Northern Territory University

Faculty of Business

MBA Dissertation

Japanese Foreign Direct Investment in China

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TO THE BEST OF MY KNOWLEDGE AND BELIEF THE WORK PRESENTED IN THE DISSERTATION IS ORIGINAL EXCEPT AS ACKNOWLEDGED IN THE TEXT. THE MATERIAL CONTAINED IN THIS DISSERTATION HAS NOT BEEN SUBMITTED IN WHOLE OR IN PART FOR A DEGREE AT THIS OR ANY OTHER UNIVERSITY.

(Tommy) Donghui Wu
This dissertation is dedicated to my mother, brother and sister-in-law

Mrs. Yan Caijuan
Mr. Yu Dehua
Mrs. Wu Shaomin
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Abstract

Foreign direct investment (FDI) has increasingly shown its contribution to economic development in developing countries. This paper examines the situation of Japanese foreign direct investment (JFDI) in China, evaluates the role played by JFDI contributes to China’s economic miracle. A review of the theories of FDI confirms the link between these theories and the Heckscher-Ohlin theorem, this leads to the possibility of analysing the activities of JFDI in China through the help of the Heckscher - Ohlin theorem.

This study explains the interlink between Japan’s own economic development and JFDI, confirms the importance of Chinese policies towards FDI. This paper also shows the reasons why Japan recently chose China as her first target for FDI. Furthermore, the contribution of JFDI to China’s economic development are demonstrated by the effects of JFDI on China’s GDP and China’s exports to Japan. With the application of the Heckscher - Ohlin theorem, some hypotheses came to the conclusion that the main motives of JFDI in China are shortage of labour forme and abundant capital in Japan, they also point out the effect of the yen exchange rate on JFDI. With the tests of trends of JFDI over time, this paper affirms the increasing trend of JFDI in China in the future. This study finally concludes JFDI in China is important and significant to the development of China’s economy. It suggests the mutual benefit policy should be encouraged and adopted in the future in dealing with JFDI in both countries.
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List of Acronyms

APEC  Asia-Pacific Economic Cooperation
ASEAN  Association of SouthEast Asian Nations
FDI  Foreign Direct Investment
GDP  Gross Domestic Product
GNP  Gross National Product
JFDI  Japanese Foreign Direct Investment
MNC  Multinational Companies
NIEs  Newly Industrialising Economics
OECD  Organization for Economic Cooperation and Development
SEZs  Special Economic Zones
Chapter I. Introduction

1.1 Background

Foreign direct investment (FDI) has grown rapidly both worldwide and within the Asia Pacific region since the early 1980’s. At the same time, FDI has become a major source of new products, improvement of technologies and betterment of workforce skills, as well as a significant contributor to meeting the demand for infrastructure in the Asia Pacific countries.

Since the postwar period, Japan’s influence on the rest of Asia has been explained by its aid, trade and investment in these countries. From the late 1980s to the present, Japanese foreign direct investment (JFDI) is a major factor in the development of Asian economies. The importance of JFDI in the region was recently recognised especially during the current stock market crisis in Asia-Pacific and its effect of Japan on Asian economies.

Since China adopted her open-door policy in 1979, the influence of JFDI can be seen on China. Many attribute the impressive performance of China’s economy to JFDI.\(^1\) There is a general view that although many aspects influenced China’s rapid economic development, JFDI made a significant contribution to China’s miracle.

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This study is concerned with the role played by JFDI in China’s economic development.

1.2 Objectives

1.2.1 Statement of the Problem

China is no exception when evaluating the influence of FDI on her economic development. One of the FDI examples in China is related to Japan. When examining the role played by JFDI in China, this study is concerned with a number of issues. They are (a) whether JFDI in China is important to the development of China’s economy as well as that of Japan’s economy. In particular the question must be asked what makes Japan invest in China. (b) what role does JFDI play in the past and current efforts in the development process in China? What trends can we ascertain about the foreseeable future of JFDI in China? and (c) what factors affect JFDI in China? What should both governments do in dealing with the future of FDI?

1.2.2 Objectives of the Dissertation

In order to resolve the above problems, analyses of the past and current trends of JFDI in China’s economic development are required. Investigation is essential to examine three interrelated objectives. It is necessary to describe the relationship between economic development and FDI. To achieve this, a review of the different theories of FDI is needed. Second, the importance of JFDI in China can be
ascertained by comparing JFDI in the world. This will help in evaluating the contribution and characteristics of JFDI in China. It will also provide certain insight into the effects of trade relations between China and Japan. Finally, it is hoped that certain recommendation can be made for attaining successful investment of JFDI in the ever changing environment of China’s economic development.

1.3 Significance of the Study

By examining different theories of FDI and recognizing the basic forces of influences of FDI, a better understanding of the role of FDI in the development process can be achieved. In addition, this study will provide the knowledge about the trend and shifts of location of JFDI in the world. Furthermore, by understanding the situation of JFDI in China, it is noted that the advantages of attracting JFDI in China, and the possible future scenario can be better analysed.

1.4 Methodology and Limitations

A deductive - inductive methodology was used in this study. A number of steps were followed.

A review of various theories of FDI revealed that they are linked to the basic fundamental Heckscher-Ohlin theorem. The Heckcher-Ohlin theorem presents people with a basic understanding of FDI. This study then assumes that the JFDI in
China can also be examined in the light of the Heckscher-Ohlin theorem. Relevant data (see appendix 1) was collected to establish the underlying trend regarding the amount of JFDI in the world. The data used in this study was taken from different resources on the internet and statistical books (See appendix 2). After analysing the past and current situation of JFDI in the world, a link between JFDI and Japan’s economic development as well as the importance of JFDI in its own economic development was examined. Japan’s own economic development appears to be intricately linked with JFDI. This study then extended from the effect of JFDI to Japan to JFDI in China. By establishing that JFDI in China is significant to the development of China’s economy, this study sets up a few hypotheses to test the relationship between JFDI in China and some important macro-economic factors including China’s GDP, trade between two countries, labour force. These hypotheses are established with the help of applying the Heckscher-Ohlin theorem to test whether they are relevant to explain the role of JFDI to China’s economy. Methods including simple regression, multiple regression, correlation and factor analysis were used in providing tests for these hypotheses. Finally, on the basis of the research undertaken and the findings of the analysis, the conclusions are drawn and recommendations made.

Secondary data mainly through available sources in the library of the Northern Territory University and from the internet at the Computer laboratory of the Faculty of Business were used in this thesis.
The limitation of the methodology in this study is: first, some differences exist between the data collected from different resources, as various resources have been used to make the analysis possible. Second, due to the difficulties of collecting the specific data and the time limit, this study does not aim to measure the effects of China’s economic adjustment policies such as taxes, tariffs, cultural factors on JFDI in China. These issues are important in understanding the role of JFDI in China and therefore an in-depth study and investigation should be undertaken in the future.

1.5 Organisation of the Study

A literature review of the relationship between FDI and development and different theories of FDI in chapter II suggests the possibility of method of using a basic theory (the Heckscher-Ohlin) to explain the activities of JFDI in China. In chapter III the role of JFDI in the development of Japanese economy is analysed. It also presents the past and current trends, stages and reasons of JFDI in the world. Chapter IV examines the relationship of FDI and China’s economic development, China’s policies towards FDI, after reviewing the importance of FDI in China’s economy at different times. Chapter V highlights the role of JFDI in China through the trend, amount, sector and location. It establishes that the importance of JFDI in China is significant to China’s economic development. Relationship between JFDI in China and China’s GDP, labour force, China’s exports to Japan, currency exchange rate is tested by applying the fundamentals of the Heckscher-Ohlin theorem.
Finally chapter VI concludes that JFDI in China is important and significant to the development of China's economy as it meets the needs of both countries. This study suggests the mutual benefit policy should be encouraged and adopted in the future in dealing with JFDI in both countries.
Chapter II. Foreign Direct Investment and Economic Development: Theories and Practice

Most of the theories of foreign investment are considered as a part of the theory of international trade. Traditional trade theory treated foreign investment as a form of international capital movements. Kiyoshi Kojima (1978) divided these international capital movements into short (less than one year based on the maturity) and long-term capital movements, foreign investment belongs to the latter. Foreign investment can be further divided into direct (such things as building plants or sales bases abroad) and indirect or portfolio investment (subscribing to foreign stock or bonds). This study considers FDI in particular in the following discussion.

2.1 Relationship Between Foreign Direct Investment and Economic Development

FDI emerged as a major phenomenon in the world economy in the 1960s. Through the 1960s FDI grew at twice the rate of Gross National Product (GNP) in the Organisation for Economic Co-operation and Development (OECD) countries. The growth of FDI was checked by the oil and other commodity price shocks of the early 1970s, and it was not until the mid-1980s that the upward trend was resumed.
Thereafter, the amount of FDI has increased rapidly through the 1980s until now. During these periods, the major sources of outward foreign investment were the G-5 countries (the United States, the United Kingdom, Japan, Germany and France). From the 1970s to the 1980s, these G-5 countries were also a major destination for FDI. The situation has shifted with the increasing investment (particularly by Japan) in the newly industrialising countries (NICs) of East Asia—i.e Korea, Taiwan, Singapore, and Hong Kong—and the Association of South-East Asian Nations (ASEAN) economies. From the middle of the 1990s, FDI has begun to flow from G-5 countries into developing countries such as China, Vietnam, India. A considerable number of developing countries have become more receptive to FDI and are exploring ways of increasing inflows. Nowadays, the flow of FDI in two ways—focuses are not only from developed countries to developing countries, but also from developing countries to developed countries.

There is considerable controversy about the relative costs and benefits of FDI to developing countries. Thinking about the role of FDI in development, some economists argue that the package of capital, technological and managerial resources generally increases the real domestic income of the host country (FDI receiving country) by more than the profits to the home country (Investing country), but others think that there are mutual benefits. Experiences of the past  

4 ibid  
5 ibid, P. 2  
6 Vincent Cable & Bishnodat Persaud, Developing with Foreign Investment, Croom Helm Ltd. 1987  
7 Foreign Private Investment in Developing Countries-A Study by the Research Department of the International Monetary Fund, International Monetary Fund, Washington, D.C January 1985, P. 9  
8 ibid
decades persuaded people believing the latter. There is also a growing recognition of the importance of FDI in the development process. This paper looks at the relationship between FDI and development from two views.

2.1.1 The Home Country View

Investing countries can benefit from their investments in developing countries by getting scarce natural resources, cheap labour and government incentives. Former economists analysing their benefits thought investors could get more profits if the cost of their product is less than in their own countries and could reduce their risks of reinvestment in their own countries. Experience demonstrates FDI might stimulate domestic investment, it can lead to an increase in employment. (BID 1995b; Lipsey 1994). At the same time, it will increase or reduce their imports and exports, and the globalisation of firms can stimulate technological development in home countries, because these countries can use the higher profits earned by the investors to increase research and development (R & D).

2.1.2 The Host Country View

Host countries have typically allowed and encouraged FDI because of a lack of domestic capital needed for economic development purposes.

From a host country’s perspective, the objectives for seeking FDI through multinational expansion are similar to those for obtaining foreign aid and loans;
each represents a transfer of capital from one country to another which can offset domestic resource gaps that limit the country’s ability to meet development targets.

Looking at the progress of the developing countries, we realise that these countries have an increasing preference for the investment in equity form over commercial bank borrowing, which has proved to be unpredictable, onerous and inflexible in its servicing obligations, and which is unobtainable for many countries. First, FDI provides not only an initial capital inflow, but also the subsequent outflow profits are determined by the performance of the investment. Second FDI is a means of obtaining not only capital but also technology, scarce management and skills, improved marketing ‘know-how’, and outlets for non-traditional exports of manufactures, processed commodities and traded services.

There can also be many “indirect effects of FDI that are beneficial to the host country’s economy. Such investment may contribute longer-term advantages in terms of improved productivity and international competitiveness. The presence of efficient firms that are competitive on world markets can provide a potentially important channel for transferring to host countries technological and managerial skills. Further more FDI can have complex and wide ranging effects on indigenous enterprises and the level of competition in a developing country”.10

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9 Robert Bl. Dickie & Thomas A. Layman, Foreign Investment and Government Policy in the Third World-Forging Common Interests in Indonesia and Beyond, the Macmillan Press Ltd. 1988, P. 4
10 ibid, P. 11
On the whole, it is evident that FDI can be of mutual advantage to the host country and the foreign investor. Moreover, these benefits depend on the particular circumstances of each country, e.g. the host country's economic policies.11

2.2 Foreign Direct Investment: Theoretical Frameworks

Theories of explaining FDI fall into two categories: (1) micro-economic analysis view; (2) macro-economic analysis view. Further the former can be divided into: (i) theories based on the growth of the multinational companies (MNC); and (ii) theories based on some specific factors. The latter can be described into: (a) theories based on the effect of the economies of investing and host countries from foreign investment; (b) theories based on the different investment models. The following section will be based on the above categories to review these theories.

2.2.1 Micro-Economic Analysis Theories of Foreign Direct Investment

(i) Theories of Foreign Investment Based on the Growth of the Multinational Firm

In the 1960s and 1970s, analyses of FDI by Western economists had focused on the multinational companies. They analyzed FDI by applying industrial organization, product cycle, business administration theories to the actions of the multinational firms by combining with the Heckscher-Ohlin theorem and its extended theories. In

11 ibid, P. 13
the early 1970s the leading theoretical explanation of FDI was the industrial organization or imperfect competition theory espoused by Stephen Hymer, Charles Kindleberger, and Richard Caves etc. According to this framework, large oligopolistic firms that produce differentiated products undertake FDI. Their investigations began with the assumption that although a multinational operation in a foreign country was faced with certain costs which local firms did not face,\textsuperscript{12} these costs arose from cultural differences, difficulties in understanding local language and markets, problems with bureaucracy. Firms engage in production abroad because they possess certain advantages, allowing them to obtain larger profits than domestic firms.\textsuperscript{13} These advantages enhance the profitability of producing abroad as opposed to producing at home and exporting. The following section briefly describes five of these theories.

