertinent regions. It is obvious that in order to understand the emergence and in particular, the growth and dynamics of clusters there is a need to bring the two approaches together. One possible approach to do this is to associate (1) the resource-based advantages to the input market potentials of each sector, and (2) the scale-based advantages to the customer market potentials of each sector (Holmberg, Johansson & Stromquist, 2003).

Each industry cluster is unique because of differences in their core industry sectors, sizes, purchase-sale links, and extent of interfirm cooperation and collaboration. Markusen (1986) argues, however, that shared characteristics among industry clusters permit them to be grouped into four general types: Marshallian, huband-spoke, satellite platforms, and state-anchored clusters.

➢ Marshallian clusters are composed primarily of locally owned, small- and medium-size businesses. Firms in these clusters generally are concentrated in craft-based, design-intensive industries, high-technology industries, or advanced producer and financial services industries (Storper and Scott)

➢ Hub-and-spoke clusters are dominated by one or several large firms surrounded by input suppliers and service providers, such as Detroit and Seattle.

> ➢ Satellite platforms are industry clusters dominated by branches of externally based, multi-plant firms, such as North Carolina' Research Triangle Park. Scale economies in each branch are moderately high here.

> ➢ State-anchored industry clusters as regions where the local business structure is dominated by a public or nonprofit entity, such a military base, defense plant, university, or government office.

2.3.3 Advantages and Disadvantages of an Industry Cluster Strategy

2.3.3.1 Advantages

Targeting industrial development programs at an industry cluster is based on the assumption that such a strategy will provide greater local economic development benefits than those associated with a more diverse industrialization effort. It has four advantages which are grouped into four areas (David & Mark, 1997):

> ➢ Industry clusters provide production and marketing cost savings (localization economies) to member firms.

> ➢ Industry clusters provide enhanced opportunities for cluster firms to focus on fewer activities and to adopt new production technologies and organizations, that is, clustering facilitates a restructuring of firms' production activities.

> ➢ Industry clusters facilitate the development of links, cooperation, and collaboration among area firms, that is, clustering stimulates networking.

> ➢ Industry clusters allow communities to focus industrial development programs on the needs of specific industries.

2.3.3.2 Disadvantages

The potential benefits associated with industry groupings are strong inducements for a community to pursue an industrialization strategy focused on industry cluster. The principal shortcoming inherent in following such a strategy is that the likelihood of

success, for many rural communities, will be small. Viable industry clusters are difficult to establish for three reasons (David & Mark, 1997):

➢ Communities will have difficulty identifying clusters that best fit their local economies and firms that are most desirable for these clusters.

➢ Communities late in developing industry clusters are unlikely to provide competitive advantages available in areas with larger, more established clusters.

➢ Communities will have difficulty developing the institutional environment required to support the establishment and growth of industry cluster.

2.4 Summary

In the theoretical party, the thesis mainly encloses two aspects to explain the theories—Special Economic Zone and Cluster. The purpose of choosing SEZs is that the SEZ is a crucial factor in Shenzhen Municipality's economic development. Choosing Cluster will supply the theoretical evidences for the later analysis part.

3. Methodology

3.1 Introduction

What is methodology? Different researchers have different definitions. It is the "combination of techniques used to enquire into a specific situation. Method can be thought individual techniques for data collection, analysis, ect" (Smith, 2002). Babbie (1998) defines it simply as a technique that is used to find a solution to a problem stated. Annear and Lawrence (1997) note that the methodology has two different meanings: general approach to the type of research undertaken, a theoretical framework for the thesis, and techniques for data collection. Halvorsen (1993) states that methodology means a systematic way to explore the reality. Hellevik (1980) states that methodology gives the reader an idea of how to conduct a scientific research and what tools are to be used to collect empirical data as well as the validity and reliability of the results. It is worth reminding that there are neither good, nor bad methodologies, but more or less adequate methodologies are specific conditions in order to achieve a goal. Other words, there is no definite standard for the perfect combination, but only "as proper as possible" methods for the specific situation. For example, positivism and social constructionism have absolutely opposite features in several aspects, however we can not generally which one is better but only can discuss which one is more suitable to certain issue.

Method can be divided into quantitative method (statistical approach) and qualitative method (observation, interview, questionnaire, etc). Maurice Godelier (1972) states the method simultaneously expresses the subjective approach of the thinker and the objective content of what he is thinking about. In the last analysis, though, it is the content that provides the "grounds" for the method, since, while the method expresses the procedure adopted by the thought process, the latter expresses the nature of what is being thought about.

3.2 Research Approaches

Normally, we call two broad methods of reasoning as the deductive approach (deduction) and inductive approach (induction). Deduction is aimed at particular phenomena, whereas induction is aimed at general truth (Belozerov, 2002).

3.2.1 Deductive Approach

Deductive techniques of formal logic are always leading from the general to particular and never vice versa (Veenhoven, 1992). The deductive approach moves towards hypothesis testing, after which the principle is confirmed, refuted or modified. These hypothese resent an assertion about two or more concepts that attempts to explain the relationship between them. Concepts themselves are abstract ideas that form the building blocks of hypotheses and theories. The first stage, therefore, is the elaboration of a set of principles or allied ideas that are then tested through empirical observation or experimentation. But before such experimentation can take place, underlying concepts must be operationalized in such a way that they can observed to confirm that they have occurred. Hence, measures and indicators are created. Deduction is sometimes informally called "top-down" approach, i.e. Theory→ Hypothesis→ Observation→ Confirmation (Rudakovskiy, 2007).

3.2.2 Inductive Approach

The basic idea behind inductive reasoning is that of learning from experience. Through the inductive approach, plans are made for data collection, after which the data are analyzed to see if any patterns emerge that suggests relationships between variables. From these observations it may be possible to construct generalizations, relationships and even theories. Through induction, the researcher moves towards

discovering a binding principle, taking care not to jump to hasty inferences or conclusions on the basis of the data (Gray, 2004). We notice patterns, resemblances, or other kinds of regularities in our experiences, some quite simple (sugar sweetens coffee), some very complicated (objects move according to Newton's laws), and we project them onto other cases. We use inductive reasoning so frequently in everyday life that the inductive nature of this kind of conclusion drawing regularly goes unnoticed (Tidman & Kahance, 2003). Induction is sometimes informally called "bottom-up" approach, i.e. Observation→ Pattern→ Tentative Hypothesis→ Theory (Rudakovskiy, 2007).

3.2.3 Inductive Approach in this Research

This research process has been carried out by inductive approach. There are huge researches describing clusters and SEZs individually, but we still see few of whom talking both issues together. My observation was implemented in several different ways, such as collecting empirical data from Chinese Statistical Report, Shenzhen Municipal Government Plan, and some non-profit academic research organizations, like http://tjsj.baidu.com; because service clusters encompass various types, the paper also uses case study—paying more attention on financial clusters. According to the specific case to analyze the problem what I explored, I can go inside the research body, and obtain the core data. I get my tentative hypothesis that what and how the SEZs should benefit the clusters, and what are the SEZ's disadvantages when pushing clusters. Finally, I got my "theory": how to establish clusters within a SEZ.

3.3 The Research Design

3.3.1 Definition

The research design is the milestone for any research paper, "…as in designing any other type of research investigation, a plan, or research design, is needed" (Yin, 2003).

Green (et al, 1998; 96&97) points: a research design is the specification of methods and procedures for acquiring the information needed to structure or to solve problem. It is the overall operational patterns of framework of the project that stipulate what information is be collected, from which sources, and by what procedures. Nachmias (1992) states: guides the investigator in the process of collecting, analyzing, and interpreting observations. It is a logical model that proof that allows the researcher to draw inferences concerning causal relations among the variables under investigation. Smith (2002) says: research designs are about organizing research activity, including the collection of data, in ways that are most likely to achieve the research aims

There are many kinds of factors that can affect the decision of how research should be designed and implement in practice. For example, a topic of a thesis, as the important factors, will influence on the choice of specific research. The topic will directly influence on the research process and what kinds of data will be used. The research design is contextualized in terms of Churchill's (1999) design typology; conceived as "descriptive", it is seen in practice to involve "exploratory" elements as well. However, once the goals of the research are determined and kinds of data required is planned, the researcher should decide on a research design, which in turn will make impacts in the entire research. The research design explains what procedures are supposed to apply n connections with collecting necessary information (Parsuraman, 1991).

3.3.2 Qualitative Method VS Quantitative Method

The choice of methodology depends upon the nature of the research and the way the problem is being tacked can vary from one research to another. Researchers have long debated the relative value of qualitative and quantitative inquiry (Patton, 1990). One can distinguish between qualitative and quantitative research and qualitative and quantitative inquiry (Crewell, 1998). An examination of the quantitative and

qualitative paradigms will help to identify their strengths and weaknesses and how their divergent approaches can complement each other. In most cases, researchers fall into one of the two camps--either relying exclusively upon "objective" survey questionnaires and statistical analyses and eschewing warm and fuzzy qualitative methods, or using only qualitative methodologies, rejecting the quantitative approach as decontextualizing human behavior. However, social marketing researchers recognize that each approach has positive attributes, and that combining different methods can result in gaining the best of both research worlds.

3.3.2.1 Qualitative Method

Skrtic (1995) contends that qualitative methods are preferable to quantitative methods when the phenomena to be studied are complex human and organizational interactions and there fore not easily translatable into numbers. Van Maanen, J. (1983) defines qualitative methods (technique) as "an array of interpretative techniques which seek to describe, decode, translate and otherwise come to terms with the meaning, not the frequency, of certain more or less naturally occurring phenomena in the social world". In addition, Qualitative research, broadly defined, means "any kind of research that produces findings not arrived at by means of statistical procedures or other means of quantification" (Strauss & Corbin, 1990). Qualitative research methodologies are designed to provide the researcher with the perspective of target audience members through immersion in a culture or situation and direct interaction with the people under study. Qualitative methods used in social marketing include observations, in-depth interviews and focus groups. Although qualitative methods provide less explanation of variance in statistical term than quantitative methods, they can yields data from which process theories and richer explanations of how developed and why processes and outcomes occur can be developed (Macus & Robey, 1988)

Therefore methods are designed to help researchers understand the meanings people

assign to social phenomena and to elucidate the mental processes underlying behaviors. Hypotheses are generated during data collection and analysis, and measurement tends to be subjective. In the qualitative paradigm, the researcher becomes the instrument of data collection, and results may vary greatly depending upon who conducts the research.

There are three main types of qualitative methods: interview, observation and diary method (Smith, 2002). These types of qualitative methods go deeper than quantitative methods when being employed in data collection. For instance, the qualitative part in interviews will be designed more subjectively and implicitly than quantitative questions aiming to get informant's deep understanding and answers to the questions

The advantage of using qualitative methods is that they generate rich, detailed data that leave the participants' perspectives intact and provide a context for health behavior. The focus upon processes and "reasons why" differs from that of quantitative research, which addresses correlations between variables. A disadvantage is that data collection and analysis may be labor intensive and time-consuming. In addition, these methods are not yet totally accepted by the mainstream public health community and qualitative researchers may find their results challenged as invalid by those outside the field of social marketing (www.social-marketing.com, 2007).

3.3.2.2 Quantitative Method

Quantitative method is the reliance on experimental and statistical control as the defining feature of the research (Kaplan & Kuchon, 1998).

Usually there are four well used ways to collect quantitative data: interviews, questionnaires, tests/measures and observation (Smith, 2002). The research result generated by quantitative method should be more convincible than qualitative method

as numbers always represent absolute fact as long as the number is correct.

The strengths of the quantitative paradigm are that its methods produce quantifiable, reliable data that are usually generalizable to some larger population. Quantitative measures are often most appropriate for conducting needs assessments or for evaluations comparing outcomes with baseline data. This paradigm breaks down when the phenomenon under study is difficult to measure or quantify. The greatest weakness of the quantitative approach is that it decontextualizes human behavior in a way that removes the event from its real world setting and ignores the effects of variables that have not been included in the model (www.social-marketing.com, 2007).

Quantitative methods emphasize the use of numbers and statistics to understand and explain phenomena. In this approach, answers to countable questions (for example, "how often?" and "how many?") are derived through the collection of numerical data. Quantitative methods enable researchers and practitioners to better understand social structures and to make general statements over wide populations on a number of social topics ranging from infant mortality to unemployment. Numerical data provide an opportunity to initiate correlation studies (for example, comparing between different programs, different geographic locations, and different periods in time), and to track changes over time (for example, changes in rates of coverage or the percentage of the at-risk population that was reached). For instance, quantitative methods can be used to determine the number of behavior change communication messages prepared, the number of condoms distributed, or the number or frequency of clinical services delivered. Quantitative methods can also be in the form of surveys that seek numerical information that can lead to a better understanding of how to conduct programmatic work (e.g., How many minutes did you wait? How many different providers did you see? Etc) (www.social-marketing.com, 2007).

3.3.2.3 Research Design in the Paper

The paper adopts quantitative method. This is a normal way to write an economic thesis. Krugman (1991) uses such method to calculate the geographic boundaries of industrial clusters. Audretsch & Feldman (1996) uses such method to calculate the R&D spillovers and the geography of innovation. Kim (1996) uses such method to measure U.S. Regional Manufacturing Structure. In my paper, I also use quantitative method. More concretely, that is Hoover's Location Quotient (LQ). First I find several parameters which are required by LQ, and then from the value of LQ to measure whether Shenzhen SEZ has mature modern service clusters.

