FOREIGN DIRECT INVESTMENT FROM DEVELOPING COUNTRIES: A CASE STUDY OF CHINA'S OUTWARD INVESTMENT

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Contents

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Abstract

This thesis presents an interpretation of foreign direct investment (FDI) by Chinese firms. The research is motivated by the phenomenon that, compared with foreign investment in China, direct investment from China has so far attracted relatively little attention from researchers.

The development of China's outward direct investment exhibits distinctive features. It was expanded rapidly in a relatively short time and was directed heavily to a few developed countries, namely, the United States, Canada and Australia. In addition, it is not evident that Chinese investors possess clear international competitive advantages. Existing mainstream theories of FDI from developing countries cannot provide a ready explanation of the underlying rationale for the pattern of China's FDI.

Given the difficulties in providing a convincing explanation of the pattern of China's outward FDI by using mainstream theories, this thesis develops a network model of FDI by formalising network ideas from business analysis for application to economic analysis, and interprets China's outward FDI in terms of the network model. This thesis holds that Chinese firms were engaged in FDI for various network benefits. Accordingly, the geographic distribution of China's outward FDI reflected the distribution of network benefits required by Chinese firms and the relevant cost saving effects for obtaining such benefits. As the functioning of networks relies on elements of market economies, the development of China's outward FDI was affected by the progress of marketisation in China.

China's outward FDI has a very short history and comprehensive data on industrial composition and overseas subsidiaries' operation are not yet available. This has ruled out the possibility of more specific testing with formal econometric analysis. Rather, the method of approach is essentially descriptive and the interpretation is mainly based on qualitative analysis.

Abbreviations

CSIESR	China State Institute of Economic System Reform
CSPC	China State Planning Committee
FDI	Foreign direct investment
FDI affiliates	Overseas affiliates which are established by firms through FDI, such as wholly owned subsidiaries, joint ventures, etc.
GDP	Gross National Product
GNI	Gross National Income
IDP	Investment Development Path
IIE	Institute of Industrial Economics under the Chinese Academy of Social Sciences
IMD	International Institute for Management Development
IMF	International Monetary Fund
ITD	Industrial and Transportation Department of the National Bureau of Statistics (China)
L&MFs	Large and middle-sized firms
MNE	Multinational enterprise
MOFTEC	Ministry of Foreign Trade and Economic Cooperation (of China)
Multinationals	Multinational enterprises
NBS	National Bureau of Statistics (of China)
R&D	Research and development
SAFE	State Administration of Foreign Exchange (of China)
SOEs	State-owned enterprises
TNC	Transnational corporation
TWFDI	Third World FDI
UNCTAD	United Nations Conference on Trade and Development
UNCTC	United Nations Centre of Transnational Corporations

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Chapter 1. Introduction

This thesis presents an interpretation of China's outward direct investment. The research is motivated by the phenomenon that, compared with foreign investment in China, direct investment from China has so far attracted relatively little attention from researchers. It is hoped that this research can make a small contribution to the body of knowledge on foreign direct investment (FDI) from developing countries in their desire to catch-up with developed countries in the current era of globalisation.

1. The Pattern of China's Outward FDI and Theoretical Issues

1.1. The growth and distribution of China's outward FDI

It is well known that China has absorbed a huge amount of FDI since the implementation of its open-door policy in the late 1970s. By 2001, the total number of the foreign capital invested projects approved by the Chinese government was 390,025, the total contractual foreign investment was US$745.29 billion, and the realised foreign investment was US$395.33 billion [MOFTEC, 2002, p.1052]. Considering that, in three decades before the economic reform, FDI in China was essentially zero as a result of its policy of economic autarky, the surge in FDI in China is indeed impressive. While China only ranked as fifth largest host country in the developing country group in the early 1980s, it has been the largest host country for inward FDI in the developing world since 1992 and the largest host country in the world next only to the United States since 1993. Huge inflows of FDI have penetrated into almost all industries and regions and are playing an ever-growing role in the Chinese economy.

It is not well known, however, that China's direct investment abroad has also been proceeding rapidly. According to the Ministry of Foreign Trade and Economic Cooperation (MOFTEC), by the end of 1998, the number of foreign affiliates approved by the Chinese government was over 5,600, covering almost all countries in the world [*China Daily*, 5/12/1999]. Average annual FDI outflows increased substantially from US$150 million in 1980-1985 to US$711 million in 1986-1990. This figure increased further to

more than US$2.66 billion during the next five-year interval (1991-1995), nearly quadrupling the FDI outflow of the 1986-1990 period. Annual FDI outflows kept at a level about US$2 billion in the following six years (1996-2001) [SAFE, 1999; UNCTAD, 1994-2002]. For a developing country with a very short history of foreign direct investment, the development of China's outward FDI is also remarkable.

The rapid expansion of FDI outflows makes China one of the main sources among developing economies. Since 1985, China is among the top five of those economies, and it ranks third largest source country in terms of outward FDI stock in recent years. Six of the top 50 multinational enterprises based in developing economies, ranked by foreign assets in 1997, were from China [UNCTAD, 1999, pp.86-87].

Another distinctive feature of China's outward FDI is its high geographic concentration in a few developed countries. While China's outward FDI reaches more than 152 countries/regions, until 2001, 30 per cent of Chinese government approved outward direct investment went to the United States, Canada and Australia, each accounting for 13, 9 and 8 per cent of total outflows, respectively. These three countries, plus Hong Kong, Peru, Thailand, Mexico, Zambia, Russia, Cambodia, South Africa and Brazil, accounted for about 67 per cent of China's outward FDI, leaving the remaining 143 countries (regions) accounting for 33 per cent of China's outward FDI [MOFTEC, 1993-2001].

1.2. Theoretical issues raised by China's outward FDI

The rapid growth of China's outward FDI calls for an explanation of the underlying rationale. However, mainstream theory of FDI has difficulties providing ready answers to main issues involved in such a pattern of FDI from a developing country.

1.2.1 Ownership advantages for the Chinese investors

Mainstream theory of FDI claims that the possession of some kind of proprietary advantages is a critical factor in explaining a firm's direct investment overseas. These proprietary advantages are derived from the ownership of intangible resources, such as technology, managerial skill, and organisational capabilities,[1] which can be easily

[1] There is no unanimous view on what encompasses intangible assets or resources. Grant [1991, p.119]

transferred from one country to another within a firm but is very difficult to transfer between firms due to the imperfection of the market for such resources. In response, a firm would prefer to undertake foreign direct investment to internalise such resources to avoid transaction costs (the internalisation model) or to improve its market power (the market power model) [Graham and Krugman, 1991]. It follows that the main actors in foreign direct investment are large firms with abundant proprietary advantages. However, it is hard to find evidence for this claim from China's outward FDI, especially when considering the fact that China's outward FDI has developed countries as its major destinations.

Chinese firms can be classified into four groups, i.e., state-owned enterprises, collective-owned enterprises, individual-owned enterprises, and enterprises of other types of ownership [NBS, 2000, pp.462-463]. Before economic reforms, state owned enterprises (SOEs), though dominating in non-agricultural sectors, did not have suitable opportunities for growing due to the rigid central planning system of the past. They still did not have favourable conditions for growth after the start of economic reforms due to their inability to adapt to the intense competition in a market economy as well as the government discrimination policy in favour of foreign capital invested firms. The other three types of enterprises only had the opportunity to emerge and develop after the introduction of market economic mechanisms about two decades ago and, therefore, most of them have not had enough time to develop into big enterprises. As a result, the average size of Chinese firms is relatively small. For example, in 1996, General Motors of the United States realised sales of US$5.26 billion, which was equal to the sum of the sales of 342 largest Chinese firms, or 32 times that of Daqing Oil Company, the largest firm in China in terms of sales. The total sales of the world largest three firms, General Motors, Ford and Shell, exceeded the total sales of all 23,927 large- and medium-sized firms (L&MFs) in China [CSIESR *et al.*, 1999, pp.111-112]. In addition, most of the Chinese firms operate in a single industry, and the variety of their products is correspondingly limited.

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categorises intangible resources into four subclasses: human resources, technological resources, reputation, and organisational assets. Hall [1993] classifies intangible resources into two categories: intangible assets and competencies. Intangible assets include "having" capabilities, which typically are regulatory (e.g. patents) or positional (e.g. reputation). Competencies (intangible skills) are related to "doing" capabilities, which include functional capability (e.g. know-how) and cultural or organisational capability (e.g. routines). Intangible skills are typically people dependent, while intangible assets are considered as people independent.

Chinese firms as a whole are also inferior in management in comparison with their counterparts from developed and most newly industrialised countries. The management competitiveness of firms in China was ranked 30 out of the 46 sample countries in 1998. The major host countries for China's outward FDI – the United States, Canada, and Australia – were ranked 1, 11, and 17, respectively, much higher than China [IMD, 1998]. One of the main reasons for the relatively poor management competitiveness of Chinese firms is that China is still in the process of introducing macro and microeconomic institutions and practices appropriate for a market economy. Consequently, it will take more time for Chinese firms to fully embrace and internalise these institutions and practices in their operations.

Furthermore, compared with their counterparts from developed and newly industrialised countries, Chinese firms are weak in research and development (R&D) activities. Though the total employment in R&D activities in China is very large, less than 30 per cent of R&D workers are employed by firms. In 1998, less than one third of the China's large- and middle-sized firms had their own specialised R&D institutions. Even among those firms with R&D institutions, 37 per cent did not have relevant inputs [NBS, 1998]. This contrasts sharply with developed and newly industrialised countries where more than half of the national R&D employees work in firms. In the United States, for example, R&D employees in firms accounted for nearly 80 per cent of the national total in 1998 [IMD, 1998].

1.2.2 Timing of China's outward FDI

The investment development path (IDP) developed by Dunning [1988] claims that the outward and inward FDI position of a country is systematically related to its economic development, relative to the rest of the world. As its relative ownership, location and internalisation advantages change over time as its economy develops, a country tends to go through five main stages of FDI development. In sequence they are: (1) non existence of both inward and outward FDI; (2) emergence and expansion of inward FDI and bare existence of outward FDI; (3) expansion of outward FDI and slowing growth of inward FDI; (4) outward FDI stock exceeding inward FDI stock; and (5) net outward FDI stock (i.e. gross outward FDI stock less gross inward FDI stock) fluctuating around the zero level

[Dunning and Narula, ch.1, 1996]. This implies that a country would not engage in large scale outward FDI until its inward FDI has developed enormously.

However, China's outward FDI shows different features. Contrary to the IDP pattern, the emergence and development of outward and inward direct investment flows coincide with each other. The period of 1982-2001 witnessed steady growth of both inward and outward FDI. In addition, compared with the huge inward direct investment, China's outward FDI remained relatively small, but its absolute value was by no means negligible. From 1982 to 2001, the total FDI outflows amounted to US$29.55 billion [UNCTAD, 1994-2002]. This is a substantial amount for a developing country with a very short history of foreign direct investment. These features suggest that China's outward FDI has skipped the first and part of the second stage of the investment-development-path, and has now entered the early period of the third stage. Therefore the process of the development of China's outward FDI is difficult to be explained by the IDP paradigm.

1.2.3 Geographical distribution of China's outward FDI

China's outward FDI is heavily concentrated in the United States, Canada and Australia. Developing countries are not its major destinations. This fact seems to deny the decisive role of proximity in economic development and geography between home and host countries for the choice of destination of FDI, as mainstream theory of FDI suggests.

Given the importance of ownership advantage in mainstream theory of FDI, the choice for the location of FDI is largely a function of the possession of the ownership advantages. For example, Hymer [1960] suggests that national firms enjoy the general advantage of better information about their country: its economy, language, law, politics, and so forth. Since foreign firms do not possess that knowledge, they will incur additional transaction costs in operations conducted within that country. Accordingly, a firm must have sufficient firm-specific advantages (ownership advantages) to offset the comparative disadvantage of being foreign if it is to compete successfully in the host country. By the same token, if a firm chooses to invest in countries with closer cultural, economic or physical distance from the home country, it will need less ownership advantages to tackle barriers to international operation, as the "short" distance implies less barriers. Therefore, firms tend to enter markets at an closer distance from the home country, not only in terms of physical distance but also in terms of differences in economic development, language, culture, and political

system. Thus, firms are predicted to start their internationalisation by moving first into markets they can most easily cope with, and enter more distant countries only at a later stage [Benito and Gripsrud, 1995]. As firms from developing countries are normally characterised as small in size, weak in technological innovation, and less experienced in international operation, their outward FDI at the early stages generally takes other developing countries as its main destination. This implies that the pattern of FDI from developing countries displays heavy regional concentration [UNCTC, 1983]. The tremendous differences in the level of economic development and economic structure between China and developed countries have militated against large-scale entry of Chinese firms' direct investment into developed countries and some developing countries. On the one hand, as indicated above, Chinese firms do not possess clear technological and managerial advantages over their counterparts in developed countries. On the other hand, Chinese firms cannot obtain substantial labour cost savings in their outward FDI either, as labour costs are much lower in China than in most of other countries, including developing countries. In the 1995-1999 period, the yearly labour cost per worker in manufacturing in China was US$729, only about 2.5 per cent of that in the United States, 2.6 per cent in Canada, and 2.8 per cent in Australia [World Bank, 2000]. If labour cost saving were the major concern in foreign direct investment, Chinese firms would be much better off when they operate at home.

2. Research on FDI from Developing Countries

Foreign direct investment from developing countries or Third World FDI (TWFDI) can be traced back to about a century ago [Katz and Kosacoff, 1983]. However, the share of TWFDI was infinitesimal before the 1970s. The real surge, encompassing many more countries and continents, has taken place in the last three decades. The 1990s witnessed a big jump in FDI from developing countries: its share in the world total FDI outflow reached about 15 per cent, approximately 3 times that during the 1980s [UNCTAD, 1994-2000]. As FDI from developing countries is concentrated geographically in terms of sourcing – several East Asian countries plus a few Latin American countries accounting for the major portion, the growth of FDI from developing countries is impressive. In addition, as the process of economic catch up and FDI development goes on, multinational enterprises headquartered in developing countries have been increasing in number, size, complexity of

organisation, and transnationality. Among the 50 top multinational enterprises from developing countries in 1998, there were 29 with foreign assets above US$1 billion, and two ranked the 43 and 73 respectively in the world's top 100 multinationals [UNCTAD, 1998, pp.48-49, 36-38].

The development of TWFDI to a large extent accompanies the industrialisation and catch-up of relevant countries. Or more accurately, outward FDI is an integrated part of industrialisation and catch-up of the relevant countries. For a developing country, while inward FDI plays an important role in improving its international competitiveness through its effects on technological change, structural upgrade, market competition, and the expansion of foreign trade and business links, engagement in outward FDI is essential and inevitable for the further improvement of the country's international competitiveness [Lall, 1998; Dunning and Narula, 1996].

The academic community has paid attention to FDI from developing countries since the late 1970s. It is acknowledged that Lecraw's 1977 paper, *Direct Investment by Firms from Less Developed Countries*, signified the start of FDI from developing countries as a subject of research [Dunning *et al.*, 1997]. In this paper, Lecraw presented his findings about the characteristics of firms established by FDI from developing countries based on a questionnaire based study. Thereafter, the interest from economists and business researchers has yielded many publications on the subject. Many interesting observations and assertions have been made about the causes, nature, operational mode of the invested firms, as well as explanations of developing countries' FDI. Representative theoretical publications in this literature include Lecraw [1977], Lall [1983a], Wells [1983], Riemens [1989], Tolentino [1993], Dunning *et al.* [1997], and Yeung [1998].

Notwithstanding the above theoretical contributions, the existing literature on FDI from developing countries consists mainly of empirical studies, focusing on specific cases of certain countries, business operations of certain types of firms, or specific functional issues of some firms. There is a lack of theoretical framework which can shed light on FDI from developing countries in general. Rather, the analyses apply mainstream FDI theory to study FDI from developing countries. Wells' 1983 work is an example. He studies multinationals of developing countries in the framework of Dunning's eclectic paradigm of ownership, location and internalisation advantages (OLI), holding that FDI from

developing countries are realised by combining particular advantages available to developing countries' multinationals. These advantages are the same as that of developed countries' multinationals in nature but different in form or source. According to Wells [1983], while the ownership advantages for FDI from developed countries derive from frontier technologies and sophisticated management and marketing, those for investors from developing countries derive from technologies and management which suit the market and production conditions of other developing countries. These advantages include small scale, labour intensive and flexible process, and low R&D and management expenditure due to engaging in mature manufacturing and fewer levels of management. Also stressing ownership advantages, Lall [1983] and Tolentino [1993] attribute these to the ability of developing countries to adapt foreign technologies to local production and markets.

It is generally acknowledged in the literature that FDI from a developing country is most likely to be directed to its neighbouring developing countries. This pattern is attributed to the claim that FDI is based on firm-specific advantages to overcome disadvantages faced by subsidiaries in the host country and firms from developing countries are relatively weak in international competitiveness. Therefore FDI from developing countries should choose in its early stages countries with economic, cultural and geographic proximity as a destination in order to bypass or to reduce the disadvantages. Only after having gained international experience through overseas operations and consolidated firm-specific advantages can firms invest on a relatively large scale in more developed countries that are distant geographically [see, for example, Dunning and Narula, 1996; Riemens, 1989; Tolentino, 1993].

The phenomenon of using mainstream theory to interpret FDI from developing countries has also attracted some criticism. Yeung [1998] holds that such attempts to explain FDI from developing countries result in under-research and misleading treatment of this subject.

> *When these theories, based on the experience of American and British transnationals, are applied to emerging TNCs from the developing world, as manifested in the 'Third World Multinationals' literature, the problem of Western-centric interpretation arises. Whereas TNCs from developed countries are given the arbitrary status of 'mainstream', 'Third World multinationals are regarded as 'deviants' and 'unconventional'. The deviations of 'Third World multinationals'*

are explained away by established economic theories of international production. Genuine developments of TNCs from developing countries are subsumed under the overarching explanatory power of these theories. The net result of this academic exercise is the production and perpetuation of misleading stereotypes. For example, 'Third World multinationals' are often seen as very small in their assets and sales, labour-intensive in their operations, low in technological capabilities and restricted in geographical coverage.[Yeung, 1998, p.3]

This view may appear oversimplified, but it is not baseless. The dominant FDI theories were advanced from the 1960s to the 1980s. They were to a large extent based on the observations of FDI from the United States and Britain after World War II. The internationally super-strong position of both source economies and their investing firms at that time has inevitably influenced the hypotheses and arguments of these theories. As indicated earlier, FDI has mainly been characterised as being motivated by a firm's desire to exploit its existing proprietary advantages abroad or as part of the firm's strategy in a game of imperfect international competition [Graham and Krugman, 1991]. This implies that the focus of mainstream theory of FDI is the supply-side of FDI. Correspondingly, ownership advantage is implicitly or explicitly assigned crucial importance to FDI. In comparison, the demand-side of FDI, basically asset-seeking FDI, has not attracted sufficient attention in the literature [Wesson, 1999]. As a result, "the theory of FDI has its own dramatic tension between existing theory and apparent fact" [Ethier, 1994, p.105]. For example, the largest part of FDI is between developed countries rather than from developed countries to developing countries; and FDI is increasingly two-way and intra-industry, irrespective of the home country, e.g., Germany is both home and host to a large amount of FDI in the chemical and auto industries, as is the United States [Ethier, 1994; Graham, 1997]. Explaining FDI from a developing country, such as China, to developed countries remains a challenge for mainstream theory of FDI.

3. Methodology and Structure of Thesis

The difficulties in providing a convincing explanation of the pattern of China's outward FDI by using mainstream theory call for a different approach. For this purpose, a network model of FDI is developed in this thesis by formalising network ideas from business analysis for application to economic analysis of FDI.

In this model, FDI is defined as a means of choosing the most appropriate form of economic organisation by using an ownership-based hierarchy and involving international markets and firms. It leads to the expansion of the investing firm's boundary into the host country and forms a node there. This node can be used for further networking[2]. As a form of economic organisation, the rationale for FDI lies in economic organisation in the global market economy.

Economic organisation involves issues of both how and where to organise economic activity. As regard to the first issue, this thesis argues that the organisation of economic activity in a market economy has two possible methods (namely, price and hierarchy) and three alternative institutions (namely, the market, the network, and the firm) to use these methods of organisation. While the market uses the price system to organise transactions between firms and the firm organises internal activities via hierarchy, the network organises activities across the market and the firm by using a blend of price and hierarchy. For a market-based transaction, firms are faceless entities engaged in "sharp in" and "sharp out" transactions; and the boundaries between "in" and "out" at the beginning and "in" and "out" at the end, are clear [MacNeil, 1974, p.750]. In contrast, for organising economic activity via the network, a certain kind of inter-locked relationship is formed between the firms due to the overlap of economic and governance boundaries between the firms. This overlapping of boundaries is a result of the partial market transaction and the partial internal organisation for the concerned economic activity. This leads to the formation of external networks around a firm that becomes the hub firm in a particular network. As a

[2] The defining characteristic of FDI is the cross border reallocation of resources in the form of a more integrated package deal and the conferral of control over the investment project to the foreign investor. Though there are many definitions of FDI in the literature, all conventional definitions stress ownership-based control of the investment project by an investor. For example, United Nation (UNTACD, 1996, p.219) defines FDI based on OECD (1992) and IMF (1993): "Foreign direct investment is defined as an investment involving a long-term relationship and reflecting a lasting interest and control of a resident entity in one economy (foreign direct investor or parent enterprise) in an enterprise resident in an economy other than that of the foreign direct investor (FDI enterprise or affiliate enterprise or foreign affiliate). Foreign direct investment implies that the investor exerts a significant degree of influence on the management of the enterprise resident in the other economy". Theoretically, foreign direct investors include individuals and public institutions as well as firms. FDI by individual and public institution investors is normally not separately stressed in conventional analysis as it is very limited in volume and importance. My investigation adheres to that tradition. However, in the light of my specific model and explanation of China's outward FDI, I have introduced network ideas into that definition.

consequence, the organisation of networking activities reshapes the boundaries of all the firms that are a part of a network.

The second issue of where to organise economic activity is related to the heterogeneity of the market and the industrial logic of interconnected activities and resources. Due to various reasons, the market is not universal and homogenous, but consists of different markets at different locations for different factors and products, and economic activity can take place in different regions, including at home and abroad. In addition, a firm is not deemed to be a single-plant production unit with all its activities based in a single location. In principle, it is natural that, in a market economy, entrepreneurs are free to displace market transactions by increasing the scope of allocations made administratively within their firms, and the most profitable pattern of enterprise organisation should ultimately prevail. Where more profitable results can be obtained from placing plants under wholly or partly common administrative control, multi-plant enterprises will dominate and single-plant firms will merge or go out of business.

As economic activity can be organised via the market, through networking, or within the firm, and the organisation can take place either at home or abroad, a firm has six possible choices for the organisation of an activity. The final choice is made essentially on the basis of total cost-benefit comparisons. Multinational enterprises are outcomes of such choices of economic organisation.

A multinational enterprise (MNE), the main subject of FDI and a consequence of such investment, is a firm which controls and manages production establishments – plants – located in at least two countries [Caves, 1996, p.1]. It involves not only the dimension of the boundary between the administrative allocation of resources within the firm and the market allocation of resources between firms, but also the dimension of the international setting of the boundary between the firm and the market as well as the dimension of the form of hierarchy. From this perspective of economic organisation, wholly owned overseas subsidiaries are the international expansion of the parent firm's boundary based on hierarchy. Joint ventures are similarly the international expansion of the parent firm's boundary based on a mixture of price and hierarchy.

Within the framework of the network model of FDI, the main body of the thesis interprets China's outward direct investment during the last two decades. Ideally, the network model

would be applied to the decision-making calculation at the firm level. But such application requires firm level data on FDI. In China, such data does not exist, except for a few sample studies.

China's outward FDI has a very short history, and statistics have not kept pace. Comprehensive data on industrial composition and overseas subsidiaries' operations are not available. The main sources are China's two government institutions, the State Administration of Foreign Exchange (SAFE) and the Ministry of Foreign Trade and Economic Cooperation (MOFTEC). The SAFE data represent actual flows of capital, including equity capital and reinvested earnings and the UNCTAD uses this source of data. Unfortunately, this source only provides figures at the national aggregate level. MOFTEC is the Chinese government institution responsible for the administration of outward FDI. It provides data on the amount of investment, the number of investment projects as well as the Chinese investors' share in total investment of the invested projects, all of which go down to destination country level. However, its data are based upon approval figures for initial investments rather than actual outflows, and it does not screen all outward FDI [also see UNCTAD, 1995, p. 56].

Given these limitations, the approach in this thesis had to be adapted to the available information. Accordingly, the analysis is carried along the line of the environment-response principle in business operations and is focused on the relationship between changes in macro environment and FDI in China. Also, due to the unavailability of detailed data on the operations of overseas subsidiaries of Chinese firms, the method of approach is essentially descriptive and the interpretation is mainly based on qualitative analysis rather than econometric analysis.

Although the unavailability of detailed statistical data on the operation of China's FDI subsidiaries has ruled out the possibility of more specific testing with formal econometric analysis, we take some survey data and case study materials as supplement to test our arguments. Among these are Zhang and Bulcke's [1996] survey data, G. Li's [2000] survey data, and Tseng's [1994] and Tseng and Mak's [1996] case study materials.

4. Brief Summary of Thesis

The main body of the thesis consists of three parts. The main contents of each part are summarised below.

4.1. Part I (Chapters 2-5)

Chapter 2 documents the pattern of China's outward FDI. China's outward FDI has exhibited two conspicuous characteristics, the rapid expansion in a relatively short period, and the high geographic concentration in a few developed countries, namely, the United States, Canada and Australia. These characteristics are not readily compatible with the prediction of the existing mainstream theories of FDI.

Chapter 3 describes the research on FDI from developing countries and theoretical issues raised by China's outward FDI. It shows that literature on this subject consists mainly of empirical studies within the framework of mainstream theory of FDI. Investors from developing countries have been characterised as very small in their assets and sales, labour-intensive in operations, low in technological capabilities and restricted in geographical coverage. Accordingly, FDI from a developing country is claimed to be directed to its neighbouring developing countries. Only after having gained international experience through overseas operations and consolidated firm-specific advantages can firms invest on a relatively large-scale in more developed countries that are located geographically, culturally and economically at a greater distance. However, this pattern of FDI is hardly reflected in the timing and distributional features of China's outward FDI.

Chapter 4 provides a brief survey of network research in business organisation, as a background for searching for an explanation of the underlying rationale for China's outward FDI. The survey is confined to issues regarding the basic nature of network relationships and their relevance to foreign direct investment.

Chapter 5 develops a network model of FDI by formalising network ideas from business analysis for application to economic analysis of FDI. This model sheds light not only on economic organisation in the market and within the firm, but also on economic organisation lying between the classic dichotomy of the market and the firm. As a result, the choice of undertaking of FDI can be captured in a more comprehensively integrated framework. In

such framework, both the supply-side and demand-side of FDI can be stressed. Dunning had indicated several years ago [1993, p.92] that "network analysis would seem to have a lot more to offer than it has so far been able to demonstrate, but it needs to be integrated with work now being done by industrial organisational economists." The establishment of the network model of FDI is an attempt in this direction.

4.2. Part II (Chapters 6-8)

Chapter 6 develops an explanation for the growth of China's outward FDI from the angle of governance configuration in economic organisation. The results show that there is a positive relationship between the growth of the nation's outward FDI and economic reform. Such relationship reflects the intrinsic dynamics of the Chinese firms in engaging in networking for various networking benefits. Specifically, the emergence and development of China's FDI reflect a change in the firms' behaviour in networking as China began to be transformed from a centrally planned economy towards a market economy. The arranged networking in the previous traditional planning system is replaced by the semi-autonomous networking during the system transition. Due to the existence of the two-track system during the transition, engaging in outbound direct investment enabled the relevant firms not only to obtain normal international networking benefits but also to exploit the two tracks. Hence, the growth of outward direct investment was extraordinarily rapid when the benefit from exploiting the two tracks was thick. The growth retreated to a more normal rate when such benefits were lessened due to the maturing of the marketisation.

Chapter 7 analyses the technological configuration of the rationale for China's outward FDI. As the transition of the economic system is nearing completion, rationales of technological configuration in economic organisation are becoming more important for China's investors. Resource seeking, transaction enforcing and position improving objectives are crucial to the development of the Chinese economy and are relevant to the firms as well. FDI aimed at these is not only a normal response to the opportunities and the constraints raised by economic development, but is also a quite beneficial response.

Chapter 8 interprets the geographical distribution of China's outward FDI. This analysis shows that the high geographic concentration of China's outward FDI reflects the motives of Chinese firms for investing abroad as well as the conditions in target countries for meeting investors' needs. In general, investments in resource seeking are concentrated in a

few natural resource rich countries and technologically advanced countries. Investments for market transaction enforcing and position improving are distributed in countries with relatively large markets for the products of investing firms. Specially, overseas manufacturing investments mainly go to developing countries to serve local markets. Target countries' domestic transaction efficiencies for goods and labour and their existing linkages with China further shape the direction of China's FDI flows.

4.3. Part III (Chapter 9)

This part synthesises the results of the analysis in Part II and provides a whole picture of interpretation of China's outward direct investment. The main findings are as follows. FDI as a form of economic organisation in market economies depends upon the functioning of market mechanisms. The planned and closed economic system in China before the late 1970s ruled out opportunities for China's enterprises to carry out outward FDI. With the introduction of the market mechanism into China's economy, firms began to organise economic activity by using price and hierarchy, and correspondingly, to decide whether the organisation is carried out in the market, through the network or within the firm, and whether the organisation is undertaken at home or abroad. The importance of networking would motivate some Chinese firms to undertake FDI. As economic reform in China is characterised by gradual transition and a two-track system, the development of the market elements and the autonomy of firms proceed gradually. As a result, the expansion of China's outward FDI is affected by the process of firm-related reforms. As a form of economic organisation, China's FDI is naturally attracted to activities which have plentiful network benefits. These activities are mainly aimed at overseas technology and natural resources seeking as well as at market exploring. The geographic distribution of China's outward FDI reflects the geographical distribution of various network benefits and the related cost saving effects.

PART I

THEORIES OF FDI AND

THEIR RELEVANCE TO CHINA'S OUTWARD FDI

Chapter 2. Emergence and Development of China's Outward FDI

This chapter describes the pattern of China's outward FDI. On the whole, China's outward FDI has exhibited two distinct characteristics, rapid expansion in a relatively short time, and high geographic concentration in a few developed countries, namely, the United States, Canada, and Australia. These characteristics appear to make China's outward FDI different from the generally acknowledged pattern that FDI from a developing country is most likely to expand gradually in volume and to take neighbouring developing countries as the main destinations in its early stages of development.

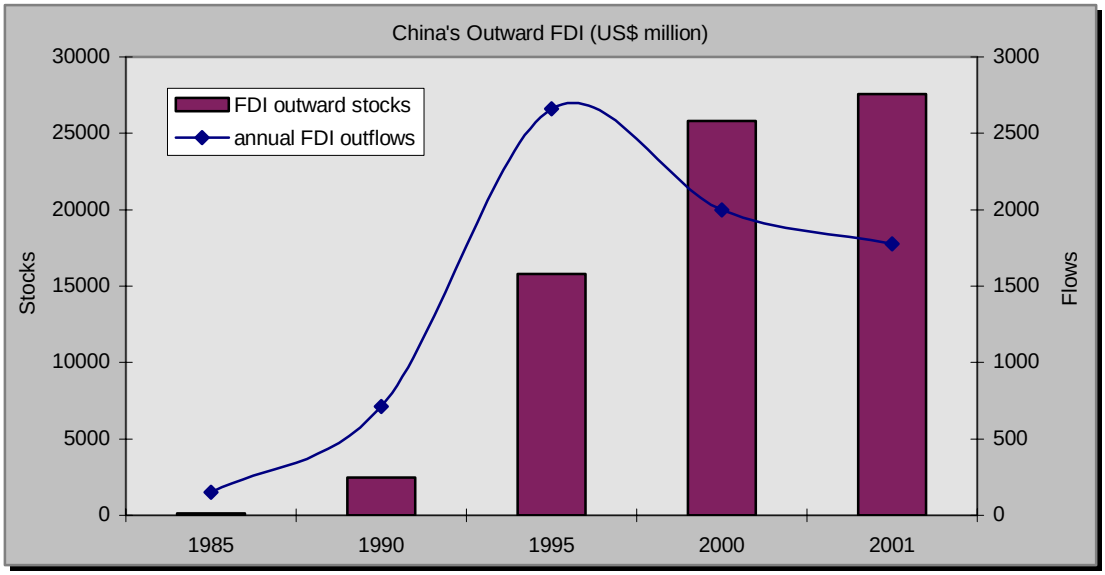
1. Development of China's Outward FDI

China's outward direct investment emerged in the early period of economic reforms. It began on a small scale, with an annual outflow less than US$40 million in the first few years. However, as the economic reforms proceeded, Chinese enterprises invested abroad on a large scale and the volume of direct investment expanded rapidly. According to the Ministry of Foreign Trade and Economic Cooperation (MOFTEC), at the end of 1999, the number of Chinese foreign affiliates was estimated to be more than 5900, covering almost all countries in the world. Average annual FDI outflows increased substantially from US$150 million in 1980-1985 to more than US$711 million in 1986-1990. This figure increased further to more than US$2.66 billion during the next five-year interval (1991-1995), nearly quadrupling the FDI outflow of the 1986-1990 period [SAFE, 1999; UNCTAD, 1994-2002] (Figure 1).

China's outward FDI has mainly experienced three stages in its development detailed below.

Stage 1 (1979-1984): *Emergence*. In November 1979, the Beijing Friendship Commercial Service Company set up a joint venture in Tokyo with a Japanese firm, which signified the start of China's overseas direct investment. Investors during this period were basically trade enterprises, which might be grouped into two types: one specialised foreign trade

corporations with import and export licences, and the other economic and technological corporations affiliated to provincial and city governments. Encouraged by the open door policy, these firms sought to enter into overseas business by taking advantage of their higher autonomy in operation granted by central and local governments and their existing international business links. As the economic reforms were at the early stage and negative views of multinational enterprises were influential, China's overseas direct investment during this period was quite small, in both volume and number of projects. For example, annual FDI outflow in 1982 and 1983 was US$44 million and US$93 million respectively, and even in 1984 this figure was only US$134 million [SAFE, 1999].



(Outflows are annual average figures for 1980-85, 1986-90, 1991-95, 1996-00, and 2001, respectively)

Figure 1

Data source: 1. SAFE (1999). *1982-1999 Balance of Payments Statement for China*.
2. UNCTAD. *World Investment Report*, 2002.

Stage 2 (1985-1991): *Early Boom*. In 1985, the State Ministry of Foreign Economy and Trade passed a resolution: "Any economic entity can apply for setting up an overseas joint venture if it has the relevant financial resources, a certain level of technology and business speciality, and joint partners". In response, a group of large enterprises and conglomerates began to undertake foreign direct investment. Soon after that, the State Council formally gave approval to the China National Chemical Import and Export Corporation (SINOCHEM) to make experiments of overseas business [IIE, 1998, p.127]. During this period, not only trading enterprises engaged in international business, but manufacturing enterprises such as Shougang (the Capital Steel and Iron Corporation) also began to join the

ranks of overseas direct investment. As a result, annual FDI outflow jumped from US$134 million in 1984 to US$629 million in 1985 and further mounted to US$850 million in 1988 [SAFE, 1999]. However, this boom was severely affected as the Chinese government backtracked towards re-tightening central control and suspended the approval of trade-type overseas enterprises in 1989.

Stage 3 (1992-present): *Steady Development*. In the early 1990s, the Chinese government clearly defined that the aim of the economic reforms was to establish a market economic system and formulated the strategy of "utilising two kinds of resources and developing two markets."[3] Many local governments and enterprises acknowledged the strategic importance of overseas business for accelerating economic development. As a result, China's overseas direct investment began to expand at an unprecedented rate. Annual FDI outflow jumped to US$4,000 million in 1992 from US$913 million in the previous year and further to US$4,400 million in 1993. Though this figure reduced to US$2,000 million in 1994, annual FDI outflows kept at a level about US$2 billion in the following six years (1996-2001) [SAFE, 1999; UNCTAD, 1994-2002].

The rapid expansion of FDI outflows makes China one of the main sources of FDI among developing economies. During 1985-1998, it was among the top five of those economies in terms of annual FDI outflows. As a result, its outward FDI stock mounted to US$27.6 billion in 2001, close to that of South Africa (US$29 billion) [UNCTAD, 2002, pp.307-317]. Six of the top 50 multinational enterprises based in developing economies, ranked by foreign assets in 1997, were from China [UNCTAD 1999, pp.86-87]. Considering the fact that there was basically no outward FDI before the economic reform, the development of China's outward FDI is indeed remarkable.

2. Destination of China's Outward FDI

There are two general types of data on FDI. One is the financial data from balance of payments accounting, which records inward and outward flows of FDI and the resulting stock. The other source is the data on the operations of FDI affiliates and their parents,

[3] Two kinds of resources refer to the domestic resources and overseas resources; and two markets refer to the domestic market and international market.

including their sales, production, employment, assets and expenditures on R&D. In discussing the differences in source and feature of these two types of data, Lipsey [2001] indicates that the financial data are the only data on FDI that cover virtually all countries, but they contain no information on the economic activity of FDI affiliates and their parents. In contrast, data on FDI operations can reveal more detailed information, but their comprehensiveness depends on how the home country carries out the survey.

In China, the financial data are provided by SAFE, and the operations data by MOFTEC. UNCTAD uses SAFE data. Though UNCTAD and SAFE provide data on the growth of China's FDI outflows at the aggregate level over the years from the late 1970s, they do not provide data on the distribution of FDI among different countries. Fortunately, the Ministry of Foreign Trade and Economic Cooperation (MOFTEC), the Chinese government institution responsible for the administration of outward FDI, has recorded every single investment project approved by or registered with the government, including investment from Chinese investor(s) and its destination country. It is the only detailed data source available so far from Chinese authority, and we will trace the geographical distribution of China's outward FDI based on data from this source.

MOFTEC data shows that China's outward direct investment covers as many as 152 countries (economies). However, its distribution is quite uneven among different regions and individual countries. A further breaking down of its geographic distribution will show that China's outward FDI is concentrated in a handful of countries.

2.1. Distribution among different regions

In term of flows, Asia and North America are the two major recipients of FDI from China. They accounted for 33 and 21 per cent respectively of China's outward FDI for the period 1979-2001. They are followed by Africa, Latin America, and the Oceania-Pacific region, each accounting for 16, 12, 11 per cent, respectively. European countries as a whole only received 6 per cent of China's outward FDI, the lowest share among all the regions.

In terms of the number of FDI projects, Asia is the biggest host region, which accounted for about 42 per cent of China's outward FDI between 1979 and 2001. In the following positions are Europe, Africa and North America, each accounting for 16, 14 and 14 per cent, respectively, for the same period (Table 1).

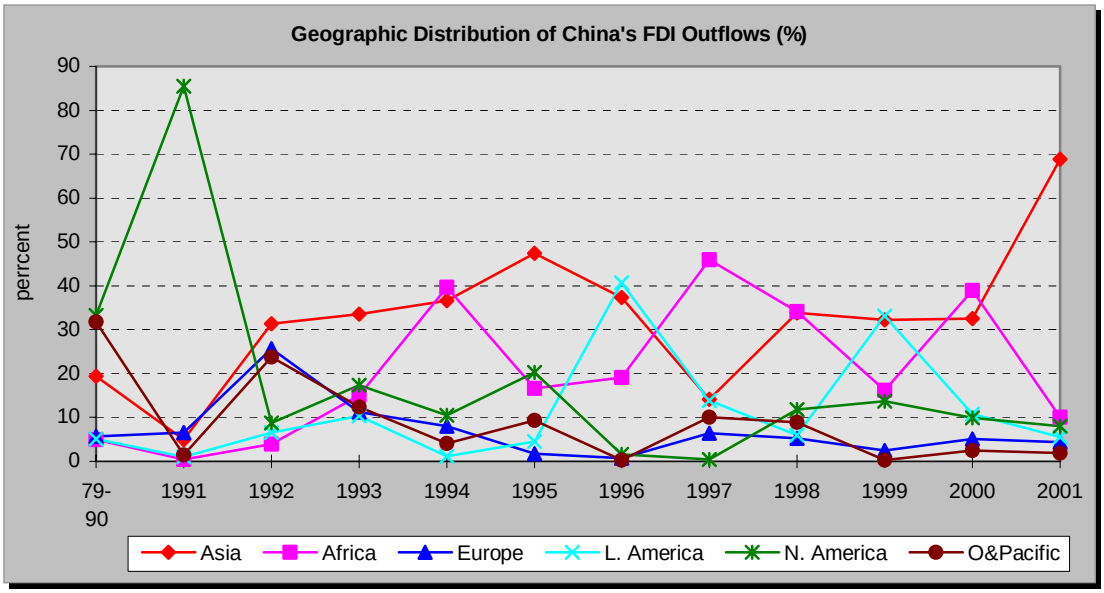
Table 1 Destination distribution of China's government approved outward FDI (%)*

		1979-1990	1991-1995	1996-2000	2001	1979-2001
1. Among different regions						
Asia	Flows	19.4	22.5	31.4	68.8	33.0
	Projects	41.9	37.5	45.7	48.7	42.0
Africa	Flows	4.9	8.3	28.8	10.1	16.4
	Projects	12.4	8.9	22.1	18.5	14.4
Europe	Flows	5.7	11.1	3.8	4.3	5.7
	Projects	12.7	24.4	11.9	10.3	16.3
L. America	Flows	5.1	3.9	22.1	5.5	12.1
	Projects	5.9	7.0	6.9	6.0	6.5
N. America	Flows	33.2	45.1	9.1	8.1	21.4
	Projects	18.5	14.5	8.3	9.9	13.7
O&Pacific	Flows	31.7	9.1	3.1	1.9	10.7
	Projects	8.6	7.5	4.0	4.3	6.5
2. Among different types of countries						
DC	Flows	67.0	56.5	15.3	13.3	35.0
	Projects	38.0	28.8	20.0	21.6	28.7
LDC	Flows	30.3	34.5	80.1	82.8	60.4
	Projects	57.7	50.9	70.7	72.2	59.8
C&E Europe	Flows	2.7	9.0	3.0	2.7	4.0
	Projects	4.4	20.3	9.2	6.2	11.6

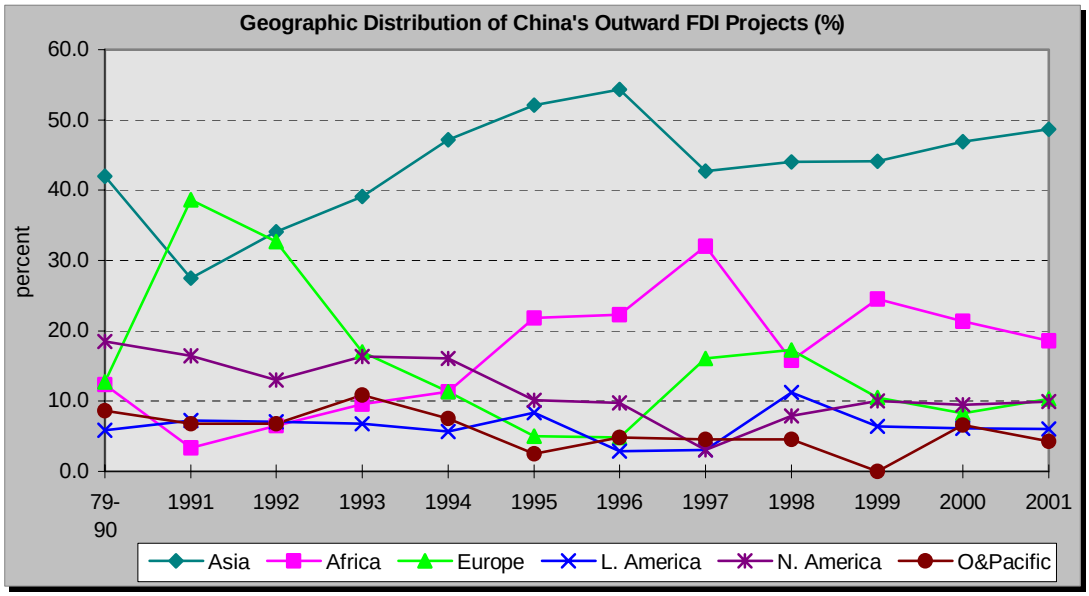
Data source: MOFTEC, *Almanac of China's Foreign Economic Relations and Trade*. 1993/94~2001/2002.

* Due to rounding off, the sum for a particular year may not equal 100.

The regional distribution of China's outward FDI has been changing over time (Table 1 and Figure 1). North America attracted a large share of Chinese investment in the early years. Up to 1990, more than 33 per cent of China's outward FDI went to North America. This figure jumped to 86 per cent in 1991. However, Chinese investment in North America fell to lower level in most of the following years. In the meantime, investment in Africa kept increasing in terms of both FDI outflows and projects. Up to 1990, only 99 investment projects involving a total investment of about US$50 million went to Africa. In the following eight-year interval, 196 Chinese FDI projects went to Africa, involving a total investment of US$294 million. Over the whole period of 1979-2001, Asia was a region which attracted relatively constant interest from Chinese investors, with 1297 Chinese FDI projects involving a total investment of US$1,463 million. In most of the years of the 1990s, more than 30 per cent of Chinese investment flows went to Asia [MOFTEC].



a.



b.

Figure 2 Distribution of China's outward FDI among different regions

Data source: MOFTEC, *Almanac of China's Foreign Economic Relations and Trade*. 1993/94~2001/2002.

2.2. Distribution among three groups of countries

The distribution of China's outward FDI among the three groups of countries, developed, developing, and Central and East European, is very uneven. Until 2001, Central and East European countries only absorbed 4 per cent, leaving the remaining 96 per cent of

investment flows to be distributed to developed and developing countries (Table 1). During the entire 1979-2001 period, China carried out 355 investment projects involving a total investment flow of US$178 million in Central and East European countries, but about half of the investment was carried out in 1991and 1992 [MOFTEC].

While for the whole period between 1979 and 2001, the developed country group and developing country group received 35 per cent and 60 per cent of China's outward FDI flows respectively, several distributional features are worth noting. First, the average size of China's FDI projects in developed countries is larger than that in developing countries. This feature is also reflected in the shares of FDI flows and projects received by these two groups of countries. The distributional shares of China's FDI flows indicated above, i.e., 35 and 60 per cent, involved 29 and 60 per cent of China's outward FDI projects during that period, respectively. This implies that the average size of China's outward FDI projects in developed countries (i.e., 35/29) was about 1.2 times that in developing countries (i.e., 60/60). This difference was even larger in the earlier stage of this period, with the average size of projects in developed countries doubling that in developing countries between 1979 and 1998.

Secondly, China's FDI flows were concentrated heavily in developed countries before 1991. More specifically, between 1979 and 1991, more than 72 per cent of China's FDI outflows went to developed countries, while developing countries only received 24 per cent. The share of FDI to developed countries was especially high in 1991, reaching 88 per cent, while that to developing countries was only 6 per cent (Table 1 and Figure 3). This feature is contrary to the generally claimed pattern that FDI from developing countries should take other developing countries as its main destination, especially at its early stage.