1. Theory on FDI by Applying Business Administration Theory

It is the first theory of FDI which concentrates on the growth of the firm. This theory views the activities of FDI as a natural consequence of the growth of a firm. When the decision-making of the firm changes from the traditional domestic market to a world market orientation its organization goes through changes. First there is the strengthening of its export section, then the independence of the international business section has to be reinforced, next a foreign subsidiary has to be established.

\textsuperscript{12} Pasuk Phongpaichit, \textit{The New Wave of Japanese Investment in ASEAN-Determinants and Prospects}, ASEAN Economic Research Unit, Institute of Southeast Asian Studies, 1990, P.6
This theory is more a source of advice to the management of MNCs than an explanation of FDI.\(^\text{14}\)

2. Theory on FDI by Applying Industrial Organization or Imperfect Competition Theories

This theory explained FDI as a natural consequence of the growth and expansion of oligopolistic firms, the US-type of FDI in particular. Stephen Hymer(1976)\(^\text{15}\) first demonstrated that the central motive for foreign investment was the firm's desire to control foreign operations. Hymer hypothesised that FDI belonged to the theory of imperfect competition because multinationals are usually large firms operating in imperfectly competitive markets. For firms to operate in imperfect markets abroad they must have certain net advantages over firms in the host country.\(^\text{16}\) Hymer found that the motives for investing abroad were similar to Joseph Bain's list of barriers to entry.\(^\text{17}\) Bain classified barriers as those due to economies of scale, absolute cost advantages, and product differentiation advantages. In Stephen Hymer's view, FDI is typical of an oligopolistic firm, which has some sort of superiority, searching for control in an imperfect market in order to maximise profits.\(^\text{18}\)


\(^{15}\) The gist of the idea about specific advantages of foreign firms is found in the writings of Southard(1931) and Dunning (1958). It was Stephen Hymer, in his Ph.D thesis in 1960(published 1976), who explored it in depth. Dunning(1973), and Hufbauer(1975).

\(^{16}\) Sarah Gordon & Francis A. Lees, P. 48

\(^{17}\) Hymer, the International Operations of National Firms; Joe S. Bain, Barriers to New Competition, Cambridge:Harvard University Press, 1956

\(^{18}\) Kiyoshi Kojima, P. 60
Hymer concluded that knowledge or technological advantage over local firms was the most important necessary condition for FDI. After Hymer, Charles Kindleberger (1969), Caves (1971), Horst (1978) stressed the idea that FDI belongs to the theory of industrial organization. They also argued that imperfections in the markets were important additional factors which ensured that firms could exploit their specific advantages through discriminatory pricing. Caves and Horst argued that firms were established brand names and other forms of product differentiation which created monopolistic advantages over local and other foreign firms. The marketing advantages of oligopolistic firms with differentiated products offset disadvantages inherent in investing and operating overseas, and could explain why these firms invested abroad. These theories suggest that firms venture into FDI because of their oligopolistic characters and that their investment and operation abroad enable them to survive by strengthening and expanding oligopolistic systems. These theories neatly characterise US-type FDI. There are some similar theories and ideas including Alexander Lamfalussy’s defensive investment idea, and Fredrick Knickerbocker and Edward B. Flowers’s theory of oligopolistic reaction. They all belong to the industrial organization theory.

3. Theory of FDI by Applying Product Cycle Theory

Raymond Vernon proposed the product cycle theory (Vernon 1966, 1981; Wells 1972), it related to the oligopolistic theory. This theory of innovation, growth and

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19 Kiyoshi Kojima, P. 60
20 Saral. Gordon & Francis A. Lees, P. 49
maturing of a new product combined with the R & D factor theory presents that in the first stage a firm in an advanced country innovated a new product. As long as the technology for producing the product was not yet standardized, the production was located in the country of origin where there was a good supply of suitably skilled labor and easy access to the major market.

At the growth stage, after the new-phase stage, sales of the product increase. Mass production and bulk sales are introduced. At the same time, entries in the industry increase and competition intensifies among producers. Demand becomes price-elastic so the sales of each firm become more responsive to price. Under these circumstances, the realization of economies of scale and the managerial ability of the firm play important roles.

Finally, when the mature stage is reached, the product becomes standardized and its production technologically stable. Instead of the decisive role played by research and development activities or managerial skills at the new phase and growth stage, unskilled and semi-skilled labour become important. Accordingly through foreign investment the production location moves to low-wage, developing countries. The costs of marketing exports of the product from these countries may be low compared with other commodities, since the commodity is standardised.

At what stage in a product cycle and for what reason is FDI undertaken? New products created in a country first enjoy a monopolistic position, exports increase
when mass production is introduced and the cost reduced. But threats to this export position arise and exports decrease. The threats include tariffs in the importing countries, import quotas, domestic production in importing countries and entry of other multinationals into the import market. Thus FDI is a monopolistic defence of the market and could be made before the mature stage. Kojima thought in the final stage of the product cycle theory, the product is well standardised and its comparative cost is determined by the Heckscher-Ohlin theorem. 'Low cost of labour' becomes the greatest attraction for investing in underdeveloped countries.

4. Theory of FDI by Applying the Catching-up Product Cycle Theory

The Japanese economist, Dr. Akamatsu (1962) propounded a ‘Catching-up product cycle’ theory which is also called ‘the wild geese-flying pattern’ of industrial development in developing countries. This theory states that in a developing, or catching-up country, the product cycle starts with imports of the new product with superior quality, and once increased demand approaches the domestic production threshold, domestic production is economical. A learning process follows and is assisted by importing technological know-how and by FDI. The expansion of production then leads to the exploitation of economies of scale, increase in productivity, improvements in quality and reductions in cost. This involves an

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22 Kojima, P. 62
23 Kojima, P. 64
import-substitution process. But as domestic costs reach the international competitive cost threshold, foreign markets are developed, the scale of production is extended further and costs are reduced again. Thus the expansion of exports that is originally made possible by the growth of domestic demand in its turn provides a stimulus to industrial development. In sum, it may be appropriate to call such successive development of imports, domestic production and exports the catching-up product cycle. The role of FDI can be explained by the following example: supposing there are two countries: one is a more ‘caught-up’ country I (e.g. Japan) and the other is a less ‘caught-up’ country II (e.g. China). Country I’s direct investment in country II’s industry makes it possible to start and accelerate the development of the latter if the investment supplements the shortage of appropriated capital, technology and managerial skill. If the direct investment has taken place in accordance with the comparative cost pattern between the two countries, that is, in the industry in which country I has comparative disadvantage, while country II has comparative advantage, the industrial structure in each country is quickly adjusted resulting in the upgrading of industrial structure of both countries and the expansion of trade between them. This theory, the structure of comparative advantages is also basically determined by factor proportions—the Heckscher-Ohlin theorem. We can conclude this theory is suitable for explaining the FDI from the developed countries to the developing countries.

5. Eclectic Theory for FDI

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26 Kojima, P. 67
27 Kojima, P. 66
Some of the theories of FDI have been concerned with the application of the concepts of transaction costs and internationalisation to explain the existence and organisation of the MNC. The basic insight of this approach is that there are substantial transaction costs involved in the operation, under separate ownership and control, of plants in different countries. Casson\textsuperscript{28} thinks the possession of exclusive knowledge (whether technical, managerial or marketing) affords the owner a degree of monopoly power form which the owner will want to extract the maximum profit. In principle, this knowledge could be marketed but, in practice, it would be difficult to establish a satisfactory system of property rights. The international patent system offers only limited protection for the exploitation of existing knowledge. Moreover, most knowledge may also be used in research to generate further knowledge—which perhaps renders the original knowledge obsolete—and here the patent system offers even less protection. So firms are usually reluctant to license proprietary knowledge and prefer, where possible, to exploit it themselves through FDI.

After Casson, Dunning\textsuperscript{29} criticises the approach as providing only a partial explanation of international product, and a lack of a formal model relating either to trade or to other modes of resource transfer. He puts forward his eclectic theory. According to Dunning, a firm will engage in FDI if the following three conditions are satisfied: (1). The firm possessed certain competitive advantages, either due to


the ownership or as a consequence of its multinationality *per se*, that enables it to compete with host country firms in their own markets. The ownership advantages are required to compensate the firm for the additional costs of selling to, or producing in a foreign environment. (2). It is in the best interests of the firm to exploit these ownership advantages itself by transferring intermediate products across national boundaries, rather than sell them, or the rights to them, to host country firms. These internationalisation advantages arise because of the costs involved in establishing and monitoring effective contractual arrangements with other firms. (3). It is in the best interests of the firm to transfer mobile assets from the home country, and combine them with at least some immobile factor endowments, or other intermediate products, in the host country. If these location advantages do not exist, then foreign markets would be serviced by exports.

Dunning provides an exhaustive classification of these advantages (and disadvantages) which he points out may vary according to country, industry, and firm-specific circumstances (e.g. resources and skilled labour, government intervention in the form of general tariffs, and assistance to foreign investors). The eclectic theory is an attempt to integrate internationalisation theory with theories of trade and location in order to embrace the three main vehicles of foreign involvement, namely: exports, direct investment and contractual resource transfers. Dunning has further extended his analysis by introducing the notion of the 'investment development cycle'. The basic hypothesis behind the investment development cycle is that national income affects the balance of ownership,
internationalisation and location variables, and these in turn affect the propensity of a country to be net outward or inward investor. As a country develops, and its national income rises, its international direct investment position will pass through a number of stages from being solely an importer of capital for direct investment, to being an exporter as well, and eventually to being a net exporter. In general, Dunning’s eclectic theory of FDI is still basically a micro-economic analysis for FDI, it confirms simply the performance of the firms in aggregate.\(^{30}\)

(ii) Theories of Foreign Investment Based on Some Specific Factors

More recently, economists became interested in new forms of overseas involvement which differed from the conventional style of direct investment(\(^{30}\) Oman 1984). Some theories arose partly based on the different FDI forms, cultural factors, especially for analyzing the JDI in China. Economists explained the reason through the understanding of the cultural linkage between China and Japan( Liping Deng, 1997)\(^{31}\). Other factors include managerial resources, international division of labour, etc. These theories were suggested by Ronald W. Jones and Richard E. Caves decades ago.\(^{32}\)

\(^{30}\) Roger Strange, P. 17
2.2.2 Macro-Economic Analysis Theories of Foreign Direct Investment

(a) Theories Based on the Effect on the Economies of Investing and Host Countries Through Foreign Direct Investment

Macro-economic analysis of the effects of international capital movement or foreign investment was initiated by G. D. A. MacDougall (1960) and subsequently elaborated by Murray C. Kemp (1964).\(^{33}\) This theory states that when capital moves freely between the countries of the world, marginal productivities of capital are equalized internationally; efficiency in the use of world resources improves; the output of the world increases, thus augmenting welfare of individual countries. This theory assumes a world composed of an investing country and a host country. Before FDI movement takes place, the marginal productivity of capital in the investing country is lower than that of the host country since capital is relatively abundant in the former. But after the foreign investment takes place, total world output increases.

As for the investing country, although the output decreases after FDI, at the return to FDI, the investing country receives a sum equal to the marginal productivity of capital, times the amount of capital invested abroad, the income from foreign

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investment is greater than the loss of output. The investing country enjoys a greater national income than before the FDI.

As for the host country, the host country enjoys a net increase of national income. This theory concludes that the output of the world as a whole increases and the gain is shared by both the investing and the host countries.

(b) Theories Based On The Different Investment Models

1. Japanese Model and American Model of FDI

The organization, product cycle theories and others as well as the analysis of FDI were all developed to help to explain the behaviour of multinational corporations. From 1969 onwards, FDI began to flow out of Japan at an ever-increasing rate. By the late 1970s, the annual outflow of investment had become a topic of major importance for Japanese economists. Kojima, one of them, argued that the product cycle theory and other theories from the micro-economic view tended to explain the motivation to invest overseas in terms of the defence of monopolistic or oligopolistic advantages (Kojima 1973a, 1973b, 1978). He elaborated his theoretical exposition, based on the Heckscher-Ohlin theorem. He divided direct investment into four major types: resource-oriented, labour-oriented, market-oriented, and oligopolistic. He argued that each type had a different motivation, and a different impact on trade and on the host country economy.34

34 Pasuk Phongpaichit, P.10

MBA Dissertation 22 The Faculty Of Business Northern Territory University
Kojima thought resource-oriented investment was undertaken to increase the production of natural resource products which the home country lacked. This type of investment generated trade, because it resulted from the home country’s lack of comparative advantage and its desire to secure a supply of natural resource products from the host country.

Labour-oriented investment was undertaken in labour-intensive industries (such as textile, shoes) for which home countries had lost comparative advantage, usually due to rising labour costs. Such investment complemented less developed countries which have a scarcity of capital but abundant labour.

Market-oriented investment was direct investment induced by trade barriers in the host country. Often developing countries imposed differential tariffs, heavier on final consumer goods but lower on intermediate and capital goods. This tariff structure influenced foreign firms to import components and parts and assemble them into consumer goods for sale in the domestic market of the host country. This type of investment was trade-creating, but often one-sided. It increased export of components, parts and capital goods from the home to the host country.

Kojima’s fourth type of direct investment was oligopolistic FDI, it was a variant of the market-oriented type, essentially similar to the direct investment described by
Hymer and Vernon with respect to the U.S.\textsuperscript{35} This type of investment, according to Kojima, was anti-trade creating in two different ways. From the point of view of the home country, the transfer of production to a foreign location reduced exports and might eventually increase imports as products were imported back from the overseas subsidiary to the home country. From the point of view of the host country, the demand for input (foreign exchange, skill) in the newly located industries tended to restrict the availability of such inputs for traditional industries in which the host country had a comparative advantage in world trade. As such it diminished the host country’s capacity for export growth.

Kojima pointed out that American FDI was mainly of the fourth type and JFDI consisted mainly of the first three types. (Sekiguchi and Krause, 1980). Then he mentioned his Japanese investment model and American investment model theory for explaining JFDI. He pointed out that some products, such as textiles, iron, were traditional, price competitive goods in which Japan and other developed countries had been losing their comparative advantage, largely on account of rising labour costs. Japanese investments were thus complementary to the factor endowments of developing countries, and tended to encourage trade, promote the international division of labour, and aid the industrialization of host developing countries. He concluded ‘Japanese-type, trade-oriented’ and ‘American-type, antitrade-oriented’ foreign investment models.