3.4 Data Collection

Once the research problem is defined and clearly specified, the research effort logically turns to data collection (Churchill and Iacobucci, 2005). Data Collection helps your team to assess the health of your process. To do so, you must identify the key quality characteristics you will measure, how you will measure them, and what you will do with the data you collect (Deming, 1982).

Data Collection is nothing more than planning for and obtaining useful information on key quality characteristics produced by your process. However, simply collecting data does not ensure that you will obtain relevant or specific enough data to tell you what is occurring in your process. The key issue is not: How do we collect data? Rather, it is: How do we obtain useful data? Why do we need to collect data? Every process improvement effort relies on data to provide a factual basis for making decisions throughout the Plan-Do-Check-Act cycle. Data Collection enables a team to formulate and test working assumptions about a process and develop information that will lead to the improvement of the key quality characteristics of the product or service. Data Collection improves your decision-making by helping you focus on objective

information about what is happening in the process, rather than subjective opinions. (Deming, 1982)

There exist two types of data which can be utilized in order to pursue the goals of the study. They are primary data and secondary data.

3.4.1 Primary Data

Primary data are originated by researcher for the purpose of the immediate investigation at hand (Churchill & Iacobucci, 2005). Saylor (2006) states it as sources of information are generally categorized as primary, secondary or tertiary depending on originality and to the source of origin.

The primary data has been collected and the study was performed on a step by step basis. Primary data, that is—the information you can get directly from people in the community—presents a much different set of challenges than the numeric and statistical data you have encountered as part of your secondary data collection. For one thing, it requires you to deal with actual people, which can be a daunting task after staring at a flickering screen full of excel charts all day (Richard, Lommel & Hartz, 2005).

3.4.2 Secondary Data

As defined by Churchill and Iacobucci (2005), secondary data are statistics that already exist; they had been gathered for a previous purpose, not your particular study. Secondary data includes both raw and published summaries which can provide a useful source from which to answer; or begin to answer, research questions (Saunders, 2003). Such as written information like company policies, procedures, and rules that can be obtained from the organization's records and documents (Sekeran, 1992).

The advantage of secondary data is (Parsuraman, 1991): 1. The most magnificent benefit of secondary data is less time consumer with compare to primary data; 2. When it is hard to obtain some data as primary, it is some time accessible free secondary data,e.g. data presented in Government Publication, Internet.

The disadvantage of secondary data is (Churchill & Iacobucci, 2005): 1. Problem with relevance. As accessible secondary data has been collected for some other reason, it may not fit with your prerequisite; 2. Problem of accuracy. The accuracy is related with dependability of the data. The reliability of the secondary data is low with respect to primary data acquired by the researcher.

To obtain an overview of the problem area, I prepared a preliminary study by reading extent material and the literature on industrial clusters theories, with especial attention to the difference between the clusters who within a SEZ and who without the SEZ. It was useful for general understanding of the reforming situation, formulating the research problem and conducting the research.

3.5. Validity and Reliability

3.5.1 Validity

Validity is a question of how far we can be sure that a test or instrument measures the attribute that it is supposed to measure (Smith, 2002). For George Kelly, validity is defined as the capacity of a test to tell us what we already know (Bannister and Mair, 1968). Cook and Campbell (1979) says best available approximation to the truth or falsity of a given inference, proposition or conclusion. With other words, validity is often defined by asking the question: are you measuring what you think you are measuring (Kvale, 1996)? Joppe (2000) provides the following explanation: Validity determines whether the research truly measures that which it was intended to measure or how truthful the research results are.

Yin (1989) suggested using multiple sources of evidence as the way to ensure construct validity. The traditional criteria for validity find their roots in a positivist tradition, and to an extent, positivism has been defined by a systematic theory of validity. Within the positivist terminology, validity resided amongst, and was the result and culmination of other empirical conceptions: universal laws, evidence, objectivity, truth, actuality, deduction, reason, fact and mathematical data to name just a few (Winter, 2000).

The data was collected as much and strongly related as possible to the research questions. The typical data were directly dealing with Shenzhen SEZ. And I chose data on financial clusters, which is the most significant represent of Shenzhen's service clusters.

3.5.2 Reliability

The concept of reliability is the central one in the process of evaluation of chosen methodology and shows how trustworthy are the results of the study. Researchers should evaluate stability and transparency in how sense it was made from the collected data. Joppe (2000) defines reliability as: The extent to which results are consistent over time and an accurate representation of the total population under study is referred to as reliability and if the results of a study can be reproduced under a similar methodology, then the research instrument is considered to be reliable. Compte & Goetz (1982) think reliability is generally seen as a very difficult concept in qualitative research, especially when it is defined as "the extent to which studies can be replicated"

As a researcher, it doesn't mean to record all you hear from the interviewees. Get answers what researcher need, and guide interviewee tracing the questions what you want to ask. By investigator triangulation, it will keep the reliability. Reliability is

enhanced by the triangulation of data collection and multiple analysis methods (Yin, 1989).

Kirk and Miller (1986) identify three types of reliability, which relate to: (1) the degree to which a measurement, given repeatedly, remains the same (2) the stability of a measurement over time; and (3) the similarity of measurements within a given time period.

According to the principle of reliability, I considered some factors. First, in order for SEZs for the enterprise chosen to be representative enough of the majority of the SEZs in China, the targets with be focused on the most famous and successful SEZ. Second, the SEZ chosen by the paper must have mature experiences on how to develop clusters. Third, the location of the SEZ and its clusters should be convenient to access. Considering above factors, Shenzhen SEZ is a typical model which satisfies all requirements.

4. Empirical Part

4.1 Structure of the Empirical Part

The empirical part will give many general understanding about the topic. It contains of seven sub-chapters.

The first part, the thesis tells why Shenzhen is chosen as one of the earliest Chinese SEZ. The second part introduces as a SEZ, what preference could be offered to investors. The third part depictures the phases of Shenzhen SEZ experienced when pushing its industrial clusters. The forth part says the reasons of developing modern service clusters. The fifth part focuses on the concrete approach Shenzhen SEZ adopts to push its service clusters; and the final part is a brief summary of this chapter.

4.2 Why is Shenzhen a SEZ?

By the end of the 1970s, China's centrally planned economy and demoralized society were on the verge of collapse. Strict control by the central government had led to a shortage economy that stifled growth (Ng & Tang, 1999a). Hence, a certain degree of liberalization was necessary and according to the document on Central Government's Decisions on a Number of Issues Concerning the Institutionalization of the Market Economy, "the government should use macro control policies such as economic means, laws and administrative measures to manage the national economy, to provide infrastructure and to improve the investment environment. It should refrain from interfering in an enterprise's production activities (Gu and Zhang, 1997)". To realize these changes, various reforms were initiated including enterprise reforms, the introduction of "extra-plan" elements in the economy, decentralization of administrative functions to local governments, financial and tax reforms and the open door policy to attract foreign investment (Ng & Tang, 1999a). "A strategy or policy shift can, however, be costly, and learning to cope with the changes takes time and

effort. To gain experience and to avoid unnecessary economic and social instabilities that a sudden, drastic policy switch could cause, precautions were taken by the Chinese leadership; reform and opening up were to proceed, but only at a gradual pace (Ge, 1999)". As Deng Xiaoping, the architect of China's Open Door Policy, remarked, "Central Government has no resources and so (the SEZs) have to do it on your own 'to find a way out' (Shao, 1998)". To Deng, "SEZ is a window of technology, management, knowledge and foreign policy".

Shenzhen, across a bay from Hong Kong's New Territories…was insignificant no matter in Chinese politic or in Chinese economy at such time. When the SEZ was opened, Shenzhen was featured, for example, as a small border town surrounded by agricultural land…its share of GDP and exports in the Guangdong Province were both well below 1% in 1979 (Ge,1999). However, because of its proximity to Hong Kong, Shenzhen was identified as a possible site for developing an export-oriented economy. One of the (other) reasons for setting up a SEZ here was to stem illegal migration through attracting investments from restructuring Hong Kong (Shenzhen Museum, 1999) and it was entrusted with the following functions:

- ➢ As a "window" for observing global trends in economic, scientific, technological, managerial and market developments.
- ➢ As "training ground" for talents in the Mainland.
- ➢ As "experimenting ground" for reforms such as special economic management systems, flexible economic measures for enhancing economic cooperation and technology interflow between China and foreign countries (Shenzhen Museum, 1999)

4.3 The Preference Offered by Shenzhen SEZ

When the SEZ was set up, Shenzhen almost had not any resource to develop its economy. Ge (1999) points: Within the Shenzhen area, nearly 80% of households in

1979 were engaged in either agricultural or fishery activities. The industrial base was weak, accounting for less than 20% of GDP and employing about one-fourth of the total labor force. Manufacturing was highly concentrated in a few items. Infrastructure was virtually nonexistent. The capacity for electric power generation was negligible.

(Draw on Ge, 1999): Foreign direct investment in the SEZ has been directly linked to the SEZ policies. Aimed at attracting foreign investors, the SEZ has put together various incentive packages in a flexible, innovative manner. The incentives include duty-free privileges; concessionary rates, breaks and exemptions; preferential fees for land or facility use; favorable arrangements with project duration, size, sector invested, location, and the type of ownership; flexible treatments regarding business management, employment, and wage schemes; and so on. From the standpoint of foreign investors, these measures, from tax treatments to land-use arrangements, all translated into a lower cost of production or operation, and other things being equal, a potential for higher profits. Coupled with improved infrastructure, facilities, legal structure, and administrative framework, these open-minded, investor-friendly policies have helped within a short period of time to turn an inflow of foreign capital into a flood. In dealing with foreign direct investment, the SEZs have shown a high degree of flexibility. Various types of arrangements with foreign investors are developed in a pragmatic fashion. The most commonly practiced arrangements include processing and assembling trade, compensation trade, co-production, joint ventures, and the operation of wholly foreign-owned firms. In negotiating contracts with foreign investors, labor, land, factory facilities, and raw materials have generally been the main types of inputs that China is willing and able to put up, especially labor and land. These prototype arrangements appeal to the Chinese primarily because they allow for the acquisition of new equipment and technologies, including managerial skills, with minimum foreign exchange requirements in the long term, and they provide the quickest way to generate foreign exchange and to increase employment in the short term. To foreign investors, the flexible arrangements allow them to cope

with wide array of risks and uncertainties, from the convertibility of local currency, operational controls, profit- and risk-sharing schemes, management and marketing structure, to the protection of patents and trade secrets.

4.4 The Phases of Shenzhen SEZ Develops its Industrial Clusters

At the beginning of this sub-chapter, for easily understanding of how the SEZ set and pushed its industrial clusters, I must give some general information about Shenzhen's huge successful in industrial procession. From 1980 to 2001, the annual growth rate of GDP was 38.9% and per capita GDP had improved about 72 times. While the annual net wages of staff and workers had increased about 34 times in the 20 year period, the annual per capital income of the rural population increased about 65 times over the same time. While the agricultural sector made up 37% of GDP in 1979, it dropped to less than 1% in 2001 (SSB, 2002 and Ng, 2003). On the contrary, secondary industries have grown dramatically over the years. In 1979, secondary industries contributed only 20.5% of GDP but in 2001, the figure increased to 54%. Tertiary sector's contribution to GDP had increased from 42.5% to 45.1% over the same period (Ng, 2003)

From Figure 2, it is clear that the percentage of Tertiary (Service) sector didn't change so much—either increased or decreased. The service sector produced around 40%-50% of the total GDP of Shenzhen SEZ. However, we must notice that after 1979 the zone's total GDP grew hundreds times. Then the service sector also got growth, even its percentage shown from Figure maintained stable. In addition, we also could explain the figure from industry sector—please see sub chapter 6.6, the first obstacle.
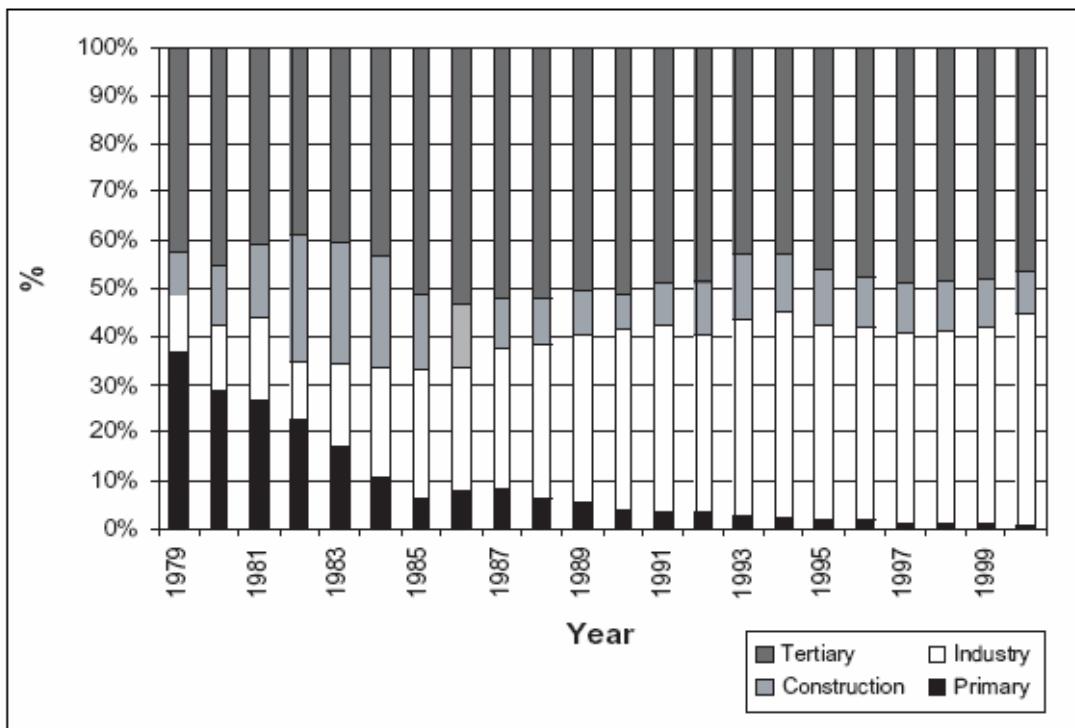
Figure 2 The Percentage of Four Sectors

The development of the industrial clusters in Shenzhen, based on Ng (2003), can be divided into three phases: construction phase from 1980 to 1985; economic restructuring from 1986 to the early 1990s; and re-engineering phase since the mid-1990s. The following more concrete depiction of the SEZ's industrial clusters based on such three phases.