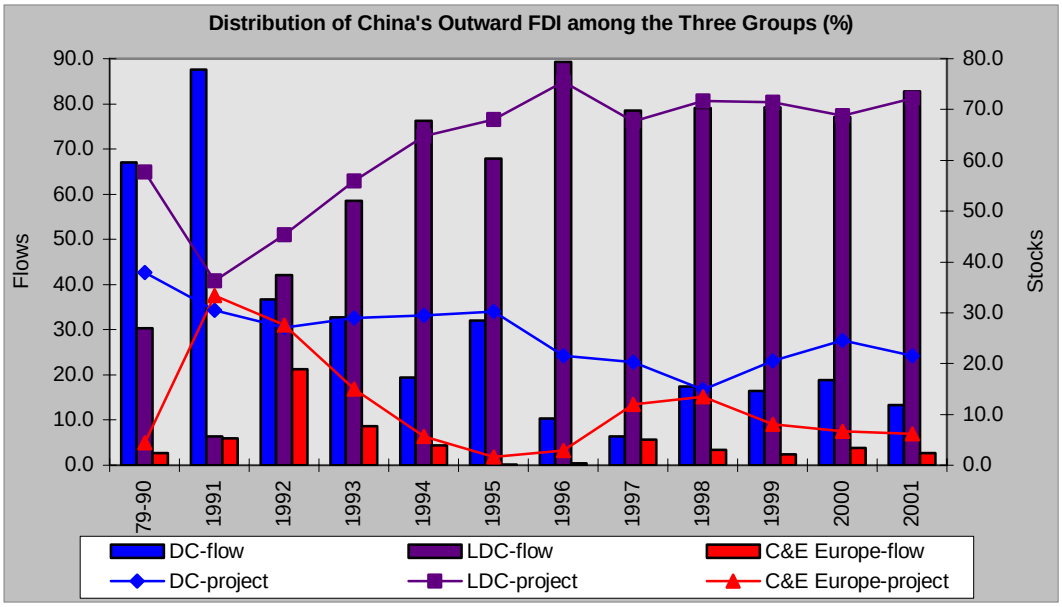


Figure 3 Distribution of China's outward FDI among the three groups

Data source: MOFTEC, *Almanac of China's Foreign Economic Relations and Trade*. 1993/94~2001/2002.

Thirdly, China's investment in developing countries kept rising and a growing share of investment went to this group of countries after 1992. In 1991, the developing country group only received 6 per cent of China's outward FDI flow. However, this group accounted for 42 per cent of China's outward FDI flow in 1992. This figure rose further to 59, 76, and 68 per cent in the following three years, respectively. The share of China's outward FDI flow to developing countries was even higher in the 1996-2000 period, reaching 83 per cent (Table 1 and Figure 3). The number of China's FDI projects to developing countries also rose along with the rising share of FDI flows. Developing countries accounted for more than 50 and 70 per cent of China's outward FDI projects during the periods of 1991-1995 and 1996-2000, respectively.

2.3. Distribution among individual countries

The distribution of China's outward FDI among different countries is much more uneven than that among different regions or different groups of countries.

In Asia, ASEAN countries and Hong Kong are the main destinations of China's outward direct investment. Up to 2001, these two regions absorbed US$585 million and US$473 million respectively, each accounted for 40 and 32 per cent of Chinese government approved direct investment in Asia. In ASEAN, Thailand and Cambodia are the largest

recipients. They absorbed US$194 million and US$120 million respectively of direct investment during the 1979-2001 period. They were followed by Indonesia, Vietnam and Myanmar; each absorbing US$58 million, US$56 million and US$47 million, respectively. The Philippines received the least share [MOFTEC, 2002]. It is worth noting, however, that the trend for the annual number of China's FDI projects to ASEAN is going down.

In Africa, North Africa only received a very small share of China's FDI, the majority went to central and southern African countries. Among them, Zambia, South Africa, Mali and Tanzania are the major destinations; until 2001, each received US$134 million, US$111 million, US$58 million, and US$39 million respectively. The other major recipients in Africa are Zimbabwe, Nigeria, Egypt, Congo, Ghana, Kenya, Gabon, Benin, Mauritius, and Cote D'Ivoir.

In Latin America, Peru is the biggest recipient. Up to 2001, it received about US$200 million of Chinese government approved investment. It was followed by Mexico, Brazil, and Chile; each received US$143 million, US$95 million and US$26 million respectively during the 1979-2001 period.

On the whole, West Asia, Central Asia and East Europe (except for Russia) are the regions which attracted least interest from Chinese investors. For example, twelve West Asian countries (Cyprus, Iran, Israel, Jordan, Kuwait, Oman, Qatar, Saudi Arabia, Syria, Turkey, United Arab of Emirates, Yemen) together only received US$94 million of Chinese investment in the 1979-2001 period. Similarly, six Central Asian countries, Georgia, Kazakhstan, Kyrgyzstan, Tadzhikistan, Turkmenistan, and Uzbekistan, together only received US$90 million of Chinese investment until 2001. Until 2001, China invested US$179 million to Central and East Europe, of which 73 per cent went to Russia.

Overall, China's FDI outflows are highly concentrated in a few developed countries, namely, the United States, Canada and Australia. Up to 2001, about 30 per cent of Chinese government approved FDI went to these three countries, each accounting for 13, 9 and 8 per cent, respectively. These three countries, plus Hong Kong, Peru, Thailand, Mexico, Zambia, Russia, Cambodia, South Africa and Brazil, accounted for about 67 per cent of China's outward FDI, leaving the remaining 143 countries (regions) accounting for 33 per cent of China's outward FDI (Figure 4).

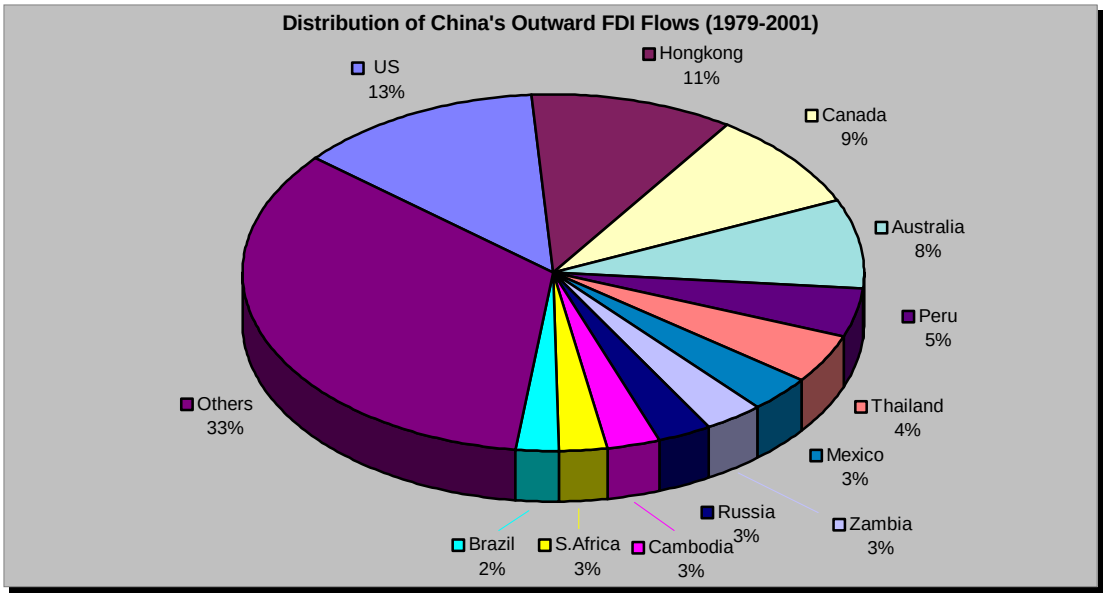


Figure 4 Main destinations of China's outward FDI

Data source: *Almanac of China's Foreign Economic Relations and Trade*, 2001/2002.

It is worth noting that the share of China's FDI in the United States, Canada and Australia was even larger in the early stages. During the 1979-1990 period, these three countries received 25 per cent of China's government approved outward FDI projects, which involved more than 63 per cent of China's FDI outflows (Figure 5 and Figure 6). Australia was the largest recipient at that time, accounting for 30 per cent of China's FDI outflows. In 1991, Canada alone absorbed 84 per cent of China's FDI outflows (Figure 5).

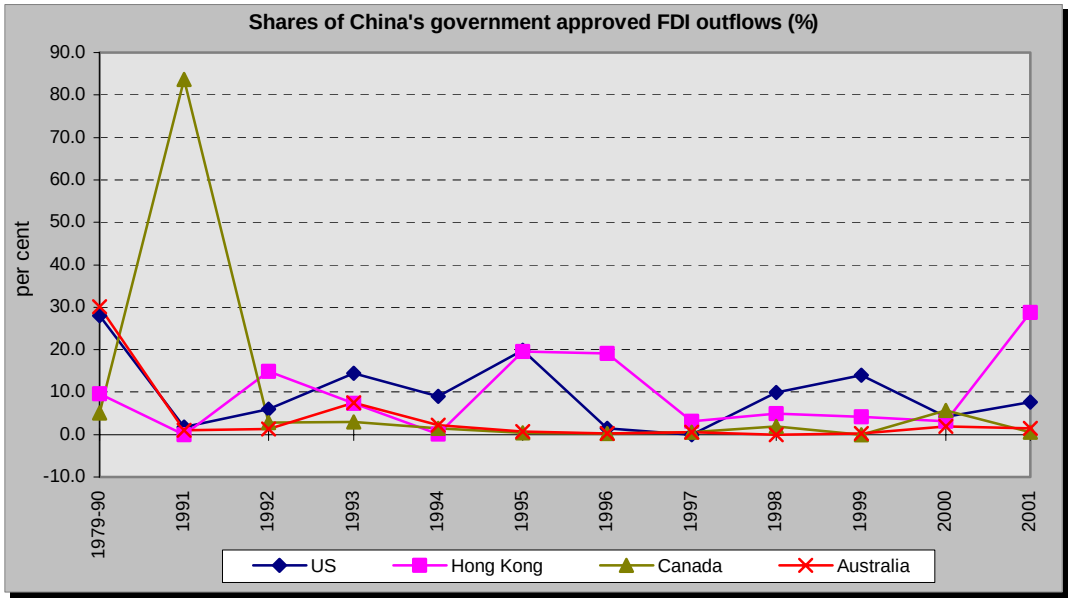


Figure 5

Data source: *Almanac of China's Foreign Economic Relations and Trade*. 1993/1994~2001/2002.

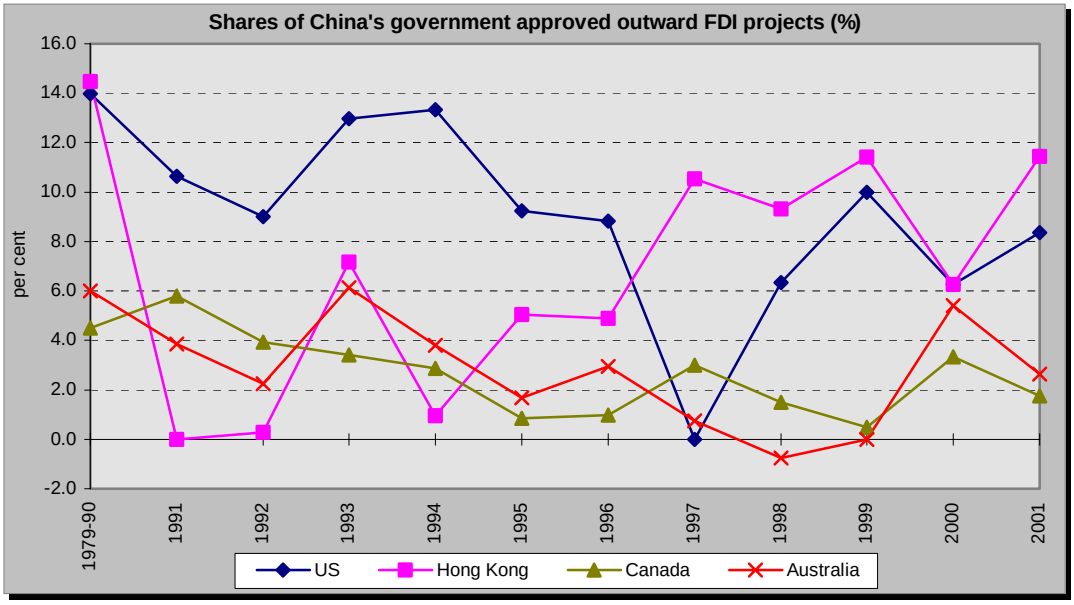


Figure 6

Data source: *Almanac of China's Foreign Economic Relations and Trade*. 1993/1994~2001/2002.

3. Concluding Remarks

China's outward FDI began to emerge shortly after the beginning of the economic reform in the late 1970s. It expanded rapidly afterwards in volume. From 1982 to 2001, total FDI outflows mounted to US$29.5 billion. This is a substantial amount for a developing country with a very short history of foreign direct investment. While covering almost all the countries in the world, China's outward FDI is heavily concentrated in the United States, Canada and Australia. The share of investment in these countries was even larger in the early stages of FDI growth. These features seem to differentiate China's outward FDI from the acknowledged pattern according to which FDI from a developing country is expected to be directed initially at its neighbouring developing countries, expanding gradually in volume and distance. There is a need, therefore, for an explanation of the underlying rationale for China's outward FDI.

4. Appendix: 25 Largest Recipients of China's Outward FDI

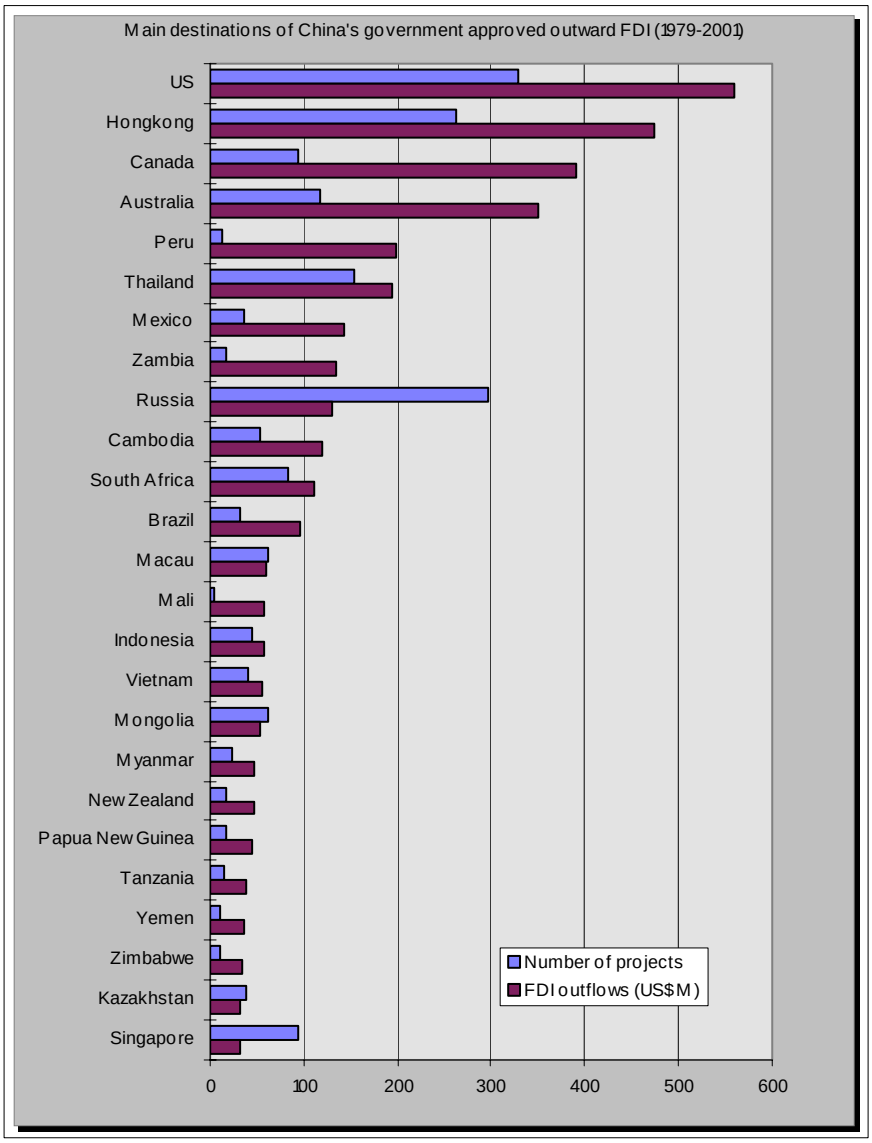


Figure 7

Data source: *Almanac of China's Foreign Economic Relations and Trade*. 1993/1994~2001/2002.

Chapter 3. Explanation of FDI from Developing Countries

This chapter reviews the current theories of foreign direct investment from developing countries and documents the issues which have been raised by using these theories to interpret China's outward direct investment.

1. FDI from Developing Countries

1.1. Research on FDI from developing countries

Although foreign direct investment from developing countries (so called Third World FDI - TWFDI) can be traced back to about a century ago [Katz and Kosacoff, 1983, p.139], it has only become a common phenomenon during the last three decades. The 1990s witnessed a big jump in TWFDI: its share in the world total FDI outflow rising to about 15 per cent [UNCTAD, 1994-1999], approximately 3 times that of the 1980s.[4] Given that TWFDI is geographically concentrated in terms of its sources – several East Asian countries plus a few Latin American countries accounting for the major proportion of TWFDI – the growth of TWFDI is all the more impressive. In addition, as the process of economic catch up and FDI development goes on, multinational enterprises headquartered in developing countries have been increasing in number, size, complexity of organisation, and transnationality. Among the 50 top multinational enterprises from developing countries in 1998, there were 29 with foreign assets above US$1 billion, and two ranked the 43 and 73 respectively in the world's top 100 multinationals [UNCTAD, 1998, pp.48-49, 36-38].

[4] There are big discrepancies among data on TWFDI from different sources as well as in some cases different periods of a same source. Dunning *et al.* [1997] gave an example, "Dunning [1993] and Narula [1996] utilised estimates based on the US Department of Commerce which that total outward FDI stock from developing countries in 1980 was $15.3 billion, while UNTACD [1994] and Tolentino [1993] place the figure at a fifth of that level, or $3.4 billion. Even more curiously, discrepancies exist in publications by the same source; for example, the estimate for 1980 published in UNCTAD [1995] gives the same stock figure at $6.1 billion, twice that of UNCTAD [1994], one year previously." In this research we use UNCTAD's data as the main source for TWFDI. Even this source is quite conservative, its data on TWFDI still suggest strong trends in the expansion of TWFDI.

The expansion and the increasing importance of TWFDI have caught academic attention since the late 1970s. As noted above, Lecraw's 1977 paper, *Direct Investment by Firms from Less Developed Countries*, signified the start of TWFDI as a subject of considerable research [Dunning *et al.*, 1997]. Based on a survey covering 200 local and foreign invested firms (including 20 TWFDI established firms[5]) in Thailand, Lecraw [1977] characterises TWFDI as involving labour-intensive technologies for small-scale production of mature and undifferentiated goods. Investors prefer a minority interest in joint ventures with local partners, and family and ethnic links with local groups play an important role in business. Compared with FDI from developed countries, TWFDI affiliates have higher autonomy and retain a larger proportion of earnings for further development.

Thereafter, interest from economists and business researchers grew, leading to a boom in the research of TWFDI between the late 1970s and 1980s. This boom offered a theoretical justification for the specific characteristics of FDI and international operations of firms from developing countries. Representative theoretical publications during this period include Lall [1983a, 1983b], Wells [1983], and Riemens [1989]. Research in the 1990s further contributed to the body of knowledge of TWFDI. Seminal contributions in this period include Ferrantino [1992], Tolentino [1993], Dunning *et al.* [1997], and Yeung [1998].

In spite of this progress, the number of studies on TWFDI is relatively small compared to that on FDI from developed countries [Pananond, 1998/1999]. The existing literature on TWFDI consists mainly of empirical studies within the framework of conventional theories of FDI. The descriptions are often made by comparing FDI (and MNEs) from developing countries with that from developed countries, focusing on specific cases of certain countries, business operations of certain types of firms, or specific functional issues of some firms. TWFDI which is investigated in this research consists mainly of FDI flows to other developing countries.

Nevertheless, questions have been raised about the appropriateness of the comparisons between TWFDI and FDI from developed countries. Riemens pointed out, for example, that "much of what can be said about the nature and consequences of FDI by developing

[5] Home countries for these firms were India (9), Taiwan (6), Singapore (2), and Malaysia (3).

countries rests on the possibility of a meaningful comparison between their MNEs and those of industrial countries. ... (But) by and large, one of the most obvious characteristics of present 3WMNEs[6] is their relatively small size, both in terms of actual FDI and of the size of the parent company." As little research has been devoted to small sized developed countries' MNEs that are comparable to third world MNEs, MNEs of developing countries are usually compared to so-called typical transnational corporations like Unilever, General Motors or IBM. This leads to more confusion than enlightenment [Riemens, 1989, pp.26-30].

1.2. Interpretation of FDI from developing countries

1.2.1 Ownership advantages for TWFDI

Setting out from the conventional framework for FDI, many analysts try to probe the nature and source of comparative advantages supporting TWFDI in an alien market. It is said that the importance of such advantages is no less for TWFDI than for FDI from developed countries, as TWFDI affiliates often have to compete not only with local companies, but also with other, usually much larger, multinationals from developed countries. Though MNEs from developing countries tend (for the time being) to bear more resemblance to local firms in outlook, size, and product lines, these firms are widely believed to hold distinct competitive advantages *vis-à-vis* all their rivals [Riemens, 1989, p.30]. These advantages are basically ownership advantages in the sense that they belong to the investing firms in relation to their foreign rivals. However, they may not all be generated within the investing firms, rather they might be derived from external country-specific factors such as the possession of ethnic specific knowledge or cheaper labour cost.

One of the most frequently quoted advantages for TWFDI is the technology adaptation and basic design capability. Empirical evidence shows that most MNEs from developing countries engage in very active technical effort to assimilate and adapt imported technologies to particular domestic needs and raw materials. For example, Hong Kong firms are considered to be stronger on product improvements for meeting changing demand in developed countries, and they also undertake steps to reduce (rather than increase) labour

[6] Multinational enterprises from developing countries.

intensity [Chen, 1983]. Indian and Argentinian firms tend to be particularly strong on production engineering and basic design capacity [Lall, 1983a, 1983b; Katz and Kosacoff, 1983]. As many developing countries have similarities in technological base, factor structure, and industrialisation goals as well as market size (small), TWFDI affiliates of certain types even have advantages over those by MNEs from developed countries. The sources of these advantages include: (1) less use of special-purpose equipment, which enables them use local low-level inputs even substitutes; (2) mature and more universal products, which better match the lower standards of machinery and equipment in local downstream firms; (3) low specialisation of TWFDI affiliates, which can reduce the economic scale to the extent of local small market; and (4) the flexibility stemming from lower specialisation and higher universality of the their machinery and equipment, which facilitates firms greatly to change their products when business environment and market conditions have changed [Wells, 1983].

Small scale of operation is another advantage for investors from developing countries. It is often argued that the smallness of their home market for manufactures gives MNEs in TWFDI an edge over western MNEs when similar circumstances in other developing countries call for a smaller scale of production. Wells termed this process as “de-scaling” and suggested that it is a type of technology unfamiliar to, and unfavoured by Western MNEs, but at the same time, it still embodies an amount of know-how not readily available to local firms [Wells, 1983].

The lower management cost and higher autonomous subsidiaries are another source of comparative advantages for TWFDI. Most FDI firms from developing countries are small in size in comparison with those from developed countries. Management levels have thus reduced and the flexibility increased. This feature brings about management cost saving effects to TWFDI affiliates as well as higher autonomy to their overseas subsidiaries [Wells, 1983].

Ethnic specific knowledge is also an advantage for TWFDI. When a country has large ethnic communities abroad, the possession of intimate knowledge of the local market in terms of tastes and opportunities, and access to channels of distribution, enable firms from the country to save significant costs involved in the collection of such information. Similarly, the knowledge of special manufacturing processes and products with ethnic

characters gives its possessors the monopolistic advantages over competitors [Wells, 1983]. In reality, this advantage is most likely to relate TWFDI to developed countries. The reason is that most "ethnic" products are relatively simple to manufacture, and therefore generally produced by local entrepreneurs belonging to the community in question in developing countries. However, developed countries are more open to external funding and to the managing of such lines of production, and their markets represent much stronger buying power. It seems that the satisfaction of the "ethnic" demand provides a foothold for some TWFDI, especially if they are able to capture some non-ethnic markets as well. But the scope of such markets appears to be limited [Riemens, 1989, p.38].

1.2.2 Timing of TWFDI

It is generally acknowledged in the literature that the emergence and development of FDI from a developing country is to a large extent determined by the level of technology accumulation and economic development in the country.

Tolentino [1993] argues that FDI is a choice for firms from developing countries to exploit their proprietary advantages which are based on their imitated and innovated technology. She reaches this view by combining Vernon's [1966] product cycle model and Lall's [1983b] theory of localised technological change. According to Tolentino [1993, ch.4], the competitive advantages of firms from developing countries is predicated on their ability to: (1) imitate and adapt foreign technology in accordance with developing countries' markets and production conditions; (2) innovate on essentially different lines from those of the more advanced countries, i.e. innovations that are based on lower levels of research, size, technological experience and skills; and (3) achieve improvements by modernising older technique, including foreign outdated technology. Though the imitated and innovated technology embodied in machinery is easily codified, the methods used in exploiting machinery and firms' accumulated experience as a result of learning by doing and learning by using are not codifiable. In effect, the imitated and innovated technology is largely implicit in the skills and experience of employees and is therefore not easily codified or embodied in patents, blueprints or trademarks. This drives developing countries' firms with imitated and innovated technology to internalise these advantages via outward FDI.

This view implies that the emergence and development of FDI from developing countries correspond to the generating of imitated and innovated technology in these countries. More

generally, as Tolentino [1993, ch. 4] indicates, the world FDI pattern can be viewed as a pecking order of different countries in which a particular country's position is determined by its ability to produce a particular product and the internationalisation of firms from developing countries as a stage in the product life cycle.

Dunning reaches a similar conclusion, but from a different theoretical framework. Within the framework of his investment development path (IDP) theorem,[7] Dunning views the development of FDI from a country as a process, attributable to the country's economic development. Whether or not a developing country can start its outward FDI depends on whether its firms have generated sufficient ownership advantages to overcome the initial barriers to foreign production. The expansion of FDI afterwards is determined by the further accumulation of ownership advantages [Dunning, 1988].

Dunning *et al.* [1997] further points out that so far, TWFDI has progressed into its second wave and the research on TWFDI in the late 1970s to early 1980s (quoted above) is mainly a description of TWFDI in the first wave. While the first wave consists mainly of some Asian and Latin American countries, e.g. India, Philippines, Argentina, Mexico and Columbia, the second wave consists mainly of newly industrialising economies in East Asia such as Taiwan, South Korea, Hong Kong, China, Singapore and Malaysia. According to Dunning *et al.* [1997], the second wave represents part of a continuum and can be best characterised as an intermediate stage in the evolution of MNE activity, between the first wave of TWMNEs and conventional MNEs. Specifically, the second wave of TWFDI has distinct features in destination, motivation, industrial areas and ownership advantages, which are specified in comparison with the first wave of FDI and conventional FDI in Table 2. These features reflect the structural upgrade in the home economy in response to economic globalisation and the improvement of investors' ownership advantages along with the structural upgrading. A holistic and integrated government policy towards industry development in the home economy is important for the transition from the first wave to the second wave in the country's outward foreign investment.

Table 2 Characteristics of outward FDI and three stages of IDP

[7] For IDP refer to Chapter 3.

	First Wave **[Stage 2]**	Second Wave **[Stage 3]**	Conventional MNEs **[Stage 4 and 5]**
Destination	Regional FDI: neighbouring countries and other LDCs	Majority still regional, but expanding to global basis	Global basis
Motivation	Resource-seeking and market-seeking in LDCs	In LDC: resource- and market-seeking; In DC: asset-seeking and market-seeking	Efficiency-seeking: MNE motivation aimed at optimising use of each country's comparative and competitive advantages
Types of outward FDI	In LDCs natural-asset intensive, small scale production in light industries (Heckscher-Ohlin), moving towards undifferentiated Smithian industries	In LDCs: natural-asset intensive sectors as in first wave; In DCs: (a) assembly-type, market-seeking primarily in Smithian industries (b) asset-seeking investment in Schumpeterian industries	Capital- and knowledge-intensive (Schumpeterian) sectors, capital/labour ratio dependent on natural/created asset of host
Ownership advantages	**Primarily country-of-origin-specific**. Fundamental Oa advantages, not Ot advantages	**Both firm- and country-specific**	**Mainly firm-specific** Advanced Oa and Ot advantages.
Examples of ownership advantages (adapted and modified version of Lall [1983, p.7]	1. Conglomerate group ownership 2. Technology (mostly adapted) 3. Management adapted to LDC conditions 4. Low cost inputs (including managerial and technical personnel) 5. 'Ethnic' advantages	1. Conglomerate group ownership 2. Management adapted to LDC conditions 3. Low cost inputs (including managerial and technical personnel) 4. 'Ethnic' advantages 5. Some product differentiation 6. Limited marketing skills 7. Vertical control over factor/product markets 8. Subsidised capital	1. Large size–economies of scale 2. Access to capital markets 3. Technology 4. Product differentiation 5. Marketing know-how 6. Cross-country management skills 7. Globally efficient intra-firm activity 8. Vertical control over factor/product markets

Note: Oa = Asset-type ownership advantage; Ot = Transaction-type ownership advantage.

Source: Dunning *et al*. [1997, Table 4].

1.2.3 Geographical distribution of TWFDI

Given the importance of ownership advantages in FDI, it follows that FDI from developing countries is likely to be directed to countries with geographical, economic, cultural and ethnical proximity, for such investment enables the investing firms to lessen disadvantages in FDI, to take advantage of cultural and ethnical knowledge, and to facilitate communications between subsidiaries and their parents as well. When the investing firms, through this kind of investment, have gained international business experience, acquired better skills and more access to improved technologies and international networks, they are

most likely to extend their area of operation to regions with larger geographical, cultural or ethnical distance [Ferrantino, 1992].

Earlier research shows that, as a reflection of this strategy, FDI from developing countries is characterised by a heavy regional concentration. Firms from Hong Kong, Taiwan, South Korea and India prefer to invest in the neighbouring countries of Indonesia, Malaysia, Thailand and the Philippines. Similarly, the bulk of Argentinian firms' direct investment went to Brazil, Peru and Uruguay. Most of Brazilian firms' foreign direct investment also went to Latin American countries [UNCTC, 1983].

2. Theoretical Issues Raised by China's Outward Investment

The above review shows that FDI from developing countries is motivated by a firm's desire to exploit its existing proprietary advantages based on imitated and innovated technology. It follows, therefore, that given the importance of these advantages and the similarities between developing countries (in market size, industry structure and the level of technology), FDI from a developing country should normally be directed at other developing countries, especially those in close proximity and at lower stages of economic development. As the expansion of proprietary advantages is a process of technology accumulation, FDI from a developing country should only expand gradually. However, these patterns of TWFDI are hardly reflected in China's outward FDI, especially when we consider the fact that China's outward FDI takes developed countries as its major destinations.

2.1. Ownership advantages

According to mainstream theory, the possession of some kind of proprietary advantages is a critical factor underlying a firm's overseas direct investment. This holds irrespective of whether the investment is claimed to be motivated by the firm's desire to exploit these advantages overseas to avoid transaction cost (the internalisation model) or as part of the firm's strategy in a game of imperfect international competition (the market power model). These proprietary advantages are derived from the ownership of intangible resources,

generally, technology, management skills, and organisational capabilities.[8] which can be easily transferred from country to country within a firm, but with difficulty between firms. However, this pattern is not found in China's outward investment.

First, the average size of Chinese firms is relatively small. In 1996, General Motors of the United States realised sales of US$5.26 billion, which was equal to sum of that of the 342 largest Chinese firms, or 32 times that of the Daqing Oil Company, the largest firm in China in terms of sales. The total sales of the world's largest three firms (in terms of sales), General Motors, Ford, and Shell, exceeded the total sales of all 23,927 large- and middle-sized firms (L&MFs) in China. In 1996, the American industrial enterprise Exxon realised a profit of US$7.51 billion, which was about 57.42 per cent of the total profit made by 23,927 L&MFs in China. In the same year, Baosteel, the largest industrial firm in China in terms of assets, held US$9 billion of total assets, which was only about 2.94 per cent of that of General Electricity from the United States [CSIESR *et al.*, 1999, pp.111-112]. The gap in size between Chinese firms and world firms is summarised in Table 3. In addition, most of the Chinese firms are operating in a single industry, and the variety of their products is correspondingly limited.

Table 3 Comparisons between Chinese and world's largest firms

	Sales	Profit	Assets
World no.1: China's no. 1	32:1	-	34:1
World no.1: China's all large and middle sized firms (23,927)	41.63:100	57.42:100	41.99:100
World no. 1 equals to China's	342 largest together	-	342 largest together
World largest three: China's all large and middle sized firms (23,927)	109.65:100	211.50:100	112.17:100

Source: CSIESR, *et al.* [1999], *Report on the Development of China's International Competitiveness 1999.* (in Chinese). Beijing: People's University Press. p.111.

Secondly, compared with their counterparts from developed and newly industrialised countries, Chinese firms are weak in research and development (R&D) activities. Though

[8] In this analysis we take the most commonly used conception, as there is no consensus of views over what encompasses intangible assets or resources. Grant [1991, p.119] categorised intangible resources into four subclasses: human resources, technological resources, reputation, and organisational assets. Hall classifies intangible resources into two categories: intangible assets and competencies. Intangible assets include "having" capabilities, which typically are regulatory (e.g. patents) or positional (e.g. reputation). Competencies (intangible skills) are related to "doing" capabilities, which include functional capability (e.g. know-how) and cultural or organisational capability (e.g. routines). Intangible skills are typically people dependent, while intangible assets are considered as people independent [Hall, 1993].

total employment in R&D activities in China is large, less than 30 per cent of R&D workers are employed by the firms. In 1998, only 32.2 per cent of the China's L&MFs had their own specialised R&D institutions. Even among those firms which have R&D institutions, 37 per cent did not have all the relevant inputs [NBS, 1998]. This contrasts sharply with situations in developed and newly industrialised countries where more than half of the national R&D employees work in firms. In the United States, R&D employees in firms accounted for as high as 79.4 per cent of the national total in 1998 (Table 4).

Table 4 Number of employees in R&D activities in firms

Country	(a) Total number of employees in R&D (thousand)	(b) Number of employees in R&D in firms (thousand)	b/a (%)
US	962.7	764.5	79.4
Japan	948.1	573.7	60.5
Germany	470.2	285.0	60.6
France	318.4	162.0	50.9
UK	279.0	148.0	53.1
South Korea	152.2	969.0	63.7
Russia	990.7	671.1	67.7
China	1667.7	477.0	28.6

Source: IMD [1998]. *The World Competitiveness Yearbook 1998.*

As knowledge goods are non-rivalous and non-excludable in nature, and are difficult to be transacted externally due to the high imperfection of the market for such goods, the low-input and under staffed R&D activities in the Chinese firms inevitably hinder the innovation and invention process in firms. In fact, many Chinese firms badly need technological transformation. For example, the original value of the micro-electronic-controlled manufacturing assets was only about 6 per cent of the total original value of all manufacturing assets in the large and medium sized firms [IIE, 1999, p.69]. In 1980, the productivity in manufacturing in China was 6.3 per cent of that in the United States. In 1992 this figure was 6.2 per cent [Ren, 1998]. "In the past ten years, the gap in productivity between China and other leading countries including the United States, Japan and South Korea, remains unchanged. In other words, there are no trends for catch-up (for China)" [Ren, 1998].

Besides productivity, other indicators also show the unsatisfactory technological conditions in Chinese firms. Generally used indicators for such purpose are the rate of intermediate

consumption and commercial energy consumption in production, as well as product quality. In 1996, the rate of intermediate consumption in industry in China was 74.49 per cent, about 23.59 and 16.89 percentage points higher than the United States and Japan respectively in 1993 [SSB, 1997]. This implies that there are large gaps between China and many other countries in the technological level of products and the ability of value addition in industry. On the other hand, though the efficiency of energy consumption in industries in China, measured in terms of ton of standard coal/per 100 *yuan* of value-added, had greatly improved from 20.54 in 1980 to 3.89 in 1995, China is still among the countries of lowest efficiency in energy consumption [CSIESR, 1999, P.101]. In 1995, the energy consumed for the production of 1 US$ of GDP was 49,179 kilojoules, 13.5 times that of Japan, 8.79 times that of Germany, 4.04 times that of the United States, and 1.58 times that of India (Figure 8).

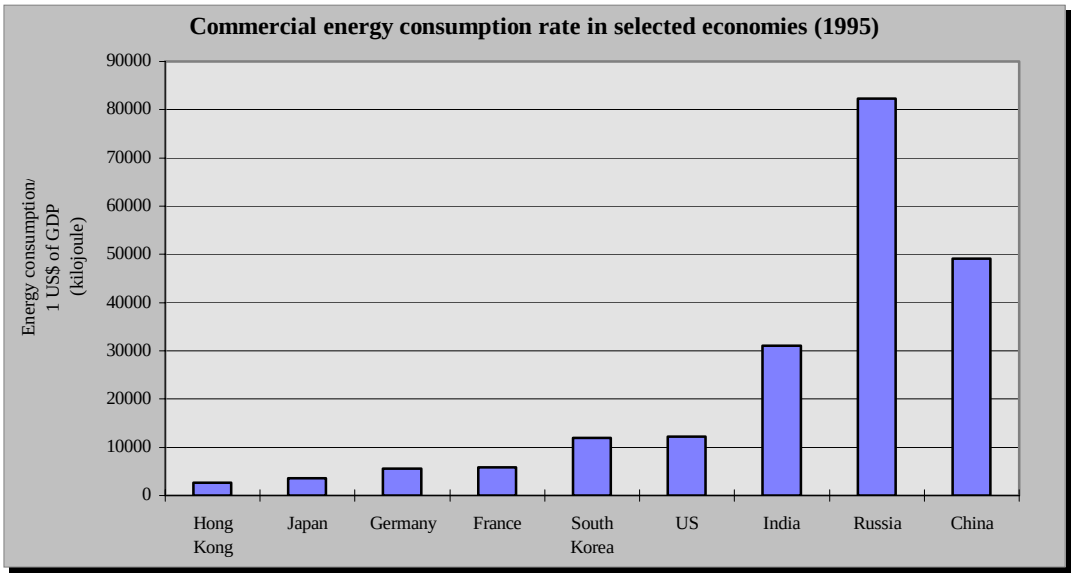


Figure 8

Data source: IMD [1998]. *The World Competitiveness Yearbook 1998*.

Conditions in product quality in China are also unsatisfactory. In most of the years between 1988 and 1997, the rate of qualified sample products was around 75 per cent, some years was even below 70 per cent. Only in 1991 and 1997 did this rate reach 80 per cent. In the meantime, there were differences between the rate of qualified products and the rate of qualified marketing goods, which implies that many poor quality products have flowed into markets by avoiding quality examinations or through abnormal channels. The situation

was most serious for machinery and electricity products, construction materials, and textile and footwear products (Table 5).

Table 5 Quality of products and marketing goods (1997)

	(a) rate of qualified batch products	(b) rate of qualified batch marketing goods	(a) - (b)
Products for agriculture	79	71	-8
Processed food and beverage	74	73	-1
Household electricities	81	71	-10
Light industry products	82	70	-12
Textile and footwear products	88	66	-22
Chemical products	88	69	-19
Construction materials	87	62	-25
Machinery and electricity products	88	60	-28
Metallurgy and metal products	76	61	-15
Others	80	65	-15
Total	80	69	-11

Source: NBS [1998]. *China Statistical Yearbook 1998*. Beijing: China Statistics Press.

Thirdly, Chinese firms as a whole are inferior in management in comparison with their counterparts from developed and most newly industrialised countries. According to the International Management Development, the management competitiveness of firms in China was ranked 30 out of the 46 sample countries in 1998 [IMD, 1998]. The major host countries for China's outward FDI – the United States, Canada, Australia, and Hong Kong – were ranked 1, 11, 17 and 4 respectively, much higher than China (Table 6).

Chinese firms are especially weak in the aspects of productivity, corporate performance and management efficiency. China is ranked the lowest in overall productivity and labour productivity among all sample countries, including both developing countries and developed ones. For Corporate Performance, Chinese firms are poor in the respects of Advertising Expenditure and Price/quality Ratio. In 1995, per capita advertising expenditure in the United States and Japan were US$619.44 and US$460.78 respectively, while in China was only US$1.81 (CSIESR, *et al.*, 1999, p.154). Chinese firms also lack competent senior managers and good marketing culture.

Table 6 Management competitiveness of selected countries/regions (1998)

	Management	# Productivity	# Labour costs	# Corporate performance	# Management efficiency	# Corporate culture
China	30	42	1	31	29	20
US	1	6	39	1	3	1
Canada	11	16	34	10	12	11
Australia	17	10	27	18	23	15
Russia	46	46	31	46	46	45
Thailand	41	38	8	40	35	39
South Africa	38	37	14	29	41	32
New Zealand	9	25	25	11	14	7
Malaysia	22	30	10	24	17	19
Singapore	2	17	21	5	5	3
Japan	24	20	43	2	33	22
Taiwan	7	23	19	19	7	8
Hong Kong	4	18	24	9	1	10
South Korea	34	27	16	43	42	25
India	32	28	2	41	25	44

Source: IMD [1998]. *The World Competitiveness Yearbook 1998*.

Table 7 International comparison balance sheet for Chinese firms' management

Assets		Liabilities	
Index	Ranking	Index	Ranking
Yearly wages in service professions	1	Overall productivity (PPP)	45
Overall productivity (PPP) growth	2	Labour productivity (PPP)	45
Remuneration of management	2	Agricultural productivity (PPP)	44
Compensation levels	5	Productivity in industry (PPP)	44
Worker motivation	7	Productivity in services (PPP)	44
Entrepreneurship	9	Advertising expenditure	43
Managers' social responsibility	12	Price/quality ratio	42
Corporate boards	14	Competent senior managers	40
		Marketing culture	36

Source: IMD: *The World Competitiveness Yearbook*, 1998.

One of the main reasons for the relatively poor management competitiveness of Chinese firms is that so far, China is still in the process of introducing macro and microeconomic systems and practices of market economy, therefore firms have to take time to enrich their experience in operating in a market economy along with the operation environment is shaping.

2.2. Timing of China's FDI

According to Dunning's investment development path (IDP) paradigm [Dunning and Narula, 1997], the emergence and development of outward direct investment of a country is related to its economic development, or more specifically, to its inward direct investment position. Before the emergence of its outward FDI, a country needs to experience a period in which even inward direct investment does not exist. Even if it has started outward direct investment, the country will still have to experience another stage in which inward FDI starts to rise but outward FDI remains low or negligible. Only when the country has entered the third stage, can the rate of growth of its outward direct investment increase while inward direct investment gradually decrease.

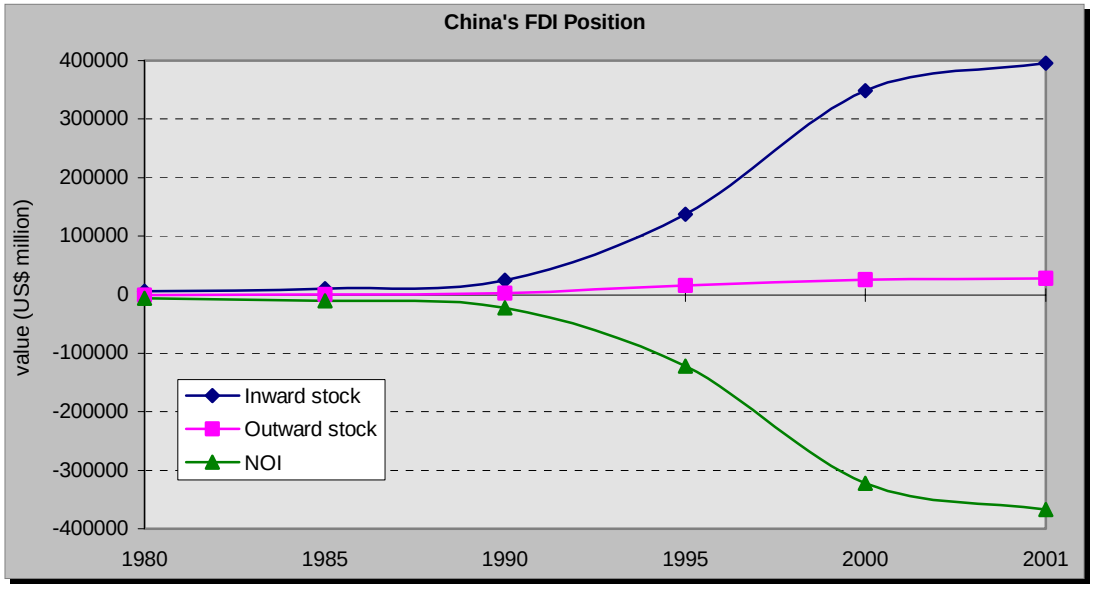


Figure 9

Data source: UNCTAD (2002). *World Investment Report*.

Figure 9 shows the evolution of China's foreign direct investment position. There are some conspicuous characteristics. First, the emergence and development of outward and inward direct investment flows coincide. The period of 1982-99 witnessed steady growth of outward and inward FDI. Secondly, compared with the huge inward direct investment during the following decade, China's outward FDI remained relatively small, but its absolute value is by no means negligible. From 1982 to 1999, total FDI outflows amounted to US$27.8 billion. This is a substantial amount for a developing country with very short history of foreign direct investment. Thirdly, due to its two features described above, it is

likely that China's outward direct investment has skipped the first stage and part of the second stage of the investment-development-path, and now entered the early period of the third stage.

Why does China's outward direct investment skip the earlier stages of IDP? Is the rapid expansion of China's outward FDI attributable to factors special to the case of China?

Theoretically, Dunning's IDP model is based on his trinity of OLI theorem [1979]: the net outward investment (NOI) of a country is attributable to its relative endowments of the ownership, location and internalisation advantages. Over time the endowment of these advantages changes, causing adjustment in the NOI position. During the first stage of IDP, no cross-border direct investment occurs since domestic firms have no ownership advantage to undertake outward direct investment nor are the country's L specific advantages sufficient to attract inward foreign direct investment. The reason for the increasing inward direct investment and negligible outward direct investment during the second stage of IDP lies in the economic development has created sufficient L advantages to attract foreign investment, but at the same time local firms still lack sufficient ownership advantages to undertake outbound investment. With the aid of inward direct investment, over time a country will gain in advantages of created assets while deteriorate in comparative advantages in labour intensive activities. This will give firms of the country motives as well as pressures to invest abroad, so as to exploit their increasing ownership advantage and avoid disadvantages in production at home. Therefore at the third stage "outward direct investment will be directed more to countries at lower stages in their IDP" [Dunning and Narula, 1996, p.4].

Since Chinese firms, as the analysis in the last part indicates, do not possess sufficient ownership advantages to invest abroad on a large scale, especially in developed countries, the timing of the emergence and development of China's outward FDI is not compatible with the prediction of the IDP paradigm.

2.3. Geographical distribution of China's FDI

It is interesting to note that China's outward FDI is heavily concentrated in the United States, Canada and Australia. Developing countries are not the major destination. This fact seems to deny the decisive role of proximity in economic development and geography

between home and host countries for the choice of destination of FDI, as mainstream theory of FDI suggests.

Given the importance of ownership advantage in mainstream theory of FDI, the choice for the location of FDI is largely a function of the possession of the ownership advantages. For example, Hymer [1960] states that national firms enjoy the general advantage of better information about their country: its economy, language, law, politics, and so forth. Accordingly, a firm must have sufficient firm-specific advantages (ownership advantages) to offset the comparative disadvantage of being foreign if it is to compete successfully in the host country. On the other hand, if a firm chooses to invest in countries with less cultural, economic or physical distances from the home country, it will need less ownership advantages to tackle barriers to international operation, as the "short" distance implies less barriers. Therefore, firms tend to enter markets at an increasing distance from the home country, not only in terms of physical distance but also in terms of differences in economic development, language, culture, political system, etc. Thus, firms are predicted to start their internationalisation by moving into markets they can most easily cope with, entering more distant countries only at a later stage [Benito and Gripsrud, 1995]. As firms from developing countries are normally characterised as small in size, weak in technological innovation, and less experienced in international operations, their overseas direct investment at the early stages generally takes other developing countries as its main destinations. This implies that the pattern of FDI from developing countries displays heavy regional concentration [UNCTC, 1983].