\textsuperscript{35} Pasuk Phongpaichit, P. 11
2. Kojima-Ozawa Model

Kojima’s work was extended by another Japanese economist Ozawa (1973), after them, their theory was called Kojima-Ozawa model. They both thought all the “micro-theoretic” analyses of foreign investment were “myopic neglect of the macro-global welfare consideration of overseas business operations by individual firms”.36 Ozawa went back to classical growth theory and the Ricardo-Hicksian trap of industrial stagnation. This theory says that an industrial economy could not expand indefinitely, sooner or later it would encounter irremovable scarcities. Japan faced a serious shortage of land, and also natural resources. He concluded that Japanese firms were compelled by necessity, caused by the resource constraint at home, to extend their subsidiaries overseas through foreign investment.37 He also mentioned that the Japanese government assistance was an important factor. After Ozawa, Kunio Yoshihara (1978) looked at the Japanese FDI experience during the past decades, he described the “push” (home country) and “pull” (host country) factors. Japan faced different needs during different periods, these resulted in the change of tendency, amount and destination of Japanese foreign direct investments. Sekiguchi (1983) looked further into the political dimensions of JFDI.

On the whole, this study finds all of these above theories accepted the Heckscher-Ohlin analytical framework of the theory of comparative costs. They analysed the outflow of foreign investment, JFDI in particular, within a macro-economic

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framework. They concluded the reasons of JFDI including the high and consistent rates of economic growth which provided prospects for market expansion; inexpensive labour; availability of raw materials; close proximity to Japan which minimized transport cost (especially China); and protection policies which favoured import-substitution industries (ASEAN, China, and other developing countries). JFDI has a high degree of complementarity between the economy of Japan on one side and those of host countries on the other.

2.3 Which Theory is Most Applicable?

It is very hard to point out which theory is better than the others, they can be applicable for explaining some phenomena of FDI, but they all need some requirements when applied to the real situation. For example, the product cycle theory only applies to new products, the catching-up product cycle theory applies to the FDI from the developed countries to the developing countries. All the micro-economic analyses only apply on MNC's performance, macro-economic analyses focus on explaining the different activities of two kinds of FDI from Japan and the US, they are concerned about the motivations of FDI. We have to note this when we try to apply these theories of FDI. However, after reviewing most of the theories of FDI, this study finds a common point - they are all linked to the Heckscher-Ohlin theorem.
2.4 The Basic Theory: Heckscher-Ohlin Theorem

This study finds almost all the theories can be carried out according to the same principle of comparative costs. We know “One price for one commodity” is established for prices of commodities and those of factors of production (rate of wage, interest, labour and capital)\(^{38}\), in classical economics it was assumed that factors of production-labour and capital were mobile within a country but immobile between countries. Since each national economy has a different situation, a development stage, and so on, the ratio of these factors is comparatively different between different countries. This results in the emergence of importance of FDI. From the labour (cost) theory (David Ricardo, 1913)\(^{39}\) to its extended explanation combined with various factors (labour, capital and land), they all found that if there are comparative cost differences and there is an appropriate exchange rate between the two limit ratios of costs, FDI will be profitable for both countries. The cause of the differences in comparative costs among nations are many and can be explained in various ways, but the Heckscher-Ohlin theorem presents the best understanding.

2.4.1 The Heckscher-Ohlin Theorem

The most comprehensive and systematic explanation is the theory of factor proportions which is also called the Heckscher-Ohlin (H-O) theorem and it is well-
known.\textsuperscript{40} It is also a trade theorem. This theorem is built upon three basic assumptions: (a) there are two factors of production (labour and capital); (b) there are only two commodities and two countries in the world; and (c) that production technology is the same for the two countries\textsuperscript{41}. (see appendix 3)

It says the determinants of comparative costs lie in difference in factor endowments of the two national economies and in the ways in which the two commodities are produced, either by labour-intensive or by capital-intensive methods. The factors of production, say, labour and capital, are not spread evenly among countries. Country II, such as Japan, has a comparative abundance of capital and a comparative scarcity of labour. Country I, such as China, a developing country, has a comparative abundance of labour and a comparative scarcity of capital. If such difference in factor endowments exists, it usually brings about a difference in the factor-price ratio (again in a comparative sense). For example, the wage/rental ratio in the labour-abundant country I is lower than that in the capital-abundant country II. In other words, a country which has abundant labour and consequently a lower wage can produce labour-intensive goods at cheaper cost compared to the other country, while the reverse holds true for the second country. In more general terms, 'a country has a comparative advantage in the production of a commodity which requires relatively larger inputs of the factor that is relatively abundant and

\textsuperscript{40} Eli Heckscher presented the theory first in 'The Effects of Foreign Trade on the Distribution of Income', Economiks Tedskrift (1919) (reprinted in H. Ellis and L. Metzler(eds.), Readings in the Theory of International Trade (Philadelphia, 1950), Ch.13). This theory was elaborated on by Bertil Ohlin, International and Inter-regional Trade(Cambridge, 1933)

\textsuperscript{41} Mohd. Ismail Ahmad, Foreign Manufacturing Investments in Resource-Based Industries: Comparisons Between Malaysia and Thailand, ASEAN Economic Research Unit, Research Notes and Discussions Paper No. 71, 1990
cheaper than in the other country.’ This is the central theme of the theory of factor proportions\textsuperscript{42}.

This theorem is a good explanation for the foreign investments from developed countries to developing countries which have abundant labour and scarce capital. Because capital and labour are in a complementary relation in production processes to be combined according to certain coefficients, capital will flow from a capital abundant to a labour-abundant and capital-scarce country; labour will flow into a labour-scarce and capital abundant country; in a country with only abundant land both labour and capital will flow in.

2.5 Application of the Heckscher - Ohlin to Japan’s and China’s Relationship

Japan’s relation with China has varied over time. Chinese economic and political development experienced several violent periods from the early post-World War II, the Cultural Revolution to the Tiananmen Incident etc, the relationship between Japan and China also fluctuated during these periods. However, the visit to Beijing by Japan's newly elected prime minister, Tanaka Kakuei in 1972 culminated in the signing of a historic joint statement that ended nearly eighty years of enmity and friction between the two countries.\textsuperscript{43}

\textsuperscript{42} Kiyoshi Kojima, P55
\textsuperscript{43} Japan Relations with China, http://lcweb2.loc.gov/cgi-bin/query?frd/cstdy:@field(DOCID+jp0250)
China’s economic importance to Japanese policymakers rose in tandem with the market-oriented reforms and increased foreign interaction associated with the post-Mao Zedong policies of Chinese leader Deng Xiaoping. The Chinese had long looked on Japan as a leading source of assistance in promoting economic development in China. Japan is a major source of capital, technology, and equipment for China’s modernization drive. For example, Japan has been China’s largest trading partner since the mid-1960s. In addition, Japan regarded China as a significant source of labour, coal, oil, and strategic mineral, and as an important market for Japanese steel, machinery plant equipment, chemical products, and synthetic textile fibres. This is illustrated by briefly comparing these two countries in the following table 1.1.

Table 1.1 Brief Comparison Between China and Japan

<table>
<thead>
<tr>
<th></th>
<th>China</th>
<th>Japan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>Eastern Asia, bordering the East China Sea</td>
<td>Eastern Asia, Island chain between the</td>
</tr>
<tr>
<td></td>
<td></td>
<td>North Pacific Ocean and the sea of Japan,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>east of the Korean Peninsula</td>
</tr>
<tr>
<td>Area</td>
<td>9,326,410 sq km</td>
<td>377,835 sq km</td>
</tr>
<tr>
<td>Natural Resource</td>
<td>coal, iron ore, petroleum, mercury, tin, tungsten, antimony</td>
<td>negligible mineral resources, fish</td>
</tr>
<tr>
<td>Population</td>
<td>1,210,004,956 (1996 est.)</td>
<td>125,449,703 (1996 est.)</td>
</tr>
<tr>
<td>Population growth rate</td>
<td>0.98%</td>
<td>0.21%</td>
</tr>
<tr>
<td>GDP real growth rate</td>
<td>10.3% (1995 est.)</td>
<td>0.3% (1995 est.)</td>
</tr>
<tr>
<td>GDP per capita</td>
<td>$2,900 (1995 est.)</td>
<td>$21,300 (1995 est.)</td>
</tr>
<tr>
<td>Inflation rate</td>
<td>10.1% (1995)</td>
<td>-0.1% (1995)</td>
</tr>
</tbody>
</table>

In this table, we see that Japan can benefit from China with her adequate natural resources and labour force, even the potential huge domestic market. China on other side will benefit from Japanese assistance with capital and technology, that probably is why both sides pursue a mutually advantageous foreign policy. These meet the pre-requisition. In general, Japan is in the forefront among other leading industrialized nations, restoring closer economic and political relations with China. A proof of this is Japan’s multibillion dollar resumption of direct investment, including aid, to China. Increased visits to China by Japanese officials, culminating in the visit of Emperor Akihito in October 1992, gave a clear indication that Japan considered closer ties with China in its economic and strategic interest.

2.6 Importance of the Heckscher -Ohlin Theorem in Japanese Foreign Direct Investment in China

Current theories of FDI, e.g. product cycle theory, point out that when a firm finally faces its mature stage, unskilled and semi-skilled labour become important. If a firm wants to make a profit or to reduce the cost of products, this firm will definitely choose an area or a country with cheaper labour to manufacture its products to obtain maximum profits. In addition, other theories, including theories related with growth of the multinational firm, and theories about the motives of FDI, all try to explain FDI from different aspects, e.g a multinational company wanting to control a market internationally, or get cheap labour and abundant natural resources, one obvious purpose is to reduce their cost of production and to compete with their
rivals. They are all linked to the Heckscher-Ohlin theorem. FDI between a
developed country and a developing country, a developed country and another
developed country exist all because a firm or a country faces its own disadvantages
of high costs which will not occur in other countries. This will be the basic way to
explain the emergence of FDI.

Japan is always leading among the FDI outflow of foreign investment countries.
During the past four years, Japan kept her forth position among the top five
countries in FDI outflow. One obvious reason is that Japan has to face her own
disadvantages including labour shortage, steady rise of the wage level, lack of raw
material, all of which result in the high cost of production in Japan. With abundant
capital, Japan has begun to put her capital into those countries which provide cheap
labour, abundant natural resources, and which do need capital for their own
development. This is also evidence of the H-O theorem application. China is an
outstanding recipient country of world FDI. Since 1989, JFDI in China has begun to
increase steadily. From 1994/1995 till now, JFDI in China already exceeded
investment in other countries, such as ASEAN, NIEs, in which Japan had mainly
invested. One main reason is that Japan is now facing rising labour costs in these
countries. This forces Japan to relocate her destination of FDI. Since China still
provides cost advantages compared with these countries, China has become Japan’s
first choice. As this study tries to find and analyse what role JFDI plays in China’s
economic development, it is possible that we can analyse the activities of JFDI in
China with the help of the H - O theorem.
2.7 Summary

After reviewing the different theories of FDI, it can be seen that no theory of FDI has gained wide acceptance, because each explains partially some of motives of FDI. However all of these theories are linked to the neoclassical trade theorem - the H-O Theorem. The principle of comparative advantage between labour and capital is the fundamental basis related with factors for production. As long as a variation exists between different countries, this will result in the movement of capital and labour between these countries, and is the basic reason why FDI arises. Increasingly FDI is becoming an integral part of the development process for both home and host countries.

To explain the role and activities of JFDI in China, it is necessary to compare Japan and China to identify factor differences. It is also important to examine the importance of JFDI for Japan’s own economic development.
Chapter III. Importance of Japanese Foreign Direct Investment in Japan’s Economic Development

In an attempting to examine the importance of JFDI in the economic development of Japan, it is necessary to understand two interrelated aspects (1) the process of economic development of Japan, (2) the trend of JFDI in the world.

3.1 Process of Japanese Economic Development

Japanese economic development can be divided into four different periods which include the later Tokugawa period, the Meiji Era, the Taisho Era, the Showa Era (See appendix 4 for Japanese History Chronology). This study briefly looks back at the history of the Japanese economic development starting with the Meiji Era because modern economic development of Japan can be traced back to this period.

The Meiji Era covers the period from 1868 to 1911. There were two important aspects, the Meiji Restoration of 1868 and the beginning of the institutional reforms in this period of Japanese history. These two events launched the foundations for a modern Japanese economic system. During the Meiji era, a number of social and political reforms were introduced to alter various feudal institutions of the Tokugawa period(1603-1867). Most of these activities attempted to (i) modernise
monetary and fiscal systems, (ii) educate people, and (iii) build the country's infrastructure. A new economic system and order were finally established and the Japanese economy was set on a path of long-term growth. During this era, the government played an active role in building the infrastructure of the country, which resulted in solidifying the base for economic development. Another remarkable aspect of economic development was the rise of light industry although agriculture was still the most important sector of the economy. For example, in 1891 the Japanese textile industry began exporting yarn to China, and by 1897 Japanese exports exceeded Chinese imports. In 1911, Japan established a Japanese spinning mill in Shanghai. This could be recorded as the first Japanese investment in China.

From 1914 to 1923, the Taisho Era, Japanese economic development demonstrated the rise of heavy industry. It had significant impact at the time of the First World War (1914-1918). At that time, Japan was a participant in the war on the side of the Allies. The war brought unprecedented prosperity to Japan which became the supplier of manufactured goods for Asian countries. Therefore Japan needed to heavily invest in heavy industry. The years 1914 to 1919 were the most prosperous the Japanese economy had experienced. The Japanese government directly operated factories in such areas as iron and steel, production of weapons, shipbuilding and so on. The First World War reduced the economic capacity of the West and brought about an overall shortage of goods, allowing Japan to take advantage of the situation. During 1914-1919, a surplus of 1,475 million yen was recorded in the
trade account, consequently a large number of new companies were founded, and most existing companies expanded their capacity. But this boom did not last long, the war ended in 1918 and the Western countries returned to recapture former markets in Japan. This brought the beginning of the Post-war recession in 1920. It brought a gloomy decade with depression for the Japanese economy.