4.4.1 1980-1985 Construction Phase

In the early years a combination of the special taxation policy given to the SEZ, cheap labour and cheap land proved attractive to Hong Kong based entrepreneurs (China Academy of Urban Planning and design, 2002). Although the Shenzhen SEZ was planned to be an industry-led modernized zone "to attract foreign investment and to foster domestic economic linkages", inadequate physical and legal infrastructure deterred many potential overseas investors who preferred to adopt a "wait and see" position. However, the SEZ was successful in engaging domestic investors, including ministry-led or provincial enterprises, through various preferential policies. For

instance, corporate tax in the SEZ was only 15%, compared to 55% elsewhere (Zhu, 1996). Extensive stretches of land were given to central ministries such as Shekou Industrial District owned by China Merchant Steam Navigation Company under the Ministry of Communication. By 1984, enterprises of more than 24 bureaux and departments from the Central Government had committed investment in Shenzhen. As the first experimental site for market mechanisms, many provinces in China tried to establish a foothold in Shenzhen, spurring its rapid economic growth. From 1983 to 1995, Shenzhen established linkages with over 2,000 corporations covering agricultural, commercial, food, transport, communication, sanitary and educational activities (Ng, 2003).

The kind of overseas industrial activities attracted to Shenzhen during the construction phase were low-value added labor intensive industries from Hong Kong and most were outward processing activities such as export processing, assembling and manufacturing which relied on imported materials, designs and parts. Between 1980 and 1985, Shenzhen surpassed almost all its economic and production targets set out in various socio-economic and spatial plans. This is the first phase of development and one can argue that the SEZ then was groomed more by domestic capital than foreign investment (Ng, 2003).

4.4.2 1985 to the Early 1990s: Export-Oriented Industrial Cluster

(Draw on Ng, 2003)

After 1986, the Shenzhen Municipal Government realized that to sustain growth, the best option was to develop a genuine export-oriented through attracting foreign investment. Naturally, the investment environment had to be improved, both hard and soft infrastructure had enhanced and administrative reforms were necessary to build a modern industrial city that appealed to overseas investors.

In 1986, only 30-40% of Shenzhen's industrial products were exported. In order to

boost export, the Shenzhen Government formulated the "Strategic Plan for Developing SEZ's export-led economy" and various measures were adopted (Shenzhen Museum, 1999)

  ➢ Overseas marketing of the SEZ

  ➢ Strict seletion of those enterprises that would export at least 70% of their goods; and

  ➢ Targeting investments by large-scale, high-tech and foreign-currency earning enterprises, etc.

From 1983 to 1986, Shenzhen SEZ had an annual imbalance in trade ranging from about US$ 180 million to US$ 662 million (SSB, 2002). However, from 1987 onwards, there has been a positive trade balance. In 1994, the trade balance climbed to US$ 1.64 billion. Between such period, more than 50,000 Hong Kong's processing enterprises went to Shenzhen and the remaining enterprises occupied less than 10% compared that of before.

4.4.3 Mid-1990s to Today: Modern Service Clusters and High Technology Clusters

In the middle 1990s, the SEZ had a certain economics of scale: in 1997, Shenzhen had 6,600 enterprises owned by domestic capital with an invested value of about 10 billion Yuan and they contributed to a quarter of the total industrial output and export value (Shao, 1998). Foreign capital was utilized to build facilities such as Yantian Port, Guangshen Highway, Daya Bay Nuclear Plant and the Shenzhen Telecom (Shenzhen Museum, 1999). A new city center was to be built in Futian: for this the municipal Government organized consultations from major international planning firms (Cartier, 2002). The SEZ Municipality decided to make High Technology clusters as well as Service clusters. It gets huge successful in its Service clusters, like financial clusters— the following news from China Knowledge (2007) can show us such truth:

"Shenzhen Stock Exchange, established on December 1, 1990 is also a non-profit membership institution. Like Shanghai Stock Exchange, it is committed to create a transparent, open, safe and efficient marketplace and serves to fulfill the following key functions: providing securities trading venue and facilities, formulating business rules, accepting and arranging for listings, conduct market surveillance and monitoring securities trading, regulating members and listed companies, managing and disseminating market information.

As of December 2004, a total of 573 companies (518 A-shares and 55 B-shares) were listed on Shenzhen Stock Exchange. In May 2004, as part of plans to set up a Growth Enterprises Board, a small and medium enterprises board (SME board) was established in Shenzhen Stock Exchange.

Shenzhen Stock Exchange processes orders from off-site terminals in member firms' offices directly. The daily capacity of the system stands at 20 million trades. Real-time stock quotations and transaction confirmations are disseminated to the offices of member firms via satellite and optical communication network. To ensure timely detection, reporting and investigation of trading irregularities, the Exchange is now performing real-time monitoring of market activities. A comprehensive and multi-level information system composed of the trading network, Internet and Reuter terminals assure prompt dissemination of news regarding the market or listed companies. (http://www.chinaknowledge.com/Financial/shenzhen-stock-exchange.aspx)"

4.5 The Reasons of Developing Modern Service Clusters

4.5.1 Serious Environment Pollution

After 10 years (1985-1995) of development, hundreds and thousands factories appeared here and the city rapidly evolved into an industrial city. Nevertheless, with the big benefit from business running, the environment problems also let the citizens

under a big crisis. It was reported that 1994, 677 major industries released 33 thousand million m3 of waste gases, including 1,911 tons of dust and 473 tons of industrial powder and particles (EPO, 1995). The EPO also reported serious pollution of the Shenzhen and Bujin Rivers (op. cit, 1995). The waste water treatment rate in the urban areas was only 10.3 per cent though the industrial waste water treatment rate was 98.1 per cent. Marine water and noise pollutions were rather serious. While solid wastes were treated within the SEZ, situations outside it were beyond control, causing serious pollution to surface running water (op. cit, 1995). While Shenzhen had 43.9 per cent of its areas zoned as green belt and was awarded China's Garden City and an Advanced Green City in 1994, illegal constructions were found within the green buffers every now and then (op. cit, 1995).

4.5.2 Government's City Plan

SMG (2000): "Shenzhen is to be developed into a city with environment of Singapore and efficiency of Hong Kong". The city aims to become a regional centre for finance, information, trade, commerce, transportation and tourism as will as high-tech development and R&D centre in southern China. Shenzhen will develop a modernized economic structure led by high-tech and other advanced industries, supported by modern service sectors such as logistics, finance, information, trade and commerce, and a well-developed urban agricultural sector (Ng & Tang, 2002)

4.5.3 Shenzhen Municipality's Competition

SSIB (2000) points: by 1996, Shenzhen was a very different place when compared to 1985 when the first industrial district was ready for occupation. Between 1985 and 1996, the population had grown from 0.81 million to 3.52 million (+435%); gross output value of industry had increased from 2.5 billion yuan to 143 billion yuan (+579%); fixed asset investment grew almost ten times from 3.3 billion yuan to 33.8 billion yuan and local financial revenue and expenditure in budget increased from

0.63 billion yuan to 13.2 billion yuan (+22,095%). However, throughout these years, there was increasing competition by the equally rapidly growing Pearl River Delta region and other opening regions in China (Ng, 2002).

4.5.4 Attracting Foreign Investment and High Revenue from Service Clusters

The municipal government believed that service clusters would bring it more foreign investment and high revenue.

(Draw on Ng, 2002) In fact, ever since the 1990s when the zone paid more attention on building its service clusters, Shenzhen has increasingly relied on foreign investment. The actual foreign capital used by Shenzhen from 1980 to 2000 had exceeded US 20 $ billion, two-thirds of which was used after 1995. Foreign investors from 67 countries and regions around the world, including 76 on Fortune magazine's Top 500 List, had set up more than 14000 foreign-funded enterprises in Shenzhen.

4.6 Shenzhen's Approach of Development of Service Clusters

First, **promote industrial integration.** Relying on high-tech and advanced manufacturing advantages, Shenzhen extends its industrial chain, accelerates the improvement of pre-production research, design, interim management, financing and post-delivery logistics, marketing and after-sales service, information feedback, and other services sectors, and constantly improves the service ability, service industries by fostering the growth of high-end cluster. Focus on the orientation of industrial development as: 1. Financial innovation. Shenzhen creates the financial institutions gather and financial product centers and it fully support the development of multi-level capital market. The Shenzhen Stock exchange strengthens the financing

functions of the motherboard market, and expands the scale of small and medium-sized enterprises, and promotes the building of the Global Entrepreneurship Monitor (GEM) market, and explores the establishment of over-the-counter market (OTC); 2. Modern logistics. The Zone supports to do modern logistics enterprise' network service system. It encourages logistics business by forming a third party of supply chain as the main logistics industry group; 3. Professional careers. It makes development of legal services, accounting, consulting, intellectual property rights, public relations, brokers and talent search, property rights transactions and other specialized careers; 4. Internet information. It accelerates the development of the internet, software and systems integration, information technology, digital and value-added networks, telecommunications and broadcasting operators and other services. It further improves the information infrastructure constructions such as cable networks, wireless networks and strategy of "fiber to the home"; 5. Outsourcing of services. Based on its outsourcing services, it encourages the enterprises within it to do application design, operation, and maintenance of information for Hong Kong, Macao and foreign companies. It expands the scope of engaging in the supply chain management, human resources management, data processing and analysis management, and the research solutions for users of the knowledge process; 6. Creative industries. it accelerates industrial design, animation game developers design, software design, construction and planning design, journalism, publishing creativity, broadcasting, film and television and video production, advertising and consulting planning, literary and artistic creation and business shows; 7. Brand Exhibition. It gives full play to the fair and cultural brands and actively supports the electronics, communications equipment, jewelry, furniture, clothing and other professional brands; 8. Tourism. It introduces international hotels and travel agents. It encourages and guides social capital into major tourist attractions, high-star hotels, and tourism and leisure facilities in tourism industries.

Second, **develop headquarters economy.** Shenzhen City rose: "seizing the full liberalization of services opportunities at the transitional period". It made vigorous

efforts to attract foreign capital in the financial services, logistics, exhibition, information, professional services. Headquarters attract multinational corporations and transnational purchasing center, distribution center, advanced technology, management experience and common standards which improve services and the degree of internationalization of Shenzhen. In 2005, Shenzhen total had more than 350 enterprises headquarters who located in the second and tertiary industries. Among whom, service-oriented enterprises of the tertiary industry headquarters were 215 (Shenzhen Commercial Daily, 2008 Mar 4th, in Chinese).

Third is to **promote the cooperation between Shenzhen and Hong Kong.** It undertakes high-end service industries in Hong Kong with a positives attitude and the transfer of radiation led to large or well known Hong Kong corporate services headquarters to come to the city or to set up branches here. The zone introduced Hong Kong's high quality human resource and Hong Kong's advanced mode of operation.

Particularly, CEPA (Closer Economic Partnership Arrangement) plays a key role. CEPA is the first free trade agreement ever concluded by the Mainland of China and Hong Kong. The main text of CEPA was signed on 29 June 2003. CEPA opens up huge markets for Hong Kong goods and services, greatly enhancing the already close economic cooperation and integration between the Mainland and Hong Kong. CEPA covers 3 broad areas: **Trade in goods** - All goods of Hong Kong origin importing into the Mainland enjoy tariff free treatment, upon applications by local manufacturers and upon the CEPA rules of origin (ROOs) being agreed and met; **Trade in services** - Hong Kong service suppliers enjoy preferential treatment in entering into the Mainland market in various service areas. Professional bodies of Hong Kong and the regulatory authorities in the Mainland have also signed a number of agreements or arrangements on mutual recognition of professional qualification; **Trade and investment facilitation** - Both sides agreed to enhance co-operation in various trade and investment facilitation areas to improve the overall business environment.

With the implementation of CEPA, Hong Kong's modern logistical companies are encouraged to set sub branches in Shenzhen as well as supports Hong Kong to join tourism exhibition of audio-video products services Hong Kong enterprises in Shenzhen can acquisition services enterprises and Hong Kong can full liberally to invest in public utilities. The zone removes the restrictions various unreasonable regulations—the non state owned economy will be equally treated with state owned economy. Foreign investment can enter all areas which domestic investors can do. Investment promotion activities should be fine to the extensive transition and create a more excellent overall investment environment and provide investors with comprehensive, high-quality and depth of services. In 2005, modern service-oriented industries in Shenzhen placed 56.19 percent of total foreign investment (Shenzhen Special Zone Press, 2006 Dec 20th, in Chines).