Generally speaking, developing countries are characterised by subsistence primary production (mainly agriculture) and low levels of income per person. By comparison, in developed countries the lion's share of GDP comes from the services sector while agriculture only accounts for a very small share of GDP. By this criterion, China is a typical developing country. For example, in 1980, the value added in agriculture accounted for 30 per cent of GDP while services accounted only for 21 per cent. In the United States, in contrast, these respective shares were 3 per cent and 64 per cent, respectively. Nearly two decades later, in 1998, agriculture still accounted for 18 per cent of GDP and services for 33 per cent in China. In the same year in the United States services accounted for 72 per cent of its GDP and the share of agriculture had dropped to 2 per cent (Table 8). It is worth noting that the average share of the services sector in GDP of low-income countries

was 38 per cent in 1998, some 5 per cent higher than that of China. In the meantime, in 1998, per capita GNP in China was US$750, less than 3 per cent of developed countries [World Bank, 2000].

Table 8 Main economic indicators for China and selected countries

	GNP per capita	Labour cost per worker in manufacturing		Composition of GDP (%)					
	US$	US$ per year		Agriculture		Industry		Services	
	1998	1980-84	1995-99	1980	1998	1980	1998	1980	1998
US	29240	19103	28907	3	2	33	26	64	72
Australia	20640	14749	26087	5	3	36	26	58	71
Canada	19170	17710	28424	4	3[a]	38	33[a]	58	64[a]
Brazil	4630	10080	14134	11	8	44	29	45	63
Mexico	3840	3772	7607	8	5	31	27	61	68
South Africa	3310	6261	8475	6	4	48	32	46	64
Peru	2440	2988	-	10	7	42	37	48	56
Russia	2260	2524	1528	17[a]	7	48[a]	35	35[a]	57
Thailand	2160	2305	2705	23	11	29	41	48	48
China	750	472	729	30	18	49	49	21	33
Indonesia	640	898	1008	24	20	42	45	34	35

a. 1990's figure.

Source: World Bank [2000]. *World Development Indicators 2000*. Washington, D.C.: World Bank. Tables 1.1, 2.6, and 4.2.

The tremendous differences in the level of economic development and economic structure between China and developed countries have militated against the large-scale entry of Chinese firms' direct investment into developed countries and some developing countries. On the one hand, as we have indicated above, Chinese firms do not possess clear technological and managerial advantages over their counterparts in developed countries. On the other hand, Chinese firms cannot obtain substantial labour cost savings in their outward direct investment either, as labour costs are much lower in China than in most of other countries, including developing countries. Countries in Table 8 are the main host countries for China's outward direct investment. Labour cost in all these countries is higher than in China. In the 1995-99 period, the yearly labour cost per worker in manufacturing in China was US$729, only about 2.5 per cent of that in the United States, 2.6 per cent in Canada, and 2.8 per cent in Australia. If the labour cost saving were the major concern in foreign direct investment, Chinese firms would be much better off operating at home!

Not only is economic proximity barely reflected in the location choice for China's outward direct investment, but geographical and cultural proximity seems to play a very limited role as well. As an East Asian country, China shares similar cultural tradition with several countries within the region. If Chinese firms invest in this region or other neighbouring countries, they can benefit from geographical closeness as well as easy communication with local Chinese businessmen who are familiar with local markets. However, China has only committed very limited investment in its neighbouring countries. Up to 1998, China's government approved investment in ten contiguous and nearest developing countries (Laos, Burma, Vietnam, India, Bangladesh, Nepal, Pakistan, Mongolia, North Korea, and South Korea) was US$45.89 million, only about 11.44 per cent of that in the United States [MOFTEC, 1992-1999]. Except for Thailand and Cambodia, China's investment in other ASEAN countries is also very limited. For example, up to 1998, China's government approved investment in Indonesia, Malaysia, Singapore, and the Philippines was US$30.33 million, US$31.6 million, US$28.74 million, and US$10.83 million, respectively [MOFTEC, 1992-1999].

3. Concluding Remarks

FDI from developing countries has been mainly studied so far within the framework of conventional theories of FDI, and is characterised as being motivated crucially by a firm's desire to exploit its existing proprietary advantages abroad. These advantages are the same as that of developed countries' multinationals in nature but different in form or source. They can be easily transferred from country to country within a firm, but with difficulty between firms. While the proprietary advantages from developed countries are embodied in frontier technologies and sophisticated management and marketing, those for investors from developing countries are derived from localising imported technologies by imitation and adaptation. These technologies are labour-intensive and suitable for small production with low quality inputs. Due to the similarity between developing countries in market size, industry structure and the level of technology, a firm which uses this kind of technology has competitive advantages over its counterparts from developed countries if it operates in other developing countries. Accordingly, FDI from a developing country should be directed towards other developing countries, especially the neighbouring ones at the earlier stages of economic development. As the expansion of proprietary advantages is a process

based on technological improvement, FDI from a developing country can only expand gradually.

However, such patterns of FDI are not found in China's outward direct investment. Rather, China's outward FDI exhibits two conspicuous characteristics, rapid expansion in a relatively short time, and high geographic concentration in the United States, Canada and Australia. A further examination of China's outward FDI reveals that Chinese firms do not possess clear competitive advantage, especially when considering the fact that China's overseas direct investment takes developed countries as its major destinations. Therefore, China's outward FDI is not readily explained by the insights gained from existing theories of FDI from developing countries. The difficulties in providing a convincing explanation of the pattern of China's outward FDI by using a mainstream theory call for a different approach.

Chapter 4 Networks and Foreign Direct Investment: An Overview

This chapter provides a brief survey of network research in business organisation, as a background for searching for an explanation of the underlying rationale for China's outward FDI. The survey is confined to issues regarding the basic nature of network relationships and their relevance to foreign direct investment.

1. Nature of Business Networks

1.1. Networks as relationships

Long-term relationships between firms as suppliers and customers are crucial to business operations. To establish, enhance, and change these relationships so as to maintain good relationships with other firms are among the high priorities of the agenda of management. This phenomenon has long been attracting academic attention from business analysts. A number of early studies in industrial marketing and purchasing have already demonstrated the existence and importance of these relationships [e.g. Blois, 1972; Ford, 1978; Guillet de Monthoux, 1975; Håkansson and Östberg, 1975; Levitt, 1983; Wind, 1970]. Webster emphasised that "for strategic purposes, the central focus of industrial marketing should not be on products or on markets, broadly defined, but on buyer-seller relationships" [Webster, 1979]. This stresses that relationships are important for the functioning of industrial markets and for the marketing strategy of industrial firms.

Parallel to long-term supplier-customer relationships, there are long-term relationships between firms drawing on similar sources of information, technology, capital equipment, labour suppliers and materials, or facing similar problems of distribution and marketing. This is frequently the case amongst firms competing in the same product or input markets. This kind of relationship is no less important than the long-term supplier-customer relationships for business operations. In imperfect markets, firms of the same trade compete with each other for markets or resources and such competition is featured as a kind of hierarchy due to the capacity differences among relevant firms, and there are

opportunities for cooperation between these firms to pool resources, share facilities, exchange information, etc. The importance of such cooperation is increasing as technological developments are accelerating and as product life cycles are shortening.

These two kinds of relationships intertwine to form the industrial system and the networks. For understanding the concept of the network, we refer to the following definition:

> *A network is a model or metaphor which describes a number, usually a large number, of entities, which are connected. In the case of industrial as opposed to, say, social, communication or electrical networks, the entities are actors involved in the economic process which convert resources to finished goods and services for consumption by end users whether they be individuals or organisations. Thus the links between actors are usually defined in terms of economic exchanges which are themselves conducted within the framework of an enduring exchange relationship. The existences of such relationships are the raison d'être for industrial network. They provide the stability, and hence structure, which makes the network metaphor particularly apposite* [Axelsson and Easton, 1992, xiv].

According to Jan Johanson and Lars-Gunnar Mattsson, an industrial system is composed of firms engaged in the production, distribution and use of goods and services. It consists of two levels and two basic sets of interconnections. One of these levels is an institutional set consisting of industrial networks, which are defined as interconnected exchange relationships. This set is perceived as a governance structure, through which the exchange in the system of production and consumption is coordinated. The other level is constructed on a technological set – the production system – which exhibits an industrial logic of interconnected activities and resources [Johanson and Mattsson, 1988; 1992].

1.2. Structure of networks

Networks involve three sets of interrelated elements or dimensions, i.e., actors, activities, and resources. According to Håkansson and Johanson's [1992] model, a business network is composed of three networks, i.e., network of actors, network of activities, and network of resources. Actors are defined as those who perform activities and/or control resources. In an industrial network, there are actors at several organisational levels. Actors at lower

levels can be part of actors at higher levels. Håkansson and Johanson [1992, pp.28-30] have described five characteristics of actors:

- They perform and control activities. They determine which activities to perform, how these activities are to be performed, and which resources are to be used in performing the activities.

- They develop relationships with each other through exchange processes. Each actor is embedded in a network of more or less strong relationships, which gives the actor access to others' resources.

- Their activities are based on control over resources. There are two types of control. Direct control is based on ownership. Indirect control is based on relationships with other actors and the associated dependence relations with those actors.

- They are goal-oriented. Irrespective of the goals of specific actors, the general goal of actors is to increase their control over the network. For such control enables them to control resources and knowledge and therefore to have the possibility of achieving other goals.

- They have differential knowledge about activities, resources and other actors in the network. This knowledge is a function of their experience with activities in the network and therefore the knowledge of nearer parts of the network is greater than knowledge of more distant parts.

Actors combine, develop, exchange, or create resources by utilising other resources when performing activities. There are two main kinds of activities: (i) transformation activities, which change resources in some way and are always directly controlled by one actor; and (ii) transfer activities, which transfer direct control over a resource from one actor to another and link transformation activities of different actors to each other. Different from transformation activities, transfer activities are never controlled by only one actor. In addition, transfer activities affect and are affected by the relationship between the actor involved. A complete activity cycle always contains both transformation and transfer activities.

Performing different kind of activities requires different resources. Resources are heterogeneous and the use and value of a specific resource is dependent on how it is combined with other resources. According to Håkansson and Johanson, knowledge and experience of resources are important. On the one hand, the joint performance of combined heterogeneous resources will increase through experimental learning and adaptation. On the other hand, when heterogeneous resources are combined, new knowledge emerges which creates possibilities for new and improved combinations [Håkansson and Johanson, 1992]. It is worth noting that control over resources is very important and the importance of such control will increase as the resource in question becomes scarcer.

1.3. Characteristics of networks

A business network has the following characteristics:

- *Division of work.* In a network, each firm supplies its specific resources to meet other firms' needs and in turn gets access to other firms' resources which it needs. A relationship of dependence upon each other is thus established [see for example, Easton, 1992; Johanson and Mattsson, 1985, 1988]. This interdependence is a necessary condition for the operation of modern firms and the necessity for such interdependence increases with the level of roundabout in production and the advancement of technology.

- *Resource complementarity*. Basically, there is both competition and complementarity between firms in a network. While competition exists mainly between firms having the same or similar positions in a specific transaction, e.g., between possible suppliers or among possible buyers, complementarity exists mainly between firms which have a possible seller-buyer relationship in a specific transaction. Complementarity between firms is more important for the functioning of a network [Håkansson and Snehota, 1995]. This is not only because the realisation of the seller-buyer relationship determines the functioning of relevant firms and competition serves this realisation, but also because competition between firms can create opportunities of cooperation between them. For example, two firms may produce similar goods but each may have its own specific intangible assets. Both firms might be able to improve the quality or reduce the cost of their products if they can pool each other's specific advantages.

- *Relatively Stability*. To function smoothly, a firm's relationships with other firms in a network should be stable. Business practice shows that individual business transactions between firms usually take place within the framework of established relationships, as the existing relationships have been tested over time and firms have knowledge of their counterparts through the established bonds between them. However, totally stable relationships in business transactions are rare for several reasons [Johanson and Mattsson, 1988]. When a firm engages in a new business, it is most likely to establish new relationships with new counterparts or add a relationship to the existing ones with existing counterparts. On the other hand, business relationships are sometimes disrupted due to new competition or other changes in business. However, such disruptions are relatively small and normally leave relationships in the network as relatively stable.

- *Cumulative process*. The logic of relatively stable networks is that relationships in a network are the result of a cumulative process, which involves continuous resource inputs to search, maintain, develop, and sometimes break relationships with other firms.

As each firm is engaged in a number of exchange relationships with other firms, and as these relationships define the position of each firm in the network, positioning is important for individual firms. According to Thorelli [1986], a position (which is a location a firm occupies in a given network) depends on at least three major factors: the domain of the firm (indicating its role in the division of labour), the position of the firm in other networks, and the power of the firm relative to other participants in the focal network. He stresses that "position, – like power itself – is inherently a relational, relativistic concept".

According to Johanson and Mattsson [1988], there are micro positions and macro positions. A micro-position refers to the relationship with a specific individual counterpart, and a macro-position refers to the relationships to a network as a whole or to a specific section of it. A micro-position is characterised by:

1) the role the firm has for other firms;

2) its importance to other firms; and

3) the strength of its relationship with the other firms.

A macro-position is characterised by:

1) the density of the firms with which the firm has direct relationships and indirect relations in the network;

2) the role of the firm in the network;

3) the importance of the firm in the network; and

4) the strength of the relationships with the other firms.

Johanson and Mattsson stress, "the macro-positions are also affected by the interdependencies in the whole network as well as by the complementarity of the micro-positions in the network. Thus, in the context of the whole network, the macro-position is not an aggregation of micro-position" [Johanson and Mattsson, 1988, p.293].

It may be helpful for a better understanding of position to refer to Kutschker's [1982] interpretation of the following five characteristics of power:

- The basis of power. Kutschker refers to Dahl [1957] for distinguishing between power based on reward, coercion, reference, legitimacy, expertise and information.

- The means of power. These are activities by which a firm uses its inert resources in order to influence other organisations, including such activities as advertising and promotion, sales effort, persuasion, promises and even threats.

- The scope of power. This refers to a set of specific actions in which a firm can influence a second organisation to perform by using the power at its command.

- The extension of power. This is the set of organisations over which a firm has power.

- The cost of power. This refers to the cost in terms of total resources required for the power holder to wield that power.

2. FDI and Networks

Although networks have been a major research subject in many studies, this subject has not attracted as much attention in the literature of FDI. Nevertheless, existing publications on FDI with the network approach bear meaningful implications for further theoretical investigation.

2.1. Internationalisation

Foreign direct investment is the necessary approach for a national firm to become multinational and the growth of most multinational enterprises is normally an evolutionary process. Based on this observation, some researchers treat FDI with the evolutionary process approach, especially when they investigate the phenomenon of the internationalisation of small firms. The most widely accepted conclusion is that firms become international in a slow and incremental manner [Andersen, Blenker and Christensen, 1993]. It is also acknowledged that the internationalisation process of the firm involves a varying number of stages. There are several reasons. On the one hand, when firms start their overseas operations, they often lack sufficient international business resources, such as international business experience, firm-specific assets, financial resources, etc. They have to accumulate these resources through long-term operations. On the other hand, international business is a long-term innovative course of action and hence a question of adoption of new ways of doing business. This argument therefore implies that FDI is likely to start from countries with economic, geographical, and cultural proximity to the investing countries. As firms gain more competitive advantages through international operation, they can go further away. This phenomenon is like “rings in the water”.

However, some researchers have noticed a different phenomenon where some firms skip different stages of internationalisation. For example, Welch and Luostarinen [1988] found that many small English, Australian and Swedish firms engaged in FDI in their early stages of growth. Brush [1992] found in a nation-wide study of small US manufacturers that 13 per cent of the sample had started international activities during the first year of operations.

Madsen and Servais [1997] incorporate the existing findings and attribute the rise of the so called “born global” mainly to three important factors: (1) the new market conditions – increasing international specialisation; (2) technological development – basic changes in

technology resulted in specialisation and small production; and (3) more elaborate capabilities of people – increased ability of human resources to exploit the possibility of technological changes in international markets.

Some other researchers specially stress the impact of changes in the world economy from internationalisation to globalisation on the behaviour of firms: with globalisation, both the dominant actors and the dominant forms of the internationalisation process have changed [Michalet, 1991]. Michalet argued that the new strategy of the global firm is very different from the multinational strategy of the previous decades. Previously, the multinationalisation process began with exports, moved on to the creation of a local distribution subsidiary and then a manufacturing plant. This consequence is no longer relevant. Instead, the global firm first identifies carefully its specific competitive advantage *vis-à-vis* all of its current and potential competitors worldwide. Second, it tries to eliminate most of them through takeovers and mergers so as to become the world leader in a specific world market. Competition being more intense, the key factor of success is to be faster than others. "As a result, the global multinational can be called an 'instant' multinational on the model of 'instant coffee'"[Michalet, 1991, p.57].

Also focusing on the process of internationalisation, Johanson and Mattsson [1988] take a network approach. They view internationalisation of a firm as a process of establishing and strengthening international relationships. They argue that as the firm internationalises, the number and strength of the relationships between parts of the business network increases. By internationalising, the firm creates and maintains relationships with counterparts in other countries. This occurs in different ways. First, by forming relationships with counterparts in countries that are new to the firm (international extension). Second, by increasing commitment in already established foreign networks (penetration). Third, by integrating their positions in networks in various countries (international integration).

Johanson and Mattsson [1988] views markets as networks of relationships between firms that engage in production, distribution and use of goods and services. Individual firms have positions in the networks, and those positions are developed through activities in the network and define important possibilities and constraints for present and future activities. Investments are processes in which resources are committed to create, build or acquire assets that can be used in the future. By overseas direct investment, a firm establishes and

develops positions in relation to its counterparts in foreign networks. This argument implies that a national market is a market node in the international networks of markets; an investment project is a business node in the networks of the investing firm's business and this node not only ties different business activities of the firm but also ties the firm's business network to the market networks.

Under the purview of the network approach, resources can be grouped into two types, one is firm specific internal resources, and the other is network resources which are resources within the network. The sole purpose of linking to a foreign network via FDI is to access the network resources there [Chen and Chen, 1998]. For this purpose FDI subsidiaries have to adapt to local networks as interdependent production, logistics, development, and administrative activities and resources need to be modified and coordinated to bring about a better match between the firms in the network [Hallen *et al.*, 1991; Chen and Chen, 1998].

As to the features of foreign direct investment, Johanson and Mattsson [1988] identify four categories of firms:

- The early starter

A firm in this category is one with few international relationships and whose competitors and suppliers are also in the same position. Consequently, the early starter has little knowledge about foreign markets and it cannot count upon utilising relationships in the domestic market to gain such knowledge. As a result, the firm is inclined to use agents rather than subsidiaries to enter foreign markets. By doing so, it can reduce costs and uncertainty, as it can benefit from the agent's previous knowledge and investments in that market.

- The lonely international

A firm in this category is one which is highly internationalised while its market environment is domestically focused. It has acquired knowledge and means to handle different environments. Therefore it can easily break into new markets by using such knowledge and resources. As an internationalised firm, its established position in the business network provides it with a comparative advantage over its domestic competitors.

- The late starter

A firm in this category is in a market environment that is already internationalised. Consequently, the firm has indirect relationships with foreign business networks through its suppliers, customers, and competitors. The firm can be "pulled out" by customers or suppliers and thus market investments in the domestic market are assets which can be utilised when going abroad. Therefore it is not necessary to start overseas business from nearby markets to more distant markets and the step abroad can already be rather large in the beginning.

- The international among others

A firm in this category is a highly internationalised firm operating in a highly internationalised market. Given the fact that a highly internationalised firm has enormous knowledge about international business as well as strong positions in many markets, it is quick at setting up sales subsidiaries, as it needs to integrate its global business activities by coordinating activities in different markets.

While the network approach normally stresses the external relationships of a firm, some researchers turn to internal relationships of MNEs. They conceptualise MNEs (normally large ones) as an interorganisational grouping rather than as a unitary "organisation". Therefore, a multinational enterprise in their view is an international network, because the large physical and cultural distances between the owned and owning units within an MNE have weakened the linkage between ownership and hierarchical power in complex organisations. Such linkage is particularly weak when some subsidiaries control critical linkages with key actors in their local environments, particularly the host government [Ghoshal and Bartlett, 1993].

2.2. International strategic alliances

In the past two decades or so, international strategic alliances among multinational enterprises have become a popular international business approach, especially in high-tech and capital-intensive industries. The ranges of the strategic alliances vary from purely contractual co-operation to cross share holding between the partners. As international strategic alliances are increasing in number and importance for multinationals (either as supplementary to FDI or a form of FDI), literature about collaborative business strategies has also increased sharply.

The main body of the literature on international strategic alliances challenges the existing theory of MNEs and tries to advance new explanations of the nature of international strategic alliances and factors behind them. Most contemporary theorising stresses that multinational enterprises favour internalised hierarchies and prefer wholly owned subsidiaries to joint ventures. These preferences, it is argued, stem from the potential that hierarchies afford for a reduction in transaction costs and, in a context of market imperfections, for enhancement of ability to appropriate rents from tangible or intangible assets [Hymer, 1960; Teece, 1981; Dunning, 1979; Buckley and Casson, 1988]. While the internalisation hypothesis suggests that ownership is the critical means by which firms control access to economic rents, it stops short of considering the possibility that such rents can be appropriated by means other than ownership, such as international strategic alliances [Oman, 1989].

There are three broad explanations in the literature as to why MNEs form international strategic alliances.

1) Resource dependence and technical coordination. According to Richardson [1972], co-operation among firms stems from the need to co-ordinate closely complementary but dissimilar activities. Gaps in knowledge make market arrangements insufficient for that purpose. If an industry carries out a large number of activities, such as research, development and design, production and marketing of goods, different organisations will specialise in subsets of these activities, accumulating activity-specific knowledge, experience and skills. Coordination between these different subsets can be maintained through hierarchical, market or cooperative arrangements that bind partners together through mutually agreed plans and long-term obligations. Cooperative coordination would be required when activities are dissimilar but economies of scale or matching R&D efforts are required and cannot be left to the vagaries of the market. In such cooperative coordination, each partner is most likely to take advantage of the partner's resources as well.

2) Transaction cost saving. According to Williamson [1975, 1985], the selection of the most appropriate governance mechanism in a competitive environment is determined by its efficiency in managing transactions with the lowest possible cost, contingent upon a set of behavioural and environmental factors – bounded rationality and opportunism on the one

hand and complexity and a small numbers of players on the other. Asset specificity and the complexity of the task and service exchange favour the internalisation of transaction as the mechanism whereby fewer resources would be consumed in coordinating separate activities. The standardisation of goods and services and the corresponding large number of producers and buyers suggest that a market arrangement would perform better. Strategic alliances fall somewhere in the between. In fact, successful multinational growth increases the size of the firm and the bureaucratic costs of managing it. Ultimately, the marginal benefit of internalised structures becomes lower than the marginal bureaucratic cost [Jones and Hill, 1989]. Then the organisational structure has to be re-examined and some kinds of strategic alliances with other firms may be valuable.

3) Global competition. This stream of explanation is mostly empirical in nature. In the era of globalisation and growing knowledge intensity of production, firms are facing a set of contradictory dynamics that have increased the costs, risks and uncertainties of knowledge production and intensified competition over market shares. International strategic alliances enable MNEs to pool resources while they share the costs and the risks. According to Porter and Fuller [1986], strategic alliances permit firms:

- to obtain superior economies of scale, or ride down the experience curve faster;
- to gain more effective access to knowledge;
- to reduce risks of costly projects; and
- to shape competition by *inter alia* modifying the number of actual competitors and creating new barriers to entry.

They further suggest that the alliance could be affected by transaction costs stemming from:

- coordination between the partners, contingent upon their respective strategy and configuration;
- lack of trust between the partners that makes coordination more difficult;
- erosion of competitive position: coalitions can strengthen the position of the allied competitors; and

- adverse bargaining position: coalitions can expose one of the partners to extraction of profits by the other because of a weaker bargaining position.

Thus, an international strategic alliance is adopted as a result of the trade-off between benefits and costs of alternative arrangements.

Strategic alliances between MNEs are featured by collaborative and competitive behaviour throughout the whole process. The logic of this is twofold. If there is no competition between partners, firms must be under the same owner. If there is no collaboration, there is no alliance between firms at all. The essential requirement is that there should be some type of mechanism to structure collaboration and competition organically. According to an empirical study by Ciborra [1991], there are two kinds of costs which are crucial to international strategic alliances: transaction costs and change costs. Changing partners would incur change costs, including the costs of locating new partners and the loss of speciality investment for the existing partnerships. If transaction costs were low, an arm's length relationship between firms would do. However, if transaction costs are high, change costs discriminate between internal development/acquisition and alliances. The stability and longevity of alliances are thus determined by transaction and change costs. If the former are very high, alliances may break up. If the latter are very low, partnerships will be transitional devices that ultimately lead to internalisation.

Considering from the aspect of benefit from strategic alliances, there are three basic approaches for international partners to benefit from alliances: (1) to improve the collaboration to yield higher "value" (to make a bigger cake); (2) to extract more benefit from the existing "value"; and (3) to internalise the other party's competence. The benefits and costs for any firm in an alliance lie in its relative market position before and after the alliance.

Generally speaking, the proliferation of international strategic alliances is attributed to the emergence of some very significant changes in the way organisations are structured and their evolving organisational forms are managed. These changes have their genesis in a range of trends and events that have dramatically affected the economic, political, technological and social context in which organisations are structured. Indeed, as the market complexity and instability are increasing and competition intensifies, go-it-alone policy may limit or even impair the ability of the MNEs to gain or sustain competitive

advantage. In turn these proliferating cooperative arrangements among MNEs from different countries and regions are transforming the global business environment.

3. Concluding Remarks

This brief survey has attempted to present the theoretical conceptualisation of issues regarding the basic nature of network relationships and their relevance to foreign direct investment in the literature of networks. It shows that the network approach to FDI is in the embryonic stage and a formal theory is still nonexistent [Gilroy, 1993, p.105]. Nevertheless, as indicated by Dunning [1993b, p.92], "network analysis would seem to have a lot more to offer than it has so far been able to demonstrate, but it needs to be integrated with work now being done by industrial organisational economists". This thesis is an attempt at such integration, with special reference to China's outward FDI.

Chapter 5. A Network Model of Foreign Direct Investment

The analysis in Chapter 3 shows that it is difficult to provide a convincing explanation of the pattern of China's outward FDI by using a mainstream theory of FDI. With the aim of providing such an explanation, this chapter develops a network model of FDI by combining the network ideas of business analysis with the economic theory of business organisation.

1. Choice of Economic Organisation

While business networks are an important topic in the management literature, they are not an integrated part of the mainstream economic theories of business or business investment. Therefore, there is a need to integrate these concepts and views of business networks with a more formal theory of economic organisation. Such a conceptualisation is attempted in this section.

1.1. Networks as an institutional form

Economic activities involve two integrated configurations: technological configuration and governance configuration. The first configuration exhibits an industrial logic of interconnected activities and resources. In terms of economic organisation, one of the most important aspects of technological configuration is related to the spatial distribution of resources, products, as well as productions. The second configuration relates to the institutional approach to the first configuration. For convenience, we first sketch the second configuration and construct a model of "spaceless" economic organisation without considering the first configuration. Then we will bring the technological configuration back into the model in Section 2.

Economic organisation involves methods of organisation and economic institutions that use those methods. Mainstream economic theory deals with this subject mainly under two sets of conceptions, namely, price and hierarchy, and the market and the firm [Hennart, 1993a]. Following Williamson's [1975] conception of equating hierarchy with the firm, most of the

existing theories treat markets and hierarchies, and therefore the market and the firm, as the two alternative forms for organising economic activities. It is basically held that the market uses the price system to organise transactions between firms while each firm organises internal activities via hierarchy.

It is further held that market based transactions will be most efficient in organising exchanges when the market is perfect. When the market is perfect, price signals operate in a low-cost manner to transmit information about costs of production and distribution and about the value of resources in alternative uses. In other words, in a perfect market it is the price mechanism, a function of the supply and demand, that organises the economy. Here, firms in the neo-classical microeconomic theory are merely production units that result from demand for a product and from the economies of scale needed to produce that product efficiently. In the market, firms are faceless, "sharp in" by clear agreement and "sharp out" by clear performance; and the boundaries between "in" and "out" at the beginning and "in" and "out" at the end, are clear [MacNeil, 1974, p.750].

However, where the market is not perfect, the costs of organising and monitoring market transactions are quite high. Unfortunately, contrary to what the neo-classical theory presumes, market imperfection is the norm and perfect markets are rare exceptions. First, the quality of competition cannot be maintained where a transaction requires investment in assets specific to the deal. The parties are then stuck with each other and the discipline of competition is lost. Secondly, a transaction becomes more complex where the exchange of information and knowledge is involved. Information asymmetry between the transaction parties and difficulties in describing the trading object may hinder properly monitoring of the transaction. Thirdly, it is difficult to satisfactorily specify a contract term when the future becomes unpredictable.

When two parties of a transaction are within the same firm, i.e., under common governance of hierarchy based on common ownership, difficulties stemming from market imperfections can be overcome and therefore transaction costs due to the existence of market imperfections can be avoided. This occurs for two reasons. First, by bringing assets specific to each party of the transaction under common ownership, the firm is able to provide a central contracting agency for the multitude of resource owners (of labour and capital) to well define the products, process and task. Second, common ownership also

enables the firm to centralise the monitoring function which is needed to prevent shirking and maintaining quality.

The property of the above two types of transactions has extensively been explored by economists. In this respect, Coase's *The Nature of the Firm* [Coase, 1937] and Williamson's *Market and Hierarchies* [Williamson, 1975] are classic works. Such abstracting is very important for capturing the basic characteristics of the modern economy, however, it ignores the transactions between these two alternative forms of organisation. In the real world, a significant portion of economic activity, or in Hennart's [1993b] words, a "swollen middle", is organised outside the firm but it does not fit into the market either. For example, the hierarchical forms of corporate governance have to an increasing extent been complemented with, and in some cases replaced by, a variety of inter-firm cooperative agreements in the leading market economies in recent years. Obviously, it is quite difficult, if not impossible, to label inter-firm relationships such as strategic alliances between competitors as a form of organisation of market or hierarchy. In fact, Williamson [1991] has noticed the limitation of such understanding and posited an organisational category between firms and markets, which he calls the *hybrid*, and in which he deposits those cases that do not fit into either the market or the firm.

But if we go a step further, three interesting features of activities lying between the market and the firm, i.e. the so-called *hybrid*, can be revealed. First, these activities are organised via a mode which incorporates both price and hierarchy instead of one or the other. The reason is simple: the organisation of these activities stretches over the market characterised as "sharp in and sharp out" via the price system and over the firm characterised as hierarchy. In other words, as they are organised neither entirely in the market nor entirely within the firm, their method of organisation must be some kind of hybrid of price and hierarchy corresponding to the market and the firm. The fusion of price and hierarchy may vary for different activities and under different conditions. While an activity may mainly rely on a price mechanism complemented with a weak role of hierarchy, another activity may rely heavily on hierarchy complemented with a limited role of price. Theoretically, if *a* is the market transaction representing the incorporation of the entire price mechanism and no hierarchy and *b* the transaction within the firm representing no price mechanism and the entire hierarchy, these activities are located in the area (*a, b*) in terms of the mode of their

organisation. Here, *a* (market) and *b* (firm) are seen as poles in a continuum for the distribution of all economic activity (Figure 10).

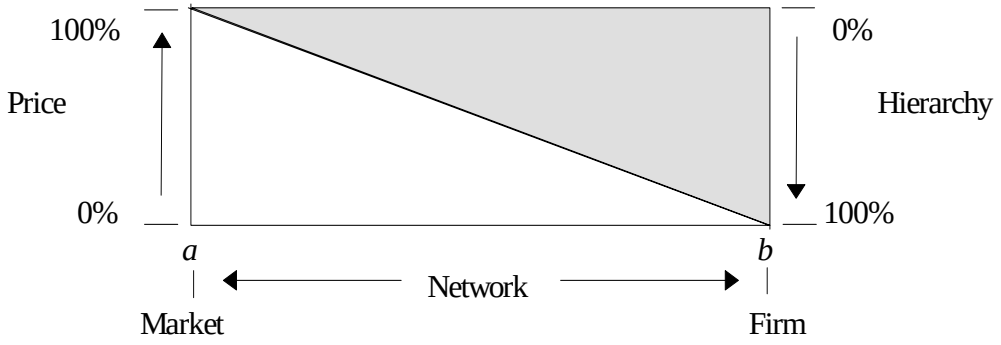


Figure 10 Modes and institutions in economic organisation

Secondly, the organisation of the hybrid activities involves at least two firms on a basis other than that of spot. The reason is that a certain part of any hybrid activity being organised outside a firm means that there must be another firm(s) to join in the activity. However, due to the same reason which leads to integrating functions within the firm explained in transaction theory, the remaining part lying within the firm implies that the firm has "longer" arrangements, such as investment in specialised assets, in the relations with its counterpart(s). In the meantime, the counterpart(s) has done the same (but possibly to a different degree) in the activity. Therefore, a certain kind of inter-locked relationship between the involved firms has come into being. The number of the relationship will increase as the firm engages in more hybrid activities with more counterparts. This leads to the formation of external networks around the hub firm.

Thirdly, the organisation of the hybrid activities reshapes the boundaries of the firm. Here we suggest that the firm has two boundaries, namely, economic boundary and governance boundary. While economic boundary is derived from ownership and leads to the position of a firm in relation to other firms, governance boundary is shaped by the internal hierarchy of a firm. In the classic market, these two boundaries coincide with each other. There, each firm minds its own business and transacts with others on a spot base for its own interests. However, this is most likely not to be the case for hybrid activities. For this kind

of activities, the involved firms are inter-locked. One of the basic reasons for such inter-locked relationship lies in the institutionalised context in reality: only a range of specific options and an array of specific economic organisations are present. Therefore, though participants in market economies reach decisions based on rational means and calculations of interests, "in any given institutional environment, economic organisations attempt to dictate the terms of exchange, and those in charge of these organisations, if they have the ability, will quickly alter their organisational structure to achieve greater market power" [Hamilton *et al.*, 1997, pp.63-64]. The asymmetry of ability between firms will result in changes in economic boundaries of these firms. Those that own advantageous assets will move their economic boundaries forward from their governance boundaries. Correspondingly, economic boundaries of the weak firms will be pushed back from their governance boundaries. The overlapping between one firm's economic boundary and another's governance boundary forms the ties, links and bonds between firms in business networks.

It follows that in fact there are three institutions for the organisation of economic activity, namely, the market, the network, and the firm. While the market organises economic activity by price mechanism and the firm via hierarchy, the network organises economic activity through a mechanism involving a blend of price and hierarchy.

1.2. Choice of economic organisation

When the network is acknowledged as an institution for organising economic activity, the firm has three basic choices regarding the organisation of economic activity: through the market, within the firm, or via the network. The decision about the choices can be made on the basis of calculation of relevant Total Costs[9] or Total Benefits associated with the alternative organisations. Mainstream theory approaches the choice of activity organisation mainly via cost calculation. We also follow suit.

A different organisation of activity incurs different costs. Assume a firm needs the output of an activity. If the activity is totally organised by itself, it will incur an Internal Cost *I*. If the firm buys the output of the activity from an outsider supplier, the firm will incur an

[9] Including sunk costs.

External Cost (*EP*) (the price charged by the supplier) plus a Transaction Cost (*TC*), which comprise the Total External Cost (*S*), i.e. $S=EP+TC$. However, if the firm chooses the method of network organisation, the firm will incur a Network Cost (*N*) for the networked activity, where:

$$N=\alpha I^{\beta}+(1-\alpha)(EP+TC)^{\gamma} \quad (1)$$

Here α ($0<\alpha<1$) is the proportion of the activity which is carried out by the firm, and $1-\alpha$ is the remaining proportion of the activity which is carried out by the outside partner(s). β ($0<\beta\leq 1$) and γ ($0<\gamma\leq 1$) capture the cost saving effects of networking for the hub firm and its partner firm(s) respectively. For simplicity, we suppose that networking has the same cost saving effect on both the external supply price and the transaction cost involved, therefore:

$$N=\alpha I^{\beta}+(1-\alpha)S^{\gamma} \quad (2)$$

The choice for network-organising the activity concerned would occur under the following condition:

$$\begin{cases} \alpha I^{\beta}+(1-\alpha)S^{\gamma}<I \\ \alpha I^{\beta}+(1-\alpha)S^{\gamma}<S \end{cases} \quad (3)$$

Obviously, whether or not to choose a network organisation mainly depends on whether the network organisation can have sufficient cost saving effects for the participants in the networking. There are the following conditions:

- Where the Internal Cost is larger than the Total External Cost, i.e. $I>S$, the network organisation of the activity would be a beneficial choice for the firm if $\beta<\frac{\ln S}{\ln I}$ and/or $\gamma<\frac{\ln(S-\alpha I)-\ln(1-\alpha)}{\ln S}$. This implies that even if $\beta=1$, which means that the networking has no positive effect on the reduction of the hub firm's internal cost for the proportion of the activity carried out by itself, so long as the networking can have a sufficient cost saving effect, i.e., $\gamma<\frac{\ln(S-\alpha I)-\ln(1-\alpha)}{\ln S}$, for the reduction of the partner's supply price and transaction cost, networking will remain an economic choice for the hub firm.

- Where the Internal Cost is equal to the Total External Cost, i.e., $I=S$, the network organisation of the activity would be a beneficial choice for the firm if $\beta<1$ and/or $\gamma<1$. Particularly, even if the networking has no effect on the reduction of the firm's internal cost, i.e., $\beta=1$, so long as the networking can reduce the partner's supply price and transaction cost to a level which is lower than I, networking will remain an economic choice for the hub firm.

- Where the Internal Cost is smaller than the Total External Cost, i.e. $I<S$, the network organisation of the activity would be a beneficial choice for the firm if $\beta < \frac{\ln[I-(1-\alpha)S]-\ln\alpha}{\ln I}$ and/or $\gamma < \frac{\ln I}{\ln S}$. Particularly, even if the networking does not have cost saving effect for the hub firm, i.e., $\beta=1$, the hub firm would also be able to benefit from the networking if such networking can give the partner firm a cost reduction effect to the level $\gamma < \frac{\ln I}{\ln S}$.

These terms are summarised in Table 9.

Table 9 The ranges of values of β and γ for the choice of networking*

	Value of β		Value of γ
$I > S$	$\beta < \frac{\ln S}{\ln I}$	and/or	$\gamma < \frac{\ln(S-\alpha I)-\ln(1-\alpha)}{\ln S}$
$I = S$	$\beta < 1$	and/or	$\gamma < 1$
$I < S$	$\beta < \frac{\ln[I-(1-\alpha)S]-\ln\alpha}{\ln I}$	and/or	$\gamma < \frac{\ln I}{\ln S}$

* Refer to the appendix to this chapter for the calculations.

As the effective domains of β and γ for the choice of networking are inverse functions of S, I, and α, the ranges of the values of these three variables affect the possible effective domains of β and γ. Therefore from the above discussion we can also draw the following corollaries regarding the range of values of β and γ:

- When the Internal Cost *I* is larger than the Total External Cost *S*, the larger the *I*-*S* is, the stronger the cost saving effects for both the hub and partner firms are required for the choice of networking; the smaller the *I*-*S* is, the weaker the cost saving effects are required for the choice of networking. In the meantime, the larger the proportion of the activity is carried out by the hub firm, the larger cost saving effect for the partner firm is required for the choice of networking; the smaller the proportion of the activity is carried out by the hub firm, the smaller cost saving effect for the partner firm is required for the choice of networking

- When the Internal Cost *I* is smaller than the Total External Cost *S*, the larger the *S*-*I* is, the stronger the cost saving effects for both the hub and the partner firms are required for the choice of networking; the smaller the *S*-*I* is, the weaker the cost saving effects are required for the choice of networking. In the meantime, the larger the proportion of the activity is carried out by the hub firm, the smaller cost saving effect for the hub firm is required for the choice of networking; the smaller the proportion of the activity is carried out by the hub firm, the larger the cost saving effect for the hub firm is required for the choice of networking.

The terms of the corollaries are summarised in Table 10.

Table 10 The changing trends of β and γ in Table 9

		β	γ
When $I>S$	if $(I-S)\uparrow$	$\downarrow$	$\downarrow$ (for $\alpha<S/I$)
	if $(I-S)\rightarrow 0$	$\rightarrow 1$	$\rightarrow 1$
	$\alpha\uparrow$		$\downarrow$
	$\alpha\downarrow$		$\rightarrow 1$
When $I<S$	if $(S-I)\uparrow$	$\downarrow$	$\downarrow$
	if $(S-I)\rightarrow 0$	$\rightarrow 1$	$\rightarrow 1$
	$\alpha\uparrow$	$\rightarrow 1$	
	$\alpha\downarrow$	$\downarrow$ (for $\alpha>1-I/S$)	

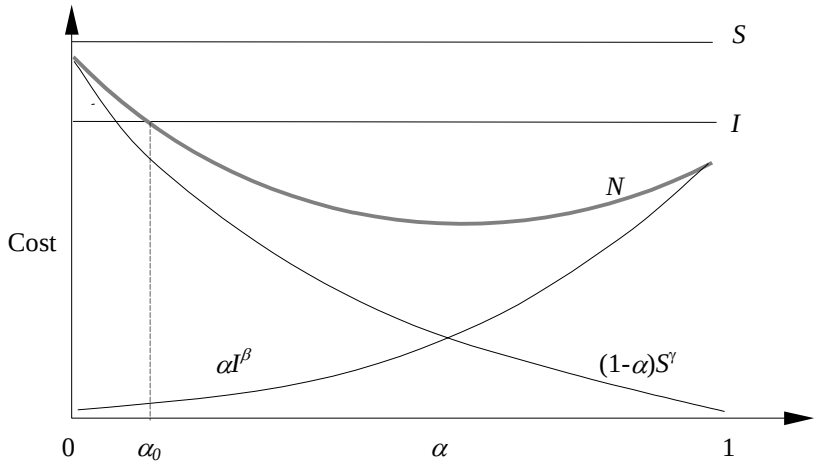


Figure 11 Structure of costs (Case of *S>I*)

(Network has cost saving effects when $\alpha > \alpha_0$)

1.3. Rationales for engaging in networking

Whether a firm chooses to engage in networking for organising an activity rather than undertaking that activity totally within the firm or obtain the output of that activity solely in the classic market, essentially depends on whether the networking can bring about positive cost reduction effects for the firm. Networking can realise cost reduction in two ways, i.e., reducing governance costs and saving transaction costs, all of which stem from the overlapping of economic and governance boundaries between firms.

One of the most noticeable benefits of networking is the overlapping of the economic boundary and governance boundary of the firms involved, which forms a good environment for more effective transaction and transfer of information between firms. The interlocked relationship between two firms would help ease the transactions between them, therefore bringing the transaction cost down. Information flows occur between people rather than the plants themselves [Casson and Cox, 1997]. Boundary overlapping can: (i) maximise the number of non-redundant contacts in the network to maximise the yield in structure holes[10] per contact; and (ii) maximise the number of contacts clustered around a limited

[10] According to Burt [1992, p.65], a structure hole is the separation between nonredundant contacts. Nonredundant contacts are connected by a structure hole and a structure hole is a relationship of nonredundancy between two contacts. As a result of the hole between them, the two contacts provide network benefits that are in some degree additive rather than overlapping.

number of primary contacts (such structure is ports), and the firm can focus on properly supporting relations with primary contacts [Burt, 1992, pp.67-69]. Therefore, the social bonds sustained by networks reduce the cost of both communicating information and assuring its quality. And the consequent reduction in information costs encourages greater sharing of information.

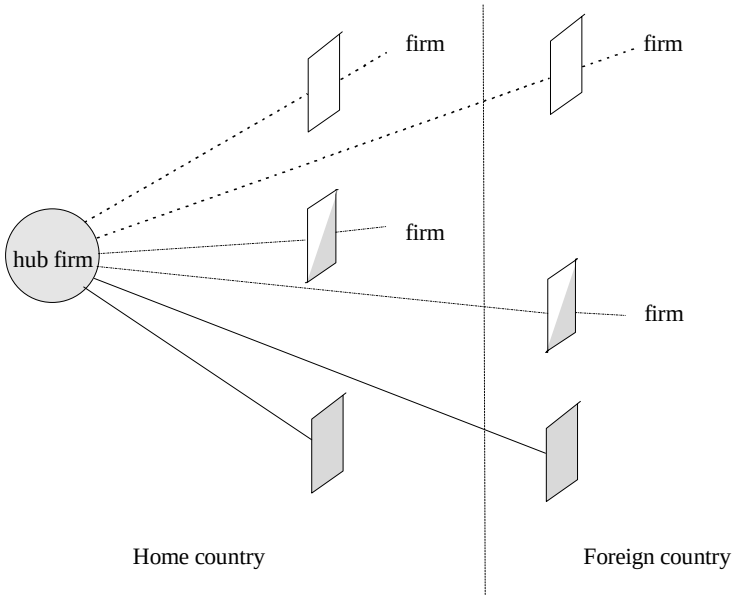
In addition, networking can also help the realisation of economies of scale and/or scope, such as joint research, marketing, or production [Contractor and Lorange, 1988; Håkansson and Snehota, 1989]. In the era of globalisation and the knowledge based economy, the accelerating increase of R&D expenditure and the shortening of technology life span have greatly increased the importance of sharing R&D cost as well as R&D benefits among relevant firms.

In short, the separation of the economic boundary and governance boundary of the firm in the networked activity creates possibilities of overlapping economic boundaries and governance boundaries between firms and forms the rationale for combining the price mechanism and the hierarchy mechanism for saving transaction costs and governance costs [Thorelli, 1986; Hennart, 1991].

2. FDI and Networking

2.1. Organisation at home and abroad

In the above analysis we did not consider the role of physical factors in economic organisation. These factors can be grouped under the categories of technology and geography. Technology determines what inputs are required and in what proportion to generate a given output, and whether or not this transformation affords economies of scale and scope. Geography represents the spatial distribution of resources which determines the degree of difficulty (and thus the cost) in obtaining the required inputs or marketing the outputs. If a required resource is located in a country other than where the firm is located, transaction costs are likely to be higher. These two groups of factors affect the spatial features of economic activity.



Transaction modes and location

Figure 12

Considering that the market is not universal and homogenous, but that it consists of different markets at different locations for different resources and products, economic activity can take place in a firm's home country or abroad. As the organisation of economic activity has three institutional choices, i.e. solely via market, through networking, or solely within the firm, the firm has six possible choices for the organisation of an activity regarding where and how to carry out this activity (see Figure 12). The relevant costs for different types of organisation at home and abroad are shown in Table 11.

Table 11 Costs for different types of organisation at home and abroad

Institution	Home country	Foreign country
Market	$S=EP+TC$	$S'=EP'+TC'$
Network	$N=\alpha I^{\beta}+(1-\alpha)S^{\gamma}$	$N'=\alpha I'^{\beta'}+(1-\alpha)S'^{\gamma'}$
Firm	I	I'

Costs for overseas economic organisations are denoted by adding quotation marks to the corresponding ones at home. This captures the possible difference between each pair of costs due to the following factors:

(1) Both natural assets and created assets are geographically scattered, and different distances to the required assets have different transaction costs.

(2) The increasing share and importance of created assets in economic activity call for effective organisation to use and to get access to them. In the real world, created assets have now replaced natural assets as a dominant factor in economic activity, and the higher the technological intensity of an industry is, the larger share the input of created assets accounts for in its total input. However, created assets are basically firm-specific. Different forms of organisation may have quite different cost effects.

(3) Social context, including cultural features and social norms, is different from country to country and has important impacts on economic organisation.

(4) The coordination between firms in activities, especially those involving the transfer and use of created assets, becomes very complex and subtle.

Similarly, we denote the cost saving efficiency coefficients of networking in a foreign country by adding quote marks to the relative ones at home.

The choice among the forms of organisation for an activity can be made by a two-step calculation and comparison. First, relevant costs of different organisations for home country and foreign country are calculated separately. This calculation and analysis are the same as discussed above. Second, the lowest cost organisational form at home and the lowest abroad are selected, and the decision is made by choosing the lower cost option between these two.