From 1927 to 1996, Japan entered the Showa Era. This period began in 1927 with the depression from the Taisho Era. In this year, the financial crisis resulted in many companies going bankrupt and large numbers of people becoming indebted or unemployed. The economic gloom continued until 1932 when the Japanese government took expansionary measures and prices began to rebound. For example, by the end of the period (1927-1932), a small number of better managed large banks, such as Mitsui, Mitsubishi, Sumitomo, had established their dominance. In heavy industry, output concentration in a few big companies was to be expected, but what became alarming in Japan, was that several Zaibatsu-family-controlled conglomerates-began to exert a large influence on the economy in the latter part of that period. The government desired further expansion in heavy industry for military purpose in the 1930s, which brought Japan to ‘abnormal’ years of the modern Japanese economic history.

The ‘abnormal’ years began with the outbreak of war with China in June 1937 which continued for eight years, until the end of the Pacific War. The second phase,

46 Yoshihara Kunio, P.11
47 Yoshihara Kunio, P. 12
the Allied occupation, began with Japan's surrender on 15 August 1945 and lasted until April 1952. The reasons causing these wars were that the government expenditure had begun increasing rapidly on the military in the 1930s. During that time the Japanese government also faced the problem of shortage of natural resources. This was explained as one of the reasons why the wars broke out. At the end of the wars, Japan faced the task of completely rebuilding her economy. There were a lot of problems to be resolved. The Japanese government undertook a new stabilisation policy to push economic recovery. In 1952 Japan regained her independence and began a post-war economic expansion. Because Japan had already absorbed many western technologies during the periods of the two wars, she had reached a high level of technological sophistication. As a result, heavy industry became the driving force of Japan's post-war economic growth. The period of high economic growth began in 1960, and this increasing trend lasted till 1973. In 1960, the Japanese GNP surpassed that of all Western countries except the US. In 1973, it was about $360 billion. In October 1973, the Oil Crisis began. It triggered a major economic recession, but Japan overcame the oil shocks period (1974 - 1982). Although a lot of western countries suffered negative growth of GNP, Japan only recorded a negative growth rate in 1974. Table 3.1 shows the growth rate of Japanese GNP during the oil shocks period.

Table 3.1 Japan's Growth Rate of GNP (Percent 1974-1982)

<table>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>GNP growth rate (Percent)</td>
<td>2.7</td>
<td>-1.3</td>
<td>2.5</td>
<td>5</td>
<td>4.4</td>
<td>3.7</td>
<td>4.5</td>
<td>3.5</td>
<td>4.0</td>
<td>3.3</td>
</tr>
</tbody>
</table>

(Sources: Ministry of Finance, Japan)

48 Yoshihara Kunio, P.22
Japan also changed her strategy of changing the industrial structure in favour of high-value-added, low-energy-and raw material using industries. After 1982, Japan still retained her high growth. In 1983, Japanese GNP amounted to about $1.2 trillion, and Japan appeared for the first time in the list of the top ten countries in the OECD group. Japan had to develop so-called high technology industries. The Japanese economy entered a good period in which her growth rate of GNP received higher than that of other countries. It was also assisted by the rise of the value of the yen from 1985. In the years 1986 to 1991, the growth rate ranged between 4 and 6 per cent, which was substantially higher than the 3 per cent recorded by the industrial countries as a whole. This can be seen in Table 3.2.

**Table 3.2 Japan's Growth Rate of GNP (percent 1985-1991)**

<table>
<thead>
<tr>
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<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent</td>
<td>3.5</td>
<td>5.2</td>
<td>2.643</td>
<td>6.2</td>
<td>4.8</td>
<td>5.2</td>
<td>4.5</td>
</tr>
</tbody>
</table>

(Source: Economic Planning Agency)

During this period (1985-1991), JFDI emerged as one of the most important phenomena in the Japanese economic development. Japanese companies had to overcome the yen revaluation which is shown at the following table (3.3).

**Table 3.3 Japan's Yen-Dollar Exchange Rate (1985-1991)**

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Yen(per $)</td>
<td>202.75</td>
<td>162.13</td>
<td>128.25</td>
<td>123.63</td>
<td>143.62</td>
<td>133.72</td>
<td>128.07</td>
</tr>
</tbody>
</table>


In addition, Japan is a high-cost country and is short of resources. Production of many goods could no longer be continued in Japan but had to be relocated to other

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49 Robert C, Hsu, the MIT Encyclopedia of the Japanese Economy, the MIT, Cambridge Press 1994, P. 152
50 Yoshihara Kunio, P.25
countries, especially South-East Asia and other Asian countries where labour costs were lower.\footnote{Recent FDI Trends in APEC, Bureau of Industry Economics, 1995, P. 24}

The Japanese economy went into recession in 1992 due to the yen revaluation. Until now, it does not look there will be an early recovery. Even in 1993, the GNP real growth was negative again (-0.2%). In 1996, the Japanese GNP real growth rate was 0.4%.\footnote{The world Factbook page on Japan, http://www.odci.gov/cia/publications/nsolo/factbook/ja.htm.} Despite Japan's recent recession, Japan is still considered a power in the world because Japan still remains in the top ten countries.

The growth of JFDI was interlinked with the development of the Japanese economy, especially from the 1980s.

### 3.2 Japanese Foreign Investment in the World

#### 3.2.1 Trends of Japanese Foreign Direct Investment

One of the most significant development in the Japanese business scene is the rapid rise of FDI, but JFDI really began in 1951 after the two wars. Since that period, Japan has begun to expand her FDI in response to a variety of domestic and international pressures, such as the shortage of raw material in Japan and the trade...
competition from other countries. Table 3.4 shows the trend of the Japanese foreign
direct investment from 1951 to 1970.\textsuperscript{53}

Table 3.4 Growth of Japanese Foreign Direct Investment in the World (1951 to 1970 USS 1000)

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Cumulative</td>
<td>143,912</td>
<td>53,06</td>
<td>92,72</td>
<td>164,81</td>
<td>99,425</td>
<td>125,9</td>
<td>120</td>
<td>156,7</td>
<td>227,0</td>
<td>274,8</td>
<td>557,1</td>
<td>667,57</td>
<td>913,44</td>
<td>3,597,0</td>
</tr>
<tr>
<td>Amount</td>
<td>2</td>
<td>9</td>
<td>1</td>
<td>77</td>
<td>291</td>
<td>39</td>
<td>08</td>
<td>67</td>
<td>74</td>
<td>9</td>
<td>9</td>
<td>23</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Source: Japan, Ministry of International Trade and Industry, M.Y. Yoshino, Japanese Foreign Investment)

- In 1971, the total cumulative total of JFDI reached $3.6 billion, although it only amounted to a fraction of the total U.S. FDI in the world which was $78 billion in that year. Japan already put her foreign investment in 104 nations.\textsuperscript{54} The first record was in 1967 that JFDI had begun to exceed foreign investment in Japan.

However, the country remained a modest net creditor from the early 1970s until the beginning of the 1980s. The following figure (3.1) shows this trend from 1976 to 1995.

Figure 3.1 Japan’s Foreign Direct Investment in the World (1976-1995) (in USS billions)

(Source: Ministry of Finance JETRO from statistics on investments notified to Japanese Ministry of Finance http://www.jetro.go.jp/WHITEPAPER/INVEST97/109.html http://www.nri.co.jp/nri/buplications/hrirg/94winterxt03-02.htm Prepared by JETRO from statistics on investment notified to Japanese Ministry of Finance Note: The figures are the accumulated value of approvals and notification)


\textsuperscript{54} Isaiah Frank, P.248
Looking at the above figures, we find that JFDI expanded considerably from 1980. It sharply rose from 1986, reaching a peak in 1989. It then decreased again from 1990 till 1992, then JFDI began increasing again. Based on the statistics records, in 1980, Japan’s direct foreign investment outflow was just US$4.7 billion; in 1986, it was US$22.3 billion; in 1989, it had jumped to US$67.5 billion; by 1990, it had declined to US$56.9 billion.\textsuperscript{55}

The location of Japan’s direct investment has been shifting. From 1950 to 1970, JFDI was widely distributed in Latin America, Asia, North America and Europe. For example from 1951 to 1970, JFDI was located in North America (25%), Asia, Europe and Latin America was 22%, 18% and 16% respectively.\textsuperscript{56}

From 1970 to the later part of the 1980s, it was mainly in Asia, especially in the middle of 1980s, JFDI focused on the ASEAN countries (mainly Indonesia, Malaysia, Philippines, Thailand) except Middle East and Africa, and Latin America, but the total percentage was lower than before.\textsuperscript{57}

From 1990 to now, it shifted to Asia again. From the following table(4.5), we can obviously find that although the growth rate of JFDI at the world level was decreased by 17.9% in 1992, JFDI in the Middle East and Africa rose substantially.

\textsuperscript{55} Japanese Foreign Direct Investment, Http://www.dfait-maeci.gc.ca/en...dfait/policy~l/93_16_e/s29.html
\textsuperscript{56} Isaiah Frank, P. 250
\textsuperscript{57} Pasuk Phongpaichit, The New Wave of Japanese Investment in ASEAN, ASEAN Economic Research Unit, Institute of Southeast Asian Studies, 1990, P. 28
to that of 13% followed by Asia (8.2%). The growth rate in Asia was 46.1% in 1994, and 26.4% in 1995.\(^{58}\)

**Table 3.5 Growth Rate of Japanese Foreign Direct Investment (1992-1995)**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>World</td>
<td>-17.9</td>
<td>5.5</td>
<td>14.0</td>
<td>23.5</td>
</tr>
<tr>
<td>North America</td>
<td>-22.6</td>
<td>4.9</td>
<td>16.6</td>
<td>27.7</td>
</tr>
<tr>
<td>Europe</td>
<td>-24.7</td>
<td>12.4</td>
<td>-21.5</td>
<td>36.0</td>
</tr>
<tr>
<td>Asia</td>
<td>8.2</td>
<td>3.3</td>
<td>46.1</td>
<td>26.4</td>
</tr>
<tr>
<td>Latin America</td>
<td>-18.3</td>
<td>23.6</td>
<td>55.3</td>
<td>-25.9</td>
</tr>
<tr>
<td>Middle East and Africa</td>
<td>13.0</td>
<td>-20.2</td>
<td>-15.9</td>
<td>-17.1</td>
</tr>
<tr>
<td>Oceania</td>
<td>-26.6</td>
<td>-15.4</td>
<td>-29.6</td>
<td>95.2</td>
</tr>
</tbody>
</table>

(Source: Prepared by JETRO from statistics on investments notified to Japanese Ministry of Finance)

One of the factors is that Japanese investors put a huge amount into China, Vietnam, and the Philippines when they chose their locations in Asia during recent years. The above table also shows the growth rate of JFDI at the world level started to increase steadily from 1992 to 1995 after it had declined between 1990 and 1991.

The major drive to invest overseas in the 1960s and the 1970s stemmed from the desire to obtain access to raw materials since Japan is a resource scarce country. As Japan became more dependent on imported raw material, energy and food, FDI was one way of ensuring supply. Also rising labour costs during this period led to certain labour-intensive industries, especially textiles being located abroad. JFDI investment in other industrial countries was often motivated by barriers to exports from Japan, such as the US. From the 1980s to the 1990s, the rapid rise in the value of the yen seriously undermined the international competitiveness of many products, the revaluation of the yen can be seen in the following figure 3.2.

\(^{58}\) http://www.jetro.go.jp/Whitepaper/invest97/tog.html
Japanese manufacturers began actively seeking lower cost production bases. These factors incrementally accelerated JFDI. It probably explains why Japan was one of the top five countries in foreign direct investment outflow in the past three years, see the following table (3.6).  

Table 3.6 Top Five Countries in Foreign Direct Investment Outflow (1993-1995)

<table>
<thead>
<tr>
<th>Ranking</th>
<th>1993</th>
<th>1994</th>
<th>1995</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>US</td>
<td>US</td>
<td>US</td>
</tr>
<tr>
<td>2</td>
<td>U.K.</td>
<td>U.K.</td>
<td>U.K.</td>
</tr>
<tr>
<td>3</td>
<td>France</td>
<td>France</td>
<td>Germany</td>
</tr>
<tr>
<td>4</td>
<td>Germany</td>
<td>Japan</td>
<td>Japan</td>
</tr>
<tr>
<td>5</td>
<td>Japan</td>
<td>Netherlands</td>
<td>France</td>
</tr>
</tbody>
</table>

(59) Prepared by JETRO from International Financial Statistics, IMF

3.2.2 Stages of Japanese Foreign Direct Investment

Postwar JFDI has gone through six distinctive stages of development.

1. The first stage, between 1951 and 1955, is characterised by small sporadic investments in the development of mineral resources, particularly copper. It was the
first resource industry to undertake overseas investment, mainly in the Philippines, Latin America, and Canada.  

This period also witnessed the restabilising of branches of trading companies in a few key markets in the world and the location is very extensive.

2. The second stage, covering the period roughly from 1955 to 1960, saw a number of investments made in the manufacturing sector in Latin America. Most notable was the establishment of textile plants as Japan began to put attention on the manufacturing industry which started in Latin America.

3. The third stage, covering the period 1960 to 1970, attracted many small Japanese investments in SouthEast Asia, notably Thailand. These were the import-substitution type which was a Japanese response to the trade barriers from the host countries. Investment in Latin America showed definite signs of decline.

4. The fourth stage, from the late 1960s to the middle of the 1970s, JFDI appeared in offshore production facilities. The major localities for this type of investment have been the Asian newly industrializing economies (NIEs) namely HongKong, Taiwan, Singapore, South Korea, with a special emphasis on Taiwan, HongKong and South Korea.

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60 M. Y. Yoshino, *Japanese Foreign Investment*
61 M.Y. Yoshino
62 Pasuk Phongpaichit, P. 2
5. The fifth stage, covers the late 1970s to the late 1980s. During this period, JFDI declined by about half in Asian NIEs region. It was relocated to the new site-Assocation of SouthEast Asian Nations (ASEAN) mainly Malaysia, Indonesia, Philippines, Thailand. At first the Philippines were a favourite destination, subsequently more flowed to Malaysia and Thailand, then recently more to Indonesia. In this period, only the United states received a greater share of Japanese investment than Indonesia. The following figure (3.3) shows the records of this period.