Fourth, **strengthen independent innovation.** High-end services do the implementation of independent innovation strategy. If we observe the issue from intellectual property rights: by the end of 2005, the local government enacted law "the Shenzhen Municipal Intellectual Property Strategy Outline" which was the first city in China who building strong intellectual property rights. After that, another two laws also passed by the local council that were "Shenzhen City trademark strategic framework" and the "implementation of the strategy for strategic framework". In 2006, there were 29,728 patent applications in Shenzhen, ranking the second in the large and medium sized cities all of China (Report from the office of commissioner of the ministry of commerce in Shenzhen, 2007 Aug 15th, in Chinese).

Five is to **strengthen the administrative support.** Shenzhen proposed to improve the industrial system, to build professionals human market, to improve government services, and to strengthen organization and management.

Finally, **service clusters are given tax concessions and financial support**. For

example, well known international services enterprises who would like to build or buy their own office space will receive 500 yuan per square meter subsides one time; the companies engaged in the digital radio and television, database, electronic publishing, such as R&D production etc, where high-tech enterprises in line with the state existing provisions of the tax preferential policies can be unified and enjoy corresponding preferential taxation policies; the fund of "development of cultural industries" is a special funds for creative design enterprises—for providing subsidies to export cultural goods and services.

4.7 Summary of the Empirical Part

The present state of Shenzhen SEZ was inseparable from its own historical evolution. Shenzhen SEZ, as a special area earmarked for economy development, had a good investment environment. The clusters within Shenzhen SEZ experienced a gradual development process. When the SEZ's local economy achieved a certain stage, due to various factors, the clusters may upgrade. At such time, an appropriate and effective approach of upgrading will ensure the further economy development.

5 Measuring

The goal of this chapter is answering the question that whether Shenzhen SEZ has modern service clusters. The main mathematic tool used here is Hoover (1936)'s Location Quotient (LQ)

5.1 Shenzhen's Service Clusters

At the first beginning of this sub-chapter, I give a general picture of GNP of Shenzhen SEZ. From table 1, it is very significant that Shenzhen SEZ got huge development in both the secondary sector and tertiary sector.

Year	GNP(million yuan)	Primary	Industry	Construction	Tertiary
1979	19,638	7,273	2,313	1,704	8,348
1980	27,012	7,803	3,726	3,310	12,173
1981	49,576	13,343	8,311	7,708	20,214
1982	82,573	18,960	9,540	21,899	32,174
1983	131,212	22,614	22,466	33,382	52,750
1984	234,161	25,932	51,802	54,804	101,623
1985	390,222	26,111	102,137	61,449	200,525
1986	416,451	32,907	106,606	56,579	220,359
1987	559,015	46,519	164,445	56,018	292,033
1988	869,807	57,005	274,787	84,443	453,572
1989	1,156,565	68,615	400,579	104,782	583,580
1990	1,716,665	70,220	644,947	124,372	877,126
1991	2,366,630	80,836	928,846	197,238	1,159,710
1992	3,173,194	105,914	1,176,087	346,345	1,544,848
1993	4,531,445	108,615	1,810,085	610,129	2,002,616
1994	6,346,711	134,152	2,671,299	686,673	2,854,587
1995	8,424,833	124,122	3,370,548	850,887	4,079,276
1996	10,484,421	148,796	4,186,130	879,794	5,269,701
1997	12,974,208	147,660	5,193,120	980,963	6,652,465
1998	15,347,272	151,764	6,315,047	1,119,929	7,760,532
1999	18,040,176	150,445	7,801,018	1,204,468	8,884,245
2000	21,874,515	155,656	9,627,492	1,233,360	10,858,007

2001	24,824,874	160,413	11,053,418	1,244,247	12,366,796
2002	29,695,184	166,587	13,367,060	1,280,111	14,881,426
2003	35,857,235	142,048	16,724,227	1,450,008	17,540,952
2004	42,821,428	123,264	20,597,743	1,414,610	20,585,811
2005	49,509,078	97,385	24,834,947	1,499,480	23,077,266

Table 1 GNP in Shenzhen SEZ from 1979 to 2005 (Resource from Shenzhen 2005 statistic year book (e-book), in Chinese)

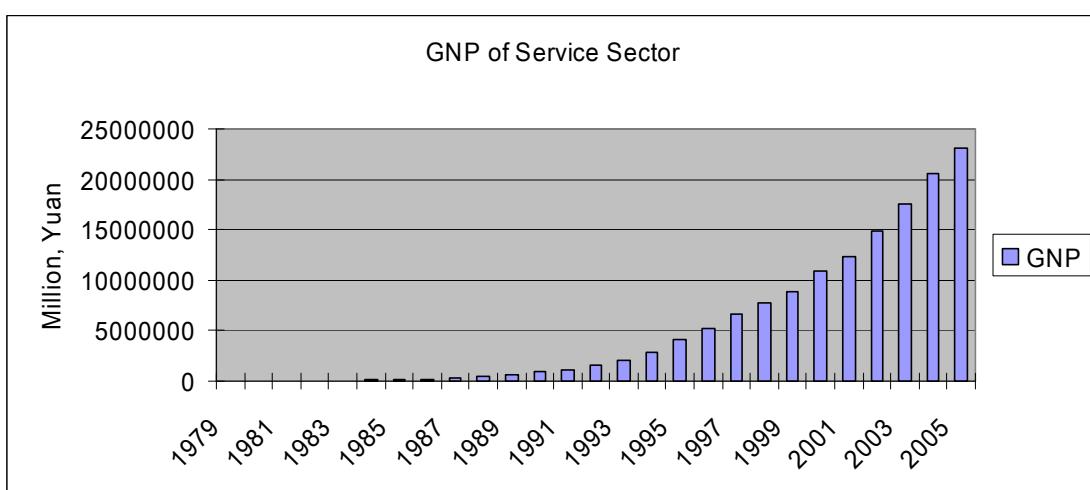Based on table 1, Figure 3 gives a direct description of Shenzhen's service sector.

Figure 3 GNP of Service Sector

5.2 Hoover's Location Quotient

5.2.1 Definition and Example

Hoover's Location Quotient Technique is the most commonly utilized economic base analysis method. It was developed in part to offer a slightly more complex model to the variety of analytical tools available to economic base analysts. This technique compares the local economy to a reference economy, in the process attempting to identify specializations in the local economy. The location quotient technique is based upon a calculated ratio between the local economy and the economy of some reference unit. This ratio, called an industry "location quotient" gives this technique

its name.

The location quotient (LQ) is an index for comparing an area's share of a particular activity with the area's share of some basic or aggregate phenomenon. Suppose X is the amount of some asset in a region (e.g. manufacturing jobs), and Y is the total amount of assets of comparable types in the region (e.g. all jobs). X/Y is then the regional "concentration" of that asset in the region. If X1 and Y1 are similar data points for some larger reference region (like a state or nation), then the LQ or relative concentration of that asset in the region compared to the nation is **(X/Y)/(X1/Y1)**.

An example: LQ is useful in demographic studies because it show what makes the region's demographics unique in comparison to its state and/or the nation. For example, if age groups over 60 have an LQ **greater 1,** then the region has a **higher** than average concentration of residents over 60. If the percent change in LQ is positive, then the over-60 age group in the region is also growing faster than the nation. "State LQ" calculates the regional LQ(s) by dividing the regional concentration of a demographic group by the state concentration. "National LQ" calculates the regional LQ(s) by dividing regional concentration by national concentration. For example, suppose that in a certain region, 7.5% of the population is age 60 to 64. In the region's state, this age group composes 6% of the population, while in the nation it composes 5.8% of the population. This group is thus 1.25 times more concentrated in the region than the state (7.5% divided by 6%), and 1.29 times more concentrated in the region than the nation (7.5% divided by 5.8%). So the state LQ would be 1.25 and the national LQ would be 1.29. If the region contains areas in two or more states, then the average concentration in all those states is the basis for the LQ calculation.
(http://www.economicmodeling.com/resources/wp-content/uploads/2007/10/emsi_un derstandinglq.pdf).

In this sub chapter, because the modern service clusters consists of many kinds of

clusters and we could not check them one by one. Here I only give the data about Shenzhen's financial industrial cluster and Shenzhen's real estate industrial cluster, which are always selected as the representatives of modern service industries.

5.2.2 Concrete Data for Financial Industrial Cluster

1. The value-added created by financial industrial clusters (including banking, stock and insurance sectors)
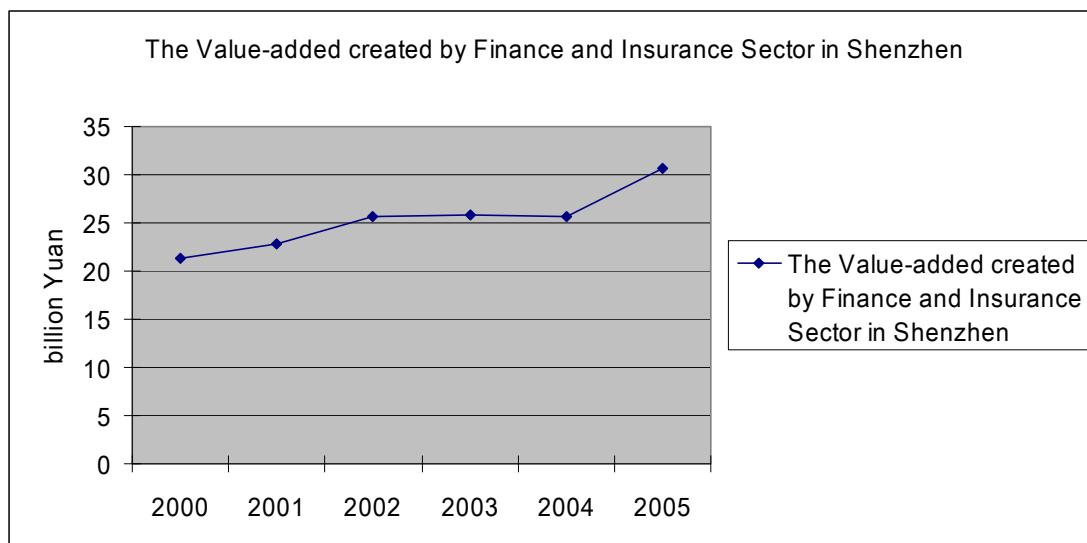
Figure 4 The value-added created by the Finance& Insurance Sector

(Original Resource from Chinese Statisecal Report Forum (in Chinese) http://www.nightbaby.net/community/viewthread.php?tid=730, edited by the author)

2. Employment in Shenzhen

Figure 5 Employment in Shenzhen

Resource from Shenzhen statistic year book, 2005

3. Shenzhen Stock Exchange

Figure 6 Shenzhen Stock Exchange

(Original Resource from Chinese Statistic Report Forum (in Chinese) http://www.nightbaby.net/community/viewthread.php?tid=730, edited by the author)