Specifically, the terms for the choice of the network organisation of an activity in foreign country are:

$$\alpha I'^{\beta'} + (1-\alpha) S'^{\gamma'} < Min\{I, I', S, S'\} \qquad (4)$$

Solving this inequality can obtain the ranges of values of β' and γ' for the choice of location of networked activity. These values are shown in Table 12.

Table 12 The ranges of values of β' and γ' for the choice of overseas networking*

		Value of β'		Value of γ'
$I'>I$ $S'>S$	$I > S$	$\beta' < \frac{\ln\left[S-(1-\alpha)S'\right]-\ln\alpha}{\ln I'}$	and/or	$\gamma' < \frac{\ln(S'-\alpha I')-\ln(1-\alpha)}{\ln S'}$
	$I = S$	$\beta' < \frac{\ln\left[S-(1-\alpha)S'\right]-\ln\alpha}{\ln I'}$ or $\beta' < \frac{\ln\left[I-(1-\alpha)S'\right]-\ln\alpha}{\ln I'}$	and/or	$\gamma' < \frac{\ln(S-\alpha I')-\ln(1-\alpha)}{\ln S'}$ or $\gamma' < \frac{\ln(I-\alpha I')-\ln(1-\alpha)}{\ln S'}$
	$I < S$	$\beta' < \frac{\ln\left[I-(1-\alpha)S'\right]-\ln\alpha}{\ln I'}$	and/or	$\gamma' < \frac{\ln(I-\alpha I')-\ln(1-\alpha)}{\ln S'}$
$I'<I$ $S'<S$	$I' > S'$	$\beta' < \frac{\ln S'}{\ln I'}$	and/or	$\gamma' < \frac{\ln(S'-\alpha I')-\ln(1-\alpha)}{\ln S'}$
	$I' = S'$	$\beta' < 1$	and/or	$\gamma' < 1$
	$I' < S'$	$\beta' < \frac{\ln\left[I'-(1-\alpha)S'\right]-\ln\alpha}{\ln I'}$	and/or	$\gamma < \frac{\ln I'}{\ln S'}$
$I'>I$ $S'<S$	$I>S'$	$\beta' < \frac{\ln S'}{\ln I'}$	and/or	$\gamma' < \frac{\ln(S'-\alpha I')-\ln(1-\alpha)}{\ln S'}$
	$I=S'$	$\beta' < \frac{\ln gS'}{\ln I'}$ or $\beta' < \frac{\ln\left[I-(1-\alpha)S'\right]-\ln\alpha}{\ln I'}$	and/or	$\gamma' < \frac{\ln(S'-\alpha I')-\ln(1-\alpha)}{\ln S'}$ or $\gamma' < \frac{\ln(I-\alpha I')-\ln(1-\alpha)}{\ln S'}$
	$I<S'$	$\beta' < \frac{\ln\left[I-(1-\alpha)S'\right]-\ln\alpha}{\ln I'}$	and/or	$\gamma' < \frac{\ln(I-\alpha I')-\ln(1-\alpha)}{\ln S'}$
$I'<I$ $S'>S$	$I'>S$	$\beta' < \frac{\ln\left[S-(1-\alpha)S'\right]-\ln\alpha}{\ln I'}$	and/or	$\gamma' < \frac{\ln(S'-\alpha I')-\ln(1-\alpha)}{\ln S'}$
	$I'=S$	$\beta' < \frac{\ln\left[S-(1-\alpha)S'\right]-\ln\alpha}{\ln I'}$ or $\beta' < \frac{\ln\left[I'-(1-\alpha)S'\right]-\ln\alpha}{\ln I'}$	and/or	$\gamma' < \frac{\ln(S-\alpha I')-\ln(1-\alpha)}{\ln S'}$ or $\gamma' < \frac{\ln I}{\ln S}$
	$I'<S$	$\beta' < \frac{\ln\left[I'-(1-\alpha)S'\right]-\ln\alpha}{\ln I'}$	and/or	$\gamma' < \frac{\ln I}{\ln S}$

* The calculation is similar to that for the domestic choice; refer to the appendix at the end of this chapter for the details of the calculations.

2.2. Foreign direct investment

In the light of the above discussion, FDI can be defined as a form of international economic organisation by using methods ranging from partial to total involvement of hierarchy based on the degree of ownership. Thus FDI leads to an expansion of the investing firm's boundary into the host country and serves as a node, which can be used for further networking.

Therefore, an FDI project is a node (in the case of initial investment) or an improvement of an existing node (in the case of subsequent incremental investment) in the network of the investing firm's global business. This node ties not only the different business activities of the firm but also the firm's business network to the market networks of the host country. So a high quality investment project is one which is able to: (i) tie organically the different activities of the firm so as to improve the firm's strength and thus improve the firms position in the market; (ii) tie dynamically the firm's business network to the market networks so as to lay a good foundation for the operation and further growth of the firm; and (iii) operate at the minimum possible cost.

If it can be said that FDI is pushed by the internationalisation of commodity chains, the benefits of networking are the driving forces which stimulate firms to go international. Cost saving effects of FDI can thus be calculated in the framework discussed above.

The motives for FDI vary from one firm to another and between projects. Following Dunning [1992], the existing literature generally classifies main motivations for FDI as follows:

1) *Labour-seeking*. The motivation here is to utilise the host country's cheaper labour (normally unskilled or semi-skilled labour) to produce relatively cheap finished consumer goods. This motive is captured by the standard Heckscher-Ohlin model of international exchange, which suggests that capital will tend to flow to relatively capital poor and labour-abundant countries. As differences in relative factor endowments are an important source of differences in comparative advantage, in this type of investment the country specific endowments (capital and labour) are decisive determinants of investment flows. In the meantime, as the products are normally standardised and their process technology is matured and simplified, while the investing firm's marketing skills

are relatively important, its firm-specific know-how plays only a minor role in the investment.

2) *Natural resource-extracting.* The motivation for this type of investment is to take advantage of comparative advantages of the home and host countries, so that capital will tend to flow to relatively capital poor and natural-resource-abundant countries. However, as resource-extracting activities are normally large in scale and relatively capital-technology intensive in nature, compared with labour-seeking investment, the MNE's firm-specific assets in production are more important in resource-extracting investment.

3) *Component-outsourcing*. This FDI aims at utilising the host country's relatively cheap labour as well as high productivity of factors in the host country for the MNE's international production network. The products involved are more expensive and their production is more roundabout in nature. This investment cannot be fully captured by the standard Heckscher-Ohlin model, and is attracted to countries that possess not only comparative, but also absolute advantages in production.

4) *Horizontal investment in differentiated products.* This investment involves the production of more expensive consumer goods and intermediate goods, such as automobiles, consumer durables, pharmaceuticals, etc. In this investment, whereas low wages alone are not sufficient for attracting FDI, sufficient economies of scale in production and distribution and firm-specific assets play very important roles. In this sense, this type of FDI to some degree goes beyond the explanation of traditional Heckscher-Ohlin model.

5) *Service-related investment*. This kind of FDI involves capital accumulation in the usually called non-traded or non-tradable sector of the economy, including business services, construction, and financial services. This investment is usually driven by market size and thickness and geared to the domestic market. For foreign investors, the quantity and quality of their firm-specific assets, especially various know-hows, are essential; this is why most foreign investors in this type of FDI are from developed countries.

6) *Technology seeking*. This type of FDI aims at establishing a channel in the host country to absorb local current and future advanced technology. As the pace of technology advancement is getting quicker and technology plays a more and more important role in competition, how to obtain the most advanced technology becomes a major concern for firms. However, besides patent protection, cultural and geographical distances still hinder technology diffusion internationally. Foreign direct investment at the spot is an effective way to go bypass the relative barriers. For foreign investors, the major concern is their technology assimilating ability, and the success of an investment project is most likely judged from the whole operation of the MNE group.

Considering the context of the networks, this classification has not told the whole story. As in the modern economy, firms operate through networks and the establishment and maintenance of network relationships are very important for business activities, FDI is not only motivated by the obtaining or using of particular factors, nor the production of particular products or services, but also by deeper considerations about the operation of the firm's business networks. In business networks, the most important issues for a firm are: (i) to take advantage of networks in resource exchange and sharing; (ii) to enforce transactions via market by filling the gap between the minimum enforceable performance and a quality performance; and (iii) to improve the firm's position in the networks. Therefore motivations for FDI can be better classified as follows below.

2.2.1 FDI for resource exchange

The motivation for resource exchange includes (from the above list) motivations 1), 2), 3), 6) and part of motivation 4) and 5) which are recognised in the existing literature, as noted above. Here resources are defined in the network perspective and therefore in a much broader sense. Resources in this sense include tangible and intangible resources. Tangible resources include real physical factors such as natural resources, labour (in its basic sense), components, and capital, whereas knowledge at different levels of abstraction, such as knowledge of the technical, administrative or logistical characteristics of a partner, information about technological development in a specific field in the host country, and a good industrial relationship are examples of intangible resources. Time as a resource, on the other hand, has received little attention in the economic analysis of FDI. However, in the financial analysis of FDI time is a decisive factor for the projecting and selection of FDI

projects. In an era of accelerating technological advances, the weight of time in business choices is ever growing. This is one of the reasons why inter-firm strategic alliances become worthwhile nowadays: to gain time by cooperating with competitors via giving up some other resources at the cost of reducing internal integration and control.

Conventional theory generally puts emphasis on the acquisition of tangible resources *in* the host country and the transferring *to* the host country the investing firm's intangible assets (referred as ownership advantage in conventional theory) either to overcome disadvantages or to obtain quasi-rent there. The acquisition of intangible resources in the host country is no less important in a network perspective. This is not only because of the important role of intangible assets in the knowledge-led economy, but also because of the importance of positive inter-firm relationships which is path-dependent and needs long term relationship-specific investment as well as relationship-development investment [Easton and Araujo, 1994].

2.2.2 FDI for enforcing transactions via market

As stated above, there is a gap between the minimum enforceable performance and quality performance. The impacts of this gap on the firm's business will be magnified by the three characteristics of the transactions involved, namely, frequency, uncertainty and asset specificity. If any of these characteristics is high, the firm is likely to be at bay if it has not applied some means to fill the gap. Specifically, high frequency implies the firm's circulating process is highly attached to its partner's operation and exchange behaviour. Therefore the firm's circulating process will face a slowdown or suspension risk when changes occur in its partner's exchange behaviour and operation. Similarly, high asset specificity implies that the transaction assets are non-tradable to a significant degree, the firm will be exposed to opportunistic behaviour as well as poor management. In the meantime, uncertainty, which can result from various institutional events and/or competition behaviour, will widen the gap instead of reducing it.

One of the important approaches to reduce the gap between minimum enforceable performance and quality performance is to establish a node in the place closest to the partner in the network or improve the existing node in the network where the partner is located. The reason for this effect lies in the fact that such a node will benefit the firm in information obtaining and network positioning. When the firm has established such a node

in the market networks, it can obtain more information at a quicker speed and more accurate in content, for the firm is now able to contact the partner as well as the partner's networks more directly.[11] This is most likely to increase the adaptive and innovative capacity for the firm as well as its partner. As the information increases in volume, the firm is able to select investment options that are less risky [Gilroy, 1993, p.110]. In the meantime, the direct presence of the firm in the network where the partner situates increases the firm's network position relatively to its partner. This would reduce the possibility of contract violation by the partner.

FDI for enforcing transactions via the market aims at improving the performance of transactions where gaps between the minimum enforceable performance and a quality performance are relatively large. This kind of investment mainly occurs in these conditions. First, transactions for the investing firm are large in volume and/or important for its business and to reduce the uncertainty in the transaction is one of the first priorities in the agenda of management. The firm can either expand its boundary by FDI to cover the overseas production or distribution of the products previously transacted via market or just set up a "small" node in the foreign market to tighten its relationships with partners in the transactions. Second, the external transactions are carried out in economies dominated by networks.

2.2.3 FDI for improving the firm's position in the networks

Foreign direct investment aimed at improving the investing firm's position in networks is to increase the firm's power in the networks so as to enable the firm to get access to external resources in foreign countries at more favourable terms. The rationale behind this is that business networks rely on strongly normative social bonds and operate in a hierarchy of some degree in nature (see below). By investing abroad, a firm establishes and develops positions in relation to its counterparts in foreign networks.

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[11] According to Ronald S. Burt, information benefits occur in three forms: access, timing, and referrals. Access refers to receiving a valuable piece of information and knowing who can use it. Given a limit to the volume of information that anyone can process, the network becomes an important screening device. In terms of timing, personal contacts can make a person one of the people informed early. When a person has insiders in another group, the insiders can speak to your virtues in the inside decision making process in that group [Burt, 1992].

According to Hamilton and Feenstra [1997, pp.69-72], there are two types of network hierarchies, i.e., vertically controlled networks and horizontally controlled hierarchies. In modern economies the vertically controlled networks are featured as those extensive networks of legally independent firms (business groups) are controlled by some core firms upon systems of authority. The core firms are very large companies dominating the markets for intermediate inputs, labour intensive operations, and services. They have positions of considerable economic power *vis-à-vis* thousands of small and medium-sized firms that supply goods and services to them.[12] Horizontally controlled networks are formed based on the same associational (organisational) rules aimed at defining the terms of doing business and the quality of products and services. Inside horizontally controlled networks, associational rules do not facilitate individual strategies leading to vertical and horizontal integration, for transaction rules are defined collectively and monopolistic strategies threaten the groups themselves[13] [Hamilton and Feenstra, 1997, p. 72]. While these two types of network hierarchies are different in characteristics of business organisation, they are similar in one aspect – long-term close relationships between firms are essential for the functioning of the networks as well as the firms involved.

Foreign direct investment into either vertically controlled networks or horizontally controlled networks has two main meanings for the investing firm in terms of the perspective of improving its position in the networks. Firstly, the firm becomes an insider in the networks of the host country and will not be treated as an outsider thereafter. Compared with those non-involved firms which can only receive lower priority from firms in the network, an insider will be given a higher priority [Hertz, 1992, p.117]. Secondly, when a firm establishes or improves its position in one network, its positions in other networks will be improved for two reasons: (i) it can now get access to more resources; and

12 Typical giants dominating network hierarchies are Japanese business groups (keiretsu): large firms at the top of the hierarchy are mutually owned through overlapping shareholding [Aoki, 1988, 1990]. A similar hierarchical network structure has also developed in the Germany economy [Orrù, 1993].

13 In modern economies, stock markets and commodities exchanges can be seen as typical horizontally controlled networks. They represent organisationally encompassed firms, the brokerage houses with seats on the exchange, that work under a common set of rules defining the terms of trade and the conditions of entry [Abolafia, 1984]. Household-based economies established by overseas Chinese and the Taiwanese economy are another example.

(ii) it is given more opportunities to disperse risk among the participants of a network value system when using contractual arrangements.

2.3. Types of Foreign Direct Investment

In view of foreign direct investment as a sequential process with various motivations described above, it can be classified into three basic types: network stretching FDI, network widening FDI, and network integrating FDI.

2.3.1 Network stretching FDI

Network stretching FDI is the investing firm's first-round initial investment in a foreign country. By this investment, the investing firm has set up its first ownership-based node in that country and this node couples the firm's business network with networks in the foreign country. As foreign direct investment is a sequential process stemming from the advantages of flexibility of a multinational system [Kogut, 1983] and having operational consequences for the firm in the future, network stretching FDI is crucial for the development of the investing firm's networks.

In a network perspective, a firm's FDI is determined by the internationalisation (or globalisation) of both the market of the industry and the firm itself. The former reflects the scope and intensity of international division and cooperation in that industry. And the latter reflects the degree of international growth of the firm.

The internationalisation of the market of an industry can be captured in the framework of global commodity chains. Global commodity chains, according to Gereffi, are rooted in transnational production systems that give rise to particular patterns of coordinated international trade. Commodity chains have three main dimensions: an input-output structure (a set of production units of different sizes linked together in sequence of value-adding economic activities); territoriality (spatial dispersion or concentration of production and marketing networks, comprised of enterprises of different sizes and types); and a governance structure (authority and power relationships that determine how financial, material and human resources are allocated and flow within a chain) [Gereffi, 1994a, pp.96-97].

> *A 'production system' links the economic activities of firms to technological and organisational networks that permit companies to develop, manufacture and market specific commodities. In the transnational production systems that characterise global capitalism, economic activity is not only international in scope; it also is global in its organisation. While 'internationalisation' refers simply to the geographical spread of economic activities across national boundaries, 'globalisation' implies a degree of functional integration between these internationally dispersed activities. The requisite administrative coordination is carried out by diverse corporate actors in centralised as well as decentralised economic structure*. [Gereffi, 1994b, p.215]

Similarly, the internationalisation of a firm is also rooted in the system of the industry in which it is situated and implies corresponding changes in the internal organisation of the firm's business activity. Welch and Luostrarinen [1988] suggest that the internationalisation of a firm has four dimensions: (i) *how* to engage in overseas business; (ii) *what* content of products to market overseas; (iii) *where* the market is; and (iv) the *capacity* of the internal organisation.

Therefore, good network stretching FDI is one which connects a firm's activity with the international industrial system in those places where useful bits of information are likely to be available and provide reliable flows of information to and from those places. In practice such places should: (i) maximise the number of non-redundant contacts in the network to maximise the yield in structure holes per contact; and (ii) maximise the number of contacts clustered around a limited number of primary contacts (such a structure is ports), and the firm can focus on properly supporting relations with primary contacts [Burt, 1992, pp.67-69].

Such places vary across firms, industries, and markets with different hierarchies. The choice is mainly a function of the following variables.

First, the firm's business activities which are about to be internationalised via foreign direct investment. For a firm, its business activities can be divided into primary activities and supporting activities. Primary activities are the production and marketing of physical products or services. These activities are the basic activities of the firm and are aided by the supporting activities such as human resource management and procurement. Together

they form the value chain which runs through the firm and link to other firms. Value will be created everywhere close to these activities [Porter, 1986]. Therefore a firm has to locate different activities to the most favourable places so as to maximise or secure the maximisation of the value. Most foreign direct investment is used for international expansion of the basic product line, leaving the operation of minor product lines and support activities more open to market. For the basic product line embodies the firm's most competitive advantages. Such competitive advantages are most valuable to the firm and form the competitive basis for improving or maintaining the firm's position in relation to its competitors in the market. However, it may be better for a firm to undertake FDI involving minor product lines or some part of its supporting activities for various reasons. Such reasons may be that the main product line is very developed; hence FDI in this product may overexpose the firm. Also if the firm has limited international business experience, it could gain experience through FDI involving minor activities.

Second, the feature of the global commodity chain in which the investing firm situates. According to Gereffi [1994b], there are two types of commodity chains, namely, producer-driven or demand-creating commodity chain and buyer-driven or demand-responsive commodity chains. Producer-driven chains refer to those industries in which large, usually transnational, corporations play key roles in coordinating global production systems. They are found most often in capital- and technology-intensive industries, such as automobiles, computers, aircrafts and electrical machinery. The main companies control the entire production and distribution process. Subcontracting of components involving labour intensive processes is carried out around the main companies. Buyer-driven commodity chains refer to industries in which large retailers and trading companies play the central role in shaping decentralised production networks. This type of commodity chains prevails in industries such as garments, footwear, toys and homewares. Here the organisers of the commodity chains are not giant manufacturers, rather branded mass merchandisers. Many commodity chains are not typically producer-driven or buyer-driven, rather lie between these two extremes. In the globalising world economy, the organisation of a commodity chain is not the legally defined, clearly bounded corporation, rather it is defined through loosely defined networks of firms sharing some form of ownership or asset control. And the configuration of the commodity chains overlaps with some types of hierarchical configuration of ownership and asset-control-linked networks of firms [Hamilton and

Waters, 1995, p.91]. Such configurations shape firms' foreign direct investment. In the first place, firms as a "drivers" (driving producers or driving merchandisers) in commodity chains will differ from driven firms in FDI. While FDI from drivers is likely to insert into the clusters of producers or distributors to present themselves in local networks, FDI from driven firms would go in the direction of fastening the ties with the drivers. In the second place, firms in vertically controlled network hierarchies would emphasise improving the division and resource exchange in the network when undertaking FDI, firms in horizontally controlled network hierarchies are likely to focus on expanding information flows and rapid response when undertaking FDI.

Therefore, in the network perspective, decisions are made from the consideration of improving the firm's relationships and positions in market networks. The following factors are important in this regard:

1) the actors (i.e., customers, suppliers, competitors, or public agencies) and the important relationships which are decisive in the target market;

2) the relative positions of the actors in the network;

3) the relationships of the focal firm to actors in the potential country market; and

4) the way that resources of other actors can be mobilised in support of market entry.

2.3.2 Network Expanding FDI

Network expanding FDI is the subsequent incremental investment which aims at improving the position of the node established by previous FDI. Specifically, this type of FDI normally takes place in the following situations:

1) Expanding the existing project to the scale required by the economy of scale or optimum network position. Sometimes due to environmental risk or lack of international business, the initial investment might have been made at a smaller scale. When the business environment has improved, or the firm has gained experience in international business through learning by doing, it is now seeking to expand its business in the host country. Another case is the established node is not large enough to present the

investing firm in the host country's network, therefore the exchange of information and other resources are limited, the terms for transactions via market is not very favourable.

2) Undertaking other FDI projects. These projects are likely to be different in location, product line, ownership structure, or legal identity. However, they all serve the objective of improving the investing firm's position in the host country's networks. For host countries with a large market or proximity to large markets, such investment is the normal case and very important for improving the investing firm's position.

3) Establishing a node in the third country by FDI from the existing node. Such FDI is a first-round initial investment for the investing firm but only a second round investment for the parent firm.

Through network expansion FDI, a firm can gain an improved position in overseas networks. In order to obtain efficiency and effectiveness, such investment should be made in places with the largest market thickness.

2.3.3 Network integrating FDI

Network globalisation FDI is the highest level of foreign direct investment for forming and improving a firm's global business networks. The multinational corporation itself is an inter-organisational network formed around a headquarters and the focal units.[14] The advantages of such an internationalised inter-organisational network lies in: (i) the ability to arbitrage institutional restrictions, e.g., tax codes, antitrust provisions, financial limitations, and even national security; (ii) the ability to capture externalities in information; and (iii) the ability to realise joint production economies occurring in both marketing and manufacturing [Kogut, 1983]. However, because of the large physical and cultural distances between the owned and the owning units, the link between different units within the multinational corporation is particularly weak [Ghoshal and Bartlett, 1993, p.82]. Therefore, some kind of FDI is needed to improve the functioning of the internal inter-

[14] Some scholars hold that, parallel to the external network, a firm is also a network of similar attributes, as organisation within a firm is no less than a contractual matter than organisation through markets, and a "firm" is nothing more than a particular dense intersection of contracts [Cheung, 1983]. We admit the network attributes of firms but stress the aspect of production process rather than the legal aspect.

organisational network within the MNE and to improve the contacts between the MNE network and market networks.

FDI can be undertaken to establish necessary ownership integration while keeping a necessary degree of coordination integration. The requirement for ownership integration varies across industries, from the lowest one (activities within Marshallian district) to the highest one (Chandlerian firms). Similar situations exist in coordination integration.[15] For firms in industries with high ownership integration requirement, the establishment of wholly owned or majority owned overseas subsidiaries might be of vital importance. However, for firms in industries with a high coordination requirement but low ownership integration requirement, relationship specific investment and relationship development investment might be crucial.[16]

3. Concluding Remarks

This chapter has developed a network model of foreign direct investment by integrating network ideas from business analysis with those of economic organisation. In this model, FDI is defined as a form of international economic organisation by using methods ranging from partly to wholly involvement of hierarchy based on ownership. It leads to the expansion of the investing firm's boundary into the host country and the formation of node there. This node can be used for further networking.

This model acknowledges that the network, along with the market and the firm, is an institution for economic organisation. While the market uses the price system to organise transactions between firms and the firm organises internal activities via hierarchy, the network organises activities across the market and the firm by using a blend of price and hierarchy. Through the network, a certain kind of inter-locked relationship between the

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[15] For details on the degree of ownership integration and the degree of coordination integration, refer to Robertson and Langlois [1995].

[16] Williamson holds that investment in transaction specific assets renders the adapting firm vulnerable to opportunistic behaviour by its counterpart [Williamson, 1985]. Easton and Araujo [1994] have expanded Williamson's concept and proposed a hierarchy of investments within relationships: (1) minimal investment; (2) relationship specific investment; (3) relationship development investment; (4) secondary investment; and (5) marketing and market investment.

involved firms is formed due to the overlapping of economic and governance boundaries between these firms. This leads to the formation of external networks around the hub firm. On the other hand, the heterogeneity of market and the industrial logic of interconnected activities and resources are the determinants of where to organise an economic activity. FDI is the case in which economic organisation takes place in the host country by using hierarchy alone or by using a blend of hierarchy and price.

It follows that FDI essentially depends on proper functioning of market economic elements, including price and hierarchy. As FDI leads to the formation of international networks for the investing firm and the network has the function of resource exchanges and information flows, FDI can be used not only to exploit the firm's assets, but also to obtain strategic resources and important information. In this respect, this model differs from most of the mainstream models and paradigms, which often stress the supply-side of FDI (i.e., asset exploitation) but ignore the demand-side (i.e., resource seeking).

4. Appendix: Specification of the Model

The determination of the range of the value for β when $I>S$:

$$\begin{cases} \alpha I^{\beta} + (1-\alpha)S^{\gamma} < I \\ \alpha I^{\beta} + (1-\alpha)S^{\gamma} < S \end{cases}$$

Assume $I>S$, then the conditions for networking would be $\alpha I^{\beta} + (1-\alpha)S^{\gamma} < S$.

Let γ be 1, solve the above inequality by substituting γ with 1, then:

$$\alpha I^{\beta} + S - \alpha S < S$$

$$I^{\beta} < S$$

$$\beta < \frac{\ln S}{\ln I}$$

With the same method, we can obtain all the relevant values for γ and β.

PART II

CHINA'S OUTWARD FDI:

A DESCRIPTIVE ANALYSIS

Chapter 6. Economic Transition and Outward FDI

The analysis in Chapter 3 had concluded that the existing mainstream theory of foreign direct investment is inadequate for explaining the phenomenon of the rapid expansion of China's outward direct investment. Therefore, an alternative paradigm of FDI, namely the network model, has been developed in Chapter 5. This model suggests that FDI is a form of international economic organisation, which involves a hierarchy based on ownership, and which depends on both forms of the market system, namely, exchange and hierarchy. As FDI leads to the formation of international networks for the investing firm and the networks perform the function of resource exchange and information flows, FDI can be used not only to exploit the firm's assets, but also to obtain strategic resources and information.

Against this background, we will now investigate the rationale for China's outward FDI in the framework of the advanced model. As outward FDI by Chinese firms has a very short history, comprehensive data, especially on industrial composition and overseas subsidiaries' operation, are not yet available. This rules out the possibility of more specific testing with the aid of formal econometric analysis. Accordingly, the analysis in this case is basically of descriptive nature.

As indicated in Sections 2.1 and 3.1 of Chapter 5, economic activities involve two integrated configurations: technological configuration and governance configuration. Technological configuration is related to the role of physical factors in economic organisation. It exhibits an industrial logic of interconnected activities and resources. Governance configuration relates to the institutional approach to technological configuration. As a form of economic organisation, foreign direct investment also involves issues relating to these two configurations. This chapter focuses on the institutional aspect of the rationale for the growth of China's outward FDI. Chapter 7 will analyse the "physical" aspect of the rationale for the growth of China's outward FDI, and Chapter 8 will analyse the geographical distribution of outward FDI.

1. Economic Organisation in the Maoist Economic System

1.1. Microeconomic environment

It is not until the beginning of the economic reform in late 1978 that China began to engage in international direct investment in a normal sense. For three decades before the reform, China had a planned economy with a quasi-autarky in the 1950s and near-autarky from the 1960s to mid 1970s.

Domestically, after the conversion of private and foreign enterprises into state-owned enterprises by 1953, central planning and "public ownership" dominated the national economy. Mandatory central planning covered not only important microeconomic issues such as the aggregate investment ratio and regional development but also basic operational activities such as financing, production, sourcing and sales. Activities of the so-called collective enterprises and communes (agricultural units) were also highly controlled by central planning bodies through integrated political networks of top to bottom administration and the Communist Party systems, though collective enterprises and communes were theoretically and politically not state-owned. As central planning covered both macro and microeconomic activities, market mechanisms were generally excluded from the functioning of the economy. In the meantime, the establishment of public ownership was taken as a central task and the state-ownership was emphasised as the highest form of public ownership. The more important an activity was, the more rigorously state ownership was established and advantageous resources were intensively injected. As a result, state-owned enterprises, especially the large ones, enjoyed the allocation of the most advantageous resources but had the least freedom to operate.

Internationally, China adopted the principle of self-reliance in its foreign economic relations, and such relations were politically coloured and tuned. First, foreign economic relations were subjected to political and ideological needs and often characterised as "leaning to one side".[17] In the 1950s, China excluded (or was excluded from) foreign economic relations with Western countries whilst maintaining certain dependent economic

[17] As Mao Zedong put it, "all Chinese without exception must lean either to the side of imperialism or to the side of socialism" [Mao, 1968, p.416].

relations with the Soviet bloc[18]. For over a decade from the 1960s to mid 1970s, when Sino-Soviet relations turned sour after the Soviets had withdrawn their assistance while the United States still maintained an economic embargo against China, China opposed both the international "revisionism" and "imperialism" headed by them respectively and "self-reliance" (*Zili Gengsheng*) became an important principle for China to develop its limited foreign economic relationships with other countries. The third world became the main focus of these initiatives, while the "second world" – industrialised countries excluding the United States – remained secondary.

Table 13 China's economic development stages and activities (1949-1980)

Stage	Activity
Economic rehabilitation (1949-52)	Postponing socialisation of industry Land reform in the agricultural sector
The First Five-Year Plan (1953-1957)	Adopting the planned economy model of the Soviet Union Collectivisation of agriculture Socialist transforming of industry
The Second Five-Year Plan (1958-1962)	The Great Leap Forward of Production The People's Commune Movement The withdraw of Soviet assistance The rise of Liu Shaoqi to power
Economic readjustment (1963-1965)	The agriculture first policy Changes in the commune system Changes in industry management
The Third Five-Year Plan (1966-1970)	Power struggle between Mao Zedong and Liu Shaoqi Phase I of the Cultural Revolution
The Fourth Five-Year Plan (1971-1975)	Formulation of the Four Modernisations The open door policy (improving relationships with the United States and Japan) Phase II of the Cultural Revolution The Gang of Four
The Fifth Five-Year Plan (1976-1980)	The rise of Hua Guofeng to power The Ten-Year Economic Development Plan The Three-Year Adjustment Plan The Third Plenum of the Eleventh CCP Central Committee The rise of Deng Xiaoping to power

Source: Liou [1998]. *Managing Economic Reforms in Post-Mao China*. Westport: Praeger Publishers, p.13.

[18] For example, the United States put China under the same export restrictions as the Soviet satellite states in Eastern Europe when the Chinese Communists proclaimed their new government in October 1949. "This embargo was broadened twice again before the Korean War, whereupon Chinese assets in the United States were frozen and virtually all US trade with China was outlawed until 1972" [Roy, 1998, pp.77-80].

Secondly, foreign economic relations were generally confined to foreign trade, and higher-level international economic activities, such as foreign direct investment, were basically proscribed. The formal ban on inward FDI was lifted in 1972 in the wake of the visit to China of U.S. President Richard Nixon. This opened the door for the resumption of diplomatic relations with some major industrialised countries. However, the severity of restrictions on foreign investment remained unchanged.

Thirdly, foreign trade was permitted to the extent that imports were restricted to meeting shortages in domestic production, while exports were only a means to raise foreign currency required for the payment of imports. As a result, China's share in the total value of world trade decreased from 1.4 per cent in the 1950s to 1.1 per cent in the 1960s and further to 0.8 per cent in the 1970s [Teng, 1982].

Several factors contributed to this de-linking of China's economy from the world market system, especially: (1) the degree of adherence to communist ideology; (2) the difference in outlook of the benefits and costs of interdependence with the world economy; and (3) the relations with major countries. While the goal was the same throughout the period: development rapid enough to enable China to catch up economically with the major advanced countries, strategies and policies changed following changes in these factors from time to time.

Essentially, the pursuit of its foreign economic relations was deeply rooted in the Chinese Communist Party's understanding of China's bitter experience in the past one hundred years and the orthodox Marxist theory. For the Chinese government, if international economic relations were unequal, then they must be associated with cross-country exploitation. It followed that if China developed international economic relations, then it must either exploit or be exploited by other countries, except for its relationships with other socialist countries, which were based on comradeship or those with other developing countries with similar experience and conditions, which served to help each other. In addition, the pursuit of economic independence was a main concern throughout the period. Even in the honeymoon period with the Soviet Union, China viewed dependence as a means of achieving independence. Zhang Huadong, China's Minister of Trade, said in 1955, "The purpose of importing more industrial equipment from the Soviet Union is to lay the foundation of China's industrial independence, so that in the future China can make all

of the producer goods it needs and will not have to rely on imports from the outside" [quote in Ross, 1994, p.438].

1.2. Economic organisation and arranged networking

Under the Maoist economic system, the organisation of economic activity was totally different from that in market economies. The Chinese government ran the country as a planned economy, similar to the Soviet Union. The state was the owner, operator, and employer – thus planned, directed, and funded all enterprises [Kidd and Lu, 1999, p.213]. First, broad division of labour was realised through the establishment of different types of enterprises, each type of enterprise specialised in particular activities. Roughly, there were production enterprises and commercial enterprises. Production enterprises carried out manufacturing, mining and other non-commercial activities. They were further divided into different industries and under the governance of relevant ministries or their lower level agents. Commercial enterprises fell into two subtypes, domestic commercial enterprises and foreign trade companies. The former specialised in the trade of finished goods (mainly consumer goods) of production enterprises, and the latter specialised in the export and import of both intermediate and commercial goods. There were basically no enterprises that had cross-industrial diversified activities as exist in market economies.

Secondly, the government set output quotas for each production enterprise and similar tasks for commercial enterprises. The sources and quantities of supply of input for production were arranged by government planning, so were the procurement and supply in commercial enterprises.

Thirdly, the firms operated within a peculiar system of dual financial flows with the government, which acted like a financial straitjacket. Enterprises turned over their revenues (profit) to the state, and the state in turn allocated funds to cover the costs of enterprises. Each type of fund the government allocated to enterprises had its specified purposes and was not allowed for other purposes, as conveyed in the figurative saying, "the money for buying cooking oil could not be used to buy vinegar". Fixed capital investment and investment for technological improvement in enterprises were appropriated by the state through a separate system – planned by the State Planning Commission and administered

by the People's Construction Bank of China.[19] Small investment projects were planned by lower agents of the Commission.

Fourthly, firms were generally embedded in the grid of the state administrative system: they were controlled by relevant industrial ministries and/or commissions vertically regarding their business activities, and by local government horizontally in regards to administration. The smaller and less important an enterprise was, the more power the central government delegated to the local government to regulate it. On the opposite-side, the bigger and more important an enterprise was, the less power the local government had in the regulation of the enterprise.

As a result, price and market in the sense of a market economy were basically excluded from the economy. Though there were "prices", they were mostly set by the state. They neither revealed information about the relationship between demand and supply, nor reflected the quality of products. As price became a kind of quota, the "quota" took the place of price in economic organisation. In the same sense, market was replaced by planning. In addition, firms in this system had limited autonomy. For a firm, internal activities were organised via a "*hierarchy*" which was specified by and attached to the government. Correspondingly, the external transactions of a firm were arranged by government via *planning*, and the volume of transaction and the prices for goods involved in the transactions were set by the government as a *quota*. This feature of economic organisation is illustrated in Figure 13.

[19] The People's Construction Bank of China was once merged into the State Ministry of Finance.

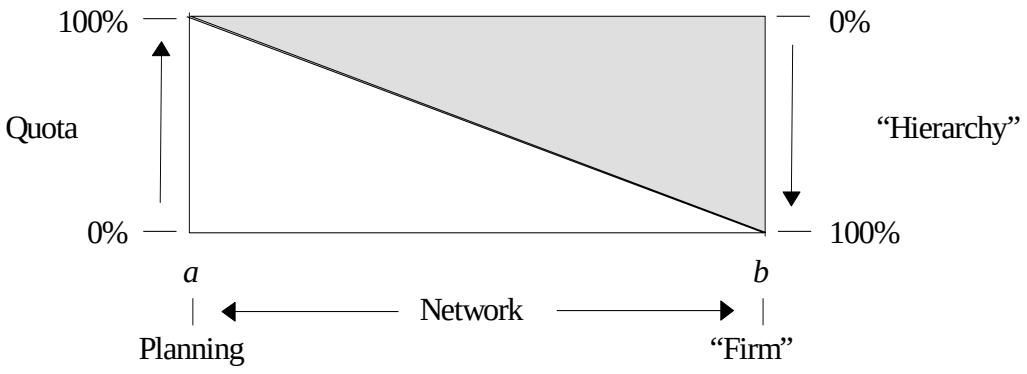

Figure 13 Economic organisation in the Maoist economic system

Nevertheless, there was still scope between the real planned transactions and transactions within the hierarchy of the firm. For a firm, there were external and internal reasons for this. The external reason was that there was a lack of sufficient and stable codified bureaucratic order. This to a large extent was rooted in the structure of society in China, which was featured as "the nation or the state". As Boisot and Child [1996] indicated, there is a "contrast between the concept of a 'nation state' and that of 'the nation and the state', even 'the nation or the state'. The former assumes that there is a positive balance between government and society, with the state being the codification of the nation through the constitutional and legal system. This approximates to the Western model. The latter concept envisages a sharp distinction between government and nation, where the state may be oppressive and fail to secure popular legitimacy. It may be conjectured that in the former Soviet Union and in China by 1976, the situation was one of 'the state or the nation', and that this contributed importantly to the failure of the planning system." As China is a segmented society, in China's case this mainly existed in the relationship between the central government and local government, with local government having some legitimacy to run local community. As a result, there was "a collection of local systems in competition with each other but co-ordinated by government at the next level up. At this higher meso level the co-ordinated group could find itself in competition with other meso level groups, with government at the next level up resolving the competition". A similar situation also existed among different government departments within an industry or sector.

The internal reason was that firms had incentives to carry out external transactions in a way deviating from the strict planning. There were two types of incentives, i.e. technological incentives and managerial incentives. Technological incentives stemmed from the requirement of industrial system, which aimed at reducing the mismatch between supply and demand as well as division of labour which were arranged by the mandatory planning. Managerial incentives aimed at obtaining more freedom and fewer difficulties in business operation. In a planned economy, such incentives could only be realised at the last through the arrangements of the government. The lack of sufficient and stable codified bureaucratic order in the administrative system allowed firms to carry out economic activities in a way deviating from the strict planning (at least the central planning), for different agencies or levels of government also had incentives to expand their controllable economic activity for various purposes, such as to increase their competition power in the higher level government, to show performance in improving the well being of local residents, and so on. Therefore, enterprises were active in obtaining support from the relevant government by strengthening the relationship with the government through various measures, including improving personal relationships with officials in charge.

A brief description of the traditional planning system and economic management system may be useful for a better understanding of the situation. The planning was generally based on the principle of "two top-downs and one bottom up" (*Liangxia Yishang*). The first step was a top-down where the State Council transmitted general directions and control targets in this round of planning, which were drawn by the State Planning Commission after a process of research and consultation with the regions, ministries and basic level units. The second step was a bottom up. Plans at the basic enterprise level were negotiated and drawn on the basis of these directions and control targets. Then these plans were submitted to the planning agencies of local government or ministries according to the subordinating status of each firm. These agencies in turn made pooled plans based on the received plans and submitted them to the higher level planning agencies, and so on, up to the provincial planning commissions (regional plans) and planning agencies of ministries (industrial plans). The regional plans and industrial plans were then submitted to the State Planning Commission for reconciliation to ensure consistency across regions and ministries and then formed a draft aggregate central plan which was submitted to the State Council. Once the State Council adopted the central plan, it was submitted to the National People's Congress for approval. The approved plan would be transmitted downwards level by level to the

basic enterprise units for implementation under the joint supervision of the Party and the State.[20]

In this system, while planning agencies had to decide the output that could be delivered from firms (the output quota) and the inputs that had to be provided to enable these outputs to be produced (the input quota), firms were inclined to seek low production quota but high input quota. The quotas would be determined after a process of bargaining between planning agencies and firms. In the implementation of plans, production targets supported by planned inputs and allocated to other organisations were less likely to be overachieved than production targets that did not meet these criteria. An enterprise in this situation had no reason to exceed its target output. Any over-achievement would only lead planners to increase the target output in the next planning period. The enterprise would therefore have the incentive to disguise its true production potential [Liew, 1997, p.60]. For similar reasons, local government also under-reported the hidhen production potential and scrambled for more resources when dealing with higher level government.

With regard to carrying out external transactions deviating from strict planning, firms could use various methods. Firms were inclined to barter with the aim of adjusting excess demand and supply due to the absence of markets and price signals. For this purpose, a firm would hoard any materials that it did not currently need before being able to exchange them for materials that it had a shortage of [Liew, 1997. p.63]. Sometimes several transactions would be required before the desired good was obtained. As the number of possible barter partners was very limited due to the absence of markets and price signals, the relationship with trading partners was important for the possibility of and better terms for bartering. On the other hand, a state owned enterprise could set up a "collectively owned enterprise" with the local government. Investment was jointly financed by this state

[20] Previously the reform, firms fell into three broad categories according to their status: central controlled, dual controlled, and local controlled. Firms in the first category were big and important enterprises, such as oil fields, the First Automobile Works (Jiefang) and the Second Automobile Works (Dongfeng). They served the national market. In contrast, local controlled firms were normally small ones and basically served only the local market, though their size and importance also varied depending on which levels of local government they were subordinated to (provincial, city, or country). Dual controlled firms lay in between. Local firms were coordinated and controlled by local plans and only their aggregated quotas and targets went into the central plan as quotas and targets for the local economy.

owned enterprise and the local government, employees were recruited both from the dependants of the employees of the state owned enterprise and local residents, and that collective enterprise served as a manufacturer and supplier of some kind of spare parts for the state owned enterprise. Due to the *de facto* ownership relationship the state owned enterprise had over the collective enterprise, the state owned enterprise had options in and influence on the demand-supply between the two firms. Similarly, a local government, under pressure from a state owned enterprise, would seek approval from the central government to establish a new enterprise in its region to manufacture and supply some kind of spare parts for that state owned enterprise. In such a way, the existing state owned enterprise expanded and improved networks with other firms and local communities.

Under the planning system, the expansion and improvement of networks in most cases would ultimately depend on the arrangement of the government; we call the formation of such networks as "arranged networking" (Figure 14).

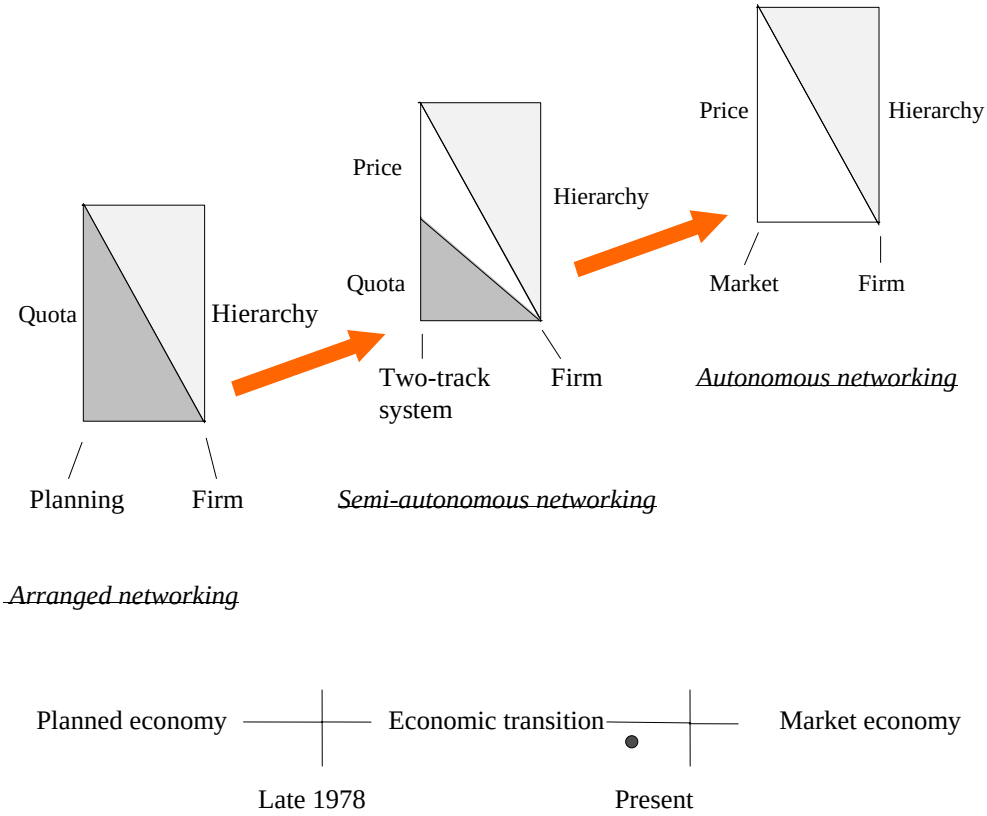

Figure 14 The evolution of economic organisation in China

The Maoist economic system gave the enterprises not only incentives to transact through arranged networking which deviated from the strict planning, but also had incentives to

internalise activities within the hierarchy of the firm. The latter enabled the firm to reduce its dependence on outsiders. This can be seen as a response of the firm to the rigidity of bureaucratically quota-based planning and the soft budget constraints. Enterprises intended to expand the range of activities within their hierarchy, so as to deepen the internal division of labour. Enterprises would not outsource by choice. The internalisation could reach an extreme, and could cover not only production activities, but also non-production activities. Thus, there was a trend in the pre-reform period for every enterprise to be established as a pocket-like self-contained society. Most of the large and medium sized enterprises had internal medical clinics or hospitals, kindergartens, education facilities (from primary schools to high schools), shops, clubs, canteens and restaurants, bathhouses and swimming pools, housing for employees, and so forth. Small enterprises ran their "small societies" on a much smaller scale, but even they had at least medical clinics and kindergartens. This model was jokingly referred to as the "large and self-contained", "small and self-contained" enterprises which "had every facility except for a crematory". These were the origins of the so-called social burden for state-owned enterprises.

It should be noted, however, that during this period the space for arranged networking was limited due to the rigid planning system. In most cases, such networking was unlikely to be expanded beyond the local region, and relationships between nodes in networks were relatively weak.

2. Economic Organisation during the Transitional Period

2.1. Economic reform and the firm

Important changes to the system of the closed planned economy in China have been formally taking place since December 1978 when the Third Plenum of the Eleventh Central Committee of the Chinese Communist Party announced it would reform the economy. The reform was initiated by Hua Guofeng, the then head of the Party, the State Council and the Army, and generally acknowledged to be led by Deng Xiaoping as Hua gradually lost his power in the following few years.[21]

[21] The brewing of the economic reform can be traced back to the mid 1970s when Zhou Enlai, the Premier,

The core of the reform consisted of the introduction of the market mechanism into the economy and to engage actively in global economic system, also referred to as "internal revitalisation and external opening up" or "reform and opening up" in short.

2.1.1 Internal revitalisation

2.1.1.1. Introducing a market mechanism into the economy

One of the basic changes during the economic reform was to introduce a market mechanism into the economy and to reduce the range and degree of central planning. The last two decades have witnessed the growing role of the market mechanism and the decreasing role of central planning in China's economy. In other words, China's economy has been developing more and more in the direction of a market orientation since the late 1970s. However, in the early years of economic reform, while the importance of introducing a market mechanism was stressed, there were no identical views as how far the market mechanism should function in the economy. Debates were centred on two issues, the relationship between the market mechanism and planning, and the scope of the market mechanism.