Figure 3.3 Japan's Foreign Investment in ASEAN (1986-1990) (in millions of U.S. dollars)

6. The sixth stage, from the late 1980s to the present, JFDI still focuses on Asian developing countries. Actually only 1989 Japan considered China as her first destination. Looking at JFDI in NIEs 4(HongKong, Singapore, Taiwan, South Korea), ASEAN 4(Indonesia, Malaysia, Philippines, Thailand) China from 1989 to

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63 Pasuk Phongpaichit, P.15
1995 (see figure 3.4). The first two have gone down or fluctuated year by year since 1989, but in China it has gone up during these years.\(^{64}\)

**Figure 3.4 Trends in Japan’s FDI Outflow in Asian NIEs, ASEAN4, China (1989-1995)**
(Unit, US$ million)

Even though FDI from Japan to China declined slightly in 1990 because of the recession of the Japanese economy and the effect of China’s Tiananmen Square Incident in 1989, Japan still considers China as her favourite destination. Based on a survey in 1995 undertaken by the Export-Import Bank of Japan, the survey identified China as the most promising country for Japanese FDI outflows in the medium term; in the long term the most promising host country for Japanese FDI is still China.\(^{65}\)

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\(^{64}\) http://www.jetro.go.jp/WHITEPAPER/INVEST97/T09.html

\(^{65}\) Foreign Direct Investment In APEC, P. 24

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MBA Dissertation

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Northern Territory University
Table 4.7 The Eleven Most Promising Destinations for Japanese FDI in the Medium and Long-term

<table>
<thead>
<tr>
<th>Ranking</th>
<th>Medium Term No. of Japanese Firms intending to invest</th>
<th>Ranking</th>
<th>Long Term No. of Japanese Firms intending to invest</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>China 169</td>
<td>1</td>
<td>China 265</td>
</tr>
<tr>
<td>2</td>
<td>Thailand 75</td>
<td>2</td>
<td>Vietnam 114</td>
</tr>
<tr>
<td>3</td>
<td>U.S 72</td>
<td>3</td>
<td>Thailand 92</td>
</tr>
<tr>
<td>4</td>
<td>Indonesia 58</td>
<td>4</td>
<td>U.S 85</td>
</tr>
<tr>
<td>5</td>
<td>Malaysia 57</td>
<td>5</td>
<td>Indonesia 83</td>
</tr>
<tr>
<td>6</td>
<td>Vietnam 34</td>
<td>6</td>
<td>Malaysia 44</td>
</tr>
<tr>
<td>7</td>
<td>Singapore 33</td>
<td>7</td>
<td>India 38</td>
</tr>
<tr>
<td>8</td>
<td>Taiwan 23</td>
<td>8</td>
<td>Mexico 25</td>
</tr>
<tr>
<td>9</td>
<td>U.K 19</td>
<td>9</td>
<td>Singapore 22</td>
</tr>
<tr>
<td>10</td>
<td>Philippines 14</td>
<td>10</td>
<td>Taiwan 19</td>
</tr>
<tr>
<td>11</td>
<td>India 14</td>
<td>11</td>
<td>Philippines 19</td>
</tr>
</tbody>
</table>

(Source: Kinoshita 1995, Foreign Investment in APEC)

It looks like China will still be at the forefront of Japan’s Asian investment strategy in the future.

3.3 Importance of Japanese Foreign Direct Investment in the Economic Development of Japan

Looking back at the process of Japanese economic development, this study found the link between JFDI and Japan’s economic development. However, the trend of JFDI in the world further confirmed the importance of JFDI in the process of Japan’s economic development. But what role does JFDI play in Japan’s economy? Why does JFDI lie in a so important position? These problems can be answered by looking at the reasons of JFDI.

On the whole, the motives of JFDI have three reasons. First, Japanese investment sought to secure supplies of raw materials which were scarce in Japan. Second,
Japanese firms relocated manufacturing processes to countries with lower production costs, for example labour. Third, Japanese firms established subsidiaries in countries which had erected tariff barriers to encourage import substitution.

3.3.1. Japan’s Need for Critical Raw Materials.

Japan is sometime referred to as a “museum of minerals”. The country is richly endowed with almost every variety of mineral, but usually in quantities only sufficient for museum displays. The postwar economic growth and the resulting changes in the industrial structure have led to a rapid growth in Japan’s need for critical raw materials. For example, between 1960 to 1970, Japan’s dependence on foreign sources for iron ores increased from 68 to 88 percent. The following table (3.8) shows the average annual growth rate of consumption for some key raw materials from 1960 to 1970.

<table>
<thead>
<tr>
<th>Raw Material</th>
<th>1960</th>
<th>1970</th>
<th>Average Annual Growth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper (1,000 tons)</td>
<td>320</td>
<td>833</td>
<td>10</td>
</tr>
<tr>
<td>Lead (1,000 tons)</td>
<td>108</td>
<td>213</td>
<td>7</td>
</tr>
<tr>
<td>Zinc (1,000 tons)</td>
<td>199</td>
<td>634</td>
<td>12.3</td>
</tr>
<tr>
<td>Nickel</td>
<td>19</td>
<td>90</td>
<td>17</td>
</tr>
<tr>
<td>Aluminium</td>
<td>155</td>
<td>880</td>
<td>19</td>
</tr>
<tr>
<td>Iron Ore (million tons)</td>
<td>21.2</td>
<td>111</td>
<td>18</td>
</tr>
<tr>
<td>Coking Coal (million tons)</td>
<td>17.5</td>
<td>59.3</td>
<td>13</td>
</tr>
<tr>
<td>Petroleum (million Kilolitres)</td>
<td>29.5</td>
<td>185.5</td>
<td>20.4</td>
</tr>
</tbody>
</table>

(source: Japan, Ministry of International Trade and Industry)

66 Isaiah Frank, P. 252
67 Isaiah Frank, P. 252
During the past two decades, Japanese resource industries had to cope with ever increasing demands for processed material. For a long time, Japan had experienced little difficulty in procuring the required natural resources from abroad. Much of her purchasing had been on the open market, occasionally supplemented by long-term contracts. But then Japanese demand for raw material skyrocketed and the quantities required grew to account for a significant share of the world consumption. In the face of these developments, Japanese resource industries have begun to perceive growing threats to their ability to procure raw materials in sufficient quantities at acceptable terms. In the late 1960s, Japanese resource industries began their concerted efforts to expand investment in exploration and development of natural resources overseas.

As one might expect, the motives for Japanese investment in other countries are of course to attain a degree of stability and security in the procurement of raw materials for domestic consumption by reducing their dependence on foreign-controlled sources, and to improve the industry's bargaining position vis-a-vis the major international corporations. For example, in 1971, the JFDI in the manufacturing sector reached an accumulative level of about US$963 million, accounting for roughly 27 percent of the total JFDI. During the past two decades Japanese foreign investment in this field was concentrated in three major regions of the world-Asia, Latin America, North America. Even Japanese foreign investment
has shifted from one area to another, obtaining the raw material was still one of her motives.

3.3.2. Japan's Needs for Lower Production Cost

The phenomenal economic growth during the last two decades has exerted tremendous pressures on labour supplies in Japan. Since the early 1960s, and for the first time in the nation's history, Japan has been experiencing a serious labour shortage, resulting in a steady rise of the wage level. The labour shortage and the resulting rapid rise of wages have been particularly serious among labour-intensive and semiskilled manufacturing activities. And the rapid rise in the wage level has had the first and most marked impact on the Japanese ability to compete in the export market, particularly in the face of the emergence of significant competition.

For some years Japan has been the major source of supply for many products of labour-intensive light industries. Faced with the rising cost of production reflecting the wage increases, Japan has begun to relocate her foreign investment to some Asian countries; During 1970s to 1980s, first to Hong Kong, South Korea, Singapore, then to the ASEAN countries. The costs of labour-intensive manufacturing in the newly industrialising countries and the ASEAN-4 countries have increased substantially since the early 1980s due to rising labour costs. As these countries continue to lose their cost advantages in the 1990s, and as Japanese investors face the above problems, they now direct their investment towards China. Actually the FDI of the whole world also focuses on China. Based on the last three years
records, China has kept her second position, following the US, among the top five
countries of FDI inflow. Recently, Mr Keiji Nakatani, senior economist with Exim
Banks; Research Institute for International Investment and Development, said:

"Until recently Japanese companies had stabilising plants in China and
other Asian Countries to take advantage of lower labour costs..." 69

3.3.3 Japan's Needs for Import Substitution

Japan faces the threat of the import substitution policies of a host country. This type
of FDI is called a kind of action "Trade-barrier-circumventing investment", because it aims at substituting local production for the export of goods from the
investing country to the receiving country. Many developing countries adopt a
policy mix of granting preferences to FDI while levying high import tariffs as a
means of promoting or protecting infant domestic industries. For example, in China
FDI is restricted to projects that involve technology already developed in China for
which domestic production meets demand, and the assembly of imported
components for domestic sale. Full ownership is allowed under restricted
conditions, such as those relating to the level of technology used in production and
to the export to output ratio; local content is required on a case-by-case basis and
depends on the level of technology used and the export to output ratio. Foreign
exchange balancing is also required; tax deductions are available to foreign
enterprises that locate in particular areas (special economic zones) and engage in

69 Tony Boyd, Japan Pivots on China as it Pours Investment Into Asia,
particular activities (manufacturing and infrastructure). Different taxation treatment applies to domestic and foreign enterprises, restrictions apply to foreigners only etc.\textsuperscript{70} In 1994 China adopted “Industrial Policy for the 1990s” in 1994 and in June 1995 a new foreign investment policy resulted in controls on establishment of new labour intensive types of enterprises and promotion of relocation of such industries to the inland regions.\textsuperscript{71} Generally these restrictions force Japanese investors using a high proportion of joint ventures, providing the local presence to meet the government’s requirements, and designing the investment to serve only the local market. Especially in the Japanese foreign manufacturing investment field, it obviously shows the effects of host countries’ restrictions on JFDI.

3.4 Summary

Japan’s economic development is interlinked with the growth of JFDI. This can be seen from the contribution of JFDI to her economic success. Obviously Japan mainly wants to overcome its own disadvantages including need for raw materials, lower production cost (labour force), need for import substitution through foreign investment. JFDI started to expand considerably and sharply during recent years due to the importance of natural resources in the global agenda. The direction of JFDI follows this trend, for example, in the early 1980s, Japan considered some

\textsuperscript{70} Recent FDI Trend in APEC, Bureau of Industry Economics, 1994, P. 41
\textsuperscript{71} Asian Policies Protecting Local Industries, http://www.jetro.go.jp/WHITEPAPER/INVEST97/t08.html
Asian countries, such as NIEs and ASEAN countries as her main location of JFDI. In 90’s, Japan chose China, Vietnam, and India as target areas for FDI.

As this study is concerned with JFDI in China, it is necessary to investigate China’s economic development and the role of China’s economic policy towards foreign investments.
Chapter IV Importance of Foreign Direct Investment for China

China's economy was massed by several periods of fluctuation. The role played by FDI in the development of China's economy can best be analysed by first examining the process of Chinese economic development, and then investigating Chinese policy towards FDI.

4.1 Process of the Chinese Economic Development

Modern China experienced a difficult history. China's economy has also suffered greatly from 12 years of war and civil war until the Chinese communist movement rose to power in 1949. Since the foundation of the People's Republic in 1949, China began to make progress in the fields of economic and social development. Since then China entered a stage of modern economic development.

Analysts usually divide the stage of China's economy into two distinct periods from 1949 until now. These are called Mao's time, and Deng's time. During Mao's time, China's economic and politic situation was influenced by "the Great Leap Forward" and "the Cultural Revolution". In Mao's time, political movements were given dominance in social activities. As data of that time period are unrealistic and unreliable, most Chinese writers do not review them.
Deng’s time began from the consolidation of Deng Xiaoping’s position in 1978. At the same time China began to introduce the Open Door Policy. This refers to the set of policies adopted since 1978 in the spheres of foreign trade, foreign investment and foreign borrowing. The directions of Deng’s main thoughts brought China to a real developing stage. China witnessed tremendous changes since 1979. From 1979 to 1995, China’s Gross Domestic Products(GDP) grew at an annual rate of over 9%.

Figure 4.1 The China’s Annual Growth Rate of GDP(1978-1995) (in Chinese Yuan, Billion Yuan)

It can be seen from figure 4.1 that from 1991 to 1995, China’s GDP maintained a double-digit growth of around 12%. It made China the fastest growing economy in the world. In 1995, China ranked the seventh in GDP among countries in the world. figure 4.1 only showed a low growth rate of China’s GDP in 1986 and 1989, this


was due to the beginning of the government’s control of the overheated growth rate in 1986 and the Tiananmen Square Incident in 1989.

One of the factors under the Open Door Policy namely utilisation of foreign investment, greatly contributed to the China’s remarkable economic development.74

4.2 Importance of Foreign Direct Investment in China’s Economic Development

FDI has played an important role during the past one hundred years. It was through FDI that China was able to be in contact with the outside world.

In the middle of the nineteenth century, China began to open more ports to foreign countries. After the Opium War (1840), foreign merchants began to establish factories in the open areas or ports to take advantage of Chinese labour and raw materials for ship repairing, shipbuilding and other fields.75 Not until 1895 were foreigners permitted by the Chinese government to establish factories in the Chinese territory.76 The Treaty of Shimonoseiki of 1895, which brought an end to the Sino-Japanese War, permitted the Japanese to undertake manufacturing in the open ports. This began the infant period of foreign investment in China.77 Foreign

76 Chi-ming Hou, P, 2
77 Chi-ming Hou P, 47
investment came mainly from Britain, India, Russia, Japan, France. Foreign investment covered many different fields including manufacture, railroads, banking, public utilities and so on. However, foreign investment in China played a minor role in Chinese economic development directly after the foundation of the new China in 1949. Until 1978, China did not consider and use FDI properly because of the Closed Door Policy and its adoption of the “Self-sufficing natural economy” model (Which focused on China’s own natural resources and labour force to develop her economy).  

In 1978 the “Open Door Policy” prepared the way for an active role of FDI in China’s economic development. Up to 1995, the Chinese government has approved more than 258,000 foreign investment projects, with an actual input of foreign exchange capital of 135.4 billion US dollars. About 120,000 FDI projects are now in operation, involving 16 million jobs, and most of these projects are running well. FDI affects almost every aspect in China. Table (4.1) describes the diversification of investment of FDI in Chinese economy.