4. Profit made by Insurance Sector

Figure 7 Profit made by Insurance Sector

5. Based on Hoover's Location Quotient (LQ) (1936), the main data is from the number of employed person. The following data are required:
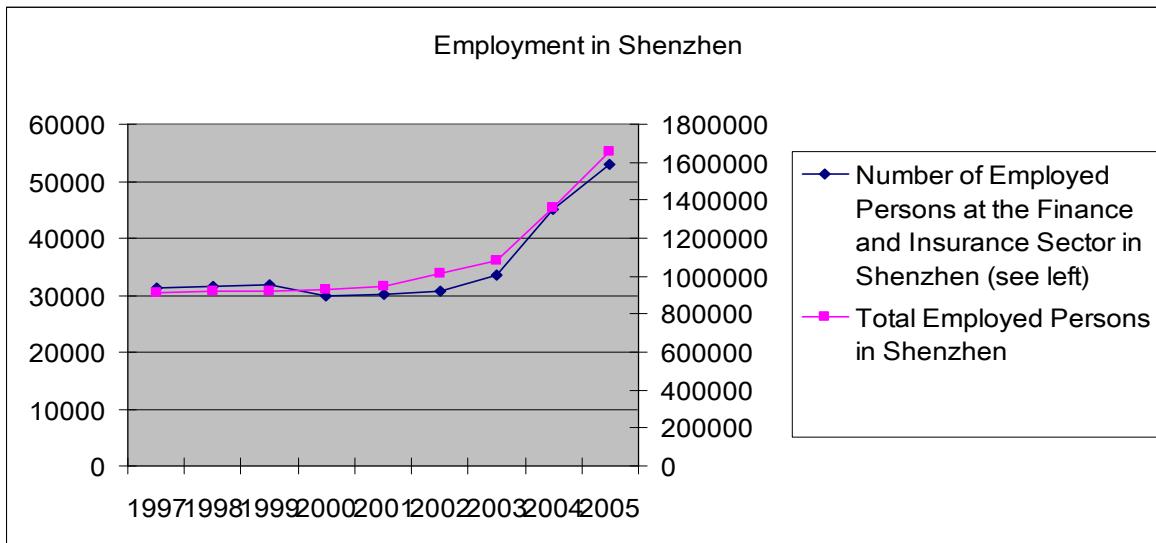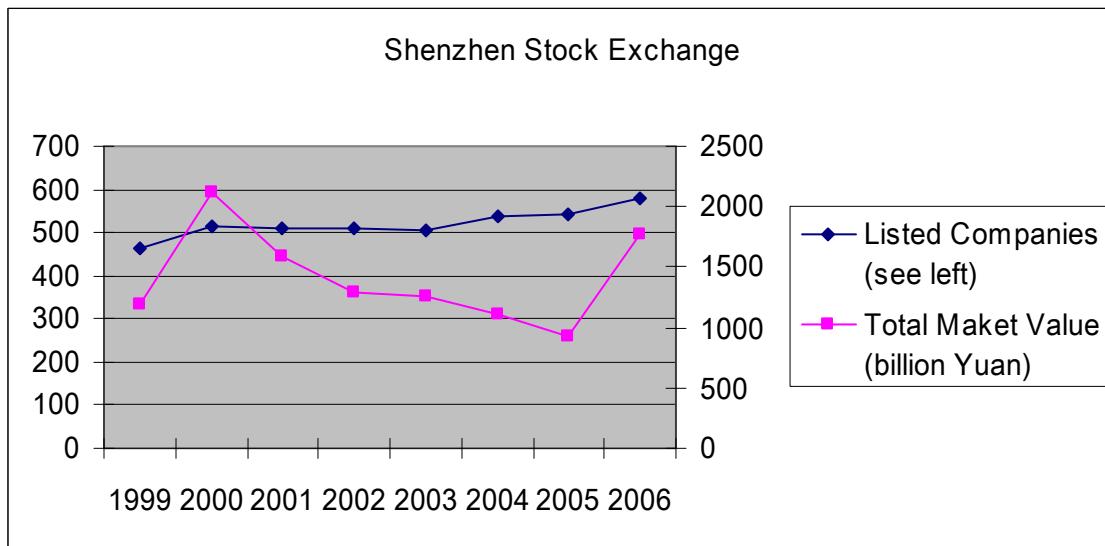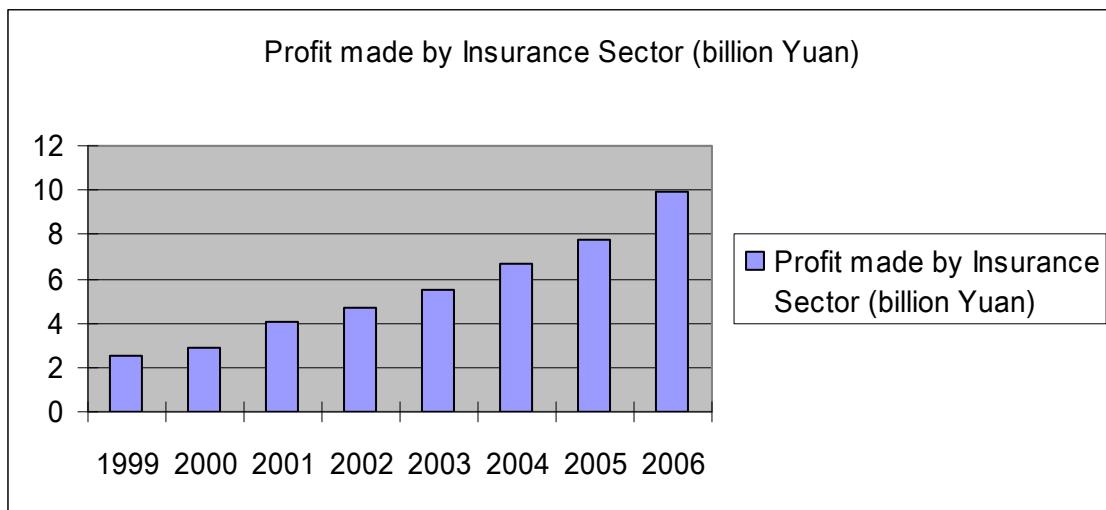
1. Number of Employed Persons at the Finance & Insurance Sector in Shenzhen

2. Total Employed Persons in Shenzhen

3. Number of Employed Persons at the Finance Sector in China

4. Total Employed Persons in China

Year	Number of Employed Persons at the Finance & Insurance Sector in Shenzhen#	Number of Employed Persons at the Finance & Insurance Sector in China*	Total Employed Persons in Shenzhen#	Total Employed Persons in China*	LQ
1997	31137	3080000	911796	698200000	7.75
1998	31517	3140000	919289	706370000	7.69
1999	31693	3280000	925177	713940000	7.46
2000	29807	3270000	933586	720850000	6.92
2001	30281	3360000	948793	730250000	6.845
2002	30762	3400000	1017571	737400000	6.426
2003	33616	3535000	1081970	760750000	6.79
2004	44976	3560000	1358764	768230000	7
2005	53044	3590000	1653832	758250000	6.808

Table 2 LQ of Finance and Insurance Sector

#: http://www.soshoo.com/Irisbin/Search.dll?db=TJ&fd=TI&ns=10&od=0&rl=*&tm=4&iw=深圳

市%20%20%20%20%20%20%20%20 全部职工人数. Because it includes 9 tables, I

only put one of them in attachment 4.

*: http://www.stats.gov.cn/tjsj/ndsj/2006/html/E0505e.htm. Chinese Statistical Year Book (2005,

E-book).

I give an example how to computer LQ in 1997.

LQ=(X/Y)/(X1/Y1)

X=31,137, Y=911,796, X1=3,080,000 and Y1=698,200,000

Then LQ=0.0341/0.0044=7.75

Here LQ=7.75 means, if we let Chinese average level of Financial and Insurance

equals 1 at 1997, and then the Shenzhen's level was 7.75 times than the average level

at such year—Shenzhen SEZ had more concentration of financial clusters.

Figure 8 reflects the Shenzhen SEZ's financial and insurance LQ from 1997 to 2005.

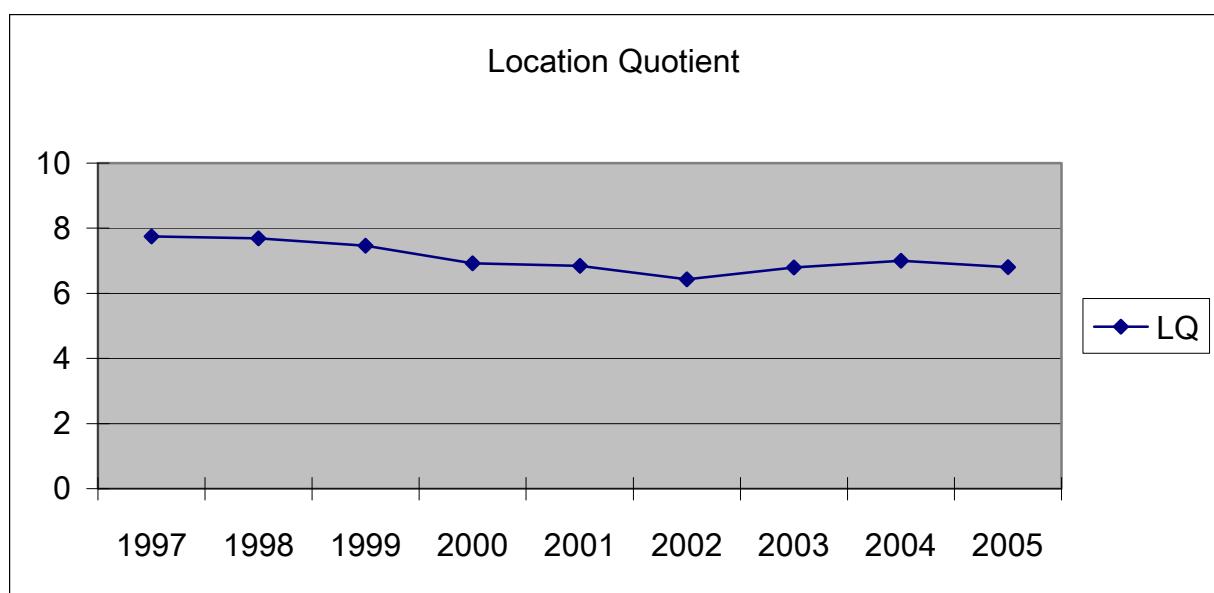And it is sure that the number was around 7 times than Chinese average level.

Figure 8 LQ of Finance and Insurance Sector

5.2.3 Concrete Data for Real Estate Industrial Cluster

I use the same method to calculate the LQ of Shenzhen's real estate sector. The result is given by the following table and figure.

Year	Number of Employed Persons at real estate Sector in Shenzhen #	Number of Employed Persons at the real estate Sector in China*	Total Employed Persons in Shenzhen#	Total Employed Persons in China*	LQ of Shenzhen
1997	29986	870000	911796	713940000	26.98754
1998	31694	940000	919289	720850000	26.43882
1999	34940	960000	925177	730250000	28.72754
2000	36540	1000000	933586	737400000	28.8614
2001	40047	1070000	948793	760750000	30.00936
2002	43051	1180000	1017571	768230000	27.54405
2003	54246	1202000	1081970	758250000	31.62718

Table 3 LQ of Real Estate Sector

#: http://www.soshoo.com/Irisbin/Search.dll?db=TJ&fd=TI&ns=10&od=0&rl=*&tm=4&iw=深圳市%20%20%20%20%20%20%20%20 全部职工人数.

*: http://www.stats.gov.cn/tjsj/ndsj/2006/html/E0505e.htm. Chinese Statistical Year Book (2005, E-book).

Figure 9 LQ of Real Estate Sector
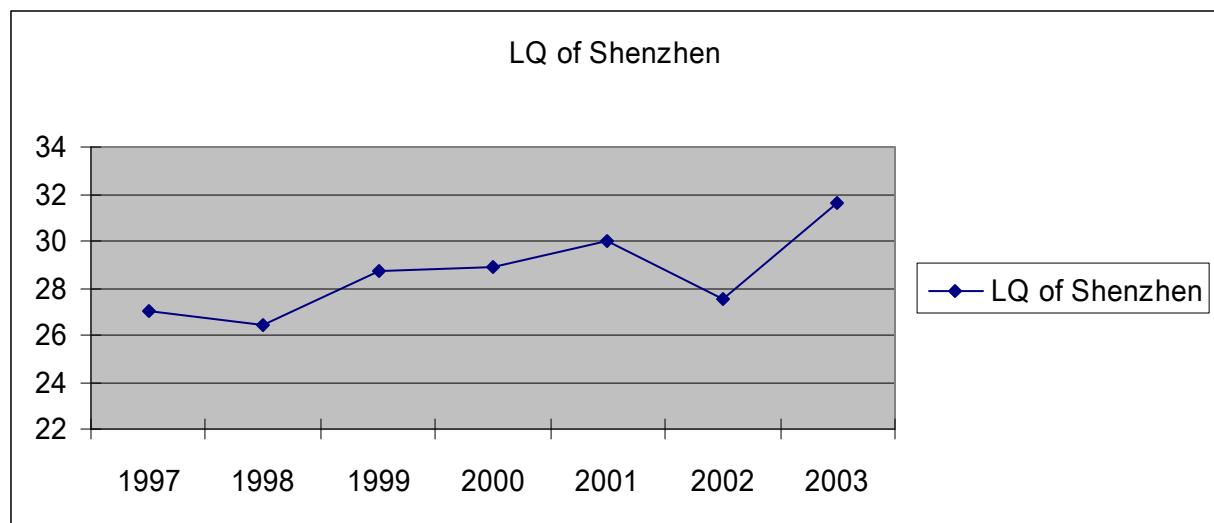
From above data, we can say that before mid 1990s, Shenzhen has had very big real estate clusters. The main reason is that Shenzhen was the first place which allowed "land trade", through with it cumulated much experience in developing real estate cluster. After 1995, the Municipal Government decided to develop service clusters and its LQ on real estate cluster increased from 27 to 31.

6. Analysis

There are a lot of SEZs in the world, but only some of which build clusters successfully. The goal of this chapter is exploring the relationship between Shenzhen's industrial clusters and Shenzhen SEZ itself.

Before the analysis, first, I give a premise that Shenzhen SEZ has enough labor resource, but lacks capital. This assumption is consistent with Chinese national situation. China does not lack the labor. It has 8 to 900 million peasants. With the development of technology and the process of urbanization, since 1979, every year tens of millions of peasants came into urban. Not only promote they the development of city, but also they are the main force of Chinese cheap labor poor. Moreover, after 1990s, the scale of Chinese advanced education expanded many times, though which thousands and hundreds qualified university/college graduates came out, which at least satisfied the requirement of many Chinese big cities' economic development. However, China in last 1970s was a very poor countries, and didn't have enough input for economic development. An interesting thing is, even 20 years later, Chinese economy still lacked of funds to carry out economic construction, mainly because of Chinese financial and banking system problem (See appendix 2). Then, we should ask, who brought capital in for Shenzhen SEZ's economic development? The answer for such question will have many editions, but **Foreign Direct Investment (FDI)** is no doubt a main force.

A lot of research works have been done on industrial clusters, which means we could have opportunity to check the SEZ and its industrial clusters from a variety of angles. Particularly, Porter (1990, 1998) analyzes industrial clusters from many perspectives like historical accident, location, firm's competitive advantage, the government's role, investment and etc. Based on Porter's fruitful researches and considered the real situation Shenzhen SEZ has, in addition under above premise, FDI is a key factor both

on SEZ and the industrial clusters within SEZ. So I choose FDI as the main angle to uncover the link between SEZ and clusters.

I will give my explanation about the advantages the SEZ has in attracting FDI, which pushes the emergence and development of its industrial clusters. The explanation consists of 3 perspectives, from chapter 6.2 to 6.4: Location, Role of the SEZ's government, and individual foreign investor. And in chapter 6.5, some Shenzhen special characteristic in modern service clusters will be given. In chapter 6.6, I will also say the challenges Shenzhen SEZ met. But first, in sub chapter 6.1, I will give some general description about Shenzhen' FDI.