Generally, there were three different points of view on the relationship between the market mechanism and planning. Some argued that market mechanisms and planning are equally important in the sense that they are complementary to each other and correct each other's

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and others started questioning China's policy of isolation, saying that the effect was to perpetuate Chinese weakness by cutting off access to advanced science and technology, the same mistake the last emperors of the pre-modern era had made. After Mao's death and the downfall of the radical "Gang of Four" led by Jiang Qing (Mao's wife), Hua Guofeng became Chairman of the Central Committee of the Chinese Communist Party, Chairman of the Military Commission of the Central Committee of the Chinese Communist Party, and Premier of the State Council. Though showing no intention to undertake political reform for the time being, he was active and determined in starting the programme of the Four Modernisations (modernisations of industry, agriculture, science and technology, and national defence) and the opening up to the rest of the world. Before the Third Plenum of the Eleventh Central Committee of the Chinese Communist Party, the Chinese government had sent many delegates to visit western economies and Hong Kong and Macau. For example, in May 1978, a senior delegation headed by Gu Mu, Deputy-Premier, visited eleven cities in France, West Germany, Switzerland, Denmark and Belgium. After their return, Hua Guofeng held an over-20 days' meeting discussing guidelines for the "four modernisations", in which Gu Mu expressed his views upon their observation. In the meantime, the observation group of Hong Kong's and Macau's economies appointed by Gu Mu returned and raised a proposal for setting up an exporting base in Bao'an and Zhuhai (in Guangdong Province), a region close to Hong Kong and Macau. On 3rd June 1978, they reported to Hua Guofeng, Hua gave a "general approval" right away and instructed to act without delay. His instruction initiated the establishment of the Shekou Industrial Base and other activities regarding the opening up in Bao'an and Zhuhai.

imperfections, therefore they should be "rubber-glued together" [Liu and Zhao, 1979]. Others advocated that planning has precedence over market mechanisms and their relationship is similar to "a bird in a cage", i.e., economic agents can only be granted the freedom to function according to market rules within the limits set by planning, just as a bird can only fly in a cage [Chen, 1986].[22] Others held that both planning and market mechanisms are not essentially attributes of economic systems but merely methods which can be used by different economic systems, socialism and capitalism alike [Gao, 1988]. As the reform went on, in 1992 the nature of China's economic system for the first time was officially acknowledged as a *socialist market economy* and the previously admitted term of a planning economy supplementarily adjusted by market was abandoned. This change signified a fundamental breakthrough in China's economic system in that the nature of the firm was finally acknowledged.

2.1.1.2. The expansion of the dimensions of the market

For a long time in China the market was restricted to a very limited commodity market while factors of production including capital, labour and other inputs were excluded. This ruled out the possibility that enterprises obtained essential inputs, sold intermediate products and avoided risks through market mechanisms. Therefore, carrying out international trade and joining in international production through inward and outward direct investment were beyond their scope. By 1988, the market economy had expanded and the factor markets started to emerge. Significant changes have taken place since then, especially after 1992. Stock markets, real estate markets, foreign exchange markets, and futures markets are now open to the public. Other factor markets have also spread all over the country. The volume of transactions is huge and expanding rapidly. For example, the Shanghai Metal Exchange, which opened in May 1992, has organised futures markets in which transactions during the first seven months of operation were more than 45 billion *yuan*. By 1998, market mechanism covered prices of more than 85 per cent of factors, 90

[22] Chen Yun was a high-ranking official in the Chinese Communist Party and had been in charge of economic affairs in the central government for decades. His basic view on the relationship between planning and market mechanisms is jokingly referred to as a theory of birdcage economics. As to the cage he especially stressed the so-called four balances – the macro balance of the supply and demand of factors (materials), national revenue, investment, and foreign exchange individually as well as all together. He and Deng Xiaoping had similar seniority until the mid 1990s when he died. His point of view had therefore influenced the process and direction of China's economic reform until his death.

per cent of manufacturing products and 95 per cent of commercial goods [IIE, 1998]. The emergence and boom of factor and product markets have paved the way for enterprises to regain their nature.

2.1.1.3. Diversification of ownership

Before the start of the economic reform, there were generally only two types of ownership of the means of production in China's economy, namely, state ownership and collective ownership. In industries and services, state-owned enterprises were the main body and collective enterprises were relatively small in size and weak in role. Agriculture basically consisted of collective ownership organisations: communes. Forms of ownership other than these essentially did not exist. The success of the experimental rural reform of the "family contractual production responsibility system" in Anhui and Sichuan provinces in 1978 had given empirical ground that state ownership was the main root or cause of all problems in China's previous economic development and therefore spurred the reform of ownership in other sections of the economy. The approach that separates ownership rights from management rights through various measures was initially adopted in collective enterprises and later extended to most medium-sized state-owned enterprises by the late 1980s.

Further measures have been adopted to reshape the patterns of ownership in industrial and services sectors and to develop modern organisations of enterprises. Firstly, ownership structures for different types of enterprises have been legally established. Besides the originally existing state-owned enterprises and collective owned enterprises, private enterprise, share-holding corporations, foreign funded enterprises and self-employed (individual) business[23] have come into being, and now account for a growing share in the national economy. Table 14 shows that, from 1985 to 1995, "other types" of enterprises (mainly enterprises funded by foreigners and by entrepreneurs from Hong Kong, Macau

[23] Enterprises in China are classified into the following broad categories in statistics: (1) *State-owned and state holding majority shares enterprises*, referring to the sole state owned enterprises and the enterprises in which the state holds majority shares; (2) *Collective-owned enterprises*, referring enterprises where the assets are owned collectively, including urban and rural enterprises invested by collectives; (3) *Private enterprises*; (4) *Share-holding corporations Ltd*, with total registered capital divided into equal shares and raised through issuing stocks; (5) *Enterprises invested by investors from Hong Kong, Macau and Taiwan*, including equity joint ventures, contractual joint ventures, wholly owned enterprises and stock holding corporations; and (6) *Enterprises funded by foreigners* [NBS, 2000, pp.462-464].

and Taiwan) increased 1522, 1120, and 967 per cent in their share in the national total assets, employment, and industrial output, respectively. In comparison, in 1985 the state-owned industrial enterprises accounted for 74.6 per cent of total assets and 64.9 per cent of industrial output, but these shares dropped to 53.7 per cent and 34 per cent respectively a decade later.

Table 14 Patterns of ownership in industry (%)

	Total assets			Employment			Output		
Ownership	1985	1995	Δ %	1985	1995	Δ %	1985	1995	Δ %
State Ownership	74.6	53.7	-28.0	41.1	31.6	-23.1	64.9	34	-47.6
Collective Ownership	24	23.8	-0.8	49.5	39.8	-19.6	32.1	36.6	14.0
Private Ownership		1			3.3			2.6	
Individual Ownership	0.5	1.9	280.0	8.9	17.5	96.6	1.8	10.5	483.3
Share Holdings		5			1.7			3.5	
Other Types	0.9	14.6	1522.2	0.5	6.1	1120.0	1.2	12.8	966.7
Total	100	100		100	100		100	100	

Data source: Main Data from the Third National Industrial General Survey. *China Industrial and Commercial Times* (Zhonghua Gongshang Shibao), 20 February 1997.

Secondly, state-owned enterprises have been granted greater autonomy. They have more freedom in planning and managing production, purchasing inputs, marketing, pricing, distributing salaries and bonuses, and hiring and firing workers. Some state-owned enterprises have been granted the autonomy of direct exporting.[24]

Thirdly, the formation of industrial concerns (conglomerates) and the establishment of a stock exchange system have advanced to a relatively large scale. The development of industrial conglomerates in China formally started in 1987 when economic reform gradually cut off the existing supply and demand arrangements between enterprises that had existed under central planning. But prices had not yet kept pace reflecting the interests

[24] The state-owned enterprises have experienced four stages of reform so far. The first stage (1978 - September 1984) is the experimental stage of expanding the autonomy of enterprises: main measures were government transfer to state-owned enterprises of some powers in the latter's planning, marketing and profit sharing. The second stage (October 1984 - end 1986) signifies the beginning of the formal reform of state-owned enterprise and focused on the separation between government and enterprises, and between ownership and operation of firms. Main measures adopted were various types of contractual operations. The third stage (1987 - end 1993) centred on the transformation of enterprises' operating mechanisms. Through particular legislation state-owned enterprises were legally granted 14 autonomy rights in operation. The fourth stage (from 1994) centres on establishing enterprises in the sense of the firm in a market economy.

of different enterprises. Particularly, raw materials and intermediate products were under-priced and final products were over-priced. These had given the under-paid firms incentives to evade the central planning assigned supply quotas one way or another, which affected, in many cases seriously, the production of firms downstream. In order to secure supply and smooth business, many large downstream manufacturers sought to establish conglomerates of reverse integration with former suppliers, or some firms established conglomerates with other related firms to compete with larger conglomerates. Therefore there was a boom in the establishment of conglomerates in the 1980s. In 1988 there were 1630 self-styled conglomerates of different types [la Croix *et al.*, 1995, p.37]. The trends in setting up conglomerates have later moved to developing "pillar" industries, pushing forward technological advancement, expanding exports, and competing with foreign based multinational enterprises. With these aims the central government pushed the development of conglomerates and selected 57 conglomerates in 1991 and added another 63 conglomerates in May 1997 as "experimental conglomerates" to test the way of forming China's industrial giants. Local governments also followed suit in this respect. The average size of some experimental conglomerates is shown in Table 15. The main approaches to forming conglomerates are assets licensed operation, establishing financial companies, buying shares of other companies, and merging with or taking over other companies. As the core firms in forming conglomerates are relatively large and strong, and large enterprises are the main body of enterprises to be reconstructed into share holding corporations, the development of conglomerates in China has been accompanied by the development of the stock exchange system. For example, among the 120 experimental conglomerates in Table 15, 45 enterprises are listed stock corporations.

Table 15 Average size of 120 experimental conglomerates

Industry	Number of Conglomerates	Total Assets (100 million yuan)	Net Assets (100 million yuan)	Sales (100 million yuan)	Realised Profit and Tax (million yuan)	Export (US$ million)
Metallurgy	8	357.0	192.1	178.2	2760.4	228.0
Energy	11	412.9	203.4	147.0	1719.2	31.0
Chemical	7	76.7	29.3	34.9	484.2	25.5
Automobile	6	262.9	90.2	219.4	2437.6	42.1
Engineering	14	43.5	13.4	24.7	244.7	26.2
Electronics	10	43.1	14.7	42.8	357.5	103.6
Communication	8	234.4	81.2	102.9	605.0	256.1
Pharmaceutical	5	39.0	13.0	23.8	305.6	31.4
Construction	3	155.0	31.3	106.0	533.9	48.3
Foreign Trade	8	119.4	22.7	135.5	308.8	764.7
120 Average		133.8	54.3	77.5	711.5	117.3

Source: IIE [1998]. *China's Industrial Development Report (1998).* (in Chinese). Beijing: Economic Management Publishing House. p.122.

2.1.2 External opening up

The direction of China's policy of opening up, which was introduced in 1978 by the Third Plenum of the Eleventh Central Committee of the Chinese Communist Party, was to expand economic cooperation actively on terms of equality and mutual benefit with other countries and to strive to adopt the world's advanced technologies [*Beijing Review*, 29 December 1978, p.11]. This official endorsement of opening up the economy signified the casting away of China's former principles that regulated interaction with the global economy. This was indeed a watershed. The principle of self-reliance was no longer to be understood to exclude international intercourse, and economic interest was no longer to be subjected to politics in foreign affairs. Rather, it was acknowledged that self-reliance did not contradict expanding economic cooperation with foreign counties in the fields of trade, finance, labour, aid, technology and science, etc. It was also acknowledged that foreign economic relations based on comparative advantage were able to make the best use of the international division of labour to actively promote national economic development, in the sense that "exports are not only the means of earning foreign currency necessary for imports, but also the means of promoting technological transformation and structural reform of the national economy" and that "imports not only meet the needs in domestic market and production but also actively serve in expanding exports" [Wang, *et al.*. 1992].

Upon the positive acknowledgement of foreign economic relations, an outward looking export oriented development model was advocated. Different regions and different business organisations were to be given different priorities because of China's large size and huge internal divergence as well as the lack of experience. Deng Xiaoping's famous phrase "crossing the river by touching the stones"[25] represented the gradualism in China's policy of opening up, rather than a big bang approach.

2.1.2.1. Regional opening up

China's economic reform has been carried out in a gradual way and the regional open door policy was implemented in the same way as well. The regional opening up began with the establishment of the four Special Economic Zones (SEZs) in the south east coast and then expanded to some other parts of the Southeast region, and later to north and west China.

In 1979, a new Law on Joint Ventures was passed that provided a basic framework under which foreign firms were allowed to operate. Four SEZs were established along the coast of Guandong and Fujian provinces close to Hong Kong, Macau and Taiwan.[26] SEZs (including their home provinces in some respects) enjoyed financial subsidies and were granted higher autonomy in economic affairs and a more freely market-oriented system. Additional preferential tax and administrative treatment were granted to foreign invested firms there. For example, on the basis that the applicable income tax rate for foreign invested firms in China was 33 per cent while the rate for domestic firms was 37 per cent, foreign invested firms in the SEZs all enjoyed a tax holiday for the first and second profit making years; a 50 per cent reduction of income tax (i.e., applicable rate: 33%×50%) in the following three years; and a 15 per cent reduction of income tax (i.e., applicable rate: 33%×85%) afterwards. Those foreign invested firms were also granted exemption from income tax on the remitted share of profits, exemption from export duties, and from import duties for equipment, instruments and apparatus for producing exports.

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[25] "Crossing the river by touching the stones", is a well known phrase of Deng Xiaoping to describe as well as to guide China's economic reform. It reflects the fact that the economic reform in China is experimental in nature: it proceeds step by step, moving forwards at the rate the government deems appropriate at any given time.

[26] These SEZs are Shenzhen (across the border from Hongkong), Zhuhai (across the border from Macau), Shantou (on the Guangdong coast facing Taiwan) and Xiamen (across the Taiwan Straits from Taiwan).

The success in economic development and foreign investment in the special economic zones had increased the confidence of the Chinese central government in the economic opening up and the motivation of other regions for the interests of opening up. Therefore the regional opening was expanded to other regions in China. In May 1984 the concept of SEZs was extended to another fourteen coastal cities and Hainan Island.[27] Their local governments were delegated similar status as that of SEZs in regulating FDI. In these cities the Economic and Technological Development Zones (ETDZs) were set up and ETDZs gave foreign investment projects similar incentives as those in SEZs. Foreign invested firms there were levied a 24 per cent tax rate, and local authorities were granted the right to approve foreign investment for projects under US$30 million.

As the economic reform proceeded, more cities were granted the similar status of the SEZs. The so-called "high and new technology development zones" and "economic development zones" were established in nearly every provincial capital city and afterwards extended to medium-sized cities or even small cities or towns. As different regions competed with each other for attracting foreign investment by offering tax incentives and surcharge reductions for foreign invested firms, the opening up of the whole economy of China was realised.

2.1.2.2. Liberalising export and international business of local firms

Before the economic reform, China's domestic industrial firms were essentially manufacturing plants. They were not only granted very limited freedom to respond to domestic markets but were also cut off from international markets. Twelve state-owned foreign trade companies, each with responsibilities for a specific category(ies) of commodities, were the only conductors between domestic firms and the international markets. However, the monopoly status of these trade companies made them the "bad conductors" in functioning between domestic firms and overseas markets, especially in

[27] In May 1984 the central government announced 14 coastal cities as Outward Open Cities: Dalian, Qinhuangdao, Tianjin, Yantan, Qingdao, Lianyungang, Nantong, Shanghai, Ningbo, Wenzhou, Fuzhou, Guangzhou, Zhanjiang, and Beihai. Hainan Island was given same status in 1984 and became a special economic zone and province in 1987. Afterwards many important inland cities – especially those locating along the Yangtze River and Yellow River – became the Outward Open Cities (duiwai kaifang chengshi) where Economic and Technological Development Zones (ETDZs) were set up. By 1993 the central government had approved 30 ETDZs: Dalian, Yingkou, Changchun, Shenyang, Harbin, Qinhuangdao, Tianjin, Weihai, Yantai, Qindao, Lianyungang, Nantong, Shanghai Minhang, Shanghai Hongqiao, Shanghai Caojinghe, Kunshan, Ningbo, Wuhu, Wenzhou, Hanzhou, Xiaoshan, Fuzhou, Fuzhou Rongqiao, Fujian Dongshan, Guangzhou, Nansha, Huizhou Dayawan, Zhanjiang, Wuhan and Chongqing.

respect of market information supply and response. In the meantime local governments had no autonomy in foreign trade.

Since 1979 several measures have been adopted in reforming the foreign trade system:

(1) decentralising the right to conduct foreign trade and permitting local governments, some industrial sectors, many large- and middle-sized enterprises and business conglomerates to engage in foreign trade in combination with their products and technology;

(2) reducing the imperative planning, increasing instructive planning and strengthening macro-regulation over exports and imports through the leverages of exchanges rates, tariffs, credits, licenses and quotas; and

(3) eliminating export subsidies, rectifying the disparities of foreign exchanges retention between regions, and standardising enterprise management behaviour.

With the above measures now there are roughly three separate trade regimes in China. The first regime is for foreign invested enterprises, which are allowed to engage in international trade directly. In addition, export oriented foreign invested firms enjoy duty free import of raw materials, components, and capital equipment for export production. The second regime is for local foreign trade companies. These companies have the license to engage in international trade, and the international trade of ordinary local producers has to be undertaken through these foreign trade companies. The third regime is for larger local enterprises which have been granted independent import and export rights. These firms are normally the parents or important subsidiaries within conglomerates. They also have the autonomy to decide setting up production joint ventures of US$30 million or less with foreign investors and a certain degree of autonomy to engage in other international business such as project construction.

2.2. Economic organisation and semi-autonomous networking

The above description has revealed two important facts about the Chinese economy. One is that before the economic reform, enterprises basically lost their essential character of a firm and each of them was attached to a specific location, an industry and a government institution. Another is the method of the economic system transition in China can be characterised as a dual track approach, setting out from a condition without market

mechanism towards the restoration of market mechanism by gradually shortening the "non-market track" meanwhile gradually lengthening the "market track".

During the transition, the two tracks co-existed in every aspect of China's economy, and the relative "length" of the two tracks at a particular time differs among different aspects of the economy. Based on an econometric analysis involving 11 groups of 76 indicators, Chen, *et al.*, [1998] shows the marketisation in different sectors between 1979 and 1997 (Table 16). Theoretically, the range of marketisation is 0~100%. While the marketisation of government behaviour and the technology market was quicker in the early stages of economic reform, the marketisation of the product market was very slow at first but faster in later stages. In the meantime, the marketisation of the financial market lags far behind that of other factor markets. For example, up to 1997, the marketisation of the product market reached 85 per cent, but the financial market only reached 10 per cent. The marketisation of the firm was very slow at the early stages of the reform and is now just halfway through.

The gradual restoration of the nature of the firm during the economic reform means that enterprises are slowly breaking their attachment to government institutions and single locations and evolving towards the institutionalisation of their own interests and the marketisation of their operations. At any particular time in the process of the marketisation of the firm, firms of different types, i.e., different in size, ownership, industry, and location, enjoy different treatment. In the meantime, a firm can also be differently treated if it uses different channels of input and output. Therefore, different firms are not on a level playing field in terms of their operation and competition.

Table 16 The trends of marketisation in the Chinese economy (%)

Year	1979	1985	1990	1995	1997
Firm	0	10[a]	15	46.4	48
Government behaviour	4	50.8[a]	62.2	73	72
Product market	2.25	15[a]	54.5	84.5	85
Labour market	5.1	24.3	34.8	64.7	65
Financial market	1	3.6[b]	6.3	9.1	10
Technology market	0	46.3	54.1	70.8	71
Agriculture	7.67	49.7	51.6	65	66
Industry	0	23.5	37.3[c]	49.9	50
Foreign trade	1.5	9	22.3[c]	41.4	54.4
East region				70.3	
Central region				64.4	
West region				64.9	
North region				54.9	
South region				67.9	

Note: a. figure for 1984; b. figure for 1986; c. figure for 1991.

Source: Chen *et al.*, [1998]. Research on the Marketisation Process of China's Economic System. *China Social Sciences Quarterly*, (in Chinese), Summer.

As the dual track approach is discriminatory in nature, it inevitably leads firms to form business networks actively, so as to exploit the dual tracks as well as to explore the ordinary benefits of networking. On the one hand, the dual track reform gives enterprises more space in forming networks: enterprises can not only carry out activities through approaches between price and hierarchy or between quota and hierarchy, but also hedge between the price and the quota with some methods. On the other hand, the incentives for enterprises to form networks are much stronger than that in the traditional planning system: a firm will enjoy more favourable treatment if it can operate in a specific region, or in a specific industry, or simply is involved in a specific type of ownership. In the meantime, the dual track price system affects the performance of enterprises. Therefore, firms are keen to expand or change their facilities or operations into the regions or industries or activities in which they can enjoy more favourable treatment. Similarly, enterprises are also actively going into favourably treated types of ownership. As enterprises have obtained some autonomy in the reform, such networking is semi-autonomous networking (Figure 14).

The following pattern of networking behaviour is commonly observed during the economic transition.

First, inland enterprises actively set up subsidiaries or other type of affiliates in the coastal areas. This is one of the major forces behind the economic boom in SEZs such as Shenzhen, Zhuhai, and Haikou, which were either remote villages or backward regions before the economic reform. Through such expansion of business facilities enterprises have greatly expanded their business networks from previously geographically concentrated ones towards those over several regions or provinces. The expanded networks have several functions. They serve as not only a method for the newly established affiliates to take advantage of more favourable treatment in the newly entered regions but also a method of leverage for whole enterprises in transfer pricing and financial flows. In addition, parent enterprises can benefit from the expanded networks in improving management through learning by doing and gathering important information which benefit by the closeness of the established facilities to international markets (e.g. Hong Kong) as well as a huge number of foreign invested firms in the coastal areas.

Secondly, many enterprises are very enthusiastic about forming industrial concerns (conglomerates). To develop industrial concerns is one of the methods of economic reform aimed at expanding the ranges of enterprises' business and improving the utilisation of the existing advantageous assets (including the intangible ones) of different member firms by mobilising these assets among the members of the same industrial concern [IIE, 1996, Chapter.15]. For this purpose the government grants industrial concerns preferential treatment in various aspects, ranging from reduced income tax rates to additional loans and even subsidies for technological improvement projects. Government support is offered in a variety of ways to firms trying to build international brand names [Richter, 1999, p.245]. Besides favourable treatment, the main reason for the enthusiasm of enterprises for engaging in the formation of industrial concerns is that this is a good approach for them to expand their networks. The expanded networks enable them not only to get access to the advantageous resources of other firms, but also to get rid of administrative and policy restriction remaining in other aspects of or for some firms. Generally speaking, vertical conglomerates are mainly formed from enterprises' concerns of dual pricing, as price reform in factors is behind that in consumer goods, and horizontal conglomerates are

mainly formed from the concern of the segment of market by institutionalised opportunistic behaviour by government in different regions.

Firms' strong response towards developing industrial conglomerates is further increased later by the intensified competition in the domestic market as well as the implementation of the bankruptcy policy. Above all, large industrial groups have gained in market power as well as bargaining power against the government, and non-member firms hope to attach to these industrial groups, to enjoy such power. On the other hand, facing intensified competition, local governments also encourage local enterprises to form industrial groups to compete with foreign invested firms and large industrial conglomerates headquartered in other regions. For example, Dalian Municipality of Liaoning Province has formed 10 industrial concerns via the restructuring of the state owned assets. The ten industrial concerns involve total assets of 17.73 billion *yuan* and 150 enterprises. Their assets and output account for 65 per cent and 60 per cent of those respectively of the industries within the budget of the city [Li, 1997]. Of course, the consideration of local governments is basically from the segment of local market and local interests, as we stated in (Section 1.2) about the arranged networking.

Thirdly, domestic enterprises actively seek to establish joint ventures with foreign investors. During the 1979-96 period, 76 per cent of foreign investment, in terms of the number of projects as well as foreign capital actually used, was Sino-foreign joint ventures, including equity joint ventures, contractual joint ventures and contractual joint development. In comparison, foreign wholly owned enterprises accounted for only 24 per cent of the total inward FDI [Wang, 1997, p.4]. This reflects the active attitude of domestic firms towards forming joint businesses with foreign investors. In fact, it is common that the most competitive domestic enterprises, including industrial concerns, have set up joint ventures with foreign investing firms. A typical example is the detergent manufacturing industry, where all Chinese firms which had famous brands merged or established joint ventures with foreign firms, had their brands are either replaced by foreign brands or confined to selected products after the introduction of foreign capital. The main motives for local firms to set up Sino-foreign joint ventures are to enjoy favourable treatment for foreign invested firms and to get indirectly into the networks of overseas market. These two motives to a large extent stem from the dual track policy and restrictions on free international business of domestic firms.

The above analysis shows that during the economic transition, due to the dual track policy, firms have responded to the strong incentives to establish and expand their networks. Firms cannot only enjoy the benefits of networking which are typical in market economies, but also exploit the dual tracks. However, there are also limitations for firms in establishing and expanding networks in the economic transition. First of all, they cannot completely be free of administrative interference in their networking expansion and business operation. Of course there is a dilemma. In cases where they are weak in competition and have small networks, they may need government support and interference to improve their status in the market and expand their networks. However, once they have obtained some market power and network penetration, they prefer freedom in their operations. Secondly, compared with foreign invested firms, local enterprises are still unfavourably treated in terms of taxation, though the discrimination has been lessening over time. Thirdly, their networks are not large enough to compete with foreign firms, especially the large MNEs headquartered in western industrialised countries. In short, in the economic transition enterprises cannot fully realise efficiency and legitimacy, the two instrumental purposes of networking [Jansson, *et al.*, 1995, p.35], if their networks are confined to the domestic market. The intensified competition in the Chinese market and the changing industrial structure in the development of the economy are imperatives for firms to perform in a larger stage.

3. Outward Direct Investment in Economic Transition

3.1. Motivations for international networking

While Chinese firms have strong incentives to establish and expand their networks during the process of economic transition, they cannot benefit fully from networking if their networks are confined within the boundary of the national economy.

First of all, a firm might be in an unfavourable situation in global commodity chains. For industrial firms, if they do not have their own networks in foreign markets, they are in an awkward position in gathering information about international trade and changes in technology and choosing a better position in global commodity chains, which means that they have difficulties avoiding being unfairly treated in their export and import either by

foreign firms or by Chinese foreign trade companies. Tseng has quoted one of his experiences illustrating this situation:

> *The author* (i.e. Tseng) *had a personal experience of this when he represented a US Fortune 500 firm in negotiating the purchase of a number of mixing tanks for its chemical plant in Shanghai. At the time of negotiation, the US firm was asked to negotiate the commercial terms and price with the import and export corporation, and the specifications and delivery date with an iron-work factory. After the start-up of the chemical plant (considered as a domestic firm in Shanghai), the author approached to the iron-work factory for additional mixing tanks and discovered that the price was only 20 per cent of that of the previous purchase. As can be expected, the iron-work factory was equally upset that the import and export corporation had made such a huge profit.* [Tseng, 1994, pp.122-123]

For ordinary industrial firms, the problem is that they do not have the right to engage directly in foreign trade if they have not been included in one of the three separate trade regimes in China, i.e., the regimes for foreign invested enterprises, for local foreign trade companies and for larger local enterprises which have been granted independent import and export rights respectively. For a firm outside these regimes, even if it has set up a joint venture with a foreign firm, it may still be in a disadvantageous position, as in most cases only a part of a firm goes into joint venture and only the joint venture concerned has the right to undertake foreign trade, the foreign parent is also most likely to use its knowledge of and channels in overseas markets to increase its control over the joint venture.

Foreign trade companies are facing problems as well. The increasing autonomy of enterprises and the decentralisation of the foreign trade system have increased the bargaining power of manufacturing firms in foreign trade through specialised foreign trade companies and other firms alike. Industrial firms have more and more leeway in choosing foreign trade agencies and negotiating terms for trade, leaving foreign trade companies and other licensed foreign trade agents compete for sourcing and supplying. Tseng's experiences also include such a situation:

> *The import and export corporations are sometimes on the losing end. The author had a very different experience when representing a Korean conglomerate to explore the feasibility of setting up a joint venture factory with a hardware factory*

> *in Fuzhou, China, to produce iron nails for the United State market. We helped the factory to calculate the direct cost of the iron nails and found out that it was much higher than the export price quoted by the import and export corporation. This means the export price of iron nails was heavily subsidised.* [Tseng, 1994, p.123]

Secondly, foreign invested firms still enjoy more favourable treatment. It is well known that since the launching of the economic reform in late 1978, China has attracted a huge amount of FDI. Annual total FDI flowed into China grew rapidly, from under US$2 billion in 1985 it jumped to over US$11 billion in 1992 and further to over US$41 billion after 1996. Since 1992 China has been the largest host country for FDI next to the United States. Besides the huge domestic market and low labour costs, preferential treatment for foreign invested firms is an important attraction.

Up to the mid 1990s, China offered investment incentives to FDI firms that locate in particular areas (such as SEZs and ETDZs) and engage in particular sectors or activities (particular manufacturing, infrastructure, and agriculture). On the one hand, different taxation treatment was applied to domestic and foreign invested firms. For example, the corporate income tax rate for domestic and foreign invested firms were 37 per cent and 33 per cent respectively before the taxation reform in 1994. In addition, foreign invested firms were entitled to enjoy tax exemption and a 50 per cent reduction for a certain period (normally a tax exemption for the first two years commencing from the first profit making year and a 50 per cent reduction for the three subsequent years). In 1994, the turnover tax regime and individual income tax regime were unified. As a result, both domestic and foreign firms are now governed by a unified set of rules on value-added, consumption, business operations and individual income taxation.[28] However, the preferential treatment on corporate income tax to foreign invested firms remains unchanged. Foreign invested firms can also enjoy other incentives including favourable land prices, various surcharge deductions, subsidies, favourable loans, etc. All this treatment puts local firms in a

[28] In early 1997 the State General Taxation Bureau made a clear stipulation that directors in foreign invested firms would be taken as dual positions of directors and employees if they actually assume managerial positions. While their income of dividend and extra dividend, *according to the Circular of the State General Taxation Bureau on the Income Taxation on Dividend and Share Transfer Income Received by Foreign Invested Firms, Foreign Firms and Foreign Nationals*, will be exempt from individual income taxation, they have to pay individual income tax for their income of director commission, wages and salaries.

disadvantageous position.

Thirdly, Chinese firms face increasing competition at home. Essentially, reform does not only mean an expansion of markets, but also greater competition among firms [Jefferson and Rawski, 1993], as market forces create a tendency to equalise financial returns to factors employed in different lines of business. Market forces and non-market forces have both contributed to the intensification of competition. In pursuing high financial returns, capital has flowed to activities where supply falls short of demand, leading to an end to the shortage economy, a consequence all centrally planned economies bear. Moreover, as the abolishment of the soft budget constraint lags behind the granting of autonomy in investment to various institutions (including firms) in the process of the decentralisation of investment system, over-investment has occurred in activities with high profit. Specifically, for a long time since the commencement of the economic reform, most of the state-owned enterprises, collective-owned enterprises and local government agencies have more and more leverage in investment decisions, but nobody bears the responsibility for investment failures in the meantime. In such a situation, firms and local governments are more active than ever in competing for state investment funds and banks' loans to finance their investment projects. High information imperfection in the transitional period further fuels such behaviour. The situation was particularly bad in the 1980s: "the decentralisation of decision-making promoted by reform resulted in a period when neither central planning nor market forces were in a position to discipline their financial demands adequately" [Hannan, 1998, p.10]. As a result, duplicate projects have mushroomed all over the country, and the situation in industries with low entry barriers is particularly serious. This leads to highly intensified competition and production undercapacity. For example, while less than 50 per cent of the production capacities for most household electric products is realised, there are still a lot of projects under construction (Table 17).

Table 17 Production capacity of household electrical appliances (1995)

Product (thousand sets)	Production capacity	Utilisation of production capacity (%)	Additional capacity under construction at the end of the year
Washing machines	21830	43.4	2280
Vacuum cleaners	12840	43.2	200
Electric fans	142530	65.1	2550
Refrigerators	18210	50.5	2170
Air conditioners	20350	33.5	3800
Colour TV sets	44680	46.1	2600
Smoke Absorbers	8920	40.2	170
Video recorders	5170	41.7	1900
Camcorders	350	12.3	10
Microwave ovens	2590	38.6	

Source: *China Business Daily*, 5 May 1997.

Another contributing factor to the intensified competition in China has been the inflows of FDI. Inward FDI is now playing an important role in China's economy. This can be seen from the contributions of foreign capital invested firms to the growth of the national economy. In 1997, actually used FDI accounted for 15.04 per cent of China's total fixed assets investment; the amount of import and export by foreign invested firms accounted for 46.95 per cent of the nation's total foreign trade; and the tax paid by foreign invested firms accounted about 13.16 per cent of China's total industrial and commercial taxes (Table 18).

Table 18 Role of inward FDI in China's economy (%)

year	FDI/Total fixed assets investment	Output by FDI firms/National total output in industry	Foreign trade by FDI firms/National foreign trade	Employees in FDI firms/Non-agricultural population	Tax from FDI firms/National industrial and commercial taxes
1991	4.15	-	21.40	-	-
1992	7.51	-	26.42	-	-
1993	12.13	-	34.27	-	-
1994	17.08	9.47	37.02	-	-
1995	15.65	11.66	39.10	-	-
1996	15.14	12.02	47.30	-	-
1997	15.04	12.66	46.95	10.00	13.16

Source: NBS, *China Statistical Yearbook*, various issues.

Huge foreign capital inflow and active operations of foreign invested firms have greatly affected China's institutional environment and intensified market competition. These exert

enormous pressure on local firms and force them to find ways for survival and development.

Foreign capital invested firms have seized a large portion of China's market, though their market shares vary from industry to industry and from region to region. In 1997, among 39 industries, there was one industry (electronics & communication equipment manufacturing) in which FDI firms accounted for 61.33 per cent of the broad market share;[29] four accounted for 40-50 per cent (clothing & other fibres; leather, feather & their products; cultural, education & sport products; and instrument, meter & office machinery); eleven accounted for 20-30 per cent (food; beverage; timber, bamboo & rattan works; furniture; paper & paper products; duplication of recording media in printing industry; medicine; rubber products; metal products; transport equipment manufacturing; electric machinery & equipment manufacturing); and one accounted for 18 per cent (textile). In the same year, of the provinces and municipalities directly under the Central Government, there were two where FDI firms had a broad market share between 50-60 per cent (Guangdong and Fujian); one had 40-50 per cent (Tianjin); one 30-40 per cent (Shanghai); one 20-30 per cent (Beijing); and one 18-20 per cent (Jiangsu).

The general trend in foreign invested firms is an inclination to control high-tech industries and high profit industries. In the new and high tech industries, the market share of foreign invested firms keeps increasing; some firms even dominate the market. For example, in the micro-electronic industry, of the eight biggest integrated circuit manufacturers, five are Sino-foreign joint ventures, one is a wholly foreign owned enterprise, and only two are local firms. IBM has established a wholly owned subsidiary and six joint ventures, 72 partners, and 200 PC speciality shops around the country. Motorola, after having monopolised the mobile communication market, set up one wholly owned integrated circuit chips manufacturing firm and eight joint ventures in Shanghai, Sichuan, Jiangsu and Liaoning. In 1998 Motorola (China)'s sales was more than RMB 19.6 billion yuan (about US$2.4 billion).

Foreign invested firms tend to invest in downstream industries and focus on those consumer products which have great market and profit potential. Therefore, the

[29] Value added of foreign invested firms as percentage of the national total value added in this industry.

upperstream industries with high cost and low profit are left for local firms. For example, in the machinery industry, automobile, electrical engineering, engineering machinery, and petroleum chemical general machinery together account for 75 per cent of FDI in the industry. In the medical industry, FDI firms basically concentrate in the production of preparation of drugs, while the producers of raw materials are almost all local firms. In the detergent, beer, bicycles, refrigerators, washing machines, and air conditioners industries, FDI firms account for a large share of the market.

Inward FDI also affects the existing brands of local products and hinders the development of local brands. This occurs mainly for three reasons. First, with an aim to penetrate into the Chinese market and reduce competitors, many established foreign firms seek Chinese firms with brands established in China to form joint ventures to produce and market the existing or similar products with their foreign brands. Chinese firms, due to difficulties such as capital shortage, redundant employees, heavy internal social burden, heavier tax burden, less autonomy in operation which stem from either the old economic system or changes in economic regime, take the forming of joint ventures as a measure to tackle these difficulties and are therefore willing to form joint ventures with foreigners. In some cases, local brands, though still used, are losing their identification in market as available resources for promotion are limited or production volume is reduced. Detergent, soap, and electrical appliances are typical examples.

Secondly, previous local brands face strong challenges from foreign brands. On the one hand, contrary to most Chinese firms which had not begun to operate in a market economic environment until the start of the economic transition, foreign firms have grown out of mature market economies and therefore are more skilful in marketing and management. Many foreign investors have internationally sound brands and high quality products, which directly challenge the brands of local Chinese firms when they carry out business operations in China. On the other hand, even in the case of joint ventures where foreign brands have not replaced local brands, local brands are still severely challenged as the Chinese partner in a joint venture is normally not the whole Chinese firm involved but only a part of the firm, leaving the other part of the firm to operate separately with its own brand(s). Therefore a portion of the existing market share of the Chinese firm has been ceded to the foreign brand(s) after the forming of the joint venture. Examples include several famous Chinese bicycle manufacturers, such as Phoenix, Forever, Golden Lion,

each of them has formed a separate joint venture with a foreign firm on a 50-50 or 49-51 equity base. These Chinese parent firms' products labelled with their local brands have been competing directly with the joint ventures' products labelled foreign partners' brands.

Thirdly, the presence of foreign famous brands in the Chinese market has not only reduced the market share of local brands, but also hindered the development of local sound brands, though many products have world-class quality and technology. Main reasons for this include: some foreign firms invest in China with subsidies from their home governments, Chinese firms are weaker in their financial strength than those foreign firms, and FDI firms enjoy more favourable tax and surcharge treatments.

3.2. Outward direct investment

Motivated by the desire to escape the above pressures and to search for more network benefits, Chinese firms began to undertake outward direct investment almost at the same time as foreign investors began to invest in China. The locus of the development of China's outward direct investment coincides with the evolutionary process of the firm related reform in China. Whenever there is a major reform, there is a big increase in outward FDI (Table 19). This suggests that Chinese enterprises have made possible use of their autonomy granted by the government and changed policies to engage in outward direct investment, just as they do in establishing and expanding domestic networks.

Before 1984, the urban and industrial reform measures introduced basically focused on the reform of the industrial management system and the expansion of the enterprise power (or *Jianzheng Fangquan* in Chinese – to simplify administration and to decentralise the power. The major reform during this period is the profit-retention system adopted by the government in 1979. It allowed profit-making enterprises to retain part of their profits to set up three internal funds, i.e., funds for production development, welfare of employees, and bonuses respectively. The aim of this measure was to transform enterprises from traditional cost centres to profit centres. In the following year, this system was modified to become a two-tier package combining a fixed base of profit retention plus a flexible extra-base proportion of profit retention, which further enhanced the incentive of enterprises to make profits.

Table 19 Firm related economic reforms and outward direct investment

	Firm related reforms	Number of FDI Projects	Total Investment (US$M)	Chinese Investment (US$M)
1979-82	Profit-retention system (1979)	43	82	37
1983		33	8	13
1984	Tax for profit system	37	120	100
1985		76	88	47
1986		88	109	33
1987	Contractual management system	108	1373	410
1988		141	118	75
1989	(Tian'anmen Square incident, and economic adjustment)	119	325	236
1990		156	167	77
1991	Reform resumes, with focus on revitalising state owned large and middle sized enterprises	207	759	367
1992	Endorsement of a "socialist market economy"	355	351	195
1993		294	187	96
1994	Deregulation of foreign exchange	106	124	71
	Overall taxation reform: central-local fiscal arrangements, income taxation on enterprises, and reforms of indirect taxes			
1995		119	200	106
1996		103	494	294
1997		131	325	196
1998		266	n.a	259

Note: Since the mid 1990s, economic reform has entered the period of overall reform and comprehensive measures have been adopted and therefore any single measure does not have as strong effects as those did before on enterprises. So no measures are listed in the table after 1995.

Data source: MOFTEC, *Almanac of China's Foreign Economic Relations and Trade*. 1993/94~1998/99. Beijing: China Prospects Publishing House.

As reforms during this period were partial ones and only covered some experiments in state owned enterprises, neither ordinary enterprises had enough authority to engage in international business, nor there were relevant market mechanisms for such activity, only very limited number of enterprises invested abroad and the investment was small in both volume and number of projects. The investors were some ministry-rank companies plus a few enterprises directly under the administrative management of provinces [Li, 2000, p.15].

The urban-industrial reforms expanded significantly in 1984. The reform programmes were stressed and outlined in "The Decision of the (CCP's) Central Committee on the Reform of the Economic System", adopted in October 1984. The programmes emphasised an expansion of enterprise autonomy and incentives and the reduction, but not elimination, of the government within-plan allocation of resources.

A tax-for-profit system was instituted in two successive steps in 1983 and 1984. Under this system enterprises were required to pay tax instead of profit remittance and were able to fully retain their after-tax profits. This gave firms stronger incentives to use possible means to expand their profits, and improved operations would in turn increase their financial ability to carry out investment.

In 1987, the contractual management system was applied to Chinese enterprises against the background of falling enterprise-realised profits and state budget revenue subsequent to the comprehensive economic reform started in late 1984, aiming at coping with the problems of soft-budget behaviour. This system set out to personify enterprises amid their taking up of rights and duties and therefore replaced the traditional party committee-dominated enterprise leadership system. Under this system managers were designated as the legal representatives of enterprises and were responsible for the fulfilment of the business tasks (e.g. profit, remittance, and taxes) set in multi-year management responsibility contracts. With regard to the internal operation and management, the reforms allowed enterprise managers to use their authority to choose the level of production, to sell output and acquire material inputs on the market, and to set or negotiate prices. With regard to the external business activities, the reforms gave enterprise managers the right to develop lateral economic associations across different trades and regions as well as to permit the exchange of capital and technology and to cooperate in production matters. In addition, enterprise managers had the right to control activities related to employment, including, for example, the right to recruit labour openly and to determine the level of skill or qualifications required.

In the meantime the government abandoned the pursuit of a single rate of state-enterprise division of profits which would be applicable across the board. It required enterprises to ensure a steady increase in tax and profit remittance (or decrease in subsidies and/or tax exemptions for loss making enterprises) over the pre-contract remittance which was taken

as the base. In addition to the requirement of increasing current profits, firms had to ensure the fulfilment of another two tasks: technical renovation investment and the linking of the wage bill with total realised profits, the latter being set as a devise both to enhance enterprises' incentive and to avoid bonus expansion at the expense of state assets accumulation [Lo, 1997, p. 108].

In the meantime the country's foreign trade system underwent drastic reform. The national import and export corporations delegated functions to their local branches; certain industrial firms were encouraged to form holding companies and were given authority to import and export; and certain big industrial firms were also granted such rights.

The important firm-related reform in 1984 and 1987 significantly increased the autonomy and internal incentives of enterprises, which in turn led to big jumps in overseas investment in the two years. In terms of the amount of investment flows, China's outward investment in the two years had increased about 669 per cent and 1142 per cent respectively on the previous years base. In comparison, the number of investment projects had increased about 12 per cent and 23 per cent respectively. As the latter are much lower than the former, it is obvious that the average size of outward FDI projects in the two years increased greatly.

Economic reform slowed down in 1989 and 1990 due to several interrelated factors, including different views on economic reforms between the conservatives and the reformers in the Party leadership, problems associated with economic growth and modernisation, and especially, the incident in Tian'anmen Square. Behind the notorious political troubles, there was a serious economic crisis. Since 1985, China's economy had experienced high rates of inflation, with the retail price index ranging from 8.8 per cent in 1985 to 7.3 in 1987, and further skyrocketing to 18.5 per cent in 1988. The direct outcome of these factors was the change of leadership in economic management, the beginning of hard-line dominance of economic policy [Liou, 1998, pp.36-37], and the economic adjustment. Therefore outward direct investment in 1990 reduced to the level of 1988. It is interesting that in 1989 outward investment increased significantly. It is certain that a part of the increase was due to the lag between the approval and undertaking of outward investment –investment projects were improved in previous years but carried out in 1989, some of the increase was most likely to involve capital flight behaviour of investors out of concerns for political uncertainty.

Economic reform was regenerated in mid 1991 and accelerated in 1992 after Deng Xiaoping's trip to South China. During that trip, Deng attacked conservative options and called on the country to pursue the reform and opening up more vigorously. In October 1992, the Fourteenth National Congress of the Party endorsed Deng's view and called for the establishment of a "socialist market economy". The goal of establishing a socialist market economy was adopted in China's constitution during the first session of the Eighth National People's Congress in March 1993.

The reform plans and measures introduced in the 1990s attempted to broaden and deepen the reform process. These plans and measures covered not only the reform activities emphasised in the earlier stages of reform but also major issues related to China's macroeconomic structures, including, for example: (1) reforming the exchange rate system (allowing the RMB to be devalued without formal government action); (2) adjusting the fiscal system (introducing a new tax assignment system that separates central and local taxation authorities); (3) reforming the bank system (intended to establish an effective central banking system and to commercialise the state banks); (4) opening the stock markets (in Shanghai and Shenzhen); (5) emphasising state-owned enterprises reform to improve the efficiency of SOEs; (6) adopting systems of accounting, laws on property rights, and patent protection; (7) reforming the social security system; (8) reforming the circulation system; and (9) accelerating housing reforms [Liou, 1998, p.32].

Such all-around measures have tremendously changed the whole economic system in China in the direction of a market economy and therefore affected the enterprises' investment behaviour. While firms have gained more freedom to engage in overseas direct investment, the maturing of market economic mechanism means that the benefit from international networking to some extent reduced due to the decreasing benefit from exploiting the two-track system. In other words, as marketisation in nearly all aspects of the economy proceeds, more and more enterprises are able to carry out overseas investment with less difficulties (easier to obtain the government's approval of and more capability to engage in outward direct investment), being able to invest abroad is becoming less proprietary in taking advantage of the segment (or barriers) between the domestic and international markets and between those with and those without overseas investment. For example, when it is very difficult to be granted a "license" to invest abroad and only a very limited number of enterprises have such "license", those enterprises which have overseas

subsidiaries could relatively easily undertake roundabout investment in the home market in the name of their overseas subsidiaries, so they can enjoy the preferential treatment specifically for *foreign* investors as well as establish internal international commodity chains with one end in China and the other in overseas markets, through which supply foreign goods badly needed in China and supply overseas markets the products of the parents with very low wage labour. The reduction of both international and internal barriers due to marketisation as well as the entering of a large number of competitors inevitably reduce the profit margin of such activities. Of course, the normal benefit of international networking still remains. As a result of the inter-action of the two forces, the growth of China's outward direct investment in the 1990s was rapid at first and relatively smooth afterwards, with obvious increases in a few years when major measures were adopted in the reform.

The first big increase of the 1990s occurred in 1991. A part of this increase resulted from the approval of some FDI projects which were suspended in the 1989-1990 period. In addition, the further deepening of the reform in 1991 also contributed to this quick growth. In the following year, 1992, China for the first time claimed to be developing a market economy, though for political reasons a tag of "socialist" was still attached. That year the number of outward direct investment projects reached 355, increased more than 71 per cent from the previous year, and the amount of investment was relatively large.