Table 4.1 The Distribution of Foreign Direct Investment in China (1978 - 1995)

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Industry Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>50%</td>
<td>Ordinary processing industries with concentration on labour-intensive projects</td>
</tr>
<tr>
<td>30%</td>
<td>Tourism and real estate</td>
</tr>
<tr>
<td>10%</td>
<td>Power, oil and other basic industries</td>
</tr>
<tr>
<td>1.8%</td>
<td>Telecommunication</td>
</tr>
<tr>
<td>1.5%</td>
<td>Agriculture</td>
</tr>
</tbody>
</table>


Until 1996, FDI came mainly from the US, Japan and Hong Kong. Undoubtedly, FDI has a significant impact on the future of China’s economic development.

Chinese attitude towards FDI and its role on the economic development process has changed tremendously.

4.2.1 Foreign Direct Investment in China During Mao’s time

When China became a sovereign nation in 1949, it was economically poor, with a per capita income between US$50 to US$60 in 1950. From the beginning, Mao Zedong pursued a number of economic policies to overcome the dire poverty of his people. China followed a soviet-type socialistic economic model, where the government played a major role in the management of the national economy. Most policies aimed at promoting distributive justice rather than enhancing productive efficiency.

Mao Zedong drew heavily on Soviet experiences when he was designing his country’s transition to socialism. It was very explicit in the government’s policy to international relation. Before 1979, the central government was controlling China’s foreign economic relations. Early monopolisation of all international trade and finance took place in a small number of state operated export-import corporations and the Bank of China. During this time, the Soviet Union played a key role as a

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80 Badiul A. Majumdar, *China and India: A Comparison of Their Development Experience*, Research in International Business and International Relation, Volume 4, Pages 3-26, 1990
81 Peter Schran, P 33
source of foreign investment, since the Soviet Union was a socialist country and was considered an important partner for China's foreign relation. During the first Five-year plans, almost all the loans, aids, investment were from the Soviet Union.\(^8\)

During that time, Mao Zedong thought that foreign investment was a type of penetration of foreign capitalism, although he admitted that it accelerated the development of the "commodity economy" in China, in both town and countryside.\(^8\)

But Mao regarded foreign investment as a disintegrating force in the sense that it destroyed the foundation of China's "self-sufficing natural economy" and "disrupted her handicap industries in both the cities and peasant homes".\(^8\) Mao's comments reflected the line of thinking of the Chinese Communists on foreign investment in China. Policy makers refused to use foreign investments in building the Chinese economy.

### 4.2.2 Foreign Direct Investment in China During Deng's Time

Mao's death in September 1976 provided the opportunity for a basic change in strategic orientation. In 1979 Deng Xiaoping began to institute policies which tied the attainment of similar public development objectives more directly and explicitly to the pursuit of private self-interest at home as well as abroad.\(^8\)

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84 Mao Tse-Tung, P.77
85 Badiul A. Majumdar, *China and India: A Comparison of Their Development Experience*, Research in International Business and International Relation, Volume, p. 12

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Northern Territory University
Before 1979, China pursued inward-looking economic policies with economic self-sufficiency as the predominant goal. Import substitution rather than export promotion was the principal strategy in China. Until 1978, China still had a relatively closed economy with tight restrictions on FDI. China began to internationalise its economy in the 1980s and adopted a more open orientation toward the world economy. Inflows of FDI were being actively encouraged. It led to FDI making high contribution to the rapid growth rate of China’s GDP. During the period 1990 - 1995, FDI’s contribution to GDP was an average 12.8%. The radical liberalization of the Chinese economic policy since 1979 had rejuvenating effects on China’s economy.

China began to realise the importance of FDI in its economic development. China’s opportunities to earn foreign exchange by exporting goods and services anywhere were limited. At the same time, its ability to absorb foreign technology through regular imports was subject to restrictions as well. Foreign businesses that operated outside China’s sphere of sovereignty could not be ordered to trade and invest. They had to be provided with incentives. To get beyond both these constraints, China vied with other less developed countries for direct investments from abroad, especially by establishing “special economic zones”. These provided a less regulated environment than the rest of the economy as first step. Foreign commitments of

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86 Badiul A. Majumdar, P 14
88 Badiul A. Majumdar, p14
capital were encouraged in numerous forms, from joint ventures to wholly owned enterprises. Success of China’s efforts to attract foreign capital is illustrated in table 4.2

Table 4.2 Foreign Direct Investment Received in China (1982-1995) (US$ million)

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount</td>
<td>386</td>
<td>543</td>
<td>1124</td>
<td>5931</td>
<td>2834</td>
<td>3709</td>
<td>5297</td>
<td>5600</td>
<td>6596</td>
<td>11977</td>
<td>58124</td>
<td>111436</td>
<td>82680</td>
<td>91282</td>
</tr>
</tbody>
</table>


It can be seen from this table, FDI in China started in the early of 1980s. From 1982 to 1989 it experienced some high and low periods due to the political movements, but from 1990, especially for 1993, FDI in China began to increase sharply.

4.2.3 Future Perspective of Foreign Direct Investment in China

There is every likelihood that the Chinese government will continue to attract FDI in China in the foreseeable future. In recent years, overseas opinions vary regarding prospects for China’s use of FDI. Some assert that China will reduce its use of foreign capital. Based on the past experience and the great benefits of the use of FDI, China will not reduce the use of foreign capital in this field. On the contrary, China will expand opening to the outside world, which is the irreversible trend of economic activities. The Proposal of the Central Committee of the Communist Party (CCCP) of China for formulation of the Ninth Five-Year Plan (1996-2000) for National Economic and Social Development and the Long-Term Targets for the
Year 2010, was adopted during the Fifth plenary Session of the 14th CPC Central committee in 1995. In the coming years, foreign investments are expected to jump to US$230-270 between 1996-2000. China is hoping to divert this huge capital influx to help it readjust its domestic industrial structure and economic policies. Also China will prefer some projects of foreign investments which are linked to basic infrastructure, basic industries, and high-tech industries. All of this was mentioned by one of the Chinese economists, Zhang Zeyu, in his article recently: 

"Generally speaking, future preferences will manifest themselves in an improved business environment, a more open domestic market and a relaxation of business restrictions. With regard to central and western regions, areas in which the government encourages large-scale investment, China will devote its main efforts to adopting favourable industrial policies and supporting the improvement of the environment".

All these can help to show the important role of the Chinese government towards FDI, they also demonstrate that the policies towards FDI played a critical part in building up a legal environment for FDI.

4.2.4 Policies for Attracting Foreign Investment in China Since 1979

The Chinese government played a very important role in attracting foreign investments and in establishing an excellent and reasonable legal system. A few

90 Zhang Zeyu, Will China Reduce the Use of foreign Capital? http://www.ihep.ac.cn/ins/BOOK/bjreview/march/96-12-1.html
economists did a research several years ago and concluded the Chinese
government's attitude is the most important factor for foreign investments.  

Since China began the acquisition of foreign capital technology and management, China also began to develop its present legal system in the late 1970's. The 1979 National People's Congress (NPC) permitted the establishment of joint ventures based on the principle of equality and mutual benefit and subject to the approval of the Chinese government. This brought the passage of the Sino-Foreign Equity Joint Venture Law in the same year, which can be considered the first step by the Chinese government to build a legal structure governing foreign investment. Since then China has continued to build a legal system that will protect her own rights as well as the rights of foreign partners. This study collects some of the important laws which are shown in the following table 4.3.

Table 4.3 Main Chinese Laws on Foreign Investments in China (Validation Date)

<table>
<thead>
<tr>
<th>Law/Mandate</th>
<th>Validation Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>the Law of the People's Republic of China on Chinese-Foreign Equity Joint Venture</td>
<td>July 8, 1979</td>
</tr>
<tr>
<td>Procedures of the PRC for the Registrations and Administration of Chinese-Foreign Joint Ventures</td>
<td>July 26, 1980</td>
</tr>
<tr>
<td>Interim Procedures for the Handling of Loans by the Bank of China to Chinese-Foreign Joint Ventures</td>
<td>March 13, 1981</td>
</tr>
<tr>
<td>Interim Provisions on Claims for Priority in Applying for Registrations of Trademarks</td>
<td>March 15, 1983</td>
</tr>
<tr>
<td>Provisions of the State Council Concerning the Encouragement of Investments by compatriots From Taiwan</td>
<td>July 3, 1988</td>
</tr>
<tr>
<td>Provisions of the State Council Concerning the Encouragement of Investments by Overseas Chinese and compatriots from HongKong and Macau</td>
<td>August 19, 1990</td>
</tr>
<tr>
<td>Income Tax law of the PRC for Enterprises with Foreign Investment and Foreign Enterprises</td>
<td>July 1, 1991</td>
</tr>
<tr>
<td>Trademark Law of the PRC</td>
<td>February 22, 1993</td>
</tr>
<tr>
<td>Supplementary Provisions concerning the Punishment of Crimes of Counterfeiting Registered Trademarks</td>
<td>February 22, 1993</td>
</tr>
<tr>
<td>Procedures for the Registration and Administration of collective Marks and Certification Marks</td>
<td>December 31, 1994</td>
</tr>
</tbody>
</table>

(Sources: China: Investment Climate, http://192.239.70.9/cgi-bin/web...69?foreign+investment+in+China

From the above table, we can see the Chinese government is seeking to attract FDI by offering a reasonable legal environment. China's policy on the use of FDI is closely linked with its policy of opening to the outside world, it is an important component of this policy. All these policies cover almost every field, including fiscal taxation system, banking, foreign exchange, imports & exports tax system etc. Nowadays, different provinces in China have different Industrial Policies for foreign investment, especially the SEZs, Open Cities, and Developing Areas. During recent years, China has issued some different provisional regulations on the Direction Guide to Foreign Investment and the Catalogue Guiding Foreign Investment. These documents not only included the newly expanded industries open to foreign investment, but also listed all kinds of projects to be encouraged. According to these policies, a number of industries are put on top priority in future economic development, namely, infrastructures, such as transportation, telecommunications, energy industry and environmental protection; pillar industries, such as machinery, electronics, petrochemical, automotive, and construction industry. China only prohibits the media field such as TV and the radio sector, and the military field for foreign investments. The following table (4.4) briefly shows the current favourable areas in which the Chinese government encourages foreign investors.
Table 4.4 Ten Areas Favourable for Overseas Investors

| 1. Comprehensive and new technological agroeconomic projects like the retooling of low-and medium-yield farmland and the development of high yield varieties. |
| 2. Construction of infrastructural facilities in the sectors including energy and communications, and basic industrial projects, such as the production of key raw and processed materials. |
| 3. State designated pillar industries, including machinery, electronics, petrochemicals and automotive |
| 4. Projects capable of introducing advanced technologies to improve economic returns and productivity of domestic enterprises, and the products that can meet the demands in the home market. |
| 5. Projects that can increase foreign exchange earning through export. |
| 6. Projects using new technologies and equipment to comprehensively use resources and recycled resources. |
| 7. Technologies and equipment helpful for pollution control and environment protection. |
| 8. Emerging industrial technologies and equipment, such as bio-chemical, telecom networking systems, isotope radiation and laser, marketing development and the development of oceanic energy. |
| 9. Service industry, such as consultancy services, maintenance and after sales service of precision instruments. |
| 10. Projects that can make good use of the labor-force and natural resources in central and western China. |

(Sources: http://www-we.online.sh.cn/spider/00102/inv/trade/031.htm)

China will devote the main efforts to adopting favourable policies and supporting the improvement of her investment environment- a more open domestic market and a relaxation of business restriction environment.\(^{92}\)

Last year, Xiao Gang, Ministry of Foreign Trade of the PRC, mentioned China will expand and improve some basic policies for attracting foreign investment proven by Sino-foreign summary trade statistics and trends. He concluded the four basic policies for attracting foreign investment in China in the future;\(^{93}\) are

"Firstly, various methods and channel will be used to attract foreign investments. Secondly, China will keep to adapt a series of encouraging policies already in effect of attracting foreign capital. For example, there is no upper limit for foreign capital proportion in a venture, sole foreign ventures are allowed to be set up in China...."

\(^{92}\) Zhang Zeyu, *Will China Reduce the Use of Foreign Capital?* http://www.ihep.ac.cn/ins/BOOK/bjreview/march96-12-1.html

Thirdly, foreign ventures are investing capital in wider fields/sectors. China is encouraging investment, not only in the field of energy, communications, basic industries and infrastructures but also in the commercial circulation sectors...

Fourthly, China will strengthen industry guidance, improve foreign capital using efficiency..... 'Policy slanting' will move from some special regions to some special industries which need prior development. foreign capital involved firms will get 'citizen treatment' in the long run, then a fair environment is achieved in which domestic enterprises can compete fairly with their foreign counterparts.”

China is still among the low income countries with insufficient capital supply. A free market economy has still to be established, combined with China’s past successful experiences of using foreign capital, China will keep on giving good policies, and maintaining political stability, to make full use of FDI.

4.3 Summary

Looking back at the process of China’s economic development, this paper concludes that China’s economic miracle explains the importance of the Chinese open door policy, especially China’s attitude to FDI, e.g. mainly in legal construction, and the opening of SEZs. FDI makes a significant contribution to China’s success. China’s successfully using FDI since the introduction of the open door policy ensures that China will further improve her business and political environment for FDI. China can absorb the huge amount of capital from other countries to meet her development. Moreover, as this study mentioned in chapter III which analysed the
trend of JFDI in the world, based on the special relationship and the unique geographical location along with Chinese policy, the new wave of JFDI will focus more on China than NIEs and ASEAN countries. With the purpose to evaluate the role of JFDI in China and analyse the factors affecting JFDI, the first step will be to examine the existing situation of JFDI in China.
Chapter V  Role of Japanese Foreign Direct Investment in China

5.1. Historical Role

China has long historical ties with JFDI which commenced in the last decade of the 19th century. The Treaty of Shimonoseiki of 1895,\(^ {94}\) which brought an end to the Sino-Japanese War permitted the Japanese to undertake investment in manufacturing, beginning with textiles in the open ports in China, later it extended to other fields, such as banking, railway etc.