6.1 General Description about FDI in Shenzhen

As fig 10 shown, Shenzhen SEZ is preferred by more and more foreign investors. In 1979, there was only 1.79 million US dollars FDI in Shenzhen, and around ten years later (at 1993), the number reached 600 million $ and almost peaked 2,900 million $ at 1998. After 1998, the number decreased to 2,500 million and rose again to 3000 million $ in the year 2000, in such year the SEZ only received 1.2 billion FDI.
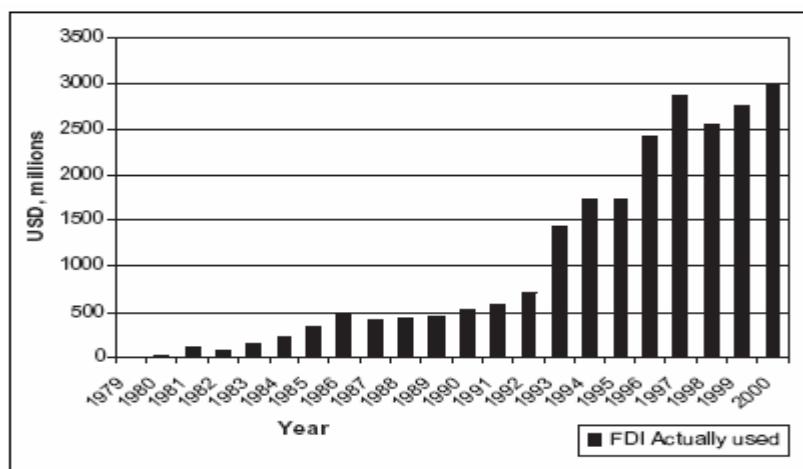

Figure 10 FDI actually used by Shenzhen

Resource from SSIB, 2002

Then, let we see the FDI in Shenzhen's modern service. Shenzhen SEZ is the first

place in China which allowed FDI flowing into modern service. The first foreign bank in China called Nanyang Commercial Bank, which is a bank controlled by Hong Kong and started to have its own sub branches in Shenzhen SEZ in 1982. Tianding International Trade Co., Ltd and Shenzhen Sino-US Aokang De international trade Co., Ltd. were Chinese first foreign joint ventures, which were set up by foreign trade companies and both of companies were located at the zone. Since 1990s, Shenzhen SEZ gradually accelerated the pace of opening its modern services to the outside. From 1990 to the end of 2005, the SEZ had approved 7,321 foreign investment projects in modern services fields, which was far higher than the national average level. Among which, the number of project that had FDI more than 10 million US was 551. Since the implementation of CEPA, the city has approved 63 CEPA projects, including transport agency services, convention and exhibition, retail, warehousing, business, and consulting industries. Shenzhen in 2005 maintained high-speed growth of FDI, in which modern logistics, modern commercial and financial services were most significant, which occupied 56.19% of total FDI at such year. In 2006, Shenzhen approved 2,197 new tertiary industry projects, accounted for 70.76 percent of total projects. All of 2,197 projects absorbed FDI 3.105 billion U.S. dollars, accounting nearly for 60% of the SEZ's FDI. The tertiary industry projects and the amount of FDI grew 19.17% and 6.26% than the number in 2005. Among them, Shenzhen focused on the development of high-end services in the financial industry and the logistics industry, and the foreign capital actually used in former was 362 times than the same number at 2005. The FDI in modern logistic industry rose 11.46 percent compared to the number at 2005. The first half of 2007, there were 18,178 foreign companies at Shenzhen SEZ, in which 5,951 were engaged in the modern services sector, accounting for 32.74%.

In recent years, the proportion of foreign investment in the manufacturing sector dropped from 72.37 % (the year 2004), to 64.94% at the year 2005 and 68.72% at the year 2006. While FDI still treated the manufacturing industry as the key point, but the proportion of FDI on service increased year by year. In 2004, Shenzhen has 3,799 FDI

projects, accounting for 26.18% of total FDI projects; in 2005, the number increased by 4,297, accounting for 28.14%; and in 2006, the number was 5,190, accounting for 30.83%, in which around 46% were belonged to modern service industries like logistic, information service, real estate, and etc[1].

Here, as a typical example of modern industrial clusters, I give some concrete data on bank clusters, from which we could see how FDI affect the SEZ's economy development.

As I have pointed above, there was only one foreign bank in Shenzhen SEZ in 1982 (Nanyang Commercial Bank), but 16 foreign banks appeared at Shenzhen in 1991; 7 years later before the Asian Financial Crisis, 8 more foreign banks came to the zone; before CEPA had gotten final agreement at 2003, Shenzhen SEZ had 19 foreign banks; after CEPA was passed by both Mainland China and Hong Kong, until 2005 there were 31 foreign banks in Shenzhen. I used the following figure to show this change:

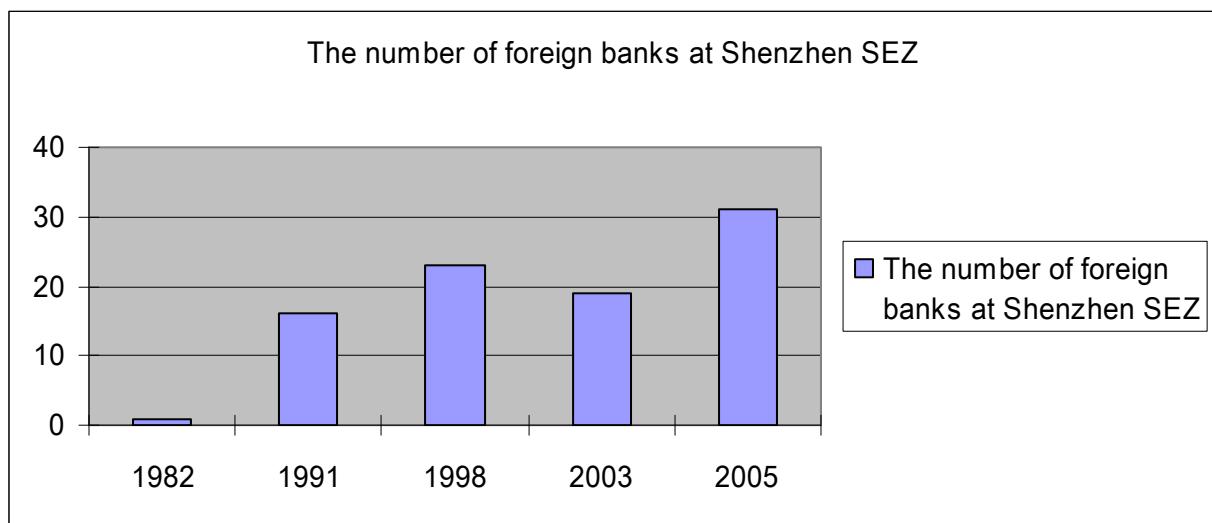Figure 11 The number of Foreign Banks at Shenzhen

Zhang Siping, Shenzhen's vice mayor, said the financial sector was one of the four

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[1] All the data in this paragraph is edited by author, from following website (in Chinese):
http://wzj.saic.gov.cn/pub/ShowContent.asp?CH=GZDT&ID=1354,
http://www.ebtime.net/html/dq/20071/dq20071sj1180554327.html
http://news.tom.com/2006-02-15/000N/12422611.html

basic industries in Shenzhen. Many foreign banking giants, including the U.S.-based United Commercial Bank and Japan's Bank of Tokyo-Mistubishi had expanded their businesses in the city…there were 31 foreign banks in Shenzhen, the second-largest number nationwide (at 2005). There were 19 foreign banks operating Chinese yuan business in Shenzhen, 11 of which can offer Chinese yuan services to business including Standard Chartered, Citigroup, East Asia, HSBC, DBS, Wing Hang, Asia, the Bank of China, Hang Seng, South to Shenzhen Bank, the International Finance (http://www.china.org.cn/english/BAT/136255.htm).

Foreign banks in Shenzhen show strong profitability, particularly a robust development momentum in the RMB business. As at the end of 2005, foreign banks in Shenzhen achieved pre-tax profit of 48.304 million U.S. dollars. Net profit was 44.5376 million U.S. dollars, growing 16.11 percent than that of the previous year. In 2005, Shenzhen foreign banks had total assets of RMB 24.1 billion yuan, accounting for 28.6% of all the total assets of all banks.

6.2 Location

Location is a crucial factor for the development of industrial clusters. FDI always like to flow into the places where enjoys good location. Good location consists of natural resources, the supply of infrastructure, facilities techniques, scale of economy etc (see sub chapter 2.3.2).

For making successful industrial clusters within a SEZ, the SEZ's location is a potential factor. Then we must answer the question that "**where is the best place to set the SEZ up**"?

Chinese government thinks such issue more direct: the SEZ must be built at a location where the FDI would like to flow into, and then it will be possible to see the

emergence of industrial clusters which should benefit local economy. From Chinese experience, we see the following four points (main hints from Lai, 2006):

a. The SEZs were set at places which enjoy geographic proximity to neighboring advanced economies. Gu (1985) points: (Chinese first four SEZs) Shenzhen SEZ (in Guangdong Province) is adjacent to Hong Kong, Zhuhai SEZ (in Guangdong Province) is connected to Macao by land, and Xiamen (in Fujian Province) is close to Taiwan and the offshore islands controlled by the Republic of China based in Taiwan. Shantou SEZ (in Guangdong Province) is located between Hong Kong and Taiwan. All of them are coastal cities and have access to seaports. They were in advantageous positions to expand trade with developed economies. These cities could offer both inexpensive land and labor for investors from Hong Kong, Macao, Taiwan, as well as Singapore, Malaysia, and Thailand. If investors from these economies earned profits in these, it might prompt Japanese, Korean, Western investors to follow suit.

b. The SEZs were set at the places where "kept international backgrounds". Chen (1998) says many overseas Chinese came from Guandong province and Fujian province. Many of them had become successful entrepreneurs, yet had strong sentimental bonds with their Chinese's social connections to attract overseas investment.

c. The SEZs were set at provinces which have a long tradition of trade and entrepreneurship (Howell, 1993): for the last thousand years, both had experienced growth in foreign trade. Cantonese and Fujianese are very enterprising and receptive to foreign business and the world markets.

d. The SEZs were set at the places where the "free market" concept exists. Since the late 1970s, leaders in Guangdong had been quite liberal-minded, and rather forward- and outward-looking. In fact, Guangdong leaders were the first to ask for local opening. In April 1979, Fujian leaders requested their own SEZ.

The existing industrial clusters in the SEZs normally have relationship with the SEZs' locations. For example, Shenzhen SEZ has low added value industrial clusters firstly, like most of outward looking processing industrial clusters and traditional service

cluster, because Hong Kong's investment, technology and skill could transfer to the zone soon.

6.3 The Role of SEZ's Government

In Western classical economic theory, few researches on "the role of government in industrial clusters" were done. And the reason was that traditional economists thought the market should and could be controlled by an "invisible hand". The only issue the government can do is to maintain the stability of the macro economy. But "Government inevitably plays a variety of roles in an economy (Porter, 1998)". A SEZ is a special place where under government control and implement free market. The governments, no matter central government or local government, have influence on FDI, by which industrial clusters could be easily created.

6.3.1 Macroeconomic and Political Stability

It is no doubt that for any economic activities, a stable environment of macro economy and politic is necessary factor. Porter (1998) says, "Government's most basic role in an economy is to achieve macroeconomic and political stability. It does this by establishing stable government institutions, a consistent basic economic framework, and sound macroeconomic policies, including prudent government finances and low inflation." For attracting FDI, the SEZ generally enjoys a very good environment offered by the government.

The SEZ is place where enjoys preferential economic environment. Particularly at the beginning of establishment of the SEZ, such preferential policies played a significant role to attract FDI, which pushed the emergence of industrial cluster within the zone (no matter industry clusters are belonged to the secondary industrial clusters or service clusters). As I have mentioned in sub chapter 1.2, before 1979, "Shenzhen was only a small village, which nearly 80 percent of households were engaged in either

agricultural or fishery activities. The industrial base was weak, accounting for less than 20 per cent of GDP and employing about one-fourth of the total labor force… The role of Shenzhen in Guangdong Province was insignificant: it shares of GDP and exports in the province were both well below 1 per cent in 1979 (Ge, 1999)". From 1955 to 1978, China was nearly free of foreign direct investment (Reardon, 1998). Foreign loans, a politically less sensitive form of foreign capital, played a minor economic role, especially between 1960 and 1976. Between 1950 and 1960, China's foreign loans were provided by the Soviet Union. During the 1960s and 1970s, foreign capital in China was mostly a down payment for sellers' credit to purchase equipment from Western Europe and Japan (Gao, et al, 1993). It was impossible for Shenzhen having any service clusters. However, from 1979 to 1985, the service cluster, which represented by retail clusters, appeared at Shenzhen SEZ, and kept developing for many years. This was mainly because there were only five SEZs, who had enjoyed "free market policy" (other Chinese places were still under Plan Economy). At such time, in China, when the SEZ was set up at Shenzhen, it made a possibility for foreign investment coming in, by which population got fast growth that made rapid development of traditional service clusters (particularly, goods from Hong Kong came the SEZ, though which entered into mainland market). Of course, in the coming years, because Chinese market was in the ongoing process of reform, and an increasing number of cities started to adopt free market policy step by step, Shenzhen SEZ's advantages in attracting FDI became weaker and weaker. That's why around 15 years later, modern service clusters were restructured from the old one.

6.3.2 "Soft power"

Here the meaning the "soft power" given by me refers to "establish the overall microeconomic rules and incentives governing competition that will encourage productivity growth. Such rules and incentives include a competition policy enhancing rivalry, a tax system and intellectual property laws encouraging investment, a fair and efficient legal system, laws providing consumer recourse, corporate

governance rules holding managers accountable for performance, and efficient regulatory process promoting innovation rather than freezing the status quo (Porter, 1998)".