The tax reform in 1994 represented the Chinese government's intention to re-construct its overall tax system and covered three major aspects: central-local fiscal arrangements, income taxation on enterprises, and reforms of indirect taxes. In the central-local fiscal arrangement, the old fiscal contract system (the central and local governments shared revenues according to a pre-agreed ratio) was replaced with a new tax system which divided taxes into three categories: central taxes (e.g., tariffs, income tax on central enterprises, tax on revenues from railways, banks and insurance companies, and consumption tax), local taxes (e.g., business tax, income tax from local enterprises, personal income tax, capital tax on land and property sales, estate duty, and stamp duty), and share taxes (e.g., value-added tax for central and local governments and stock transaction gain tax for central and local governments). The reform introduced the income (profit) tax at a uniform rate of 33 per cent for all enterprises (state and non-state). This

measure to some extent has clarified the state-firm relationships and therefore indirectly increased the autonomy of firms.

On 1st January 1994, the previous two-tier foreign exchange rates system was replaced by a single foreign exchange rate system, and the RMB under the current account could be freely changed into foreign currencies. In addition, the Chinese government abandoned the mandatory planning over revenue and expenditure of foreign exchange. This was a significant change for firms entering international business.

The two big reforms in areas of taxation and foreign exchange in 1994 also pushed the development of outward FDI in the following years. However, as these reforms were not directly related to the autonomy and strategic development of enterprises, and the market was maturing, their effects on FDI were not so strong as the previous major measures of reform.

4. Concluding Remarks

Since the late 1970s, China has been experiencing fundamental changes from a basically closed planning economy to a gradually internationally-oriented market economy. The process of such changes accompanies the diversifying of industrial organisational forms, the enhancing of the market mechanism, and the acceleration of the integration of the economy into the world economy. During the process of change, Chinese enterprises at any particular time tried to establish and expand their networks, so as to gain the benefits of networking.

The two-track system in the economic system transition enabled enterprises to obtain benefit from hedging the two tracks in addition to the normal benefits of networking. Therefore the benefits of networking in the two-track system were larger than in the single-track system, i.e., the matured market economic system. However, for a particular enterprise, the precondition for obtaining such “bigger” benefits is that it has the autonomy as well as the capacity to expand its networks to reach foreign markets. Enterprises faced an awkward condition in their efforts for such expansion. On the one hand, it was difficult for them to realise such networking when the market track was very short but the non-market track was very long. On the other hand, once it was easy to expand their

networking due to the maturing marketisation, the specific benefits of networking stemming from hedging the two tracks were reduced. Therefore, the firms were most active in engaging in international networking when they had sufficient autonomy but the marketisation was not too mature. They were most sensitive to measures introduced in the economic reform when carrying out foreign direct investment. Before that, the marketisation was not mature enough for ordinary enterprises to sustain such motivations for international networking. And after that, enterprises would consider more factors other than hedging the two tracks in their international networking. As a result, the locus of the growth of China's outward direct investment was very closely interrelated with firm-related reforms sometime after the start of the economic reform and the interrelationship became less strong as the marketisation matured.

Chapter 7. Economic Development and Outward FDI

The previous chapter analysed the institutional aspects of the rationale for China's outward FDI, and showed that there is a close relationship between the growth of outward direct investment and economic reform. Such a relationship reflects the intrinsic dynamics of Chinese firms for engaging in networking. Specifically, the emergence and development of China's outward direct investment from the late 1970s reflect a change in firms' behaviour in networking as China began to be transformed from a centrally planned economy towards a market economy. The limited arranged networking in the previous planning system was replaced by the semi-autonomous networking during the transition. Due to the co-existence of the two tracks during the transition, engaging in outbound direct investment enabled relevant firms not only to obtain normal international networking benefits but also to exploit the existence of the two tracks. As a result, the growth of outward FDI was very rapid when the benefits from exploiting the two tracks were plentiful and returned to a normal speed when such benefits were reduced due to the maturing of marketisation.

The purpose of this chapter is to analyse the main aims of Chinese firms to use international networking via FDI. Section 1 analyses the opportunities provided by the development of the economy for the growth of firms. Section 2 analyses the major constraints for Chinese firms to exploit the opportunities. Section 3 analyses the Chinese firms' exploitation of opportunities by tackling the constraints via outward FDI.

1. Chinese Firms in the Economic Development Phase

The Chinese economy is a large developing economy with a comprehensive complex industrial and economic system. While some sectors or parts are advancing rapidly in catching up and some are lagging behind, the economy as a whole is now in the process of industrialisation: secondary and tertiary industries are growing at an above average rate while the share of the primary sector is decreasing proportionally. It is worth noting that the pace of industrialisation is quite fast and economic structure upgrading, especially in more developed regions, is remarkable. Rapid urbanisation in coastal areas and economic belts along the Yangtze River and major railway routes signifies such changes. Huge

foreign investment inflow and fast expansion of the non-state sector are two of the major driving forces for the development. In addition, worldwide technological advancement and the spreading of the knowledge economy are helping the process.

1.1. Size and growth potential of the economy

China is currently the world's sixth largest economy and the biggest developing economy by GDP. In 2001, it realised a GDP of US$1,159 billion, behind major developed countries (i.e., the United States, Japan, Germany, the United Kingdom and France), but larger than Italy and much larger than the other developed countries (Table 20). Within the developing country group, China's GDP in 2001 was respectively 1.87 and 2.31 times that of Mexico and Brazil, the world second and third largest developing economies by GDP.

Table 20 Gross domestic product of selected countries (US$ billion)

	1980	2001		1980	2001
China	201.69	1159.03	Spain	213.31	581.82
US	2709.00	10065.27	Russia	...	310.00
Japan	1059.25	4141.43	India	186.39	477.34
Germany	...	1846.07	Indonesia	78.01	145.31
UK	537.38	1424.09	Thailand	32.35	114.68
France	664.60	1309.81	South Korea	62.54	422.17
Italy	449.91	1088.75	Mexico	223.51	617.82
Canada	266.00	694.48	Brazil	235.03	502.51
Australia	160.11	368.73	Argentina	76.96	268.67

Source: World Bank. *World Development Indicators 2000, 2003*. Washington D.C.: World Bank.

China is the world's largest producer of many agricultural and industrial products (Table 21). Its output of cereals, meat, cotton lint, groundnuts in shell, and rapeseeds accounted for 21 to 38.2 per cent of the world's total output. It also produces the lion's share of several industrial products in the world, and for some industrial products, its output is much larger than that of the second largest country. For example, in 1999 China produced 536 million tons of cement, nearly 5.7 times that of the United States, the second largest cement producer in the same year. China also produced 36.37 million sets of television, nearly two times that of South Korea and 3.18 times of the Unites States, the second and third largest television producers in the world. This suggests that China is not only a big agricultural country, but also becoming a big industrial country.

Table 21 Output of major agricultural and industrial products (1999)

Product	China	World	China/World (%)
Cereals (million tons)	453.04	2064.18	21.9
Rapeseeds (million tons)	10.13	42.53	23.8
Cotton lint (million tons)	3.83	18.24	21.0
Groundnuts in shell (million tons)	12.64	33.07	38.2
Meat (million tons)	59.49	225.94	26.3
Fruit (million tons)	62.38	444.65	14.0
Fishery (million tons)	36.02	122.14	29.5
Crude steel (million tons)	115.59	727.55	15.9
Cement (million tons)	536.00	1507.60	35.6
Coal (million tons)	1250.00	4763.55	26.2
Fertiliser (million tons)	28.21	149.96	18.8
Electricity (billion kwh)	11670.00	137457.00	8.5
TV sets (million sets)	36.37	137.14	26.5

Sources: United Nations FAO database.

Judging from its current industrial output and technological level, the country seems to be in the middle stages of industrialisation. In 2001, China's industry value added reached US$591.11 billion, larger than that of the United Kingdom (US$384.51 billion) and Germany (US$572.29 billion). In the same year, its manufacturing value added was US$405.66 billion, almost as large as South Korea's GDP. The industry and manufacturing sectors' share in GDP was 51 and 35 per cent respectively, higher than that of South Korea (43 and 30 per cent), a newly industrialised country [World Bank, 2003, pp.190-192]. This shows that China is close to newly industrialised countries in the position and structure of its industry. As China has established a comprehensive industrial complex and economic system, it produces a large range of products with multi-level technologies, some of which are advanced ones.

But judging from per capita industrial output and per capita production of major industrial products, China is still in the initial stage of industrialisation. With about one-fifth of the world population, the per capita figures of China are very small. In 2001, per capita GNI of China was US$890, only about 2.60 per cent of that of the United States, 2.50 per cent of Japan, 9.40 per cent of South Korea, 26.73 per cent of that in Malaysia, and 17.38 per cent

of the world level[30] [World Bank, 2003, pp.14-16]. In fact, as labour productivity is higher and increases more rapidly in industry, and hence people in developing countries would flock to cities seeking employment in industries [Riedel, 1988, pp.15-16], a developing country with low per capita income must have a large proportion of people outside the industrial sector. This is just the case currently in China.

In the process of modernisation, a developing country has to experience industrialisation and sufficient expansion of the services sector. Industrialisation is essential for economic growth in most countries [Riedel, 1988, p.6]. If it can be said that the share of industry in GDP shows the progress that a developing country has made towards the completion of industrialisation, the share of the services sector in GDP demonstrates its distance from developed countries. With economic development, China's agriculture's share in GDP reduced from 30 per cent in 1980 to 15 per cent in 2001 and the services' share increased from 21 per cent to 34 per cent (Table 22). However, compared with newly industrialised economies, there still is a long distance. For example, the share of services in GDP 15 years before, i.e., 1983, in Singapore, Taiwan, South Korea and Malaysia was already 62, 47, 47 and 44 per cent, respectively [World Bank figure, quoted by Riedel, 1988, p.8], much higher than that of China in 1998. Therefore, there is a huge scope for the development of industries and services in China, as that was for these newly industrialised countries decades ago.

Since the start of the economic reform in the late 1970s, China's economy has been booming and becoming one of the fastest growing economies in the world. China's GDP grew at an average annual rate of 10.3 per cent between 1980-90 and 10 per cent between 1990-2001 (Table 22), 7 percentage points and 7.3 percentage points higher than the world average annual growth rate in the two periods respectively [World Bank, 2003, p.186-188]. In 1980, China's GDP was about US$202 billion, smaller than that of Canada (US$266

[30] China has devaluated its currency many times since the onset of the reform. The exchange rate of RMB to US dollars decreased from 1.7:1 in 1978 to 8.7:1 in 1994. Some economists specialising in comparative international economics believe that the actual size of China's GDP and GNP calculated on the basis of the official exchange rate has greatly been underestimated. Therefore they have attempted new estimates of China's national income, including those obtained by adopting the method of Purchasing Power Parity (PPP) [Lin *et al*., 1996, p.10]. The International Monetary Fund (IMF) and the World Bank supply such figures. Even so, the PPP GNP per capita of China in 1998 was just US$3051, only 10.43 per cent of that of the United States, 12.93 per cent of Japan, and 22.96 per cent of South Korea, and smaller than that of the Philippines (US$3725) [World Bank, 2000, pp.10-11].

billion), Brazil (US$235 billion), Mexico (US$224 billion), and Spain (US$213 billion). Two decades later in 2001, China had overtaken these countries (Table 20). Many analysts have projected that, if its current trends in economic development continue, China could overtake Japan and the United States to become the world's largest economy some time between 2020 and 2030.[31]

It is reasonable to hold that China will continue its catching up process in the coming decades. "Countries in China's situation of relative backwardness and distance from the technological frontier have a capacity for fast growth if they mobilise and allocate physical and human capital effectively, adapt foreign technology to their factor proportions and utilise the opportunities for specialisation which come from integration into the world economy. China demonstrated a capacity to do most of these things in the reform period, and there is no good reason to suppose that this capacity will evaporate" [Maddison, 1998, p.95].[32]

Table 22 China's GDP and population (1980-1998)

[31] Here we quote a few projections:

- World Bank's projection: China's GDP will overtake that of the United States before 2020 on the assumption that the average annual growth rate of China's GDP will be 8.4 per cent during 1995-2000 and will gradually reduce afterwards to 5 per cent in 2020 [World Bank, 1997a].

- Asian Development Bank's three projections. Optimistically, China's GDP will grow at an average annual rate of 6.6 per cent in the 1995-2025 period if it continues the economic reform and has a relatively high capital formation and productivity increase. Pessimistically, the average annual growth rate of China's GDP will be 4.4 per cent in 1995-2025 if the reform discontinues and economic growth is hindered by structural bottle neck problems. The basic projection is China's GDP will grow at an average annual rate of 6.05 per cent from 1995 to 2025 if the natural and political situations in 1995 can remain unchanged in the whole period [Asian Development Bank, 1997].

- OECD's projection: China's PPP GDP will overtake that of the United States in 2015 on the assumption that the average annual growth rate of GDP in the 1995-2010 period will be 5.5 per cent [Maddison, 1998].

[32] Madisson holds that China is likely to be able to grow faster than most other Asian countries in the future for these reasons: a) its level of real income/productivity is quite low; b) it has sustained a high growth trajectory for two decades and has proved it is capable of maintaining high rates of investment in physical and human capital; and c) it has been less exposed to the shocks which other dynamic Asian countries sustained in 1997 [Madisson, 1998, p.98].

	Amount		Average annual growth rate (%)	
	1980	2001	1980-90	1990-2001
GDP (US$billion)	**201.69**	**1159.03**	**10.3**	**10.00**
Agriculture value added	60.51	173.85	5.90	4.00
(% of GDP)	(30)	(15)		
Industry value added	98.83	591.11	11.10	13.10
(% of GDP)	(49)	(51)		
Manufacturing value added	82.69	405.66	10.80	12.10
(% of GDP)	(41)	(35)		
Services value added	42.35	394.07	13.50	8.90
(% of GDP)	(21)	(34)		
Population (billion)	**0.99**	**1.27**	**1.48**	**1.20**

Data source: GDP from World Bank [2000]. *World Development Indicators 2000*. Washington D.C.: World Bank.
Population from NBS [2000]: *China Statistical Yearbook 2000*. Beijing: China Statistical Press.
Annual progressive growth rate calculated by the author.

1.2. Growth of Chinese firms

A rapidly growing economy would provide more opportunities for the growth of firms, including more chances for the emergence of new firms as well as for the expansion of existing firms. The chances for growth of new firms are especially good under the following conditions: (1) in industries which have not been dominated by large firms; and (2) the opportunity for the growth of firms provided by the economy is too large for the existing firms, especially the large ones, to capitalise on fully, therefore there are rooms for small firms to expand and new firms to emerge.

The Chinese economy was in just such situation in the last two decades – the 1980s and 1990s, especially in the early days of the reform. Before the economic reform, the Chinese economy was not only backward as a whole but also ill-structured: the heavy industry weighed too "heavy" in the economy and the light industry too "light". As a result, consumer goods were severely in short supply and there was a major lack of variety. Most durable consumer goods were either not available or produced on a very small scale. Examples include motorcycles, automobiles, washing machines, refrigerators, freezers, colour television sets, video recorders, hi-fi, tape recorders, air conditioners, etc. So the economy of those days was characterised as a shortage economy. The start of the economic reform exposed the big gap between China and the outside world in the manufacturing of many consumer goods as well as the associated huge profit margin for such manufacturing. Driven by the prospect of huge profit and fuelled by the soft budget constraints due to the

lags in financial reform, firms engaging in manufacturing and supply of the short supply goods mushroomed all over the country after the start of the economic reform, and the investment rage had lasted for at least 15 years. These firms were basically set up with advanced technology and equipment imported from abroad. The boom has brought about several changes. First, along with the existing firms, many large new firms involving the production of the durable goods and other short supply goods have emerged. Second, it had put an end to the shortage economy in about 1996 and competition has been intensifying ever since. Third, due to the lags in the financial reform and local (basically provincial) opportunism (local government supports the development of local economy by various means), many of these firms operated below capacity for quite some time.

Penrose [1995, p.248] argues that "if an economy (or industry) is growing at a constant rate, the larger firms must be growing at a faster rate." This phenomenon of industrial concentration also accompanies the rapid growth of the Chinese economy. During the 1980-1997 period, the number of China's large and medium sized industrial enterprises increased from 4,700 to 24,000 [ITD, 1998, p.18], at an annual progressive growth rate of 10.07 per cent, higher than the 9.05 per cent annual progressive growth rate for GDP between 1980 and 1998.[33] As a result, the proportion of large and medium-sized enterprises has been increasing. In 1980, China had 377,700 firms, of which 4,700 were large and medium sized ones, accounting for 1.4 per cent. In 1997, China had 534,400 enterprises, of which 24,000 were large and medium-sized enterprises, accounting for 4.5 per cent (Table 23). The share of large and medium sized firms in China trebled in less than two decades. In the sense that firms are collections of resources [Penrose, 1995], larger average size of enterprises implies that the capability of Chinese firms has been improved.

[33] Due the unavailability of data on the number of large and medium sized industrial enterprises in 1998, there is a one year difference between the periods for these two growth rates in comparison. However, this will not affect the validity of the comparison as the time span is very long (18 years).

Table 23 Number of industrial enterprises in China (thousand)

	a. Number of enterprises	b. Number of large and medium sized enterprises	b/a (%)
1980	377.3	4.7	1.4
1985	463.2	7.9	1.7
1990	504.4	13.5	2.7
1995	592.1	23.0	3.9
1997	534.4	24.0	4.5

Source: ITD [1998]. *China Industrial Economic Statistical Yearbook 1998.* Beijing: China Statistics Press, pp.18-19.

Accompanying the faster growth of large- and medium-sized enterprises, industrial conglomerates are developing rapidly in China. The changing pattern of market competition is the major environmental force for the development of industrial conglomerates, though the specific motives for different industrial conglomerates may be different. In the process of the transition of the Chinese economy from a shortage economy to a buyers' market economy, those which have gained in capability want to expand their market share and market power as quickly as possible, so as to explore the market opportunities further ahead of their emerging followers; and those who are losing their competitiveness want to be merged with stronger ones for survival and development. Many industrial conglomerates are therefore formed between these two kinds of enterprises with the stronger ones as the core. Such formation enables the core enterprises to expand their business quickly and often economically. Either as centralised command can smooth the previous external relationships among these firms or as the existing facilities of the weak enterprises can function properly once the needed resources, normally the intangible assets and financial resources are supplied by the core enterprise. There are also industrial conglomerates which are formed between competitive enterprises rather than between strong and weak enterprises. Such formation mainly aims at enhancing their competitiveness in relation to foreign-based multinational enterprises by pooling the resources of the involved enterprises. A meaningful feature of the formation of industrial conglomerates is that many of them are cross-regionally organised, which has broken through firms' localised behaviour, a common phenomenon attributable to the old economic system.

The development of industrial conglomerates in China is also supported by the government. With the aim of improving firms' international competitiveness, the Chinese government

has adopted specific measures to encourage the development of industrial conglomerates. On 14th December 1991, the State Council issued the [1991] No. 71 instrument, which approved the request by the State Planning Commission, State System Reform Commission and the Production Office of the State Council for an experiment of selected large sized conglomerates. This signalled the government's efforts in pushing the development of China's industrial giants. Besides specified incentives, conversions of the selected conglomerates into joint stock companies were the main focus in the instrument. Industrial conglomerates were given preferential treatment for listing the stocks of their core firms in the Shanghai and Shenzhen stock exchanges, which greatly facilitated their capital raising. On 16 May 1997, the State Council further approved the proposals of the State Planning Commission, the State Economic and Trade Commission and the State System Reform Commission about deepening the experiment of large sized conglomerates. The new instrument gave experimental conglomerates further autonomy in investment, international financing (including listing in foreign exchanges), foreign trade, and employment. The state also subsidised innovation activities in these experimental industrial conglomerates. For example, Baosteel, Qingdao Hier, Founder, Changhong, North China Pharmaceutical Group Corporation (NCPC) and Jiangnan Heavy Industry Co. are now entitled to obtain at least RMB 20 million every year as an innovation subsidy [IIE, 1998, p.120].

The growing large enterprises and industrial conglomerates in China form the core competitiveness of the economy. While the average profitability of industrial firms is declining, large sized firms are much better off. For example, in 1997, the rate of return to capital for large sized enterprises was 8.51 per cent, much higher than the 4.63 per cent for medium sized firms and 5.71 per cent for small firms [IDT, 1998, p.82]. According to the central bank's report on its successive monitoring of 1,254 large sized enterprises, the sales and profits of these firms grew simultaneously and earnings were concentrated towards some super big enterprises and industrial conglomerates. At the end of November 1997, 23 firms of the 1,254 enterprises realised sales over RMB10 billion per firm. These 2 per cent of firms realised RMB 480 billion of sales and over RMB40 billion of profit, and accounted for 31.5 per cent of sales and 56 per cent of profit respectively of the 1254 firms [IIE, 1998, p.115; 1999, p.438].

2. Major Constraints for the Growth of Firms

Although economic reform and development in China have provided firms with opportunities for growth, and most of them have exploited the opportunities, a survey by the World Bank shows that there are many factors which prevent firms from raising productivity and growth. Firms are commonly confronted with shortages of raw materials, technicians, skilled workers, and capable managers. In addition, while shortage of capital and technology is another unfavourable factor for non-state owned enterprises, the problem of outdated equipment is serious in state owned enterprises (Table 24). As outdated equipment will certainly result in outdated technology in production process, in this respect both state owned enterprises and non-state owned enterprises face the same problem: shortage of technology.

Table 24 Impediments for raising productivity (percentage of sample)

	SOEs			Urban cooperatives			Township & village enterprises		
Impediment*	I	II	III	I	II	III	I	II	III
Shortage of raw materials	14.6	5.5	4.3	17.2	3.7	5.8	14.3	7.4	5.3
Shortage of electricity and other energy inputs	5.7	6.3	4.4	3.0	5.4	4.4	7.7	11.2	10.6
Shortage of technician and skilled workers	9.7	14.7	10.5	16.8	22.1	8.5	12.2	13.3	20.1
Shortage of good managers	10.7	14.1	12.2	17.8	21.1	10.5	17.5	16.1	9.5
Lack of effective incentives	7.0	6.7	9.0	4.4	5.4	7.8	0.7	0.4	1.4
Poor market conditions	15.7	8.0	11.2	14.1	9.4	13.6	13.3	9.5	9.9
Shortage of capital or technology	8.5	12.6	10.7	12.5	14.1	16.6	21.3	23.9	12.7
Too much production under mandatory plan	1.8	2.4	1.1	0	1.0	0.3	1.4	2.5	2.5
No authority to set prices and production	3.1	5.0	3.6	1.0	1.7	2.0	2.1	4.9	5.3
Excessive profit handed over to the state	5.5	6.2	6.8	3.7	4.4	4.4	0.3	0.4	2.8
Little authority over personnel	3.3	4.0	3.9	3.0	2.3	2.4	6.6	10.2	19.0
Outdated equipment	14.4	14.5	21.3	6.1	9.1	22.4	2.4	...**	0.7

Note: * I - most important; II - Second most important; III - Third most important. **. Negligible

Source: World Bank [1992]. *Enterprise Survey*. China and Mongolia Department and the Socialist Economies Unit. Washington, D.C.

All these disadvantages can be attributed to two factors, the lack of certain critical resources, including created assets, and intensified domestic competition.

2.1. Natural resources shortage

China has a large land area, and so far 162 kinds of minerals have been discovered and the potential value of proven reserves amounts to around 10 trillion *yuan* (calculated on the basis of the potential value of 45 minerals), placing China third in the world ranking [Guo, 1996]. However, there are some serious problems relating to China's natural resource endowment. Firstly, while the total amount of natural resources is huge, per capita natural resources are very low. Though China's total resource base accounts for 5-10 per cent of the world's total for each of many types of natural resources, with one fifth of the world population, China's per capita resource base is only 20-50 per cent of the world's per capita average. For example, China's per capita output of mineral resources is only one-half of the world's average (of this, petroleum is around one-fifth, phosphorus four-fifths, and iron two-fifths). Per capita forest resource is one-sixth and per capita forest reserve one-eighth. Per capita cultivated land is one-third and per capita water resource one-fourth [Guo, 1996].

Secondly, most natural resources are poor in quality. Over 75 per cent of China's land is on hills or mountains over 500m high. Half of its total land space is arid or semi-arid. Two-thirds of cultivated fields produce low or medium yields. Irrigated land only accounted for 37.7 per cent of cropland in the 1995-1997 period [World Bank, 2000, p.118]. Similarly, China's poor quality mines outnumber high quality ones. For example, 95 per cent of iron mines are of poor quality, containing less than 50 per cent iron. A mere 2 per cent of proven iron ore reserves can be melted directly; and the average national grade of iron ore is 31.78 per cent, which means that 3.8 to 4 tons of ore have to be mined to melt each ton of iron. In contrary, in many other countries the grade of iron ore is over 50 per cent and 1.5 to 1.6 tons of ore can produce a ton of iron. The grades of Chinese manganese, lead, and zinc are also very low.

Thirdly, the geographical distribution of natural resources mismatches the demand or complementary factors. There is a serious disparity between the distribution of cultivated land and water resources. While 63.9 per cent of China's total cultivated land lies on the plains north of the Yangtze River, only 17.2 per cent of the country's total water resources and 9.5 per cent of the country's annual precipitation are there in the region. On the contrary, with 36.1 per cent of China's total cultivated land, south of the Yangtze River possesses as high as 82.8 per cent and 90.5 per cent of the country's total water resources

and average annual precipitation respectively. Similarly, north of the Yangtze River lie 75.2 and 84.2 per cent of the country's coal and oil deposits, respectively, but south of the Yangtze River energy reserves are in severely short supply. In the meantime, there also exists regional disparity between the distribution of mine resources and industrial development. Geographically, the ratio between the potential value of the proven deposits of 45 minerals in the eastern, central and western regions is 1:2:2, but the ratio of gross industrial output between the three regions is 1:0.3:0.2 and that of the mine output is 1:0.47:0.28. More particularly, the lower reaches of the Yangtze, despite the lack of iron resources, currently shoulder one-third of the nation's steel production. The five provinces of Yunnan, Guizhou, Hubei, Sichuan, and Henan possess 80 per cent of the nation's phosphorus mines while the vast northern and eastern regions are short of such resource.

As to individual resources, research by nearly 300 hundred Chinese specialists indicates that 45 major minerals are crucial for the development of the Chinese economy but many of them are or will be in serious short supply [Guo, 1996]. They classified these resources into four groups according to the degree of security up to the end of last century (Table 25). Except for the first group in which China has abundant reserves, China faced shortages in supply and the shortage was especially severe for the third and fourth group of resources. The situation will become worse as economic development proceeds. Guo's projection shows that, from 2000 to 2020, one-half of the 45 minerals will not be sufficient to meet domestic needs. Of the 15 major staple minerals used in large amounts and on which economic development depends (coal, oil, natural gas, uranium, iron, bauxite, copper, lead, zinc, gold, sulphur, phosphorus, sylvite, sodium, and cement raw materials), 7 (oil, natural gas, gold, copper, sylvite, iron, and coal) have either insufficient deposits or shortfalls. The shortages in the supply of these resources are as follows: oil, 10 billion tons; natural gas, 1.5 trillion M^3; proven coal reserves, 61 billion tons; proven gold deposit, 3000 tons; copper, 250 to 300 thousand tons annually; and sylvite, 80 per cent of the demand. At the same time, rich iron ores need to be imported in large quantities. In 2020, China will become a net import nation in resource-type products and raw materials [Guo, 1996, p.15].

Table 25 Security of 45 Major Mineral Reserves until 2000

Type	Mineral
1. Abundant reserves: sufficient for domestic needs and some export	Coal, beryllium, tin, molybdenum, antinomy, rare earth elements, graphite, fluorite, magnesite, barite, talcum, cement limestone, siliceous raw material.
2. Nearly sufficient reserves: can meet domestic needs, but with some problems	Iron, manganese, aluminium, zinc, lead, nickel, phosphorus, sulphur, uranium, asbestos.
3. Insufficient reserves: unable to meet the needs of domestic economic development	Petroleum, natural gas, copper, gold, silver.
4. Sever shortage reserves: too small to meet the domestic needs	Chromium, platinum, cobalt, sylvite, diamonds, high quality kaolin, boron, gem.

Data source: Summarised from Guo [1996]. Natural Resources and Economic Development in China. *China Economic Studies*. Vol. 29. pp.5-21; and *China Map Publishing House's data from website*: www.enviroinfo.or.cn/research/new_technologies.

2.2. Technology gap

With regard to technology, China is facing a challenging task in economic development: to close its technological gap with developed countries. Dynamically, this task includes two challenges, to bridge the gap with advanced countries in the existing technologies and to speed up the catch-up in the ability of innovation and invention. Without sufficient improvement in the ability of innovation and invention, the gap with advanced countries in the existing technologies would be hampered as these two aspects are intertwined. If so, Chinese firms will follow their counterparts of advanced countries passively at an ever-existing distance. In the context of economic transition and development, China must meet these challenges while reforming its technology system.

China's scientific and technological system has been a centralised innovation system, dominated by three types of institutions: (1) the Chinese Academy of Science Institute, which was traditionally responsible for carrying out basic research and supporting major mission-oriented projects; (2) R&D institutions attached to universities, which have been responsible for a combination of research and education; and (3) R&D institutions within the industrial sector, which are responsible for solving problems within specific sectors. The role of government was to co-ordinate these activities [Turpin and Liu, 2000, p.193].

These three groups of institutions had 1.67 million R&D employees (FTE[34]) in 1998, ranking number 1 in the world, but less than 30 per cent of the R&D workers were employed by firms. In comparison, this ratio was 79 per cent in the United States, 61 per cent in Japan, 66 per cent in Singapore [CSIESR, 1999, p.51].

The centralised innovation system enabled many breakthroughs in the 1960s and 1970s in some cases where major government projects were concerned, e.g., two bomb projects and one satellite project. However, it was neither efficient nor innovative as a means of linking scientific research and activities to commercial activities. "In terms of technological progress, despite the fact that China had been able to generate major innovations in short intervals after the industrialised world (for example the first IC and the first semiconductor-based computer in 1965, both were introduced six years later than in the USA and one year later than Japan), the application was basically confined to small-batch rather than commercialised production" [Lo, 1997, p.155]. As a matter of fact, for commercial production and upgrading technology, China's enterprises relied heavily on foreign imports. More seriously, once a technology was imported, there were few incentives in place to stimulate innovation or adaptation around the technology. "The Liberation Truck, for example, designed and manufactured on former Soviet technologies, remained virtually unchanged for forty years" [Turpin and Liu, 2000, p.194]. As a result, technology in enterprises was caught in a vicious circle of import → obsolete → re-import → re-obsolete.

The features of the former centralised innovation system are characterised by Xu and Fang [quoted by Turpin and Liu, 2000, p.194] as follows:

- a self-contained system located within a rigid vertical structure;
- R&D institutions responsible to a higher authority rather than customers;
- weak links between R&D, education and production; and
- excessive management leading to lack of incentives for innovation and production.

[34] Full time work equivalent.

Since the late 1970s, various measures have been adopted by the state to reform the science and technology system and for this purpose policy initiatives have been introduced progressively to remove the existing rigidity (see Appendix 1). The focus of the reform was to introduce market mechanisms into the organisation of science and technology activity, to make R&D institutions more responsive to applied, downstream problems, and to promote active and formally organised R&D activities within manufacturing enterprises. The promulgation of the *Decision on Reforming the Science and Technology System* by the Central Committee of the Communist Party in March 1985 signalled the formal start of a comprehensive reform of the science and technology system, which was carried out simultaneously within research institutions and along government regulation lines. In 1988, the State Council promulgated its *Decision on Several Issues Regarding Deepening the Reform of Science and Technology System*. The main contents were: encouraging research institutions to engage in economic activities, including establishing business entities incorporating R&D and production; establishing high and new tech industry development zones in areas where research and education facilities concentrate; pushing technology changes in enterprises and countryside; supporting the development of non-state owned R&D institutions; and actively pursuing various forms of contract operations in R&D institutions. In September 1996, the State Council further issued the *Decision on Deepening the Reform of Science and Technology System during the Ninth Five-Year Period*, setting targets for reform: to form mechanisms which integrate research, development, production and markets; to establish two systems, i.e., the technology development system with enterprises as the main body, and the scientific research and technological service system with science research institutes and universities as the main body.

In the meantime, the government carried out a series of science and technology development programmes with quite specific objectives, including:

- *The 863 High-tech Research and Development Programme*. It started in 1986 with the target of tracing world frontiers in selected applied research areas, including biotechnology, space technology, information, laser technology, automation, energy and advanced materials. So far considerable progress has been made, examples including the integrated circuit and hybrid rice.

- *The Torch Programme*. It was established in 1988 with the aim of commercialising discoveries from institutes and universities and to create new high technology enterprises. It was a key initiative in providing technological links for the establishment of the 53 national-class New High Technology Zones across China. By the end of 1997 these zones inhabited 13,681 new high tech enterprises and realised a total output of 338.7 billion yuan [CSIESR, 1999, p.56].

- *The Spark Programme*. It was set up in 1986 with the aim of diffusing technology appropriate for township and village enterprises (TVEs) and farming. The approach of technology diffusion in this programme is to operate directory and exemplary technology development projects.

With the above measures, positive changes have taken place in the science and technology system. Both funding and staffing in R&D activities in firms have been increasing. For example, total funds for R&D in large- and medium-sized enterprises expanded from 9.48 billion *yuan* in 1987 to 49.98 billion *yuan* in 1997, increasing at an annual average progressive growth rate of 7.9 per cent [NBS, 2000, pp.681-688]. This increase is mainly due to a large increase in firms' self raised funds for research and development activities. As a result, firms began to take self-innovation as another important source of technology. The ratio between expenditures on importing technology and self-innovation reduced from 2.25 in 1995 to 1.24 in 1998 [IIE, 1999, p.67]. All these have helped reduce the gap between China and advanced countries in technology. According to the International Management Development, the ranking of China's international technological competitiveness moved up from the 23rd in 1994 to the 13th in 1998 [CSIESR, 1999, p.13].

Nevertheless, China still has a long way to go in technological catch-up. The main body of innovation as well as the relevant mechanisms for the performance of firm centred innovation remain to be established. Innovation is "the process by which firms master and implement the design and production of goods and services that are new to them, irrespective of whether or not they are new to their competitors – domestic or foreign. Most of the time, and in most industries, innovation is based on the continuous and incremental upgrading of existing technologies or on a new combination of them" [Ernst *et al.*, 1998, p.13]. Therefore in market economies, the main body of innovation is enterprises. However, due to the inertia of the traditional economic and technological

system, Chinese firms, especially large and medium-sized state owned enterprises, still lack initiatives in technological improvement and innovation. Firms are still under-equipped in human and financial sources and facilities in R&D. Total expenditure on R&D as a percentage of DP in China is very low. The index for the sufficiency of financial resources in enterprises in China was 2.43, only about 39 per cent that of the United State (6.17), 46 per cent of Japan (5.27), 43 per cent of Singapore, and less than that of South Korea (Table 26).

The shortage of staff and funding for R&D activity in enterprises is to a certain extent due to the lag of firm-related reform: enterprises have not been granted sufficient autonomy in operation. This lag not only negatively affects the incentives of firms for innovation, but also hampers the accumulation of firms' financial sources for R&D, which in turn handicaps the R&D activities, including improving R&D facilities and recruiting competent R&D personnel. The innovation survey by the former State Science and Technology Commission and the State Statistical Bureau mentioned above reveals the impact of the degree of autonomy on innovation. According to the results of the survey, compared with non-SOEs, SOEs are less likely to collaborate with outside institutions. In addition, the "science-based" enterprises are very active in links with outsiders for the purpose of recruiting expert staff, but state owned enterprises are far less likely to have links for such purpose [Turpin and Liu, 2000].

Firms' sizes also affect their ability in innovation. As noted in Section 2.1 of Chapter 4, the average size of Chinese firms is small. For example, in 1996, General Motors (US) realised sales of US$5.26 billion, which was equal to the sum of that of the 342 largest Chinese firms, or 32 times that of Daqing Oil Company, the largest firm in China by sales. Small size means that most Chinese firms only have very narrow product lines; some just manufacture a few variety of products with very limited levels of technologies. Therefore many firms only have a very narrow foundation on which to carry out innovation.

Table 26 Technological competitiveness of selected countries

	China			US	Japan	Singapore	South Korea	India	Russia
	Ranking (1996)	Ranking (1998)	Value (1998)						
Total expenditure on R&D US$100M	19	17	39.33	1846.65	1531.81	12.71	135.22	21.88	37.60
Total expenditure on R&D as % of GDP	34	34	0.482	2.418	2.982	1.370	2.790	0.770	0.860
Business expenditure on R&D US100$M	17	15	24.93	1342	998.93	8.04	86.52	3.78	6.01
Total R&D personnel nationwide (1000 FTE)	2	1	1667.7	962.7	948.1	11.1	152.2	114.4	990.7
Total R&D personnel in business enterprise (1000 FTE)	4	4	477.0	764.5	573.7	7.4	96.9	37.3	671.1
Qualified engineers on the market	44	36	4.59	5.33	6.38	5.12	5.68	8.00	6.32
Technological cooperation between companies	35	19	4.73	5.65	5.99	5.60	3.17	3.72	4.43
Research cooperation between companies and universities	26	17	4.67	6.21	4.69	5.72	3.90	2.65	4.57
Sufficiency of financial resources in enterprises	45	34	2.43	6.17	5.27	5.60	2.88	2.40	1.83
Legal environment facilitating development and application of technology	-	20	5.94	5.81	5.96	7.32	4.98	5.15	5.38
Threat of relocation of R&D facilities to the future of economy	-	5	6.16	7.27	5.57	5.60	5.10	6.20	5.46
Support of basic research to long term economic and technological development	26	10	6.02	7.13	6.37	6.72	4.38	3.56	4.17
Science and education	39	25	4.96	4.4	6.19	8.16	4.26	7.07	5.71
Science & technology arouses the interest of youth	-	20	5.65	5.17	5.42	7.52	5.45	6.83	4.81
Patent granted to residents (1994-95)	11	13	1595	55903	83781	15	6175	432	18459
Average growth rate of patents granted to residents (1991-95)	7	19	3.94	2.15	32.83	-	26.68	3.76	-
Securing patents abroad	37	29	213	109146	80905	96	2434	78	403
Number of patents in force (per 100000 inhabitants)	-	36	2	422	544	502	141	1	51
Protection of intellectual property	32	33	4.763	7.438	5.832	7.440	3.952	3.717	2.639

Source: IMD, *The World Competitiveness Yearbook*, 1996, 1998.

In addition, current education in China is unable to keep up with economic development and technology changes. According to IMD [1998], China's position in this respect was very low, ranked 40th among the 46 surveyed countries. Higher education enrolment ranked 44th, public expenditure on education 45th, and human development index 44th, thus placing China as one of the least competitive countries. In addition, as to whether the education structures can meet the needs of a competitive economy, China got 4.29 (ranking 27th), though higher than some developed countries and newly industrialised countries,

e.g., Japan (3.98), the United Kingdom (3.83), and South Korea (3.79), but much below the United States (5.08), Canada (5.33), Singapore (7.09), and below some developing and transitional countries as well, e.g., India (4.57) and Russia (4.72). Obviously, an uncompetitive education will certainly weaken the basis of supporting self-generated comprehensive technology changes.

Due to the various reasons analysed above, though enterprises are active in innovation, their innovation activities are basically shallow. The innovation survey by the then State Science and Technology Commission and the State Statistical Bureau we mentioned above also shows, that though 92.9 per cent of the surveyed enterprises had undertaken innovation activities, only 66.7 per cent of the surveyed enterprises had new products marketed. In addition, most of the innovation items did not have international competitiveness, and the export sales of new products accounted only for 3.3 per cent of the total export [IIE, 1999, p.68].

2.3. Intensified domestic competition and increasing dependence on exports

Another constraint facing many Chinese firms is that domestic competition is intensifying and dependence on exports is increasing. The intensified competition can be seen from the decline of profitability. The rate of return to capital (equals tax plus profit as a percentage of net (of depreciation) value of fixed assets plus working capital) for industrial enterprises dropped from about 20.5 per cent in 1986 to 6.92 per cent for all industrial enterprises in 1997. The situation was even a bit worse for the state owned enterprises (Figure 15).

The main reason for the intensified domestic competition is the changing pattern of the economy. Two decades of economic reform and development have put an end to the shortage economy. Unlike in Russia, other former Soviet republics and East Europe, the reform in China led to industrial competition, not monopoly [Jefferson and Singh, 1999, p.69]. The major forces for the upsurging of competition are the boom in the rural industry (notably the township enterprises), the huge number of foreign capital invested firms, the conversion of defence industries into civilian industries, and China's long standing policy of building complete sets of state owned industries in most provinces. Among them, the greatest impetus to competition comes from the growth of township and village enterprises, which accounted for about 25 per cent of GDP, 45 per cent of value added of industry and

38 per cent of export revenue for the two decades since the start of the reform [IIE, 1999, p.367].

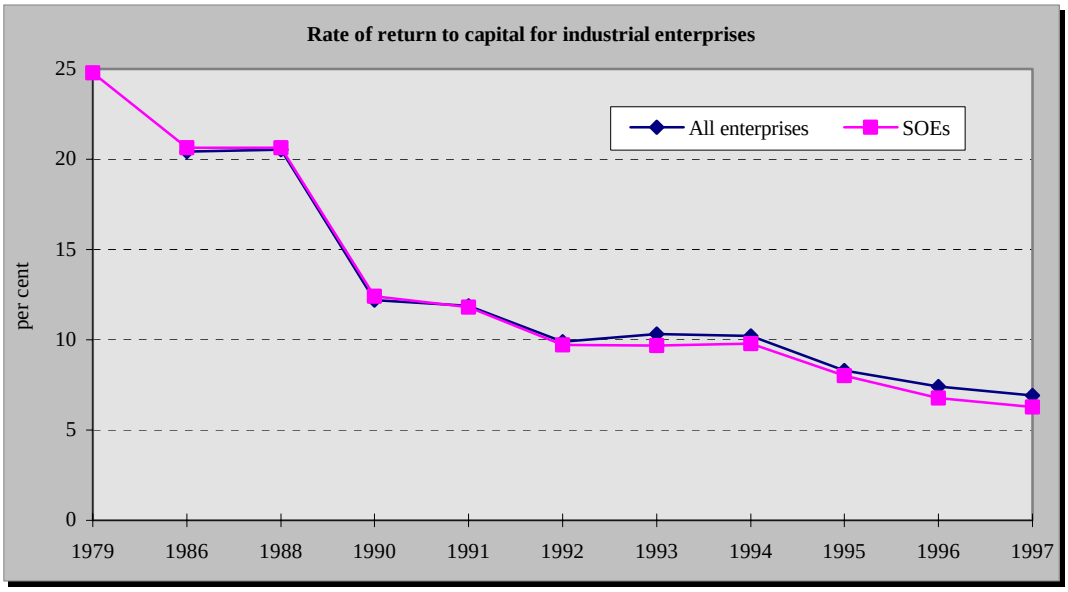

Figure 15

Data source: NBS, *China Statistical Yearbook, 1980-1998*. Beijing: China Statistics Press.

The growth of imports of foreign goods also contributes much to the intensified competition. During the 1980-1998 period, the annual progressive growth rate of imports was 11.42 per cent, 2.37 percentage points higher than that of GDP. As a result, the ratio of imports to GDP increased from 7 per cent in 1980 to 15 per cent in 1998. In addition, Chinese firms know that China is a high tariff country and it has been negotiating with the World Trade Organisation (including GATT) for entering this international institution since the mid 1980s. Once it becomes the member of the World Trade Organisation and therefore the trade barriers are reduced, the competition from foreign firms via import and direct investment will inevitably increase further.[35]

In the meantime, exports from Chinese firms have also expanded dramatically. Between 1980 and 1998, China grew from the world's 26th largest exporter to 9th, and exports grew from 6 per cent to 19 per cent of GDP [NBS, 2000]. Contributions from non-state enterprises, including foreign funded, collective and private enterprises, are especially

[35] The World Trade Organisation admitted China as a member in 2001.

conspicuous in this respect. For example, in the 1985-1992 period, two third of the growth in exports came from the non-state sector. Also the share of exports from township and village enterprises increased fivefold, from 5 to 25 per cent, while the contribution from private enterprises and joint ventures rose from 1 to 20 per cent over this period [NBS, 2000].

As exports expand, the contribution of exports to the growth of GDP increased from 0.7 per cent over the 1979-1988 period to 15.8 per cent in the 1992-1997 period [IIE, pp.114-115]. This implies that the dependence of the economy on the world market has greatly increased. The performance of firms, especially those with export business, becomes vulnerable to fluctuations in export markets. For example, affected by the 1997 East Asian financial crisis, China's exports for the first time in two decades experienced a negative growth in the following year (1998) and low growth afterwards. As a result, economic growth in China slowed down and many firms have experienced difficulties.

3. Outward Direct Investment

The above analysis shows that while the rapid economic development in China has provided firms with opportunities to grow, it has also exposed general constraints for the firms to capitalise on their opportunities. In such a situation, it is an essential task for firms to pursue their growth by tackling these constraints [Andersen and Kheam, 1998]. In the era of globalisation and the knowledge economy, establishing and improving international networks via outward direct investment is an important choice.

3.1. Seeking foreign resources

Resource seeking direct investment is aimed at obtaining important strategic foreign resources, including natural resources and created assets. The importance of such investment is attributable to resource heterogeneity. For economic organisation, resources are not homogeneous rather heterogeneous: business firms have to collect and combine a set of different resources in their operations. The importance of a resource element depends not only on its scarcity, but also on other resources with which it is combined. Therefore, the value of a resource must be evaluated in different combinations and constellations. This is the reason why Penrose claims that individual firms are collections

of heterogeneous resources [Penrose, 1995], and Alchian and Demsetz claim that the very existence of firms could be explained by resource heterogeneity [Alchian and Demsetz, 1972].

It is obvious that the lack of some crucial resources in China has, to a large extent, reduced the relative values of China's other resources, as the value of resources depends on which other resources they are combined with and must be evaluated in different combinations and constellations [Alchian and Demsetz, 1972]. Also the huge growth potential of the national economy and the perceived barriers for economic development, i.e., shortages of natural resources and the technological gap, have raised the pressure for firms in their operation and development as well as opportunities to explore. For the former, firms are stepping in the shadow of uncertainty in and scarcity of resource sourcing, including natural resources and technologies. For the latter, while China as one of the world's most dynamic economies provides firms with huge opportunities for growth, those firms with scarce resources and needy technologies, due to demand and supply relationships, would further gain much in market power and competitiveness. Under such circumstances firms would be motivated to engage in activities associated with tackling the pressures.

Ever since China started to invest abroad, investment in natural resource exploitation has been a major focus. MOFTEC data shows that FDI in natural resource exploitation accounted for about 30 per cent of China's total outward direct investment between 1979 and 1998. Based upon perceived shortages of certain raw materials (e.g. oil, timber, metals and fishery), some Chinese firms have carried out large-scale natural resources exploitation investment. This type of investment is concentrated in Oceania, North America and Latin America. For example, the China International Trust and Investment Corporation (CITIC) spent US$140 million to buy a 10 per cent share in the Portland Aluminium Smelter Company in Australia in 1986 [Bowen, 1993]. Another of its natural resource investment projects in Australia is the wholly owned Metro Meats with an investment of A$103 million. In Canada, CITIC's main investment is a pulp mill. Similarly, Shougang Corporation paid about US$312 million (including the outstanding long-term company debt) to acquire 98 per cent of the stock of Herroperu SA in Peru in 1992 [Bowen, 1993]. The Ministry of Metallurgical Industry of China invested A$120 million to set up a joint venture in a mine in Mt Channer, Australia. In the meantime, local firms also joined the ranks. Tseng and Mak [1996] note that firms from the Pearl River Delta in Guangdong

Province are active in natural resource seeking investment. For example, a cosmetic factory set up production facilities in Thailand because the essential oil produced there was readily accessible. Similarly, a furniture factory set up a subsidiary in Thailand to gain access to the timber produced there. Another overseas enterprise was set up in Alaska to carry out fish processing because of the enormous amount of resources available.