Japan invaded China in 1937, which ended Japanese investment in China. After China was taken over by the Communist in 1949 till 1978, China did not consider the use of any foreign investments. However, JFDI has remerged since the early 1980s when China adopted an open-door policy to attract foreign capital and new technology. Japanese investors have recently established a remarkable presence in Chinese economy. Japan wants to capitalise on the potential Chinese market and investment opportunities. Japanese investors have been in keen competition with those from HongKong, USA and European countries.

\(^{94}\) Chi-ming Hou, P. 21
Japan has consistently viewed its relationship with China as special because of China’s size, abundant natural resources, and strategic location (Asiaweek 1993; Baldinger 1992). Japan’s economic relations with China in the post-war period are in the areas of trade, investment, and aid. From the early 1980s, investment has become an important part. It was not until the late 1980s that Japanese companies targeted China for major investment. As production costs and labor unrest increased in such countries as South Korea and Taiwan, the Japanese turned to China. Moreover, when China’s austerity program imposed restrictions on imports, Japanese companies were forced to switch from exporting to investing. Several other factors sparked the upsurge in JFDI in China, including China’s improved investment climate and increasing wealth, and the global trend for Western multinational firms to switch their attention to the booming Asia-Pacific region.

From the late 1980s until now, JFDI in China became a noticeable phenomenon in the process of China’s economic development.

5.2. Analysis of Trend and Amount of JFDI in China

Since 1985, China is one of the favourite destinations for Japanese investment. JFDI ranked third among all sources of FDI in 1985. From 1988 on, JFDI surpassed that of the USA becoming the second largest source of FDI. China’s political instability in 1989 forced the Japanese to slow down their capital inflow to China.

However, the upward trend resumed and has been accelerated in the 1990s when China relaunched its reform program. By the end of 1993, the share of JFDI was behind that of Hong Kong but ahead of those of the USA and all European developed countries. The following table (5.1) illustrates the amount and trend of JFDI by comparison to direct investment from Hong Kong and USA.

Table 5.1 Foreign Direct Investments in China: Percentage Shares (1985-1993)
(US $ 10,000)

<table>
<thead>
<tr>
<th>Year</th>
<th>Japan Amount</th>
<th>%</th>
<th>Hong Kong Amount</th>
<th>%</th>
<th>USA Amount</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1985</td>
<td>31,507</td>
<td>16.1</td>
<td>95,568</td>
<td>48.9</td>
<td>35,719</td>
<td>18.3</td>
</tr>
<tr>
<td>1986</td>
<td>26,335</td>
<td>11.7</td>
<td>132,871</td>
<td>59.2</td>
<td>32,617</td>
<td>14.5</td>
</tr>
<tr>
<td>1987</td>
<td>21,970</td>
<td>9.4</td>
<td>169,821</td>
<td>69.1</td>
<td>26,280</td>
<td>11.4</td>
</tr>
<tr>
<td>1988</td>
<td>51,453</td>
<td>16.1</td>
<td>209,520</td>
<td>65.6</td>
<td>23,596</td>
<td>7.4</td>
</tr>
<tr>
<td>1989</td>
<td>43,800</td>
<td>10.5</td>
<td>207,759</td>
<td>61.2</td>
<td>28,427</td>
<td>8.4</td>
</tr>
<tr>
<td>1990</td>
<td>34,900</td>
<td>14.4</td>
<td>191,342</td>
<td>54.9</td>
<td>45,599</td>
<td>13.1</td>
</tr>
<tr>
<td>1991</td>
<td>57,900</td>
<td>13.1</td>
<td>257,911</td>
<td>55.3</td>
<td>33,066</td>
<td>7.1</td>
</tr>
<tr>
<td>1992</td>
<td>107,000</td>
<td>6.6</td>
<td>770,612</td>
<td>68.2</td>
<td>51,944</td>
<td>4.6</td>
</tr>
<tr>
<td>1993</td>
<td>169,100</td>
<td>9.2</td>
<td>1,462,492</td>
<td>56.2</td>
<td>132,717</td>
<td>5.1</td>
</tr>
</tbody>
</table>

(Source: China's Statistical Yearbook, various issues, China's State Statistical Bureau

A trend analysis of JFDI in China and in the world is illustrated by the following figures. Figure 5.1 shows JFDI worldwide, according to Japan’s Ministry of Finance, started to increase in 1986, reached a peak in 1989, then decreased from 1990 till now because of the yen recession.
This trend shows that JFDI in China (figure 5.2) is increasing and it will keep going upward. China with its large population and high growth rate promises to become an important market. Over the medium term, the China factor has become even more important, and Japan will aim to make China her main base for foreign investment.
5.3 Sectoral Analysis

Two main categories which focus on JFDI are manufacturing and non-manufacturing industries of which the most important sector is the manufacturing industry. In the mid-1960s, wage rates started to rise appreciably in Japan. Combined with Japan's disadvantages due to scarce natural materials, this forced Japanese firms to contemplate the transfer of labour-intensive production to neighbouring developing countries where labour and natural resources were in ample supply. As a result we can see the general trend in which Japan's early investment was directed geographically to Latin America, but more recently to South-East Asia.

This study looks at JFDI in China from 1989 to 1995, in both manufacturing and non-manufacturing industries. According to the following figure (5.3), both categories went up, but compared with the amount of JFDI in China, manufacturing industries increased at a much faster rate than non-manufacturing industries.

Figure 5.3 Trends of Japan's Foreign Direct Investment in China by Sector (1989-1995) (US$ Million)

The growth rate of JFDI in China and the world depicts a visibly different trend. The growth rate of Japanese investment on the whole shows a parallel line in both manufacturing and non-manufacturing industries (figure 5.4)

![Figure 5.4 Growth Rate of Japanese Investment in the World(1989-1995) (by Sector, Percentage)](http://www.jetro.go.jp/WHITEPAPER/IWEST97t09.html)

From figure 5.2, it is obvious that JFDI in both sectors in China changed year by year. Only in 1994, the growth rate in non-manufacturing industries was higher than manufacturing. However, generally, during the period, Japanese investment in
China applied to both main sectors. Manufacturing industries are more numerous than the non-manufacturing industries. This analysis also confirms that JFDI is mainly concentrated in labour intensive manufacturing industries, which reveals that taking advantage of China’s cheap labour is the main motive for investors in China. Nowadays JFDI in China is involved in almost every field except there, where Chinese government restrictions apply.

5.4 Location Analysis - Special Economic Zones and Dalian Phenomenon

Most JFDIs are concentrated in Japan’s former colony in northeast China, in special economic zones (SEZs, coastal cities, some developing areas). In this study, we look at its two locations, the “Dalian” and “SEZs” phenomena.

1. Dalian: The Japanese are the main source of FDI in Liaoning province. While Japanese companies tend to congregate in Liaoning Province, the heaviest concentration of JFDI in the port city of Dalian, since 1984 one of the open coastal cities, which used to be called Port Arthur. The establishment of the Dalian economic development zone in 1988 has attracted Japanese investors. The zone boasts some of the best infrastructure of any comparable region in China. With two operational power plants, the zone reassures investors there will be no work stoppage due to power interruptions. The zone also has a water-treatment plant and

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liquid petroleum gas facilities, plus excellent access to Shenyang, the Capital of Liaoning, on a four-lane 400-kilometre highway that is the longest in China. From 1984-90, Japanese companies established 159 joint ventures, cooperative production, or wholly-owned companies in Dalian with a total value of more than US$550 million. This investment accounted for more than 35% of foreign investment in Dalian in that period. It was the largest investment compared to other countries. The zone’s highly skilled, low-cost labour, plus the reassurance that there will be no work stoppages because of the power interruptions, is its strongest drawing card. The average monthly industrial wage in foreign-invested enterprises in China of US$88 in 1987, was only 23% of the comparable rate in Hong Kong at the time. The cost of labour in Japan has been about 27 times higher than in China.\footnote{Nigel Holloway, \textit{Japan in Asia}, Far Eastern Economic Review, P. 47}

Dalian now boasts a 3.5-square-mile industrial park occupied by 100 Japanese companies. Corporate Japan succeeded in creating a small enclave of Japan Inc. in Dalian.\footnote{Jack. G. Kaikati et al. \textit{The Role of Japan in China’s Economic Development}, Multinational Business Review, Spring 1996, P. 25}

Japan is not the only one of the investors in Dalian. According to statistical reports, by the middle of 1996, 5,720 foreign-funded enterprises (FFEs) had registered with Dalian, representing $10 billion in overseas investment and helping to transform this once-small fishing port into a city bustling with trade, industry, tourism and transportation.\footnote{Dalian's Favourable Tax Policies Attracting Foreign Investment, East Asian Executive Reports, July 15, 1996, P. 8} The geographical gateway to China’s oldest industrial area, it also became the financial gateway for foreign investment in China. The reasons for the city’s success include the favourable tax and other advantage it

\footnote{Nigel Holloway, \textit{Japan in Asia}, Far Eastern Economic Review, P. 47}
offers to FFES. Appendix five shows the tax benefits offered in Dalian. The main reason why Japanese invested so heavily in Dalian and also some other provinces in the north of China may be due to the short distance to Japan, the historical relationship caused through the China-Japan war, local advantages including the policies, cheap land, labour, even cultural factors. It is comparable with the situation in Guangdong province, South China, where most of Hong Kong’s investments are concentrated.

2. SEZs & Coastal Cities: Japanese investments are allocated along the coastal areas in the same way as that of investments of other countries in China. This includes the first five special economic zones established in 1980 (Shenzhen, Zhuhai, Shantou, Xiamen). In 1984, 13 coastal cities (Qinhangdao, Tianjin, Yantai, Qingdao, Lianyungang, Nantong, Shanghai, Ningbo, Wenzhou, Fuzhou, Guangzhou, Zhanjiang, and Beihai) were opened, and in 1990 the Pudong new zone was established in Shanghai.¹⁰⁰ When China created these areas, it had in mind three objectives: (1) to observe and to understand capitalism and to follow the trend of modern economic development in the capitalist world; (2) to test different policies, especially those connected with various economic systems; and (3) to acquire modern technology and management methods. Special policies and geographical situations certainly attracted foreign investors. This study cannot find specific statistical data for these areas. Generally, according to the data from 1987 to 1991, it

finds that the percentage of the location of JFDI is comparable with those of the US, HongKong, and Taiwan.\textsuperscript{101} (Figure 5.6)

\textbf{Figure 5.6 The Location of Direct Investment in China from Japan, U.S.A, HongKong, Taiwan, (1987-1991) (Percentage)}

\begin{figure}[h]
\centering
\includegraphics[width=0.5\textwidth]{figure5.6}
\caption{The Location of Direct Investment in China from Japan, U.S.A, HongKong, Taiwan, (1987-1991) (Percentage)}
\end{figure}

\textbf{(Sources: Japan Study, Nov.1, 1995)}

Based on the above figures, we find that HongKong and Taiwan chose mainly the south of China as their destination for investment. The US and Japan chose the delta of the Yangtse River and the North of China as their main targets. Except the US, the other three like to invest in areas which are not so distant from them. Certainly, these regions have the advantageous policies, transportation and other conditions. Although they did not mainly invest in the inner area of China, it is obvious that Japan’s investment shows the lowest percentage there during these years.

These analyses of the existing situation of JFDI demonstrate that Japan pursues a low production cost country to locate her capital, technology, managerial skills. This fits the H - O theorem framework, and also shows the importance of the labour

force, capital factor to JFDI. Based on the H-O theorem, it will be necessary first to test the effects of JFDI on China’s economy, trade through establishing some hypothetical models.

5.5 Effect of JFDI on China’s GDP

China’s economic development benefit from the use of foreign capital, especially through FDI. This has been demonstrated through the analysis in the previous chapters. JFDI represents one of the examples of FDI in China, also it is a main component of FDI in China. To test the effect of JFDI in China on China’s GDP, not only confirms the relationship between FDI and economic development, but also explains why China needs FDI.

A model which tests the effect of JFDI on GDP in China is set up. It was found that JFDI influenced China’s GDP. This study uses a simple regression analysis method to test the contribution of JFDI to China’s GDP. (See appendix 6), the result is as follows:

\[
\text{China's GDP} = 1137.38 + 1.15 \text{ JFDI in China}
\]

\[F \text{ Value: 124.5; } t - \text{ Value: 11.16; Adjusted R Square: 0.925}\]

This concludes that JFDI has a positive contribution to China’s GDP. China’s GDP is high correlated to JFDI in China, the growth of JFDI in China will result in increasing of China’s GDP. Also this growth can be explained in 92.5 percent level according to the adjusted R square.
The H-O extends its explanation for the trade of two countries. Japan faces the rising cost of labour force in ASEAN and NIEs countries, China’s abundant and cheap labour force becomes an important base for production. Then Japan imports from China, as the H-O points out that host countries can be export bases. This extended concept result in the deduction to confirm the relationship between JFDI and China’s exports to Japan.

5.6 Effect on Exports to Japan in China

This section aims at analysing the relationship between the JFDI and the trade between two countries, since according to the H-O theorem, as Japan invests in a cheap labour cost country, the imports from China should be increased.

A model which tests the effect of JFDI on China’s exports to Japan is set up. It was found that JFDI influenced China’s exports to Japan. This study uses a simple regression analysis method to test the contribution of JFDI to China’s exports to Japan. (See appendix 7), the result is as follows:

\[
\text{China's exports to Japan} = 7410.53 + 6.92 \text{ JFDI in China}
\]

\[F \text{ Value: 130.82; } t\text{-value: 11.438; Adjusted R Square: 0.928}\]

It concludes that JFDI has a positive contribution to China’s exports to Japan. China’s exports to Japan is high correlated to JFDI in China. This tells the growth of JFDI will result in an increase of China’s exports to Japan.
The following figure (5.7) also shows the increasing of China’s exports to Japan is higher than China’s imports from Japan.

Figure 5.7 JFDI in China with the Trade of Japan and China (1985-1995) (US$ million)

Figure 5.7 shows that since 1987 China’s exports to Japan exceeded China’s imports from Japan. China’s imports from Japan fluctuated from 1985 to 1995. In the same period, the trend of JFDI in China followed the trend of China’s exports to Japan.

As this paper mentioned before, one of the factors which affect JFDI in the Yen exchange rate, it seriously affects the action of JFDI, this study first tests this factor towards JFDI in China.