1. The SEZ has right to determine what kind of industrial clusters would be to set up within the zone. Between 1970s and 1980s, at the beginning of the establishment of the Shenzhen SEZ, majority areas in mainland China was still under the planned economy system, which means that most of industrial clusters were built under the central government's decision rather than by local government. Such system had its own drawbacks, for instance, because of historical reasons (like combat readiness), the central government always liked to let industrial clusters made their "home" at some traffic inconvenience areas like mountain. However, Shenzhen Municipality Government insisted on doing such decision by itself, which results in that the industrial clusters within the zone were much more in line with the zone's requirements—The first 15 years, the zone attracted FDI to push manufacturing clusters which brought huge profits and contributed a lot for the zone economy's turning off. After that, the zone FDI entered into high-tech industrial clusters and modern service clusters, both of which still benefited the zone.

2. SEZ's "soft power" also is reflected by that the zone usually is the experimenter of new policy. When China starts or sets some more advanced policies, it normally uses the policies/rules in some places for getting experience—if the policies/rules are feasible, then them will be promotion in nationwide. This approach often makes Shenzhen has a "first come advantage" in setting industrial clusters. For instance:

➢ Shenzhen is the first Chinese city that allows local land transactions, which push its real estate development and the establishment of industrial clusters. "In order to rise funding for local developments, Shenzhen SEZ learned from Hong Kong the trick of leasing as practice to increase the government's

revenue. Hence, the nation's first ever land market was introduced in the Shenzhen SEZ in 1987 (Ng, 2003). " This policy let Shenzhen's real estate group first appeared in China, and 20 years later, became one of Chinese leading real estate industrial clusters.

➢ Shenzhen SEZ is earliest city which allowed implementing structural reform of local government. Shenzhen Municipal Government carried out administrative reform in 1980s and in 1990s. The reform could separate into five phases, four of which were carried out in 1980s to simplify government structure and decentralize power to enhance efficiency. After 1990s, the administrative reforms were deepened to separate administrative units and economic enterprises-government departments were reduced from 44 to 40 and working units reduced from 11 to 8 (Shenzhen Museum, 1999). However, such reform in the Mainland of Chinese was mostly from the late'90s. With increasing the efficiency of the SEZ's Government, more and more foreign investment was attracted by the zone, which was a crucial force for the development of service clusters.

6.3.3 Infrastructure

An industrial cluster's establishment and development usually needs some certain infrastructures. The SEZ is the place that spends more money on infrastructures, compared to cities in inland China. The circle is that: the SEZ invests high and modern infrastructures, which create a good investment environment and make possibility for the clusters within it to make higher profits. And then the SEZ benefits from its clusters, and then the SEZ has more money which could spend on infrastructures.

Take Shenzhen's cultural and creative industrial clusters (one of Shenzhen's modern industrial clusters) as an example: in 1979, there were only two cultural facilities in Shenzhen SEZ—Shenzhen Cinema built in 1949 and Shenzhen Theater built in 1975. During 1980s, both FDI and Shenzhen municipal government spent a lot on the

construction of the "Eight cultural facilities" (libraries, museums, science museums, sports centers, the Grand Theatre and television stations, Shenzhen University and the News Building), and after 1990s, the "New eight cultural facilities" (Guan Shanyue Art Gallery, Painting Studio in Shenzhen, Shenzhen Book city, Shenzhen Special Zone Press Tower, the Shenzhen Commercial Daily buildings, cable television, the Chinese Arts Centre, He Xiangning Art Museum) was constructed. At present, Shenzhen City has been completed and public libraries, theaters, concert halls, art galleries and museums…more than 300 single infrastructures, covering 19 million square meters, with a total construction area of 1.39 million square meters. At the same time, we find Shenzhen's cultural and creative industrial cluster is becoming famous in China.

6.4 Individual Foreign Investor

Marshall (1920) gives some reasons why the individual firm would like to form clusters, including "non-traded local inputs", "local skilled-labour" supply and "information spillovers". Ohlin (1933) also says a number of reasons, such as "internal economies of scale", "localization economies", "urbanization economies" and "inter-industry linkages of input-out put type". If we integrate those two opinions and consider the actual situation of Chinese SEZs, we have:

(1) Individual foreign investors like to enter into SEZs, because the SEZ generally have good location. As I have mentioned above, the location is important. Individual foreign investors like go the place where has potential market demand, low logistic costs, low labour cost and etc. The SEZs normally have such conditions.

Take Shenzhen SEZ as an example. Its "non-traded local input (like transaction costs)" is very low; it is close to Hong Kong, which is one of the biggest global free ports, which means potential market is very big.

(2) Foreign investors secondly will consider the issue of "local skilled-labour". Krugman's textbook <International Economics, 7 edition> says: a cluster of firms can create a pooled market for workers with highly specialized skills. Such a pooled market is to the advantage of both the producers and the workers as the producers are less likely to suffer from labour shortages, while the workers are less likely to become unemployed.

The industrial clusters within the Chinese SEZs have almost the same situations, but they also have their own characteristic, that is SEZs are able to create a labour pool by themselves. Shenzhen was a small rural area which didn't have enough of labour pool before the SEZ set here. But when the government had provided various preferential policies, many people from inland China came to the zone under the dream of "gold rush". Increasing number of population let the SEZ's labour pool growth, which created an environment for foreign investors and FDI is gradually entering into the Shenzhen SEZ, pushing the formation of industrial clusters, and then again, the zone attracted more cheap labour from the inland of China.

(3) Quick access to "Information spillover" for foreign investors. Actually, the Shenzhen SEZ has its own city plan, which we could see from the following Fig that the industrial clusters only took some certain areas in the zone, which was easily for creating information spillover. Any way, with the help of modern transport (bus, subway, light railway, and etc), even some firms that within the zone but outside industrial clusters can also share the information with very less cost.
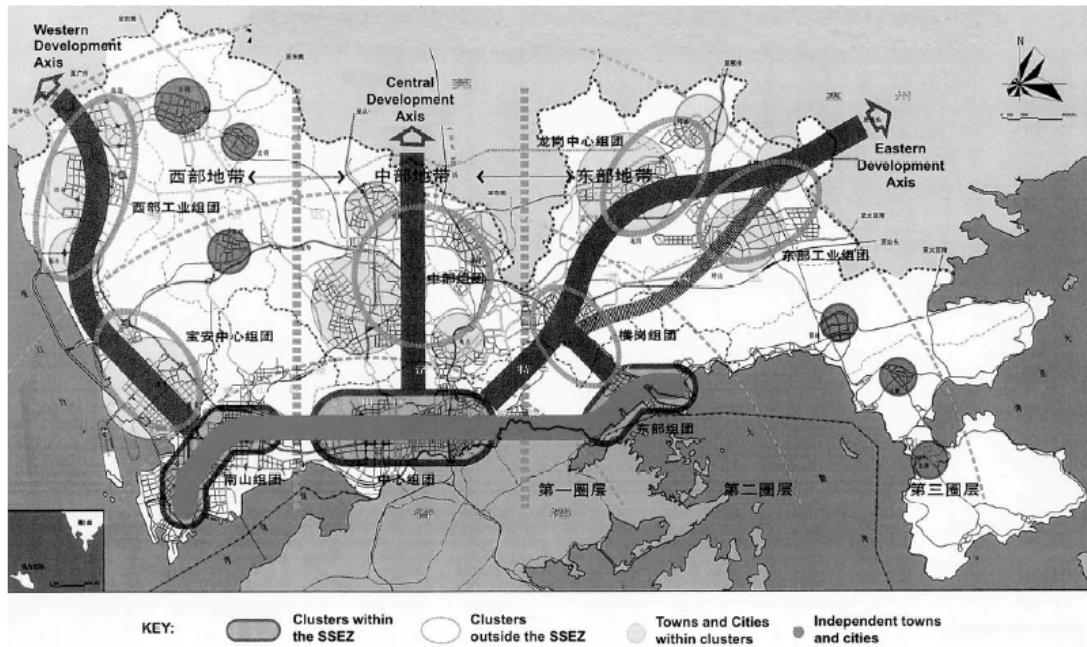
Figure 12 Clusters within Shenzhen SEZ

Resource from Shenzhen Municipal Government, 1997

6.5 Some Specific Features of Shenzhen's Modern Service Clusters

Porter (1998) says: Government should reinforce and build on established and emerging clusters, rather than attempt to create entirely new ones. New industries and new clusters emerge best from established one.

This sub chapter, we have to consider two issues, namely, what are Shenzhen Special Economic Zone's first industrial clusters? And the second is under what circumstances the SEZ transferred traditional service clusters to modern service clusters. Before the analysis, I give the definition of Traditional Service and Modern Service.

Traditional service provides various services for people's daily life. Most of traditional service has a long history such as restaurants, hotels, normal commercial

activities (like wholesales and retails). Modern service is developed in the industrial stage, relying on the information technology and management methods. Specifically it includes two categories: one category is the direct result of information technology and other scientific development, such as computer and software service, mobile communications services, information consulting services, international business, modern logistics and etc; and the other category is the transformation of traditional service through the application of science and technology, such as banking, securities, trust, insurance, real estate, accounting, auditing, assessment, legal services and other intermediary services (http://zhidao.baidu.com/question/44965266.html?fr=qrl, 2008, in Chinese).

6.5.1 Traditional Service Clusters

Although the SEZs enjoy many preferential policies, such policies do not mean that the SEZs must have successful clusters. A typical example is Hainan SEZ, which is the fifth Chinese SEZ but totally lost in building its manufacturing industrial clusters. The initial position of Shenzhen Special Economic Zone was clear, that was to establish an industry led modern zone. However, between 1979 and 1984, the SEZ got few support from FDI, because Shenzhen SEZ at this time had inadequate physical and legal infrastructure, many potential overseas investors would preferred to adopt a "wait and see" position in such circumstances, In the absence of foreign capital coming in, Shenzhen Municipal Government's plays a positive role in promoting its manufacturing clusters. For instance, the government "contacted" some big Chinese state own enterprises and successfully let the latter invested money in the zone. By 1984, enterprises of more than 24 bureaux and departments from the central government had committed investment in Shenzhen SEZ (Ng and Tang 2002). When a group of domestic enterprises in the manufacturing industry settled down here, the initial manufacturing industrial clusters appeared. After that, more and more foreign capital has begun to enter the SEZ, especially those low value added labour intensive industries from Hong Kong and those outward processing activities such as export

processing, assembling and manufacturing which relied on imported materials, designs and parts, came to the SEZ. For instance, up to 1985, there were about 4,696 foreign investments arrived at the zone, and over 76 percent of these were outward processing activities (Shenzhen Museum, 1999). In this way, the SEZ had been very successfully creating a manufacturing cluster.

Traditional service clusters located in Shenzhen is an "accident". Although Shenzhen has potential to forming a traditional service cluster, it may be possible that Shenzhen is still a village which engages in agricultural production if the Chinese central government didn't set SEZ at here. Shenzhen has the potential to become a cluster of local services, but if it was not elected by the central government as one alternative of SEZs, Shenzhen might still be engaged in agricultural production activities. But when Shenzhen SEZ set manufacturing cluster up, more and more people come to the SEZ and engage in the production, which resulted in raising the requirements of the service industry, and then the traditional industrial cluster got fast development.

6.5.2 Upgrade Services Cluster

When the SEZ's manufacturing clusters have been totally built, it began to have capital requirements on modern logistics, real estate industry and etc. At such period, the upgrading of traditional clustering services was coming. However, for Shenzhen SEZ, we found some very interesting things, that are: 1. the SEZ Government had no plan to develop modern service clusters before 1995; 2. some of the development of modern service, especially financial service, didn't get huge success as its traditional service sectors got (There were many reasons, such as the Chinese financial laws didn't not sound, and the SEZ also lacked experiences of developing financial services). For instance, in 1985, financial appropriation of capital construction investment was 2.7 billion yuan but the figure dropped dramatically to 1.9 billion yuan in 1986 (Ng and Tang, 2002).

By 1995, the Shenzhen SEZ, due to various reasons (see sub chapter 4.4.2), started to transfer and upgrade its industries. The SEZ's government established high-tech clusters and modern service clusters. This time, the issue became relatively easy: for one hand, the SEZ's government had sufficient funds which could be allowed to invest in more infrastructures; on the other hand, Shenzhen SEZ was famous in China and always be the first choice for FDI that hopes go to modern services field.

6.6 Challenges

Although the SEZ has some advantages in developing its modern service clusters, it still meets some challenges:

The first obstacle is Shenzhen SEZ's manufacturing industrial clusters develops so fast. In the 20 years, from 1979 to 2003, Shenzhen manufacturing output reached 10 billion yuan using 10 years; the output reached from 10 billion to 100 billion yuan using six years; the number reached from 100 billion to 200 billion yuan using four years Time, and from 200 billion yuan to 300 billion yuan using only two years. Since 2001, each year manufacturing output increased 100 billion yuan. Facing such an extreme growth in manufacturing scale and speed, the increase in the proportion of the service sector is almost impossible.