A survey covering 16 large- and medium-sized Chinese firms and 31 of their overseas manufacturing subsidiaries carried out by Hai Yan Zhang and Daniel Van Den Bulcke in 1993 also provides supporting evidence for our argument. As to the relevant two factors, "desire to be near source of supply" and "lack of raw materials in home country", the indices for the total sample was 2.4 and 2.2 respectively (Table 27). Considering the fact that only a limited number of firms has, among others, the financial ability, to carry out natural resource exploitation investment as natural resource exploitation in most cases requires huge capital input, and therefore their weight in index calculation is reduced, these figures imply that the actual motives for natural resource seeking investment are strong.

According to Porter's theory of competitive development, "despite the diversity of most economies, we can identify a predominant or emergent pattern in the nature of competitive advantage in a nation's firms at a particular time" by way of four distinct stages: (i) factor driven; (ii) investment driven, which is associated with the manufacturing of intermediate and capital goods (heavy and chemical industrialisation) and infrastructural building (housing, transportation, communications and public works construction); (iii) innovation driven; and (iv) wealth driven [Porter 1990, pp.545-546]. "This evolutionary path fits the notion of an optimal sequencing of development starting from the initial stage of labour-intensive, low skill manufacturing (or from the initial stage of natural resource extraction) and moving on to the subsequent stage of relatively physical capital-intensive industrial activities and finally to the more advanced stage of human capital intensive growth" [Ozawa, 1992, p.30].

Table 27 Motives of Chinese enterprises for investing abroad[a]

Factors[b]	Most recent subsidiary	Oldest subsidiary	Largest subsidiary	Total sample ranking[c]
Expansion into new market	3.4	3.8	3.3	3.6
To advance exports of parent company	3.4	3.6	3.2	3.5
To be near export markets	3.3	3.6	3.2	3.4
Access to information abroad	2.9	3.8	2.8	3.3
Following home country's strategy	4.0	2.3	3.2	3.2
To build up international experience	3.1	3.3	2.8	3.1
Access to third country markets	2.8	3.5	2.8	3.1
Diversification of production	2.3	3.2	3.0	2.9
Higher rate of profit abroad	2.9	2.2	3.3	2.6
To use product innovation	3.1	2.2	2.7	2.6
Trade barriers in host country	2.3	2.4	2.7	2.4
Investment incentives in host country	1.8	2.5	3.0	2.4
Desire to be near source of supply	3.0	2.2	1.8	2.4
Defending existing markets	2.6	2.0	2.3	2.3
Lack of raw materials in home country	2.7	1.7	2.5	2.2
To follow competition	2.0	2.5	1.7	2.1
Home country's agreements with host country	1.3	2.5	1.5	1.9
Cultural and language proximity	1.3	2.1	2.2	1.9
Competitive pressure in home country	1.9	1.7	1.5	1.7
Lower labour cost in host country	2.0	1.5	1.7	1.7
Lower land cost in host country	1.9	1.7	1.3	1.7
To use labour-intensive technology	2.2	1.4	1.5	1.7
To exploit managerial skills	2.1	1.2	2.0	1.7
To follow customers	1.6	1.2	2.7	1.6
Lower capital cost in host country	1.0	1.6	1.3	1.4
Political instability in home country	1.0	1.2	1.5	1.2
Diversification of financial risks	1.2	1.0	1.3	1.1
Market limitation in home country	1.0	1.0	1.2	1.0

a. The survey was carried out in 1993.

b. There were 28 responding firms, of which 9 were most recent subsidiaries, 8 the oldest and 5 the largest subsidiaries.

c. The importance of each factor was ranked on a 1-5 point scale: 1= very limited, 2= limited, 3= moderate, 4= important, and 5= very important.

Data source: Zhang and Bulcke [1996]. International Management Strategies of Chinese Multinational Firms. in John Child and Yuan Liu (1996) (eds). *Management Issues in China (II): International Enterprises*. London: Routledge.

If it can be said that China's natural resource seeking investment is mainly set out from the consideration of developing a factor driven economy, which is proclaimed by some economists as the initial stage of economic development, investment aimed at obtaining access to foreign technology and information is more important for firms as well as the

home country as it signals the development of an innovation driven economy, which would come into being when a country is human capital abundant and active in research and development (R&D).

As indicated earlier in this chapter, judging from its current industrial output and technological level, China seems to be in the intermediate stage of industrialisation. At this stage, the improvement of technology innovation capacity becomes crucial to the further development of the economy. The rationale is that, as the technological gap between China and advanced countries gradually reduces, the efficiency of adopting the existing advanced technology to a greater extent depends on firms' ability of adaptation and innovation. The required technology in most cases is more difficult to obtain, as firms begin to need "newer" technology but owners of new technology are not as generous in technology transfer as owners of obsolete technology. Information about such technology is crucial for firms in the same trade. According to Mansfield [1985], information concerning development decisions is in the hands of domestic rivals for about 12 to 18 months and information concerning the detailed nature and option of a new product or process generally leaks out within about a year. It would be reasonable to assume that the speed of similar leakage internationally might be even slower. Therefore for firms in their higher stage of technological catch up, one effective option is to invest in countries of technological frontiers to maintain access to sources of innovation as well as to utilise technological experts. For Chinese firms, there is another task: they not only need technology of products and processes, but also need advanced organisation techniques and marketing skills in advanced market economies, which to a large degree is due to the lack of experience and skills for operation under market regimes.

Against this background, many Chinese firms are active in undertaking technology seeking investment. According to the result of Zhang and Bulcke's survey, "access to information abroad" and "to build up international experience" rank high in the list of investment motives of Chinese firms. According to network theory, it is natural for Chinese investors to have such motives. As Casson and Cox indicated, information flows between people. Accurate and undistorted flows of information will be characteristic of intra-firm flows created through the internalisation of markets. It also is a feature of information exchange between parties who trust each other because they belong to a well-defined social group [Casson and Cox, 1997, pp.185-186]. An overseas node established by FDI will not only

enable the firm to internalise the flows of information via employing local workers who are the sources of the required information, but also function as a unit for collecting and processing information through its contact with other firms and institutions, in a sense similar to the contact among members of a club. The short distance or on the spot contacting can also reduce the time for obtaining information. As for "international experience", FDI is the unavoidable choice, as it is a type of knowledge not codifiable in nature and information needs close contact to be obtained.

Tseng's survey provides similar supporting evidence. As for acquiring foreign technology and management skills, those firms which wish to upgrade their technology think FDI is very important. What Chinese firms are equally focused on is that first hand information of foreign technology and markets is very important, especially in product development and formulation of marketing strategy [Tseng and Mak, 1996]. They quote a television factory setting up a "window company" in Hong Kong as information collector:

> *An electronic group from Shenzhen: The electronic group from Shenzhen consists of industry, science and technology, trade and finance, property development, warehouse and transportation with electronic industries as its core businesses, which include computer, television and audio-visual equipment; telecommunications, colour television tubes, semi-conductors, and so on. It is directly under the Shenzhen municipal government (Shenzhen Investment and Management Corporation). Its sales turnover amounted to RMB 4 billon.*
>
> *In 1986, the group set up a department in the Shen Yep Company (a Shenzhen government company in Hong Kong) in Hong Kong as a marketing and technology information collector as well as a contact point with business associates from other parts of the world. It further set up overseas enterprises in the United States (trading); Canada (trading); Kenya (assembly of tape recorders), Thailand (production), Japan (trading) and Germany (trading).*
>
> *In January 1992, the Chief Executive Officer of the electronic group announced in Hong Kong that the group had purchased 340000 sq. ft of land in the Tai Po Industrial Estate, for HK$ 48 million. The objective of acquiring the land was to build a super-integrated circuit factory in Hong Kong, with a total investment of HK$2.5 billion.*

> *The main purpose was to acquire the latest technology from the foreign partner. The group was confident that even though the technology from the foreign partner was not the latest, they could use it as a foundation for further development. Hong Kong was chosen as the investment site instead of Shenzhen to avoid the embargo imposed by COCOM (Coordinating Committee for Multilateral Export Control) in Paris*. [Tseng and Mak, 1996]

In effect, there are a number of cases of successful and unsuccessful Chinese ventures into technology upgrading through outward direct investment in the United States. For example, Shougang acquired Masta Engineering Co., a leading US designer and manufacturer of hot rolling mills and other metallurgical plants. The efforts of technology seeking investment sometimes are not successful. An example was the proposed acquisition of Mamco Manufacturing Company by China National Aero-Technology Import and Export Corporation, which was blocked by the Committee on Foreign Investment in the United States on national security grounds [Graham and Krugman, 1991].

Many firms take overseas investments, especially joint ventures outside of China, as ideal training grounds for PRC management and production personnel. Most of the large Chinese holding companies in Hong Kong, for example, the Bank of China Group, Guangdong Enterprises Holdings, and China Resources (Holdings) Co. Ltd, have their own in-house training centres there. China Resources (Holdings) Co. Ltd even organised an MBA course in cooperation with an established university in the United States for selected young high-flying executives who have the potential to be promoted to top management positions. Besides management training, this gives them the opportunity to put into practice Western management principles and production techniques in the Hong Kong environment. In addition, many Chinese executives consider an initial investment of US$0.5 million as a reasonable "tuition fee" to learn overseas business even if the investment is ultimately lost [Tseng and Mak, 1996]. Their point of view meets Peng's learning option argument that this kind of direct investment is like a financial option investment: following the intuitive notion of keeping options open, the investor makes a small initial investment to buy the option, which gives him the right for further investment without being obligated to do so [Peng, 1995].

3.2. Enforcing transactions and improving market positions

The major portion of transactions enforcing FDI from China is aimed at overseas market. Table 27 shows that this is the strongest motivation for China's outward direct investment and the sample firms assign the relevant factors with very high weights, e.g. to expand into new markets 3.6, to advance exports of parent company 3.5, to be near export markets 3.4, for access to third country markets 3.1, for higher rate of profit abroad 2.6, to bypass trade barriers in host country 2.4, and to defend existing markets 2.3. This indicates that Chinese firms are very keen to market their products to foreign countries. This, together with the fact that China is a large market with huge growth potential, implies that the domestic competition is intensifying. It is interesting that the surveyed firms have given the factor "market limitation in home country" a very low weight. The reason may be that the domestic market still has room for these firms, but comparatively foreign markets are more profitable and more important for the future of the firms.

A large portion of China's transaction enforcing FDI is made by industrial firms to carry out overseas manufacturing activities. Though the specific motives for such investment vary from protecting existing overseas market to developing new markets in foreign countries. From June 1999 to April 2000 a "Go Abroad" research team incorporating researchers from the Foreign Branch of the Ministry of Finance and the Institute for International Trade and Economic Cooperation under the MOFTEC carried out a questionnaire survey about China's overseas manufacturing. This survey was taken at "The Training Class for Overseas Manufacturing and Trade" jointly held by the MOFTEC and the State Economic and Trade Commission and in Jiangsu, Shanghai, Guangdong, and Fujian (including SEZs of Shenzhen, Zhuhai and Xiamen) as well. Structured questionnaire sheets were sent out to about 170 firms and more than 100 firms gave effective responses. According to the result of the survey, 47.1 per cent of the surveyed firms take "to develop overseas market" as their main concern. About 17 per cent of the surveyed firms have the motivation to obtain higher expected profit in foreign countries. Firms which are concerned about inadequate need and intense competition in domestic markets account for 14.5 per cent. Still FDI aimed at bypassing trade barriers and at tackling intensified export competition, each accounts for 12.2 per cent and 9.3 per cent respectively (Figure 16). The ranking of these factors confirms the findings of Zhang and Bulcke [1996] quoted in Table 27.

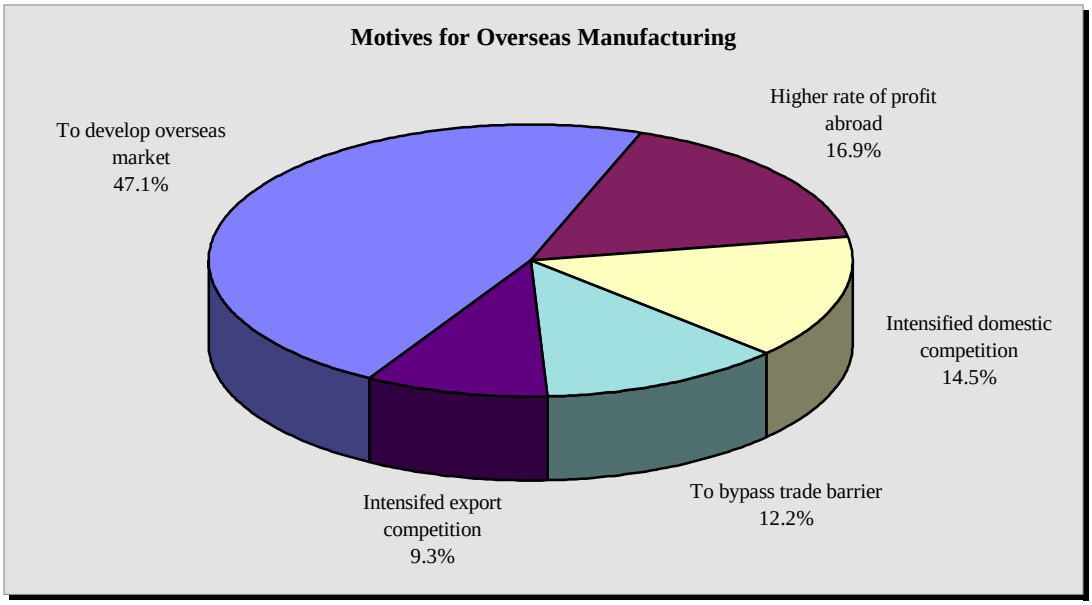

Figure 16

Source: Gang Li [2000]. *"Go Abroad": Opening-Up Strategy and Case Study*. (in Chinese). Beijing: China Foreign Economic and Trade Press.

As foreign direct investment can establish a node in the place closest to the firm's partners and customers and such a node can benefit the firm in information obtaining and network position improving, the firm's transactions are improved. Here we take Jincheng Motorcycles as an example. It is one of the biggest motorcycle producers in China. Due to intensified domestic competition, the overseas market is important for the company as a source of revenue. However, before 1996 it served its overseas market solely through exports. It realised that exporting only could not be a long term strategy for the following reasons: (1) it was extremely difficult to have a satisfied import and sale agent which was willing to provide sufficient market information and possessed rich market experience about the local market; (2) export distance of the firm from the market so the firm could not supply necessary after-sales service; and (3) the firm's dependence on the import agent was increasing as the export expanded, therefore the firm was facing growing uncertainty and risk. These reasons led the firm to set up a 50-50 joint venture in Colombia in 1997 to produce motorcycles and supply the local market which had been one of Jincheng's important export destinations. The joint venture has established 25 specialised shops for the firms' products. This has greatly improved Jincheng's networks in the country. Thanks to the well structured networks and the establishment of the joint venture, Jincheng's revenue from abroad increased 69 per cent in 1997 on the previous year's base and achieved a further growth rate of 24 per cent in 1998 [Li, 2000, pp.113-126].

Not only can overseas manufacturing FDI improve firms' transaction and positions, FDI of other types also has such considerations, including natural resource exploiting FDI. Natural resource exploiting is a classic type of foreign direct investment. The unrecovery of most natural resources induces severe market imperfection, and most of the time government behaviour would further enlarge the imperfection, resulting in the uncertainty of supply. One of the key benefits of natural resource exploiting investment is the security of resources supply. The subsidiaries of an investing firm have access to a large set of relevant resources supplies owned by the investing firm. If there is a disruption to part of the supply, action can be taken by the parent firm to minimise the effect on any one affiliate. Also, an affiliate can always renew its contracts for supplies of the specific resource. During times of crisis a firm with no ongoing relationship with a supplier may have difficulty in obtaining adequate supplies of the resource at any price. On the other hand, natural resource exploiting investment often results in the establishment of vertical integration within the complex of the investing firm. In such a situation, cost saving efficiencies are most likely to be realised by co-ordinating activities that occur in several different countries within the networks of the firm. Therefore an international integrated firm can co-ordinate the exploiting, transport, refining and distribution of downstream products at lower costs than individual firms at each stage might be able to by using the market. The economies of vertical integration involve reduction in transaction costs, the cost of search, and the costs of holding inventories [Aliber, 1970, pp.19-20].

4. Concluding Remarks

This chapter has analysed the technological configuration aspects of the rationale for China's outward FDI. As the transition of the economic system proceeds towards completion, factors relating to technological configuration in economic organisation are becoming more important for China's investors. The development and reformation of the Chinese economy has provided firms with huge opportunities for growth. However, capitalising on these opportunities needs firms to tackle difficulties related to natural resource shortages, technology gaps and intensified domestic competition. Overseas direct investment is a good means to tackle the difficulties and therefore a good means to exploit the opportunities. With overseas investment, networks between the parent and affiliates are established. Through these networks, information, technology and natural resources can

flow more smoothly within the relevant firms. In the meantime, as the overseas nodes of the networks attached to business networks in the host countries, the contents of the flows are likely to be better in quality, larger in volume, or more secure in a supply-demand relationship. Direct benefits from such investment are transaction cost saving and efficiency improving. Indirect benefits include the improvement of the market power of the investing firm. For such reasons, Chinese enterprises were very active in engaging in these investments in the last two decades.

5. Appendix: Main Science, Technology, and Innovation Policies and Plans in China

Time	Important events	Essentials and Objectives
1982	Plan for technology improvement	Improve technological equipment in SOEs (with focus on technology import)
1983	National plan for key technological tasks	National technological plan (as a part of the national five-year plan)
Early 1980s	National plan for key technological development projects	Support key products and technologies in SOEs
Early 1980s	Non-state owned technological enterprises	The emergence of research-development-production business entities, which puts an end to the unitary state managed R&D system
1984	Plan for building key national laboratories	Reinforce basic research
1984	Plan for key national industrial experiment projects	Linking to plans for key technological tasks and R&D
1984	Technology market	Improve technology exchange environment
1984	State awards for technology changes	Encouraging the application and extension of technology achievements
1985	Patent law and regulations	Introduce patent system into China
1985	Venture investment	Establish venture capital investment institutions
1986	Reform appropriation system of R&D	Reform the unitary state appropriation system, expand sources of funding for R&D, adopt contract system
1986	Establish the National Natural Science Fund	Introduce competition mechanisms, support basic research
1986	Institute engagement system	Adopt the system of engagement for professional positions
1986	National plan for high tech R&D	Support high tech R&D in several key areas
1987	High and new technological industry development zones	Create good environment for the development of high and new technological industry
1987	State Spark Award	Reward the development o f commercial technology, support the implementation of the plan for spark programme
1987	Law of contract for technology	State policy and regulations for fostering technology market
1988	Plan for experimental manufacturing of national class new products	Support the experimental manufacturing of national class products by tax reduction/exemption and favourable loans
1988	Plan for the Torch Programme	Develop and diffusion of high and new technology, support the development of high and new tech industry
1990	National plan for the extension of key tech achievements	Diffuse key tech achievements
1990	Loan for technological development	Support the extension of technological achievements
1991	Plan for establishing the State Engineering Research Centre	Speed up the application of technological achievements

1991	Centre for Productivity Acceleration	Provide technology and information for medium-and small sized enterprises
1992	Climbing Programme	Key basic and application research
1992	Plan for joint development projects by firms, universities and research institutes	Support the application and commercialisation of technological achievements
1993	Plan for establishing technology centres within firms	Strengthen the capability of R&D institutes in firms
1993	Law for changes of science and technology	Promote technological changes by legislation
1994	Agenda for China in the 21st century	Strategy, policy and action plan for the sustainable development of China
1995	Decision on accelerating changes in science and technology	Speed up the advancement of science and technology, implement the strategy of strengthening the nation by science and education
1996	Technological innovation programme	Promote technological innovation in large and medium sized enterprises and key industries
1997	The Ninth Five-year Plan and the Programme for Long-term Objectives till 2010	Comprehensive arrangements for technological development and reform

Source: IIE [1999]. *China's Industrial Development Report 1999*. (in Chinese). Beijing: Economic Management Publishing House. pp.62-63.

Chapter 8. Geographical Distribution of Outward FDI

Within the network framework, the previous two chapters have analysed the rationale for the growth of China's outward direct investment in the last two decades. The results suggest that the growth of China's outward FDI is most likely to be a consequence of the changes in economic organisation in the process of the economic reforms and development. The transition of the economic system is reflected in the diversification of industrial organisational forms, the enhancement of the market mechanism, and the acceleration of the integration of China's economy into the world economy. During the process of these changes, Chinese enterprises sought to establish and expand their networks, including overseas networks. Outward FDI enabled Chinese firms not only to gain access to foreign resources, created assets, and markets as well as international business experience, but also to exploit the domestic two-track system of the economic transition.

This chapter analyses the geographical distribution of China's outward FDI. China's FDI is heavily concentrated in a limited number of destinations, i.e., the United States, Canada, and Australia. Developing countries are not major destinations. This pattern is in contrast to the pattern suggested by the conventional theory of FDI, which holds that FDI from a developing country would be directed to countries with economic, geographical and cultural proximity. Nevertheless, when China's investment is considered in the framework of the networks, the pattern of location choice for China's outward FDI can be viewed as consistent with the aims of seeking various networking benefits.

This chapter is organised as follows. Section 1 discusses the location choice for FDI in network theory. Section 2 analyses the destinations of China's resource seeking FDI. Section 3 analyses the location choice for China's FDI for transaction enforcing and position improving. Section 4 investigates the effects of existing links and market conditions on the location of China's FDI. Concluding remarks are provided in Section 5.

1. Networking and Location Choice for FDI

Form a network perspective, foreign direct investment is a means of establishing and developing positions for the investing firm in relation to its counterparts in foreign networks. As noted earlier in Chapter 5, FDI achieves this objective in the following manner: an FDI project is a node (in the case of initial investment) or an improvement in an existing node (in the case of subsequent incremental investment) in the investing firm's global business networks and this node ties not only different business activities of the firm but also the firm's business networks to the market networks of the host country. Through the node, intended assets are created, developed or acquired. As FDI can be classified according to motivation as well as to the evolution process of a firm's international networking, the location choice for FDI is essentially a function of the firm's motives and the evolution of the investing firm's international networking. As China's outward direct investment as a whole is basically of the greenfield variety, we focus on the location choice of initial outward direct investment.

The first round of direct investment is aimed at the stretching of a domestic firm's network to a foreign country. The investing firm sets up its first ownership-based node in the host country and this node couples the firm's business network with networks in that country. It is such a coupling that serves the specific motives of the investment. Compared with investment by well-established multinational enterprises, first round investment is the beginning of going international. Therefore the node which is going to be established has the specific purpose of seeking either a specific type of resource or a market for the firm's products. Therefore the location choice for an FDI project mainly depends on the motive in respect of geography and information airing.

As discussed in Chapter 5, the principal motives of investing firms are resource exchange, enforcing market transactions, and improving the firms' positions in the networks; their impact on the location of FDI are discussed below.

1.1. Location choice for resource-seeking FDI

Resource exchange FDI aims at obtaining strategic resources required by the investing firm. The importance of this FDI lies in the heterogeneity of resources in use, value, transaction and mobility.

In this perspective, resources have two dimensions: scarcity and relationship. Conventional economics emphasises the dimension of scarcity and to some extent derives the purpose of the firm from such resource scarcity. Thus, it is argued that the very purpose of the firm is economising on scarce resources and the emphasis must be on the control of resources [Håkansson and Snehota, 1995, p.134]. Such a view regards resources as being homogeneous and their value is considered to be independent of other resources they are combined with when used. In the real world, resources are heterogeneous and their value depends crucially on which other resources they are combined with and in what combinations and constellations [Alchian and Demsetz, 1972].

While a firm would have direct control over certain resources, it still needs to acquire some other resources external to itself. In other words, a firm would always have to make some resources available through exchange with others. In most cases outsourced resources cannot be simply transferred, rather they have to be accessed and made available only through relationships, and the control over these resources is *indirect, joint control* shared with the counterpart.

Generally, tangible resources can be made available mainly through ownership, and access to and control over these resources depends less on relationships. However, the softer resources such as material know-how, knowledge of the market, application know-how or technology are not embedded in physical products and cannot be simply transferred. Therefore, relationships play a much important role in accessing and asserting control over these resources. This implies that networking would be the preferred mode for acquiring such soft resources.

If the spatial distribution of resources is brought into the analysis of economic organisation, the collection and combination of resources must consider mobility of resources within and across nations.

Individual factors of production are also heterogeneous in terms of mobility: the degree of mobility varies among factors and from one nation to another. If it can be said that the dimension configuration of a particular resource mainly determines how to collect that resource and combine it with other resources, then the mobility of that resource mainly determines where to obtain it and where to combine it with other resources.

Natural resources are completely immobile. It is physically impossible to move land area, climate, soil, forests, mines, landforms, and other gifts of nature from one place to another. Since the international distribution of natural resources is most haphazard, their immobility assures a permanent dissimilarity in the supplies of natural land factors. A further related issue is that international movement of the products derived from certain scarce natural resources may be hindered by high transaction costs, either due to monopoly or government protection of the related resources. In such cases, the establishment of ownership control over the required resource at the location of the source is most likely to be the choice.

Labour is physically able to move from one country to another. However, potential mobility of labour is severely constrained by legal restrictions, opportunities, and information, especially in the case of unskilled workers. Besides the attachment to one's place of birth, family, friends, language, customs, the way of life of the native country, and of other similar conditions, the uncertainty and limited opportunities to emigrate are important barriers to large-scale international movement of ordinary workers at present. In contrast, the international mobility of professional workers, such as engineers and scientists, is much higher for several reasons. Mainly, these workers possess highly valued skills that meet international standards. In the meantime, they have a superior knowledge of job opportunities in foreign countries because they belong to a profession that is international in scope. Furthermore, due to their higher education, they have greater capacity to adapt to foreign cultures, such as language. On the other hand, they are likely to be interested in professional advancement whether at home or abroad [Root, 1973, pp.124-125]. It should be noted that the international movement of professional workers has a specific spatial trend. Professional workers tend to move from less developed countries to more developed ones and tend to concentrate in particular areas within a specific country. This trend helps and is a part of the formation of some famous regional agglomerations such as Silicon Valley in California, Route 128 in Greater Boston, Baden-Württemberg in Southern Germany, and Emilia-Romagna in Northern Italy. Conventional economic theory might say that these regions have benefited from having low transaction costs and high external economies, both of which contribute to what Marshall called the "industrial atmosphere" of a centre of specialised industry [Cooke and Morgan, 1996, p.26]. This feature of the international movement of professional workers constrains the firms' efforts to recruit such foreign workers if these firms are located outside such innovation regions, especially those in less developed countries.

Intangible resources have high international mobility in form, as few of them have any physical constrains for their international movement. It is easy to move a draft, blueprint, or a manual about a process of production from one country to another. However, there are severe constraints for transferring most intangible resources from one agent to another. Intangible resources are essentially information based. The tradability of information depends on the involved communication costs and contractual problems. The more difficult a transfer of the content of information is, the higher the communication costs would be. Communication costs are the highest for information of a tacit nature [Polanyi, 1964; Winter, 1988], as such information is shared among a firm's employees and cannot be easily copied or appropriated by other firms without learning on the spot. Contractual problems are greatest for information if it is difficult to patent and if its quality is difficult to assess [Buckley and Casson, 1976], as arm's-length transfers of such information between firms are prone to market failure, including being priced inefficiently, impactedness and opportunism. Of course there are also structural transactional market failure for the transfer of intangible resources: owners of intangible resources may set entry barriers by way of monopoly behaviour. When sources of information are localised and costs of communication are high, those who are closest to these sources can obtain information more cheaply than others can [Hayek, 1937; Richardson, 1960]. This implies that firms which require such resources should go close to the sources of the resources.

Synthesising the results of the above analysis shows that the location choice for resource-acquiring FDI is mainly determined by three features of the required resources, that is, scarcity, relations, mobility (including both natural mobility and transaction related mobility). Specifically, scarcity and relation regarding a required resource determine the degree of control over the resource, and immobility determines the location for establishing such control. For example, if the required foreign resource is very scarce and its mobility is sufficiently low, the firm should directly control this resource via FDI in the place of source. By doing so, transaction costs can be reduced and security of supply can be improved. If the required resource is very relation-specific, FDI in the place of source is also a preferred choice but the FDI subsidiary would mainly function as a tangent plane to get access to the resource. The impact of resource features on FDI are show in Figure 17.

Figure 17 Resource's features and resource acquiring FDI

	Low	High

Scarcity	Wider choice	Direct control
Relation	Wider choice	Indirect control
Immobility	Wider choice	Close to source

1.2. Location choice for transaction-enforcing and position-improving FDI

FDI aimed at enforcing transactions in the market reduces the gap between the minimum enforceable performance and quality performance. The impact of the gap on a firm's business depend on the frequency, uncertainty and asset specificity of the transactions involved. High frequency implies that the firm's circulating process is highly attached to its partner's operation and exchange behaviour. Therefore the firm's circulating process will face slowdown or suspension risk when changes occur in its partner's exchange behaviour and operation. Similarly, high asset specificity implies low tradability of the transaction assets. In such a situation, the firm will be exposed to opportunistic behaviour as well as poor management of its partner. In the meantime, uncertainty, which can result from various institutional events and/or competition behaviour, will widen the gap between the minimum enforceable performance and quality performance. Therefore, if any of the frequency, uncertainty and asset specificity is high, the firm is likely to be at bay if it has not appealed to some means to fill the gap.

FDI can reduce the gap between the minimum enforceable performance and quality performance if it establishes a node in the place closest to the partner in the network or improves the existing node in the network where the partner is located, for such a node will benefit the firm in information obtaining and network positioning. When the firm has established such a node in the market networks, it can obtain more information at a quicker speed and more accurate in content, for the firm is now able to contact the partner as well as the partner's networks more directly. This is most likely to increase the adaptive and innovative capacity of the firm as well as its partner. As the information increases in volume, the firm is able to select investment options that are less risky [Gilroy, 1993, p.110]. In the meantime, the direct presence of the firm in the network where the partner situates increases the firm's network position relatively to its partner. This would reduce the possibility of contract violation by the partner.

Therefore, FDI aimed at enforcing market transactions would be the most beneficial when gaps between the minimum enforceable performance and quality performance are relatively large. When transactions for the investing firm are large in volume and important for its business and reducing the uncertainty in the transaction is a high priority for its management, the firm can either expand its boundary by FDI to cover the overseas production or distribution of the products previously transacted via market or just set up a "small" node in the foreign market to tighten its relationships with partners in the transactions. In addition, when the external transactions are carried out in economies dominated by networks, transaction-enforcing FDI is also important. These imply that transaction-enforcing FDI is most likely to be located in important export or import markets.

Market position improving FDI contains purposes of both resource exchange and transaction enforcing FDI. It aims to increase the firm's power in the networks to enable the firm to get access to external resources or undertake transactions in foreign countries at more favourable terms. As indicated in Chapter 5, the rationale is that business networks rely on strongly normative social bonds and operate in a hierarchy of some degree in nature. By investing abroad, a firm establishes and develops positions in relation to its counterparts in foreign networks. It would be further beneficial if a firm has improved its position through FDI, as a firm's position in the national network prescribes its process of internationalisation because that position determines its ability to mobilise the resources within the network for such an endeavour [Johanson and Mattson, 1988].

Foreign investment into either vertically controlled networks or horizontally controlled networks has two main meanings for the investing firm in the perspective of improving its position in the networks. Firstly, the firm becomes an insider in the networks of the host country and will not be treated as an outsider thereafter. Compared with those non-involved firms which can only receive lower priority from firms in the network, an insider will be given a higher priority [Hertz, 1992, p.117]. Secondly, when a firm establishes or improves its position in one network, its positions in other networks will be improved for two reasons: (i) it now can get access to more resources; and (ii) it is given more opportunities to disperse risk among the participants of a network value system when using contractual arrangements. This implies that similar to transaction enforcing FDI, position-

improving investment should also be located in places where important overseas markets exist.

It is worth noting that in practice a node can serve several purposes and one type of FDI can help achieve another purpose of FDI. For instance, resource exchange FDI can also function as a node for improving market transactions of the required resource or other market transactions. In order to present the issue clearly, the following analysis will be carried out along the main purpose of FDI.

2. Target Countries for China's Resource Seeking FDI

The results of the above analysis about the features of resources imply that there are two types of countries which would be the main target countries for China's resource seeking direct investment. They are: (1) countries with abundant natural resource endowments and (2) countries with technological leadership. Both these countries are discussed below.

2.1. Countries with abundant natural resource endowments

China badly needs some of the major staple minerals consumed in large amounts and on which economic development depends, such as oil, natural gas, uranium, iron, bauxite, copper, lead, zinc, gold, sulphur, phosphorus, sylvite, sodium, and cement raw materials. In the perspective of the Chinese economy, the value of these resources is very high as China's country specific (advantaged) resources need to be combined with these resources. Because most of the above resources involve high transaction costs stemming either from various types of monopoly or government protection, direct control over these resources is the preferred choice. Therefore countries with rich endowments of these resources are the main targets for China's natural resource seeking FDI. FDI in this field is to establish direct control over the required resources at their sources.

2.2. Countries with technological leadership

In the era of the knowledge based economy, "for most developing countries, tapping into the global stock of knowledge is critical" [World Bank, 1999, p.26]. In China's case, the most important task is to reduce its gap with developed countries in technology creating and managerial techniques, rather than in general product and process technology, as in the

latter aspect China already has reached a certain level. One of the main aims for China's investment in this field is to establish indirect control over the necessary created assets at places close to their sources.

Table 28 lists China's outward FDI in main destinations, including the numbers of FDI projects, the average size of projects, and the total flows. Among these countries/regions, the United States, Canada, Australia, Hong Kong, Peru, and Russia are the major recipients by FDI flows. They account for about 60 per cent of China's government registered outward FDI flows. They are followed by Thailand, Macau, South Africa, New Zealand, Pepua New Guinea, and Zambia. In terms of the number of FDI projects, the United States, Russia, Hong Kong, Thailand, Australia, Japan, Canada, Singapore, Malaysia, South Africa, Macau and Indonesia are the major recipients. They account for 60 per cent of China's government registered outward FDI projects. Most of these countries/regions either have rich natural resource endowments or advanced technology stocks or both.

Natural resources FDI normally involves large amounts of capital injections. As China's overseas manufacturing FDI is just emerging with relatively small-scaled projects, a large average size of FDI projects implies that there are major natural resource extraction and development investments. For example, up to 1997, the average size of FDI projects in Peru was US$17.9 million, much higher than the average size of FDI projects in most other countries. This is because in 1996 Shougang (The Capital Steel and Iron Co. headquartered in Beijing) took over 98.4 per cent of the equity of an iron mine company in that country with more than US$118 million. This iron mine has about 1.4 billion tonnes of iron ore reserves plus a large amount of copper, cobalt and zinc reserves. This investment entitles this subsidiary to extract the reserves without a definite time.

Table 28 China's FDI in Selected Countries

	Projects (1979-98)	Average size of projects (US$M) (1979-97)	Chinese Investment (US$M) (1979-98)
US	274	2.0	401.0
Canada	82	8.7	356.5
Australia	96	13.4	329.2
Hong Kong	197	2.1	230.5
Peru	9	17.9	120.7
Russia	259	0.6	99.6
Thailand	136	1.5	67.2
Macau	49	2.5	57.4

South Africa	50	2.7	54.2
New Zealand	15	6.7	45.9
Papua New Guinea	16	3.7	43.3
Zambia	10	2.0	43.2
Brazil	23	2.6	42.1
Cambodia	27	1.7	34.7
Malaysia	78	0.9	31.6
Indonesia	42	1.4	30.3
Zimbabwe	6	11.7	29.9
Singapore	79	0.8	28.7
Mali	3	12.6	28.2
Mexico	32	0.7	25.9
Chile	6	3.8	20.9
Tanzania	9	3.0	20.8
Nigeria	22	1.7	20.5

Note: These 23 economies accommodate more than 63 per cent of China's FDI projects and about 84 per cent of China's FDI flows between 1979-1998.

Data source: MOFTEC: *Almanac of China's Foreign Economic Relations and Trade*. 1993/94~1998/99.

Table 28 shows that China also has some large resources development investments in Canada, Australia, New Zealand, South Africa, Papua New Guinea, Zambia, Brazil, Zimbabwe, Mali, Chile, Tanzania, Nigeria, and Egypt. The investment fields vary in accordance with each country's natural resource endowments. In some African countries, metal resources are the focus. In oil rich countries, investment focuses on oil extraction and processing. An example is an oil extraction subsidiary in Sudan set up by a Chinese oil corporation with an investment of US$1.8 billion. This subsidiary produced 2 million tonnes of oil in 2000 [*Zhongguo Gongshang Shibao*, 25/6/2001].

China's investment in natural resources fields in Australia, Canada and New Zealand focuses on metal mines, forestry and fishing. CITIC investment is a typical investor in natural resources fields. In 1986 it established CITIC Canada Inc., a wholly owned subsidiary in Canada. This subsidiary initially invested in pulp mills and later on in lumber mills. CITIC Canada Inc. currently wholly owns Sundance Forest Industries Ltd, a logging and saw mill enterprise located in Edson, Alberta. CITIC first invested in Sundance as a minority partner in June 1989, increased its interests to two thirds by 1991 and became a full owner in 1999. The annual revenue for Sundance is about US$34.5 million. Also in 1986 CITIC set up a wholly owned overseas subsidiary in Australia: CITIC Australia Pty Ltd. CITIC Australia focuses on investment and trading in resources and primary

industries. In 1986 it acquired a 10 per cent interest in the Portland Aluminium Smelter in Victoria and in 1998 it further acquired another 12.5 per cent interest in that company from the Aluminium Smelter of Victoria Pty Ltd (ALUVIC) which was owned by the Victorian government. It is now entitled to 77,000 tonnes of primary aluminium ingots each year. In 1997, CITIC Australia acquired a 10 per cent interest in the Coppabella Coal Mine in Queensland which has an annual production capacity of over 3 million tonnes of PCI coal (Pulverised Coal Injection) as well as a 50 per cent share in C&S Joint Venture, which is involved in active exploration activities in Queensland.

Southeast Asian countries are also an important target for China's resources seeking investment. According to the Malaysian Industrial Development Authority, China's earliest investments in Malaysia were predominantly resource seeking in nature, especially in rubber and metal products. At the end of 1995, China's total investment in the base metals industry accounted for close to 82 per cent of its cumulative manufacturing investment in Malaysia between 1985-1995 and 4.6 per cent for rubber. In recent years, the paper industry has been a keen interest of Chinese investors too. In January 2001, a US$760 million Sino-Malaysian 64%-36% joint venture was established to produce pulp and paper in Sabah. In Thailand, the agriculture sector has attracted significant resource seeking investments in areas such as fertilisers, chemicals, and rubber production. For example, in June 2001, Sinochem Chemicals made a US$1.5 million investment there for an antioxidants plant with a 1,000 tonne capacity, of the plant's output 30 per cent will be exported (Thailand's Board of Investment). Early this year, CNOOC agreed to buy the Indonesian assets of Spanish oil major Repsol-YPF for US$585 million. The purchase will bring 360 million barrels of oil equivalent (BOE) in proved net working interest reserves and add 15-20 million BOE to CNOOC's annual output. As CNOOC already has a presence there through a 39.51 per cent interest in the Malacca Strait production-sharing contract (PSC), the acquisition will make CNOOC the largest offshore oil producer in Indonesia [Reuters, 18/1/2002].

FDI as a conduit for technology acquisitions and transfers drives many Chinese investments to be located in developed countries. In this respect, several cases need to be considered. One is to set up overseas trade companies which serve as a channel for exporting domestic goods to host countries and in the meantime also serve as a channel for importing foreign technology for domestic firms. For example, a Sino-Japanese joint

venture set up in 1980 in Tokyo by CITIC, a Japanese bank and a Japanese trade company takes importing advanced technology and equipment for domestic Chinese firms as its main business. In the meantime it also engages in export activities. Similarly, soon after its establishment, Suihua, a joint venture in Hong Kong by a domestic firm and overseas Chinese imported eight production lines on behalf of domestic firms, including a refrigerator production line with a capacity of 100,000 refrigerators yearly, the first of its type in China at that time [MOFTEC, 1985, pp.256-257]. This type of overseas subsidiaries is the major force for acquisitions and transfers of foreign technology, especially in the early days of economic development. This is one of the main reasons why certain developed countries have been major destinations of China's outward direct investment.

Other firms set up posts for themselves in developed countries by investing there. These posts can serve multiple purposes, including information collection, technology acquisition and transfer, the recruiting of high level technical professionals, etc. An example is Haier, the world's sixth-largest whitegoods manufacturer with 13 overseas factories and 12 overseas sales companies with more than 40,800 sales outlets, which has set eight design centres and local headquarters outside China, including midtown Manhattan and the southern United States. Konka, an electronics company and one of the largest colour television producers, has also set up overseas R&D centres, including Silicon Valley in California, the United States.

3. Target Countries for China's Transaction Enforcing and Position Improving FDI

According to the analysis in Section 2, both transaction enforcing and position improving FDI would be located in places closest to important trading partners, so as to improve the transaction conditions by reducing the distance with partners. To a certain extent the geographical distribution of China's FDI reflects the requirements of networking. The results of the regression show that the geographical distribution of China's investment is positively correlated with the geographical distribution of China's trade, and the correlation between the number of FDI projects and trade is stronger than that between FDI flows and trade (Table 29).

Table 29 Correlation Coefficient between China's FDI and Trade

		1978-1990		1978-1998	
		Number of FDI projects	FDI flows	Number of FDI projects	FDI flows
All destinations (152 countries)	*R*	0.7850	0.4027	0.6490	0.4983
	t	(15.5200)	(5.3886)	(10.4483)	(7.0382)
23 largest destinations*	*R*	0.7452	0.2964	0.6993	0.6002
	t	(13.6869)	(3.8006)	(11.9810)	(9.1905)

Note: * The 23 largest destinations for the 1978-1998 period were Australia, US, Hong Kong, Canada, Thailand, Soviet Union, Chile, Macau, Brazil, Malaysia, D R Congo, Japan, France, Singapore, Nigeria, Germany, Mauritius, Papua New Guinea, Bermuda, Turkey, the Philippines, Guyana and Bangladesh.

Data source: MOFTEC: *Almanac of China's Foreign Economic Relations and Trade*. 1993/94~1998/99.

The stronger correlation between the number of FDI projects and trade indicates that, overall, China's outward FDI is strongly influenced by the desire to secure overseas markets. There are two reasons for this. The results in Table 29 are generated by data on China's FDI and trade for the same period (i.e., without time lag). As in most cases, a direct investment project can only function normally after some time has been spent on construction (greenfield project) or adjustment (take-over project). The results in the table are, therefore, more likely to suggest that trade has been leading China's FDI. Here FDI is at first a response to trade conditions, though it can also have impact on trade afterwards. In addition, trade-served FDI projects are normally small in size of investment, so the correlation coefficient between FDI flows and trade would underestimate the weight of small investment projects, leading to a correlation coefficient between FDI flows and trade to be much smaller than the correlation coefficient between the FDI project number and trade.

This finding is also supported by the results of two surveys regarding the motives for Chinese enterprises to invest abroad. The first survey was carried out by Hai Yan Zhang and Daniel Van Den Bulcke in 1993. Its result shows that the top motives for invest abroad are overseas market seeking, including to expand into a new market, to advance exports of the parent company, to be near export markets, and to obtain access to third country markets. The result of this survey also shows that the largest subsidiaries give a slightly lower index to overseas market seeking [Zhang and Bulcke, 1996]. Another survey was

carried out by a research group under MOFTEC and the Ministry of Finance in 1999. Of the 170 effectively responded questionnaires, 47.1 per cent specified exploring overseas markets as the main motive for their outward FDI [Li, 2000, p.21].

As market seeking investment accounts for a large share in outward FDI projects, countries hosting a large number of investments are most likely to be the main target countries for China's transaction enforcing and position improving investment. Therefore, from the geographical distribution of China's outward FDI projects we can see that Chinese firms take the United States, Russia, Hong Kong, Thailand, Australia, Japan Canada, Singapore and Malaysia as the main destinations for their market seeking investment (Figure 18). While a few of them (e.g. Hong Kong) may also serve as a platform for a third country's market, their domestic markets are the attractions for Chinese firms. Some of them are the world's main developed countries; products from developing countries have price competition advantages in these markets.

As a form of transaction enforcing and position improving investment, market-seeking FDI would also facilitate other types of transactions, including imports, information collection, technology acquiring and transfer, etc. A specific type of market seeking investment is overseas manufacturing, especially in developing countries. Intensifying domestic competition, immobility of ordinary labour and unfavourable trade conditions in previous exporting markets are the main factors which push Chinese firms to set up overseas production facilities.

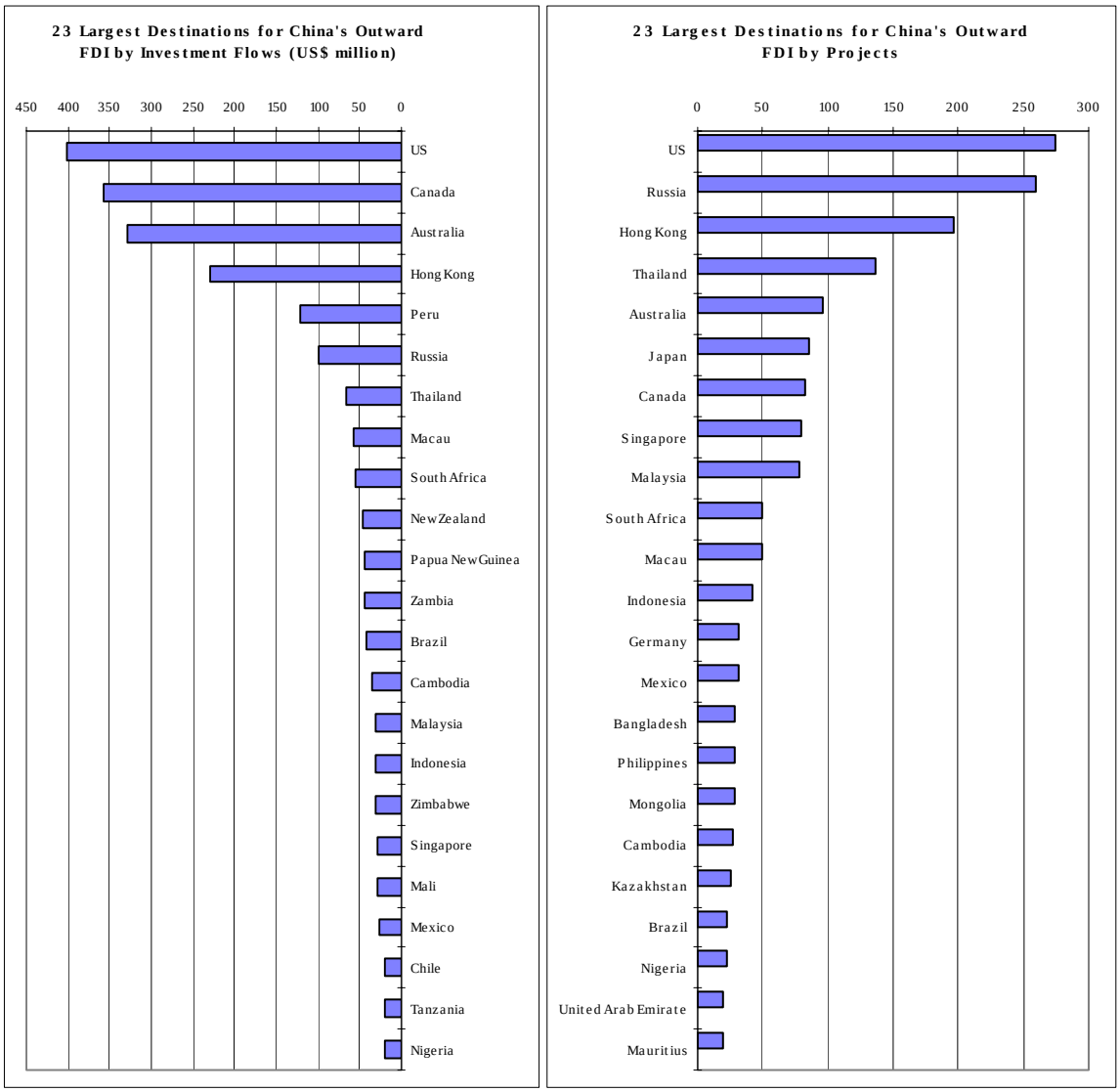

Figure 18 23 largest destinations of China's outward FDI (1978-1998)

Note: These two figures cover about 84 per cent and 72 per cent of China's government registered FDI outflows and projects respectively.