The second obstacle is City Targeting. Any city has some special city targeting like a city near natural resource would be targeted as a heavy industry city and a city has beautiful attractions would be targeted as a tourism city. In theory, strong service clusters are the unique features of central cities. The content of "Services" includes offer service for other industries and other areas. We can see that Beijing, the capital of China, becomes the most developed cities in the service sector because it is the centre of Chinese political, cultural, scientific, education, transportation—its service "space" throughout the country. Shanghai raises the development of the country's

agriculture-oriented service platform, including the development of agricultural technology, agricultural markets, agricultural products, farm produce processing and agricultural product quality certification, because it is a natural function of Shanghai as the economic centre of China. By contrast, Shenzhen doesn't have such advantage, because Guangzhou, in the southern China, as the transport, trade, cultural and educational centre for science and technology has been clear for a long time. More importantly, when Shenzhen SEZ develops its service clusters, it faces the situation that the Pearl River Delta Region encounters a number of the coexistence spatial market competitions— Hong Kong, Guangzhou, and Dongguan will be the rivals.

The third obstacle is the time barrier. That is, in the aspect of history of accumulation in the commercial, cultural, educational, scientific, technological, and other services fields, Shenzhen SEZ still has a long distance to go comparing to those cities that have long history. A university group, several outstanding universities, research institutes and several significant scientific research bases, have asked the city to spend several decades and the centuries to form. However these areas are the top of modern service industry –knowledge services.

Of course, there are other obstacles, such as the building of government systems, but compared with above three obstacles, those are some short-term and microeconomic factors.

6.7 Summary

Until now, we could conclude that, "why Shenzhen SEZ is favoured by FDI?" or other words, "why Shenzhen SEZ can get the power to establish its industrial clusters?". The reasons are as follows: First, Shenzhen SEZ's location and external trading environment has advantageous. It is closed to Hong Kong and has almost the same culture (language, life habit etc) with Hong Kong, which lets Hong Kong's FDI

went to the zone naturally. Because, for Hong Kong whose capital going to Shenzhen would make higher profits, and for Shenzhen SEZ, its industrial clusters were built by "help" from Hong Kong's FDI. Second, the zone had its potential labour market. This is mainly because China indeed has advantage in labour resource. Third, the Shenzhen Municipality government made the best efforts to improve the investment environment and attract FDI.

7. Conclusion

7.1 Summary of the Study

The subject we have chosen for this thesis is: **Chinese Special Economic Zone as Clusters—a case study of Shenzhen's service clusters.**

The purpose of the thesis is to explore How Shenzhen Municipality has been able to develop modern service clusters like financial and insurance clusters, logistical clusters, real estate clusters and etc, that has been able to achieve such a fast economic development.

Because the thesis is concerned with discussing the relationship between a SEZ and its clusters, we must have a general idea on both issues. In western world, many clusters appeared totally by themselves, in a free market environment, where the government has no intention to be a guide at the microeconomic level. But, in eastern world, particularly China and India, the central governments, by creating SEZ's automatically create the condition for the emergence of clusters. In the theoretical part, the theories chosen by the paper has two aspects: Theory on SEZ and Theory on Clusters. Theory of SEZ tells us that a SEZ is a special place where is set for developing local economy and where enjoys some certain preferential economy policy. The theory of Clusters says that a cluster is also a special economy agglomeration. Porter (1998) describes clusters as geographic concentrations of interconnected companies and institutions in a particular field, encompassing linked industries and other entities important for competition.

In the empirical part, first it explains that why Shenzhen was chosen as one of the earliest Chinese SEZs. The historical situation of the economy spurred such a development: by the end of 1970s China's centrally planned economy and demoralized society were on the verge of collapse. Hence, a certain degree of

liberalization was necessary. Another consideration is that Shenzhen had an advantage as regards location and political risk. Second, the paper tells us what preferential politics Shenzhen SEZ had, including duty-free privileges, concessionary rates, breaks and exemptions, preferential fees for land or facility use, favourable arrangements with project duration, size, sector invested, location, and the type of ownership, flexible treatments regarding business management, employment, and wage schemes and so on. All of these advantages attracted investments, particularly FDI's. Third, the paper says the phases of Shenzhen SEZ develops its industrial clusters, encompasses construction phase, export-oriented industrial cluster, and modern service clusters and high technology clusters. Fourth, the thesis describes the reasons of Shenzhen developing modern service clusters, because of serious environment pollution, the government's city plan, Shenzhen SEZ's competition, and attracting FDI and high revenue from service clusters. Finally, the thesis gives a detailed description of the approaches Shenzhen used to push its service clusters, such as promote industrial integration, develop headquarters economy, promote the cooperation between Shenzhen and Hong Kong, strengthen independent innovation, strengthen the administrative support and give service clusters tax concessions and financial support.

In chapter 5, Measuring, many data and figures are given for demonstrating that Shenzhen SEZ has mature and successful service clusters.

In analysis part, the paper answers the questions presented in the introduction part. Combing theories and Shenzhen's real situation, I choose FDI as the main angle to do such analysis.

➤ First, Shenzhen SEZ did attract huge FDI since 1979 and after mid 1990s, more and more FDI flowed into service clusters. In 1979, there was only 1.79 million U.S. dollars FDI in Shenzhen, and after 1998, the number rose to 3,000 million $. For Shenzhen's modern service, from 1990 to the end of 2005, the zone had approved 7321 foreign investment projects in modern services fields, which was far higher than the national average level. Particularly, after CEPA was signed,

huge Hong Kong's FDI's entered into Shenzhen SEZ's service sector. All of this increasing FDI became the chief power to push service clusters appearing and developing.

➢ Second, Location. Location is a crucial factor for the development of industrial clusters. FDI always like to flow into the places where enjoys good location. When we want to make a successful industrial cluster within a SEZ, we must consider the question "where is the best place to set a SEZ up?" carefully. According to Shenzhen's experience, the SEZs would be set at places which enjoy geographic proximity to neighbouring advanced economies, a place with a very international neighborhood, a place which have a long tradition of trade and entrepreneurship, and a place where the "free market" concept exists.

➢ Third, Government's role. A SEZ is a special place where under government control and implement free market. The governments, no matter central government or local government, have influence on FDI, by which industrial clusters could be easily created. The government could provide stability of macro economy and politic. The government has ability to establish the overall microeconomic rules and incentives governing competition that will encourage productivity growth. And SEZ's government offers more and better infrastructures for clusters, comparing to cities in inland China.

➢ Fourth, if we take the point of view of an individual foreign investor angle, we find the SEZ satisfies the basic requirements for building clusters. That are: SEZ has good location where has potential market demand, low logistic costs, low labour cost and etc; and a SEZ easily gets local skilled labour; and a SEZ usually has its own city plan—which clusters are set where. By such plan, foreign investors have quick access to information spillover.

Of course, I must say that the modern service clusters didn't arise in Shenzhen naturally, while a traditional service clusters did.

Finally, Shenzhen SEZ's modern service clusters still meet some challenges, such as

facing an extreme growth in the manufacturing sector and the proportion of modern service sector has not increased much. Shenzhen is still a young city which needs more time to accumulate its "cultural capital" in the service sector.

7.2 Limitation of the Study

To any case study, the existence of limitation is a common feature, and it will not be avoided (Wei, 2007). It also has the study limitation in the thesis:

Firstly, the paper studies the relationship between SEZ and Clusters from the perspective of FDI, but indeed we still have other angles such as many scholars in Strategy field like to study clusters from the competitiveness of enterprises.

Secondly, service clusters is a "wide" concept, in my paper, I choose financial and real estate clusters as the representatives of service clusters. Although financial and real estate clusters are significant examples, we could have more data on other sectors, such as logistical sector, information communication sector and etc.

Thirdly, the paper could improve its methodological approach. For example, the paper uses secondary data as the main research method. This is a method which has strong objectivity, and we found out though that there is a relative paucity of data regarding the industrial structure of the SEZ. Every method has its own advantage and disadvantages, but it is possible to use other research approach like interview.

7.3 Proposals for Further Research

According to the above limitations, some suggestions for further research are: we could do further research to uncover the links between SEZ and Clusters from a micro

level—that is to consider the issue from the perspective of an individual company who operate its business in the clusters within the SEZ. Researchers could go to a SEZ and interview several companies in the same clusters within the zone. This will give researchers first hand data, and allow them to deepen the study.

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Appendix1

Type of Zone

Type of Zone	Definition
Border Economic Cooperation Zone	A zone situated on a border between two countries where goods exiting and entering the neighboring countries are not subject to duties and tariffs
Economic and Technology Development Zone	A term commonly used in China, it is a zone that includes higher end manufacturing and processing
Economic Development Zone	A term commonly used in China, it designates a zone where investment is targetted for purposes of economic growth
Export Processing Zone	Similar to a Free Trade Zone, it is an area set off as a non-tariff area where manufacturers can import goods to process, assemble, or fabricate with the intention of export
Free Trade Zone	An area where goods can be imported and warehoused, processed, fabricated, exhibited, and otherwise utilized and transhipped without customs processing and duties
High and New Technology Zone	A zone that is reserved for high technology investments
Industrial Estate	An allotted land designated for the establishment of industrial factories and consists of industrial area, facilities, utilities and complete infrastructure. Often used interchangeably with Industrial Parks. In some jurisdictions they denote a larger scale development than an Industrial Park. In Thailand the term is reserved for parks developed with some government equity involvement or certification.
Industrial Park	An area set aside for industrial use. Often used interchangeably with Industrial Estates. In some jurisdictions the term can denote a smaller scale development. In Thailand the term is reserved for parks developed solely by the private sector that have not been promoted by the Industrial Estate Authority of Thailand (IEAT).
Industrial Zone	An area set up for industrial development, similar to Industrial Estates and Parks
IT and Software Park	A zone that is reserved for IT and software firms
Open Economic Zone	A term used in Vietnam to denote larger scale developments that not only include manufacturing, but also a range of industries with a goal to create a diversified economic area
Reconstruction Opportunity Zone	An area identified as in need of special economic treatment due to adverse circumstances in Pakistan. The term is being used for proposed zone in North West Frontier Province (NWFP) that would have a free trade agreement with the U.S.
Special Economic Zone	A well-defined geographic area where certain economic activities are promoted by a set of policy measures that are not generally applicable to the rest of the country

Appendix 2

A brief introduction to Chinese bank and financial system

(Based on Herrero, Gavila and Sabtabarbara <China's Banking Reform: an assessment of its evolution and possible impact> 2005)

China's very high and stable growth in the last years would seem to indicate that the country is a success in all regards, including finance. This optimistic picture, however, may change if we consider the extremely high domestic saving and investment ratios. In fact, for an average 40% domestic investment to GDP (fully financed by domestic savings), an 8 to 10% growth is not such a high return to investment. This is a very rough indicator of potential misallocation of resources, namely domestic savings, which has been a common feature of closed economies, and even more so of planned ones.

In 2004, banks in China loaned represented 83% of the funds raised by the non-financial sector, while stocks were only 5% and bonds 12%. The banking system is the main financer of non profitable state-owned enterprises (SOEs) so that bank reform will have a direct impact on SOEs. And the Chinese banking system is so large that the way in which the reform is resolved could have systemic consequences.

We review the main features characterizing China's banking system so as to better understand and assess the steps taken to its reform.

1. The first striking feature is the large size of the banking system not only in relative terms but also in absolute ones. Bank credit continues to growth at a brisk rate, pushed by buoyant economic growth. However, this does not imply a very developed banking system since penetration of banking products is low and bank credit for small and medium size enterprises (SMEs) and households is scarce, 15% and 11% of total loans, respectively,

in 2004.

2. As many transition economies, the Chinese banking system has been dominated by four very large state owned commercial banks (SOCBs), which were created in the 1980s to grant credit to key sectors and are now commercial banks concentrated in corporate lending. The remaining banks are relatively small, which explains why the degree of concentration is relatively high when measured in terms of the share of assets of the four largest banks.

3. The rather peculiar structure of the balance sheet, compared to international standards. First, loans are a large part of the assets (60.8% in 2003), the majority of which is granted to the corporate sector (over 85% of total loans and over 85% of profits) and to a large—although decreasing—extent short term. This is particularly the case of policy banks, created in 1994 as state-owned development banks, with 92% of assets in loans. The recent boom in the housing sector has not changed this picture yet. Second, almost all liabilities are deposits, with an average share of 89% in 2003.

4. The fourth feature of Chinese banks, also rather common in transition economies, has been their very poor asset quality.

5. Very poor profitability. In 2003, the return on average equity of the banking system was 3.05%, and the return on average assets was 0.14%, well below international standards. The main reason for the low profitability seems to be asset quality. Operating income, as a percentage of total assets, is only slightly lower for Chinese banks than for European ones (2.22% compared to 2.38% in 2003), albeit very different in composition. In fact, Chinese banks have a much lower non-interest income than European ones. In addition, the efficiency of Chinese banks, measured by the cost to income, is actually better (51.68% compared to 60.39% in the same year), although it is basically explained by low wages.

6. Corporate governance is very weak. The root of the problem is

government intervention, which inhibits banks allocating their assets according to market criteria. This is particularly true for states owned commercial banks. State owned commercial banks lack the basic attributes of a profit making bank. In fact, they do not have clearly identifiable owners, or, until very recently, board of directors or specialized organs for monitoring management. They only have an external board of supervisors—as all Chinese companies—which monitors conformity with banking law and regulations but has no role in the governance or oversight of bank management. Banks are accountable only to the government (usually the Ministry of Finance) and disclosure requirements are minimal. Finally, management has traditionally been selected from the ministerial system and has remained subject to the close control of the party.

7. The last characteristic is the poor institutional framework of the banking system. This is featured by a rater loose regulation and supervision, particularly as regards enforcement. Furthermore, the regulatory bodies, as well as the central bank, are dependent on the party's decisions. The lack of enforcement power from the supervisory part helps explain the very limited improvement in corporate governance. Additional weaknesses are the lack of bankruptcy law, additional credit bureau and a smooth functioning of the payment systems.