Data source: MOFTEC: *Almanac of China's Foreign Economic Relations and Trade*. 1993/94~1998/99.

Most of China's overseas manufacturing investments are located in developing countries where export markets exist. Manufacturing facilities established afterwards lead investing firms to be closer to their partners and customers through the nodes and these nodes facilitate investing firms in various aspects, including network position improving, and therefore strengthen the bonds and ties of firms' networks. Therefore, transaction costs can be greatly reduced. In the meantime, as labour costs in developing countries are relatively low, overseas manufacturing in developing countries at least would not largely increase the production cost. As a consequence, investing firms gain in net cost saving from the

overseas manufacturing investment. An example is Gree, one of the major air conditioner producers in China. It set up a wholly owned air conditioner manufacturing subsidiary in Brazil with an investment of US$20 million in 1999. This investment has several benefits. First, tariff and tax savings are considerable. In Brazil, imports of finished goods from China have to pay an import tariff of 20 per cent, industrial product tax of 20 per cent and commercial circulation tax of 18 per cent, but import of production materials only pays a tariff of 5-10 per cent. Second, meeting the customers' needs is easier. Air conditioners are semi-finished goods before installed. As large sized durable goods they also need long term after sales services. Retailers and customers had misgivings about the products before Gree was present in the market. Third, time and transportation cost saving are also important. It takes up to more than 50 days to ship products from China to Brazil, and the transportation cost is quite high, as air conditioners are space consuming.

Some overseas manufacturing investments are located in developed countries. Normally, such investments enable firms to respond quickly to changes in local markets as well as to compete effectively with other firms. SUTEC USA Inc. is a Sino-US joint venture in a small city near Chicago by Jiangsu Technology Import and Export Company. Its initiative came from the company's general manager's visit of an annual US mower fair. When he found that the products on the fair were almost exclusively produced by European and US manufacturers and the yearly total sales of mowers in the United States was about US$6.8 billion, he was determined to have his company engage in that business. The company reached an agreement with a university in Nanjing on the design of its products and later applied for 19 patents of its new mower in the United States. In 1998 the company set up the joint venture with a large bankrupted mower firm near Chicago to use the firm's existing sales networks, personnel and plant to assemble and market its patented products. A large proportion of the components is imported from the Chinese parent company. The joint venture realised sales of more than 10,000 mowers in 1999.

4. Existing Linkages, Market Conditions, and Location of FDI

The above two sections have analysed the geographical distribution of China's outward FDI with a focus on the investment motives. There are also other factors which shape the

geographical distribution pattern of China's outward FDI, especially the concentration of China's investment in certain countries.

In the perspective of networking, whether a firm chooses to engage in networking for organising an activity depends on whether the networking can bring about positive cost reduction effects for the firm. Networking can realise cost reduction in two ways, i.e., reducing governance costs and saving transaction costs, all of which stem from the overlapping of economic and governance boundaries between firms. Therefore, when a firm is projecting an overseas investment aimed specifically at either an overseas resource, overseas market, or improving its market position, it has to consider not only where the objective is, but also the difficulty or cost involved in reaching the objective.

For thirty years before the reform, the Chinese economy was a closed planned economy, which had very limited international linkages and essentially excluded market mechanisms. As a result, after the start of the economic reform, the vital difficulty faced by Chinese firms in expanding their networks internationally was the lack of experience in international business and the market economy. In order to establish and expand networks at the lowest possible cost, Chinese firms were most likely to choose as the main destinations countries with high transaction efficiency as well as possible linkages which could be exploited.

As noted above, the three largest recipients of China's outward FDI are the United States, Canada and Australia, each accounting for about 16 per cent, 14 per cent and 13 per cent of China's government registered outward FDI for the 1979-98 period. These countries have many common features. They are all developed economies with a stable political environment and well-established market system, which provide ideal conditions for market activities, including transactions of both goods and labour. English is the official language and Anglo-Saxon culture is the dominant culture in all these countries. This cultural and linguistic homogeneity has greatly reduced barriers to communication and therefore is very beneficial for business operations, especially in the aspects of internal human resources management and external contract negotiation. As developed countries they provide good education for their nationals and overseas students, therefore foreign invested firms face little difficulty recruiting the required skilled labour there. All these factors contribute greatly to the efficiency for transactions for goods and labour.

From the perspective of Chinese firms, the transaction conditions for goods and labour in these countries are even more suitable for their FDI when the following factors are taken into consideration. First, compared with other foreign languages, English is by far the largest foreign language by number of learners in China. Most of China's university students take English as their compulsory course of foreign language. There are also many other institutions which provide English learning, including national wide television and broadcasting programmes as well as local television and broadcast programmes. Therefore a Chinese firm would find it much easier to recruit expatriates who can use English as the working language if it undertakes FDI in one of these three countries. Second, these three countries have the largest ethnic Chinese communities outside Asia. For example, in the United States, more than a million overseas Chinese are living in California alone. Overseas Chinese are exerting overwhelming economic power through the so-called "China networks" based on a sense of belonging and common experience [Choo, 2000, p.139]. Due to the similarity in culture, China's investors can use the overseas Chinese networks as effective platforms to quickly access local markets and business communities, just as Slater indicates:

> *The United States, Australia, and Canada are relatively homogeneous compared to Europe's cultural and linguistic diversity. The Chinese diaspora is more strongly represented in these countries, providing a progressive airlock for reducing cultural distance*. [Slater, 1998, p.271]

While the above factors enable Chinese firms to enjoy high transaction efficiency for goods and labour and high international transfer efficiency for cross border factor movement, the international transaction conditions for goods between China and these countries to some degree provide an incentive for Chinese firms to undertake investment for bypassing the trade barrier. Developed countries often impose technical and other non-tariff barriers to restrict imports from developing countries. For instance, there were often events of Sino-US trade conflicts due to the United States imposed trade barriers to imports from China before China became a member of the WTO. One of the main reasons that Haier set up a refrigerator factory in South Carolina, United States in the late 1990s was to bypass trade barriers. Previously this company had served the US market by trade for 8 years. Through the investment this company has maintained its US market and now it holds more than 20

per cent market share of 180 litre and below refrigerators in the United States [Li, 2000, p.190].

It is worth noting that the share of China's outward FDI in these three countries was even larger in the early days. Between 1979 and 1990, more than 63 per cent of China's outward FDI went to Australia, Canada and the United States. In 1991 Canada even attracted 83.7 per cent of China's FDI (Table 30). This reflects the more decisive role of the host country's factors in determining China's outward FDI location in the early days of China's outward FDI. As we indicated earlier, there was basically no outward FDI before the economic reform. In the early days of the economic reform, Chinese firms were not only unfamiliar with international business, but also lacked experience of operation in the market economic system. Therefore in making their decisions about where to locate their FDI, investors had to give great weight to host country transaction conditions – they did not have sufficient ability to deal with unfavourable transaction condition related risks. Therefore they had to choose countries with lowest possible transaction barriers as their ideal investment destinations.

Table 30 Trends of China's outward FDI in select destinations (FDI flows, %)

	1979-1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Hong Kong	9.6	0.0	14.9	7.3	0.2	19.5	19.1	2.9	5.0	4.1	3.2	28.4
ASEAN	5.4	2.5	9.6	19.6	24.9	18.5	9.1	8.0	15.4	12.2	19.7	26.5
Russia	2.6	5.9	20.5	6.7	0.8	0.0	0.0	0.6	1.0	0.6	2.5	1.8
US	28.1	1.8	6.0	14.5	9.0	19.9	1.4	0.0	9.9	13.7	4.2	7.6
Canada	5.2	83.7	2.8	2.9	1.4	0.3	0.3	0.5	1.9	0.0	5.7	0.5
Peru	0.1	0.0	0.2	1.5	0.0	0.0	40.2	0.0	0.1	12.8	0.0	0.4

Data source: MOFTEC: *Almanac of China's Foreign Economic Relations and Trade*. 1993-2002.

When Chinese firms become more experienced in the market economy and international business as the economic reform deepened and international business grew, their ability o deal with market transaction risks improved and they invested in countries where the market system was less favourable compared with developed countries. The improvement in transaction conditions in China further gave investing firms the edge to deal with less favourable conditions in host countries. As a result, Chinese firms greatly expanded their investment in Southeast Asian countries since the early 1990s. Between 1979 and 1990, China's investment in five ASEAN countries (Indonesia, Malaysia, the Philippines, Singapore, and Thailand) accounted for just 5.4 per cent of its total outward FDI, about 8.5

per cent of China's total investment in Australia, Canada and the United States. But during the 1991-98 period, China's investment in the five ASEAN countries increased to 7.5 per cent, nearly 28 per cent of China's FDI in Australia, Canada and the United States in the same period (Table 30).

Southeast Asian countries are close to China in geography and culture. China's direct investment in this region can enjoy convenient communications and transportation with them. The relative similarity in economic development level between China and these countries to some extent restrains the negative effect of international transaction efficiency for goods on the expansion of FDI. In addition, this region has about 21 million overseas Chinese, the largest overseas Chinese community [Choo, 2000], which exhibits enormous economic power and business networks. The common cultural heritage among the Mainland Chinese and overseas Chinese enables China's investors to settle down to business quickly. All these factors contribute greatly to the growth of China's outward FDI in these countries.

Similarly, along with the improvement in transaction efficiency at home and the enhancement of international business abilities, the 1990s witnessed the expansion of China's outward FDI in other developing countries (Figure 19). Nevertheless, China's outward FDI is still unevenly distributed among individual developing countries. For example, in ASEAN (except for Thailand, Malaysia, Indonesia, Singapore and the Philippines), all countries have only had a very small share of China's investment. In Africa, North Africa only received a very small share of China's FDI in that region, with the majority of China's investment going to central and southern African countries. Among them, South Africa, Zambia, Zimbabwe and Mali were the major destinations. The other major recipients in Africa were Tanzania, Nigeria, Egypt, Cote D'Ivoir, Sudan and Gabon. In Latin America, Peru was the biggest recipient of China's outward FDI. On the whole, West Asia, Central Asia and East Europe (except for Russia) were the regions which attracted little interest from Chinese investors. For example, twelve West Asian countries (Cyprus, Iran, Israel, Jordan, Kuwait, Oman, Qatar, Saudi Arabia, Syria, Turkey, United Arab Emirate, Yemen) together only received US$24.95 million of Chinese investment in the 1979-1998 period. Similarly, six Central Asian countries, Georgia, Kazakhstan, Kyrgyzstan, Tadzhikistan, Turkmenistan, and Uzbekistan, together only received US$25.08 million of Chinese investment until 1998. Until 1998, China invested US$123.55 million

in Central Asia and East Europe, of which more than 80 per cent went to Russia. All those countries which have received a small share of China's outward FDI are either experiencing difficulties in transition or do not have good transaction conditions required by FDI.

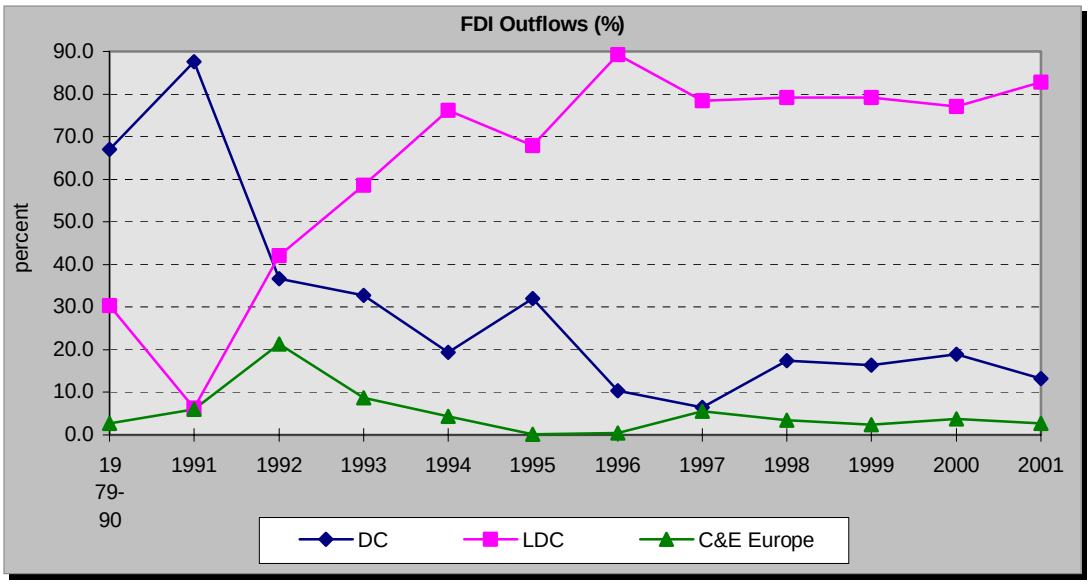

Figure 19 Distribution of China's outward FDI among three groups of countries

5. Conclusion

China's outward FDI has shown specific characteristics in its geographical distribution. While it covers almost all the countries in the world, it is highly concentrated in a few developed countries plus a limited number of developing countries. The analysis in this chapter shows that the distribution reflects the motives of Chinese firms for invest abroad and conditions in target countries in meeting investors' needs. In general, investments in resource seeking are concentrated in a few natural resource rich countries and technologically advanced countries. Market transaction enforcing and position improving investments are distributed in countries with relatively large markets for the products of the investing firms. Specially, overseas manufacturing investments mainly go to developing countries to serve local markets. Target countries' domestic transaction efficiencies for goods and labour and their existing linkage with China further shape the direction of China's FDI flows.

So far, China's FDI is still at the early stages of growth. Except for a small number of firms which have established overseas affiliates in many countries, most of the investments are initial investments for the firms involved. An initial investment has relatively simple and more specific functions, e.g. it is for a certain type of resources or a particular product market niche in a particular country. Therefore, the location choice involves fewer decision factors. The specific motive for an investment and a foreign country's conditions for meeting the investor's needs would in most cases determine the destination for the investment. As the internationalisation proceeds to the extent that a firm has more overseas affiliates, integrating the geographically scattered affiliates would become especially important for strengthening the international competitiveness of the investing firm. Then the location choice for foreign investment will involve more factors, resulting in changes in the geographical distribution pattern of China's outward investment.

PART III

INTERPRETATION OF CHINA'S OUTWARD FDI

Chapter 9. Networking and China's Outward FDI

The goal of this chapter is to interpret the material presented in the previous chapters and present an overall picture of China's outward FDI. The interpretation is carried out in terms of the network model developed in Chapter 5 and the information presented in the subsequent chapters.

1. The Pattern of China's Outward FDI and Theoretical Issues

1.1. Features of China's outward FDI

China's outward FDI emerged in the early phase of the economic reforms. In its very short history, it shows some distinct features.

First, in contrary to the most widely acknowledged pattern that firms become international in a slow and incremental manner [Andersen, Blenker and Christensen, 1993] and therefore the development of FDI of a country is a gradual process [Dunning and Narula, 1997], China's outward FDI grows very rapidly. According to the Ministry of Foreign Trade and Economic Cooperation, by the end of 1998, the number of foreign affiliates approved by the Chinese government was over 5,600, covering almost all countries in the world [China Daily, 5/12/1999]. Average annual FDI outflows increased substantially from US$150 million in 1980-1985 to US$711 million in 1986-1990. This figure increased further to more than US$2.66 billion during the next five-year interval (1991-1995), nearly quadrupling the FDI outflow of the 1986-1990 period. Average annual FDI outflows kept at a level about US$2 billion in the following six years (1996-2001) [UNCTAD, 1994-2002].

The rapid expansion of FDI outflows has soon made China one of the main FDI source countries within the developing country group. During 1985-1998, it was among the top five of those countries in terms of annual FDI outflows. Its outward FDI stock mounted to US$27.6 billion in 2001, close to that of South Africa (US$29 billion) (Table 31). Six of

the top 50 multinational enterprises based in developing economies, ranked by foreign assets in 1997, were from China [UNCTAD 1999, pp.86-87].

Table 31 Eight largest FDI source economies of the developing country group

(stock, US$ million)

	1980	1985	1990	1995	2000	2001
Hong Kong	148	2344	11920	78833	365803	374780
Singapore	3718	4387	7808	35050	53009	63225
Taiwan	97	204	12888	25144	49187	54667
South Korea	127	461	2301	7787	50552	40825
South Africa	5722	8963	15027	23305	32333	28999
China	..	131	2489	15802	25804	27579
Chile	42	102	178	2809	18293	22084
Argentina	5997	5945	6106	10696	20859	20736

Source: UNCTAD, World Investment Report, 2002, pp.307-317.

Second, different from the generally acknowledged pattern that FDI form a developing country would initially be directed to neighbouring developing countries, China's outward FDI is highly concentrated in a small number of countries, particularly three developed countries, namely, the United States, Canada and Australia. As noted in Chapter 2, up to 2001, 30 per cent of Chinese FDI outflows went these three countries, each accounting for 13, 9 and 8 per cent, respectively. These three countries, plus Hong Kong, Peru, Thailand, Mexico, Zambia, Russia, Cambodia, South Africa and Brazil, accounted for about 67 per cent of China's FDI outflows, leaving the remaining 143 countries accounting for only 33 per cent of China's outward FDI. European countries a whole only received 6 per cent, the lowest share among all regions.

Third, the earlier the time, the more skew towards a few developed countries was the geographic distribution of China's outward FDI. During the 1979-1990 period, the United States, Canada and Australia attracted 63.3 per cent of China's FDI outflows. Their share reduced to 47 per cent in 1991-1995 and further to 9.8 per cent in the next five-year interval (Figure 20). This was mainly due to the reduction in the distributional share of China's investment in Canada and Australia. Given the fact that European countries and Japan have received relatively limited FDI from China, the reduction in the share of China's FDI in these three countries implies that, as China's outward FDI develops, developing countries have growing attraction for Chinese investors. During the periods of 1979-1990 and 1991-

1995, only 30 and 35 per cent respectively of China's FDI outflows went to developing countries. However, this figure rose to 80 per cent in 1996-2000 (Table 1).

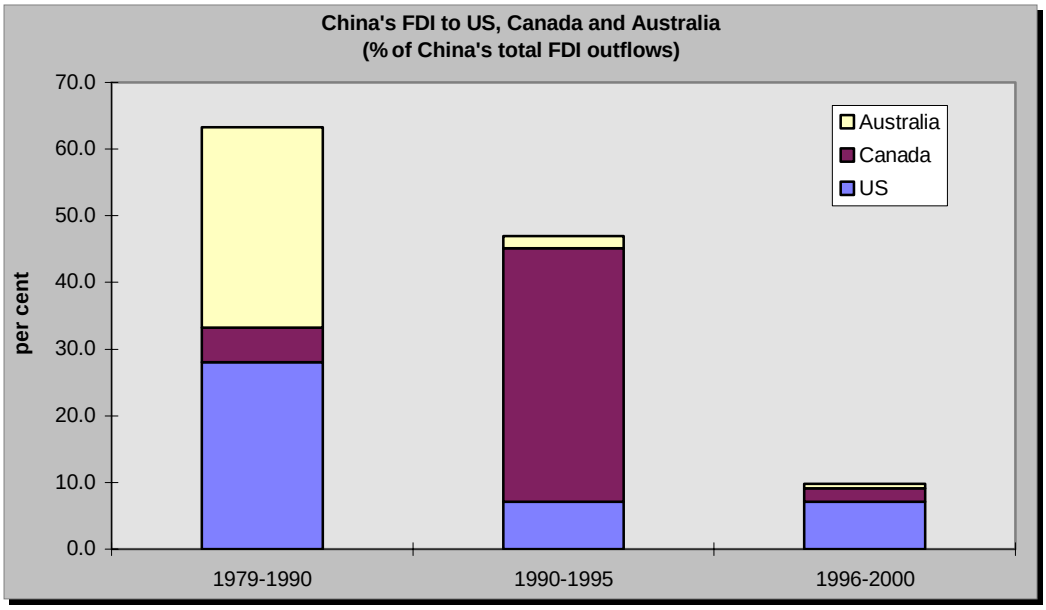

Figure 20

1.2. Theoretical issues raised by China's outward FDI

It has been argued in Chapter 3 that the pattern of China's outward FDI cannot be satisfactorily explained in terms of mainstream theories of FDI. This argument is based on the following reasons.

According to mainstream theories, the possession of some kind of proprietary advantages is a critical factor underlying a firm's outward FDI. This holds regardless of whether the investment is claimed to be motivated by the firm's desire to exploit these advantages overseas to avoid transaction costs (the internalisation model) or as a part of the firm's strategy within imperfect international competition (the market power model). These proprietary advantages are derived from the ownership of some intangible resources, such as production process, managerial skills, marketing techniques or organisational capabilities. They can be easily transferred from one country to another within a firm, but are difficult to transfer between firms. So they are termed as firm-specific ownership advantage.

However, this pattern of proprietary advantages is hardly reflected in China's outward FDI, especially when considering the fact that China's outward FDI has been directed to

developed countries as its major destinations. The discussion in Chapter 3 shows that, compared with their counterparts from developed and newly industrialised countries, Chinese firms do not possess clear competitive advantage. Rather, they are typically smaller in average size, and weaker in R&D activities and management.

The timing of the rapid growth of China's outward FDI also raises questions for mainstream theories of FDI. As discussed in Chapter 3, according to Dunning's *investment-development-path* [Dunning, 1988], the growth of outward FDI is related to the economic development of the source country, or more specifically, to the source country's inward direct investment position. Before the emergence of its outward FDI, a country is expected to pass a stage in which even inward direct investment does not exist. Even if it has started outward FDI, the country will still have to experience another stage in which inward FDI starts to rise but outward FDI remains low or negligible. Only when the country has entered the third stage, can the rate of growth of its outward FDI increase while that of inward direct investment gradually decreases.

However, in China's case, the emergence and development of outward and inward direct investment flows coincided with each other, instead of being sequential. The period of 1979-2001 witnessed a steady growth of inward and outward FDI. It seems that China's outward FDI in its development has skipped the first and part of the second stage of the investment-development-path, and has now entered the early period of the third stage.

In addition, mainstream theories of FDI hold that national firms enjoy the general advantage of better information about their country's economy, language, law, politics, and so forth. As foreign firms do not possess that knowledge, they will incur additional transaction costs in operations conducted within that country. Accordingly, a foreign firm must have sufficient firm-specific advantages (ownership advantages) to offset the comparative disadvantage of being foreign if it is to compete successfully in the host country. On the other hand, if a firm chooses to invest in countries with less cultural, economic or physical distance from the home country, it will need less ownership advantages to tackle the barriers to international operation, as a "short" distance in this sense implies comparative disadvantages. It follows that FDI from a developing country is likely to be directed to other developing countries, especially the neighbouring ones, at the lower stages of economic development. Only after having gained international experience

through overseas operations and consolidated their firm-specific advantages can firms invest on a relatively large scale in more developed countries that are distant geographically (Dunning and Narula, 1996; Riemens, 1989; Tolentino, 1993). In contrast to this view, as noted above, China's outward FDI is heavily concentrated in a few developed countries and the share of investment in these developed countries was even higher in the early period. Developing countries have not been a major destination for China's FDI in the early period. This fact seems to deny the decisive role of proximity between home and host countries for the choice of destination of FDI, as suggested by mainstream theories of FDI.

2. Network and FDI

The difficulties in providing a convincing explanation of the pattern of China's outward FDI by using mainstream theories call for a different approach. For this purpose a network model of FDI was developed in Chapter 5.

2.1. Methods and institutions for economic organisation

According to the network model, economic activity in the market economy involves two methods of organisation (price and hierarchy) and three possible institutions (the market, network and firm) which use these methods in organisation. While the market uses the price system to organise transactions between firms and the firm organises internal activities via hierarchy, the network organises activity across the market and the firm by using a mixture of price and hierarchy. For a transaction via the market, firms are faceless, sharp in and sharp out; and the boundaries between in and out at the beginning and in and out at the end, are clear [MacNeil, 1974, p.750]. In contrast, for organising economic activity via the network, a certain kind of inter-locked relationship between the involved firms is formed due to the overlapping of economic and governance boundaries between these firms. This inter-locked relationship leads to the formation of external networks around the hub firm, and the boundaries of the firm are reshaped according to the organisation of networking activities.

The network would become the preferred choice for economic organisation if networking can bring about positive cost reduction effects for the firm. Networking can raise net

benefit by reduction in costs in two ways: reducing governance costs, and saving transaction costs. As discussed at length in Chapter 5, a firm can move its economic boundary outwards to overlap its partner's governance boundary while keeping its own governance boundary unchanged or changed less in scale than its economic boundary. The expansion of the economic boundary implies that the firm directly or indirectly has some claim over the usage of some of the required resources owned by the partner. This would be beneficial for the firm if the required strategic resources such as crucial know-how, for one reason or another, are difficult to acquire in the market and their transaction involves high transaction costs [Teece, 1985]. In the meantime, as the firm's governance boundary has hardly changed, the firm does not have to increase governance cost. Even if there were an increase in governance cost, the firm would still benefit if the resulting reduction in transaction cost is larger than the increase in governance cost. This can be seen as an indirect saving of governance costs.

One of the most noticeable benefits of networking is that the overlapping of the economic boundary and governance boundary of the firms involved forms a good environment for more effective transaction and transfer of information between the networked firms. The interlocked relationship between two firms helps to bring transaction costs down, because information flows between the people rather than the plants [Casson and Cox, 1997]. Therefore, while the social bonds sustained by networks reduce the cost of both communicating information and assure its quality, the consequent reduction in information costs encourages greater sharing of information.

In addition, networking can also help the realisation of economies of scale and/or scope, such as joint research, marketing, or production [Contractor and Lorange, 1988; Håkansson and Snehota, 1989]. In the era of globalisation and the knowledge based economy, the accelerating increase of R&D expenditure and the shortening of the technology life span have greatly increased the importance of R&D cost sharing as well as R&D benefit exploitation among the relevant firms.

2.2. Location of economic activity and FDI

Economic organisation involves not only the issue of how to organise economic activity, but also the decisions regarding the geographic location of economic activity. Due to various reasons, the market place is not universal and homogenous, but consists of many

markets at different locations for different factors and products, and economic activity can take place in different locations, including at home and abroad. In addition, a firm is not deemed to be a single-plant production unit with all its activities based in a single location. In principle it is natural that, in a market economy, entrepreneurs are free to displace market transactions by increasing the scope of allocations made administratively within their firms, and the most profitable pattern of enterprise organisation should ultimately prevail. Where more profitable results can be obtained from placing plants under wholly or partly common administrative control, multi-plant enterprises will predominate and single-plant firms will merge or go out of business.

As discussed in Chapter 5, the fact that the organisation of economic activity has three institutional choices (i.e. via market, through networking, or within the firm) means that a firm that is prepared to consider locating its activity has six possible choices, i.e., to organise the activity via one of these institutions at home or abroad.

A multinational enterprise (MNE), the main subject of FDI and a consequence of such investment, is a firm which controls and manages production establishments – plants – located in at least two countries [Caves, 1996, p.1]. It involves not only the question of the boundary between the administrative allocation of resources within the firm and the market allocation of resources between firms, but also the question of the international setting of the boundary between the firm and the market as well as the question of the form of hierarchy. In the perspective of economic organisation, wholly owned overseas subsidiaries are the international expansion of the parent firm's boundary by using hierarchy, joint ventures are the international expansion of the parent firm's boundary through networking by using a mixture of price and hierarchy. Overall, a firm and its overseas subsidiaries form an international network [Ghoshal and Barlett, 1993, pp.77-104]. Accordingly, FDI can be defined as a process in which resources are committed to create, build or acquire assets in foreign countries so as to establish and develop positions for the investing firm in relation to its counterparts in foreign networks [Johanson and Mattsson, 1988]. An FDI project is a node (in the case of initial investment) or an improvement at an existing node (in the case of subsequent incremental investment) in the network of the investing firm's global business and this node not only ties different business activities of the firm but also ties the firm's business network to the market networks of the host country.

3. Networking and China's Outward FDI

Based on the results of the analysis in chapters 6-8, this section presents an interpretation of China's outward FDI in the framework of the network model of FDI.

3.1. No outward FDI before the reforms

As shown in Chapter 5, the market, network and firm are institutional forms for organising economic activity in a market economy. While the market uses price and the firm uses hierarchy to organise economic activity, networks use a hybrid of price and hierarchy. FDI is a form of international economic organisation by using methods ranging from partly to wholly involvement of hierarchy based on ownership. It leads to the expansion of the investing firm's boundary into the host country and forms a node there, and this node can be used for further networking. It therefore relies on the functioning of these market elements. When an economic system essentially rules out these market elements, it is beyond the scope of an enterprise to use these institutional forms and measures to organise economic activity. Under such conditions, FDI will not occur if the economy adopts a closed development strategy. This is the case of China before the reforms.

Under the Maoist economic system, the Chinese government ran the country as a planned economy, similar to the Soviet Union. The state owned sector was dominant in the economy. Non-state owned enterprises were very small in size and volume, and they were controlled by the state through indirect planning and other administrative arrangements. So the state was essentially the owner, operator, and employer. Each enterprise specialised in particular activities. The government set output quotas for each production enterprise and similar tasks for commercial enterprises. The sources and quantities of supply of input for production were arranged by government planning, so were the procurement and supply in commercial enterprises. Prices and markets in the sense of a market economy were basically excluded from the economy. Though there were "prices", these were mainly set by the state. They neither revealed information about the relationship between demand and supply, nor reflected the quality of products. In addition, firms operated within the peculiar system of dual financial flows with the government, which acted like a financial straitjacket. They turned over their revenues (profit) to the state and the state in turn

allocated funds to cover the expenditures of enterprises. Fixed capital investment and investment for technological improvement in enterprises were also allocated by the state.

In this system, enterprises did not have the autonomy to expand their boundaries of business, nor did there exist a market mechanism for the external transaction of factors and goods that would be associated with expansion. As a consequence, there was no possibility of enterprises undertaking FDI autonomously.

If it can be said that the planned economic system ruled out enterprises' automatic engagement in FDI activity, the principle of self-reliance in foreign economic relations adopted by the state before the reforms further blocked FDI. For three decades before the reforms, China's economy was basically an autarky economy, de-linked from the rest of the world economy. Foreign economic relations were generally restricted to foreign trade, and higher-level international economic activities, such as FDI, were basically rejected.

Due to the country's de-linking from the world market and the enterprises' de-linking from outsiders, there was basically no FDI activity for the three decades before the reforms.

The above argument would not arise in the mainstream theory of FDI which is based principally on the experience of the developed countries and assumes the existence of the market and the autonomous firm. This argument only arises in a country such as China, where neither the market nor the autonomous firm existed before the 1980s. Therefore, the insights provided below would simply not be available – the condition for the network model, which relies on the role of the markets and autonomous firms.

3.2. Emergence of outward FDI

Changes to China's closed planned economic system have been taken place since the late 1970s when China began to reform its economic system. It had adopted two main policy measures to move the economic system towards the Western model: to dismantle state administered economic activity, and to integrate the economy with the world economy.

The focus of the reform of corporate governance was to decentralise economic power from the state to economic agents, including state-owned enterprises and collective enterprises. Various approaches were adopted for this purpose. These include a profit-retention system adopted in 1979, a tax-for-profit system instituted in two successive steps in 1983 and

1984, a contractual management system introduced in 1987, and the corporatisation of state owned enterprises in the 1990s. These changes increased progressively the autonomy enjoyed by enterprises in business operations.

Along with the expansion of the autonomy of enterprises, markets developed for goods and factors. By 1988, the market economy had expanded, and factor markets started to emerge. Significant changes have taken place since then, especially after 1992. Stock markets, real estate markets, foreign exchange markets, and futures markets began to open to the public. Other factor markets spread all over the country. By 1998, the market mechanism covered prices of more than 85 per cent of factors, 90 per cent of manufacturing products and 95 per cent of commercial goods [IIE, 1998]. The emergence of factor and product markets has paved the way for enterprises to operate according to the rules of market economies.

The increasing introduction of the elements of a market economy into China's economy implies that enterprises gained increasing freedom in organising economic activity by using different measures (i.e., price and hierarchy) and through alternative institutions (i.e., market, network and the firm). Accordingly, enterprises were able to decide the boundary between the administrative allocation of resources within the firm and the market allocation of resources between firms. As a consequence, entrepreneurs were to a growing extent able to displace market transactions by increasing the scope of resource allocations made administratively within their firms. An enterprise may expand its scope of governance by complete or partial replacement of market transactions for a growing range of economic activities. Roughly, the complete replacement is to use hierarchy and the partial displacement is to use networks to organise that activity.

For a firm, which is deciding to expand its geographic boundary in relation to the market as well as the form of hierarchy, the formation of industrial conglomerates is one type of displacement of market transactions, undertaking overseas direct investment is another.

The development of industrial conglomerates in China formally started in 1987 when economic reforms gradually cut off the existing supply-demand arrangements between enterprises that had existed under central planning. But price reforms had not yet kept pace reflecting the supply-demand relationship. Especially, raw materials and intermediate products were under-priced and final products were over-priced. These had given under-paid firms upstream incentives to evade the supply quotas assigned by central planning in

one way or another. The evasion affected, in many cases seriously, the production of downstream firms or firms over-paid. In order to secure supply and smooth business, many large manufacturers downstream sought to establish conglomerates of reverse integration with former suppliers, or some firms established conglomerates with other related firms to compete with larger ones. Therefore, there was a boom in the establishment of conglomerates in China in the 1980s. In 1988 there were 1630 self-styled conglomerates of different types [la Croix *et al.*, 1995, p.37]. The trends in setting up conglomerates had later moved to developing "pillar" industries, pushing forward technological advancement, expanding exports, and competing with foreign based multinational enterprises. The main approaches to forming conglomerates were merging with or taking over other companies, buying shares of other companies, establishing financial companies, and assets licensed operation. The involved institutional forms range from the firm which uses hierarchy to networking which uses a mixture of price and hierarchy.

Similar to the formation of industrial conglomerates, the emergence and development of China's outward FDI are attributed to market oriented reform, which expanded the autonomy of the firm and put an end to the de-linking of China's economy from the world economy. Before the economic reforms, China's domestic industrial enterprises were cut off from international markets. Twelve state-owned foreign trade companies, each with responsibilities for a specific category(ies) of commodities, were the only intermediaries between domestic firms and the international markets. However, the monopoly status of these trade companies made them the "bad intermediaries" in functioning between domestic firms and overseas markets, especially in respect of market information supply and response. In the meantime, local governments had no autonomy in foreign trade.

Since 1979, several measures have been adopted in reforming the system of foreign economic relations. One of these was to decentralise the right to conduct foreign trade, permitting local governments, some industrial sectors, many large- and medium-sized enterprises and business conglomerates to engage in foreign trade. Another measure was to deduce the extent of command planning. Foreign trade was gradually regulated through adjustments to exchanges rates, tariffs, credits, licenses and quotas. While the emergence of factor and product markets gave firms the opportunity of obtaining factors and selling products in the market, the opening up of the economy provided firms with the possibility

of engaging in international business. As a consequence, Chinese firms which had the "licence" of FDI began to invest abroad.

Investors in the early period were basically trade enterprises, which might be grouped into two types: specialised foreign trade corporations with import and export license, and technological cooperation firms under the administration of provincial governments. Encouraged by the open door policy, these firms tried to enter into overseas business arrangements by taking advantage of their existing international business links and their higher autonomy in operation that had been granted by the central and local governments.

3.3. Growth rate of outward FDI

As FDI is a networking behaviour of the firm and networking activities rely on the functioning of market elements, the development of China's outward FDI, like its emergence, would depend on the feature and progress of marketisation reforms in the country.

Economic reforms in China have adopted a dual track approach, moving the economic system towards the Western model by gradually shortening the "non-market track" while gradually lengthening the "market track". During the transition, the two tracks exist in every aspect of Chinese economy, and the relative "length" of the two tracks (measured in marketisation) at a particular time differs among different aspects of the economy. This implies that at any particular time and in a particular area, a firm could benefit from exploiting the two tracks by networking activities.

Motivated to search for more network benefits, Chinese firms began to undertake outward direct investment almost at the same time as foreign investors began to invest in China. The locus of the development of China's outward direct investment coincides with the evolutionary process of firm related reforms in China.

Before 1984, the urban and industrial reform measures introduced basically focused on the reform of the industrial management system and the expansion of the enterprise power. As reforms during this period were partial, and only covered some experiments in state owned enterprises, neither the enterprises had enough authority to engage in international business, nor were there relevant market mechanisms for such activity. Only very limited number of

enterprises invested abroad during this period and the investment was small in both volume and number of projects. Investors were mainly large companies who enjoyed the status of ministries plus a few enterprises directly under the provinces [G. Li, 2000, p.15].

Two big steps in firm related reforms occurred the 1980s. A tax-for-profit system was instituted in 1984 and a contractual management system was applied to the Chinese enterprises in 1987. These reforms significantly increased the autonomy and internal incentives of enterprises. Correspondingly, there were big jumps in overseas investment in the two years. China's FDI outflows in the two years increased about 669 per cent and 1,142 per cent respectively on the previous year's base.

Economic reforms slowed down in 1989 and 1990 due to a combination of factors, including the internal debates on economic reforms between the conservatives and the reformers in the Party leadership, problems associated with economic growth and modernisation, and especially, the incident in Tian'anmen Square. As a result, the Chinese government backtracked towards re-tightening central control and suspended the approval of trade-type overseas enterprises in 1989. Correspondingly, outward direct investment in 1990 reduced to the level of 1988. It should be indicated that there was an increase in FDI outflows in 1989. Also it is certain that a part of the increase was due to the lag between the approval and undertaking of outward investment projects were improved in previous years but carried out in 1989,[36] some of the increase was most likely to involve capital flight behaviour of investors out of concerns for the political uncertainty.

Economic reform was regenerated in mid 1991 and accelerated in 1992 after Deng Xiaoping's trip to South China. In the 1990s, various general measures were adopted to reform China's macroeconomic structures. While improving the efficiency of state owned enterprises was a still focus, these measures included deregulating governance of exchange rate and taxation, opening capital markets, commercialising the state banks, reforming the systems of social security, circulation and housing, and improving property right and patent protection. As a result, China's economic system moved a large step towards that of a

[36] MOFTEC data on FDI which is allowed to be carried out in a particular year after government approval. There is a lag between the approval and undertaking of outward investment.

market economy. Firms had not only gained larger autonomy in operations, but also had more suitable environment to assume their autonomy.

These reforms had two opposite effects on the development of China's outward FDI. While firms gained more freedom to engage in overseas direct investment, the maturing of market economic mechanism meant that the benefit from international networking to some extent reduced due to decreasing benefits from exploiting the two-track system. As marketisation in nearly all aspects of the economy proceeded, more and more enterprises were able to carry out FDI with less difficulties (easier to obtain the government's approval of and more capability to engage in outward direct investment), being able to invest abroad was becoming less proprietary in taking advantage of the segment (or barriers) between the domestic and international markets and between those with and those without overseas investment. For example, when it was very difficult to be granted a "licence" to invest abroad and only a very limited number of enterprises had such a "licence", those enterprises which had overseas subsidiaries could relatively easily undertook roundabout investment in the home market in the name of their overseas subsidiaries, so they could enjoy the preferential treatment specifically for foreign investors as well as establish internal international commodity chains with one end in China and the other in overseas markets, through which supplied foreign goods badly needed in China and supplied overseas markets the products of the parents with very low wage labour. The reduction of both international and internal barriers due to marketisation as well as the entering of a large number of competitors, inevitably reduced the profit margin of such activities. Of course, the normal benefit of international networking still remained. As a result of the inter-action of the two forces, the growth of China's outward direct investment in the 1990s was rapid at first and relatively smooth afterwards, with obvious increases in a few years when major measures were adopted in the reform.

3.4. Focus of FDI activity

As highlighted in Chapter 7, while rapid economic development in China has provided firms with opportunities to grow, it has also exposed restraints for the Chinese firms to capitalise on their opportunities. These restraints include shortage of natural resources, gap in technology, and a saturated domestic market.

It is generally acknowledged that markets for both natural resources and created assets are very imperfect. Therefore networks could play an important role in obtaining them. For natural resources, networks based on ownership can reduce the uncertainty in supply. For created assets, networks can provide an ideal environment for transactions and transfers.

Resource seeking direct investment is aimed at obtaining important strategic foreign resources, including natural resources and created assets. The importance of such investment is attributable to resource heterogeneity. For economic organisation, resources are not homogeneous rather they are heterogeneous: business firms have to collect and combine a set of different resources in their operations. The importance of a resource element depends not only on its scarcity, but also on other resources with which it is combined. Therefore the value of a resource must be evaluated in different combinations and constellations. This is the reason why Penrose claims that individual firms are collections of heterogeneous resources [Penrose, 1995], and Alchian and Demsetz claim that the very existence of firms could be explained by resource heterogeneity [Alchian and Demsetz, 1972].

It is obvious that the lack of certain resources and the gap in technologies in China to a large extent have reduced the relative values of other resources. Also the huge growth potential of the national economy and the perceived barriers for economic development, i.e., shortages of natural resources and technological gap, have raised pressures for firms in their operation and development as well as opportunities to explore. For the former, firms are stepping towards the shadow of uncertainty in and scarcity of resource sourcing, including natural resources and technologies. For the latter, while China is one of the world's most dynamic economies providing the firms with huge opportunities for growth, those firms which have possessed scarce resources and needy technologies, due to demand and supply relationships, would further gain much in market power and competitiveness. Under such circumstances, firms would be motivated to engage in FDI associated with exploiting the opportunities as well as tackling the pressures.

As a result, resources seeking FDI has been a focus ever since China's outward FDI emerged. MOFTEC data shows that natural resource exploiting FDI accounted for about 30 per cent of China's total outward direct investment between 1979 and 1998. For investment for natural resources, FDI affiliates, in most cases joint ventures, are established

to extract and process the required natural resources. For investment for obtaining technology, research centres and other type of window entities are set up in advanced countries to carry out transaction and transfer activities, such as information collection, training, and R&D.

Up to 1998, trade investment flows and manufacturing investment flows accounted for 60.1 and 11.4 per cent, respectively, of China's outward FDI flows [MOFTEC, quoted from Li, 2000]. As expanding China's exports is an important business for trade investment affiliates and overseas manufacturing also mainly aims at host countries' markets, these figures show that exploiting overseas markets is another focus of China's outward FDI. As indicated in previous chapters, foreign direct investment can establish a node in the place closest to the firm's partners and customers and such a node can benefit the firm in information obtaining and network position improving, the firm's market transactions are improved. For example, by establishing overseas manufacturing and marketing facilities, firms can provide better after-sales services and effectively penetrate into growing markets. It is worth noting that the share of overseas manufacturing investment in China's total outward FDI is expanding, and more industrial firms have set up manufacturing plants, established sales networks and marketed their brands abroad [Zhang, 1999].

3.5. Geographic distribution of outward FDI

Following the above analysis, the geographic distribution of China's outward FDI would concentrate in countries with suitable environments for FDI activities of Chinese investors.

One of such suitable environments is the relative rich endowment of natural resources required by Chinese firms. This is one of the main reasons that countries such as Australia, Canada, Peru, South Africa and New Zealand attracted a large portion of China's outward FDI, especially in the earlier period. CITIC investment is an example. It invested heavily in natural resources projects, including investments in pulp and lumber mills in Canada and in aluminium smelting in Australia in the mid 1980s. Other examples include Shougang's investment of US$312 million in Herroperu SA in Peru and a Chinese oil company's investment of US$1.8 billion in oil extraction in Sudan. This type of investment is concentrated in Oceania, North and Latin America and some African countries.

Countries with technological leadership is another attraction for Chinese investors. The United States is an example in this respect. It has received the largest share of China's FDI outflows. Besides its huge market and rich natural resources endowment, its technological leadership is an important factor underlying China's investment in that country. For example, Haier and Konka, two of China's largest electronic and whitegoods producers, have R&D centres in the United States. In addition, investment in the United States can also serve the purpose of building up knowledge of advanced business practices corresponding to its highly developed market economic system. Such knowledge is badly needed by Chinese firms which are embracing and internalising macro and microeconomic institutions and practices appropriate for a market economy.

The reason that some other developed countries have not received as much attention from Chinese investors might be their lack of market conditions enjoyed by countries such as the United States. The three largest recipients of China's outward FDI, the United States, Canada and Australia, share many common features. They are all developed economies with a stable political environment and well established market system, which provide ideal conditions for market activities, including transactions of both goods and labour. English is the official language and Anglo-Saxon culture is the dominant culture in all these countries. This cultural and linguistic homogeneity has greatly reduced barriers to communication and therefore is very beneficial for business operations, especially in the aspects of internal human resources management and external contract negotiation. As developed countries they provide good education for their nationals and overseas students, therefore foreign invested firms face little difficulty in recruiting the workforce with required skills.

For China's firms, the transaction conditions in these countries are even more suitable for their FDI when the following factors are taken into consideration. Compared with the other foreign languages, English is by far the largest foreign language by the number of learners in China. A Chinese firm would therefore find it easier to recruit expatriates who can use English as the working language if it undertakes FDI in one of these three countries. In addition, these three countries have the largest ethnic Chinese communities outside Asia. Due to the similarity in culture, China's investors can use the overseas Chinese networks as effective platforms to access local markets and business communities.

Another focus of Chinese outward FDI is transaction enforcing and position improving. Destinations of this type of investment are mainly countries where export markets exist. Table 29 shows the positive correlations between the geographic distribution of China's trade and the outflows and number of projects of China's outward FDI. While investment of this type in developed countries is mainly export oriented, investment of this type in developing countries is mainly overseas manufacturing, among them include Russia, Thailand, Malaysia, Singapore, South Africa, Indonesia, Cambodia, Brazil, Mexico, Zimbabwe and Bangladesh.

4. Conclusions

This thesis set out to find a plausible explanation of China's outward FDI. In reviewing the existing literature, it became obvious that the traditional theories of foreign direct investment were unable to offer such an explanation. It then became necessary to develop an alternative explanation, which has been done in terms of the networking model. This model was developed by applying economic norms to capturing the ideas of networks in business analysis. As it has taken into consideration networking effects on both governance cost and transaction cost and networks are spatially disposed in nature, it can capture the underlying rationale for determining for an economic activity the organisational form and its location. In contrast to paradigms in mainstream theory of FDI, the forte of this model lies in its quantitative specification of the cost structure in FDI and other organisations of economic activity. As such specification is based on acknowledging, in addition the market and the firm, network effects which extensively exist in business practices but are ignored in mainstream economic theory, this model has made a contribution to the knowledge of economic organisation in general and FDI in particular. Also, the explicit specification of the cost structure for economic organisation in this model makes it relatively easy to build econometric models based on it. The absence of firm level data in China's case made it impossible to test the propositions of the networking model at the firm level. Instead, the explanation provided in this thesis runs in terms of the overall size of FDI, the timing of its rapid growth and the pattern of its destinations. These patterns seem to coincide remarkably with the progress of economic reforms in China, which provided greater decision-making autonomy to business units. As the reforms progressed, firm-level motives of outward investment started to play an important role in determining

the flows and their directions. It is hoped that, within the limitations imposed by the available data and information, the thesis has offered a plausible set of explanations that are new and may be able to be tested subsequently when more information becomes available.

Based on this research, future efforts can be made in two directions. On the one hand, improvement should be made to making this model a general equilibrium one, so as to reduce the looseness of the model. One outstanding feature of the network is its blurring boundary. This makes it difficult to formalise the network phenomenon in the economic literature. And it is expected that topological knowledge also will be required in such a formalisation.

On the other hand, empirical study based on the network model of FDI should carefully choose variables to capture the network effects. Due to the complex structure and blurring boundary of the network, it will require a large amount of data. If the sample is large, the analysis would be a time consuming task. Therefore, it would be worthwhile if some simplified econometric models are developed specifically for the purpose of a country case study.

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