5.7 Effect of the Yen Exchange Rate on JFDI in China
The effect of the yen exchange rate on JFDI in China is tested by establishing a similar model as previous, the simple regression analysis of this model gives the follow results: (See appendix 8)

\[
\text{JFDI in China} = 5035.39 - 29.467 \text{ Japan's Yen Exchange Rate}
\]

\[
F \text{ Value: 7.12; } t\text{-value: -2.67; Adjusted R Square: 0.3797}
\]

It concludes that there is a negative relationship between JDI in China and Japan's yen exchange rate, the yen devaluation will decrease JFDI in China. But this model has weakness as the adjusted R square and F-value are not obvious to explain this relation.

5.8 The H-O Theorem Revisited

The H-O Theorem gives us a comprehensive understanding of factor proportions, it presents the importance of labour and capital to FDI. According to this theorem, capital will flow from a capital abundant to a labour-abundant and capital scarce country. Japan is a capital abundant and labour force shortage country compared with China. This situation meets the requirements when this study wants to establish several models to test the effects of capital and labour of two countries on JFDI.

This study mainly collects the data including GDP, domestic investment, and labour force of two countries. As the following table 5.2 shows the evidence:
Table 5.2 GDP, Capital and Labour Force of Japan and China (1985-1995)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1985</td>
<td>2368.9</td>
<td>675.14</td>
<td>59.6</td>
<td>896.4</td>
<td>345.11</td>
<td>501.12</td>
</tr>
<tr>
<td>1986</td>
<td>2008</td>
<td>584.25</td>
<td>60.2</td>
<td>1020.2</td>
<td>384.6</td>
<td>516.46</td>
</tr>
<tr>
<td>1987</td>
<td>2431</td>
<td>690.4</td>
<td>60.8</td>
<td>1196.3</td>
<td>432.2</td>
<td>530.6</td>
</tr>
<tr>
<td>1988</td>
<td>2921.9</td>
<td>886.25</td>
<td>61.7</td>
<td>1492.8</td>
<td>549.5</td>
<td>546.3</td>
</tr>
<tr>
<td>1989</td>
<td>2897.3</td>
<td>912.65</td>
<td>62.7</td>
<td>1690.9</td>
<td>609.5</td>
<td>557.07</td>
</tr>
<tr>
<td>1990</td>
<td>2970.1</td>
<td>980.13</td>
<td>63.8</td>
<td>1854.8</td>
<td>644.4</td>
<td>571.23</td>
</tr>
<tr>
<td>1991</td>
<td>3419</td>
<td>1094.08</td>
<td>65.1</td>
<td>2161.8</td>
<td>758.79</td>
<td>587.17</td>
</tr>
<tr>
<td>1992</td>
<td>3120.5</td>
<td>973.73</td>
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<td>65.78</td>
<td>4658.5</td>
<td>1859.2</td>
<td>619.46</td>
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<tr>
<td>1995</td>
<td>3168.5</td>
<td>883.71</td>
<td>66.66</td>
<td>5773.4</td>
<td>2278.6</td>
<td>632.8</td>
</tr>
</tbody>
</table>

Notes: Japan's GDP in US$ billions at 1990 prices and 1990 exchange rates, and domestic investment in Japan in $millions, China's GDP and domestic investment in billion Yuan at 1996 market prices by industrial origin. The labour force of two countries in millions people)

Table 5.2 shows that GDP of two countries is significantly different, the domestic investments in China and Japan are comparable, it is obviously presenting the abundant labour force in China compared with Japan. In this circumstance, two similar models are built up to test and confirm whether these relevant factors affect JFDI through the principles of the H-O theorem.

5.9 Effects of China's Labour Force and Capital on JFDI

Since the H-O theorem tells the importance of labour force and capital to FDI, in the case, China’s labour force and the need for capital will be the first important factors for this study to test. Here, this study takes the amount of China’s domestic investment as the factor which represents the capital need for China’s economic
development. A possible model is set up and tested by using the multiple regression
and correlation analysis (see appendix 9), the results are as follows:

\[
\text{JFDI in China} = 5232.01 - 11.58 \text{ China's Labour Force} + 2.65 \text{ Domestic Investment in China}
\]
\[F\text{-Value: 94.25; Adjusted R Square: 0.949; } t\text{-value for China's Labour Force: } -2.38; \text{ } t\text{-value for Domestic Investment in China: 8.177}\]

The test concludes with 95% confidence that there is a relationship between JFDI in
China and China’s labour force, domestic investment. The statistical result shows
both China’s domestic investment and labour force are correlated with JFDI in
China. The individual coefficients specifically describe the growth rate or
decreasing rate of JFDI in China by the changing situation of China’s labour force
and domestic investment. Furthermore, it also shows the negative relationship
between China’s labour force and China’s domestic investment.

Since this model needs to be expanded to include variable other than China’s labour
force and capital, these results cannot specifically determine their relationship
through the value of coefficients, at least it shows China needs JFDI to meet her
development, and China’s labour force is one of the important factor affecting JFDI
in China.

The H-O theorem also presents the importance of the labour force of home countries
to FDI. In this case, this study further tests the relationship between JFDI in China
with Japan’s labour force, and Japan’s domestic investment.
5.10 Effects of Japan’s Labour Force and Capital on JFDI

The H-O theorem points out that labour force and capital will be the main motives of home countries, they promote the activities of FDI. As this study described before, the trends and locations of JFDI evaluate the importance of these two factors, especially the shortage of Japan’s labour force. Based on this, this study establishes the same model as previously. Using the multiple regression and correlation analysis (See appendix 10), the results show as follows:

JFDI in China = -35832.037 + 667.01 Japan's Labour Force - 6.195 Domestic Investment in Japan

F-value 14.69; Adjusted R Square: 0.73; t-value for Japan’s Labour Force: 5.32; t-value for Domestic Investment in Japan: -3.08

This concludes with 95% confidence that there is a relationship between JFDI and Japan’s labour force and domestic investment. The statistical result shows both Japan’s domestic investment and labour force are correlated with JFDI. Evaluating the individual partial regression coefficients, it shows that Japan’s labour force is high (positive) correlated with JFDI. This relationship can be explained in 73.25% according to the adjusted R value.

The above two tests confirm the importance of labour force and capital factors of two countries to JFDI. In addition, this paper presents the existing trends of JFDI in the world and China, however the future trend can also be foreseeable if we analyse the relationship of JFDI over time.
5.11 Future Perspective

5.11.1 JFDI in the World Over Time

This study first sets up a hypothesis to test the trend of JFDI in the world over time. (See appendix 11), simple regression analysis is used to get the following result.

\[
\text{JFDI in the World} = -5838.88 + 2.953 \times \text{Time}
\]

\[F-\text{Value}: 43.595; \ t-\text{value}: 6.6; \text{Adjusted R Square: 0.69}\]

This result confirms the increasing trend of JFDI in the world since it is correlated with the time (year). This can also be explained in 69.1%. A increasing trend of JFDI in the world can be seen in the future as well.

5.11.2 JFDI in China Over Time

Whether the trend of JFDI in China confirms an increasing attitude and will keep this direction, the similar model is established as the above, using simple regression analysis get the following result (See appendix 12):

\[
\text{JFDI in China} = -644025.3 + 324.2 \times \text{Time}
\]

\[F-\text{value}: 17.32; \ t-\text{value}: 4.16; \text{Adjusted R Square: 0.62}\]

This says the JFDI in China is increasing over time. This can also be explained in 62.01 percent level. An increasing trend of JFDI in China in the future also can be foreseeable as this test shows that JFDI in China is positively correlated with the time.
5.12 Summary

JFDI plays a significant role in China's economic development, especially from the late 1980s. Investigating the past and current situation of JFDI, the sharply increasing trend of JFDI in China compared with that of the world, demonstrates the importance of Japan's choosing China as a main target for FDI. In addition, JFDI is concentrated in her former colony in northeast China and in special economic zones, the SEZ and Dalian phenomenon reflects the consideration of low production cost areas, cheap and skilled labour force, close geographical relationship etc. However, these factors also show their importance when Japan invested more in manufacturing industries than non-manufacturing industries to take advantage of China's cheap and abundant labour.

The role of JFDI is also further confirmed by the analysis of effect of JFDI on China's GDP and China's exports to Japan since it positively contributes to them through hypothesis tests. With the help of the H-O theorem to establish two regression and correlation analysis models, the results show the effects of both countries' labour force and capital on JFDI in China. These also tell us the main motives of JFDI Japan's shortage of labour and abundant capital abilities result in locating her FDI to her close partner - China which has abundant labour force and needs for capital to meet her economic development.

Analysis of JFDI trends over time worldwide and in China shows us an increasing trend in the future as long as China's advantages are still available. Although the
models of analysing the role of JFDI still need to be expanded to include some other variables, these analyses already presented a visible effect.
Chapter VI Conclusion

6.1 Conclusion

Over the years China has achieved dramatic progress in her economic development, FDI played a significant role in this progress.

JFDI is one of the FDI sources in China. This study found that JFDI assumes an important role in the development of China’s economy, because it meets the need of capital. As JFDI in China is positively correlated both with China’s GDP as well as China’s exports to Japan, it is noteworthy that JFDI plays an important role in opening up market opportunities.

The main motive of JFDI is to resolve Japan’s own disadvantages mainly the shortage of labour force, and the lack of natural resources. This study finds that China’s cheap and abundant labour force along with its abundant natural resources can be utilized more effectively when combined with the unique historical and geographical relationship between Japan and China. This led to China attracting JFDI.

A review of various theories of FDI finds that they are all linked with the Heckscher - Ohlin theorem. It was found that the basic factors of the Heckscher - Ohlin theorem help to explain the activities of JFDI in China. Since this theorem is
based upon the basic factor proportions and differentiation concepts, it indicates that capital will flow from a capital abundant country to a labour - abundant and capital - scarce country. This principle was demonstrated through high correlation of JFDI and both of Japan’s and China’s labour forces including domestic investments. This is further demonstrated by the role played by JFDI in China which is higher in manufacturing than in non - manufacturing industries. Most of JFDI in China is concentrated in northeast China and special economic zones. It further reinstates the view that pursuing close geographic area and cheap skilled and semi - skilled labour force is always an important motive of JFDI.

JFDI in the world was found to be closely linked to the development of the Japanese economy. During periods of recession of the Japanese economy, JFDI has fluctuated since the 1980s. In keeping with a modest rate of growth, JFDI in the world followed a steady upward trend. JFDI also followed the trend in global economy. The location of JFDI in Asian countries has shifted from NIEs to ASEAN, then from ASEAN to China. The growth rate of JFDI in China is faster than that of JFDI in the world. This can be explained in terms of rising labour cost in these ASEAN countries in which Japan had mainly invested during earlier times.

The role of JFDI in China was also encouraged by political events such as the open - door policy. A comparison of the scenario influencing FDI during the two main periods - Mao’s time and Deng’s time, suggested that government policy of
encouraging foreign investors to invest in China is a pre-requisite for attracting FDI.

6.2 Recommendation

In 1978, China embarked on an economic modernisation program that saw it become one of the first socialist countries to welcome foreign investment. Nowadays, FDI is almost involved in every aspect of the construction of the Chinese economy. FDI is viewed by the Chinese government as a low-cost method of building up the national economy by gaining capital, technology, and management expertise. Therefore there is every likelihood that this trend will be encouraged in the near future.

China’s abundant, cheap, skilled and semi-skilled labour force, coupled with natural resources, and improving business environment with a huge potential market all confirm the view that China possesses many attractive features for FDI. Using the role of JFDI in China as a case study, it is very clear that all the above factors are likely to attract other FDI because investing countries consider these as important in any foreign economy. China will attract amounts of foreign capital for the rest of the decade. In the meantime, FDI will continue to play a significant role in the development of China’s economy. China will not be able to reduce the utilization of FDI in the process of its economic development. China will need to continue its process of macro-economic stabilisation and structural adjustment; establish greatly needed institutional changes appropriate for a market-oriented, high-growth
economy, and reduce illegal activities in China's business environment. It will be necessary to create an environment that encourages efficient and effective use of investment to ensure sustainable growth of its economy.

Based on JFDI in China, we can suggest that Japan and China will adopt a policy of mutual benefit which can be further enhanced and achieved from each other through the activity of JFDI in China. This has implications for other countries which already invested or want to invest in China. If they follow and imitate Japan's success to locate their investment, they will be successful in their investment in China. Moreover, they will be the constant contribution to the needs for China's economic development in the future.

However, this study did not explain the effects of JFDI on the technical change and employment on China's economy. This is because there was lack of data on this subject and the difficulty of establishing an appropriate model that linked FDI, change of technology and international trade is not readily available for China. As research and data on China's economy are expanded and improved, it will become possible to obtain more conclusive evidence about the total economic effects of JFDI. It will also become possible to establish some successful models to analyse the effects of factors such as tax, tariff, cultural factor on the activities of JFDI in China. I hope that my initial efforts will stimulate research, analysis and ongoing reviews of an issue that is likely to become more important to China and other countries involved with the restructuring process.
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Appendix 1

The Main Data Collected

1. Data About Japan

3. Japan’s Trade with China (1985-1995)

2. Data About China

Appendix 2

Data Resources

1. Available Statistical Books Include:

- Asia Yearbook (1981-1996)
- Key Indicators of Developing Asian and Pacific Countries, Economic and Developing Resource Centre, Asian Developing Bank, 1996, Volume XXVII
- Some Journals and Books on the ABI/INFORM in the Northern Territory University
- Business Periodicals OnDisc (BPO) in the Northern Territory University Library
- Other data from different books listed as footnotes in this study

2. Available Resources From the Internet Include:

- JETRO Homepage on the Web Internet, mainly from “the JETRO white paper on foreign direct investment 1996 (Summary). Internet location: http://www.jetro.go.jp/WHITEPAPER/INVEST96. (JETRO: Japan External Trade Organisation, is a nonprofit, Japanese government related organisation dedicated to promoting mutually beneficial trade and economic relations between
Japan and other nations. This study mainly gets the data by e-mail from the international communication department, Email: ita@jetro.go.jp

• “Chinese Business World” on the Web Internet. Internet locations:
  http://www.chineseworld...business.bgeneral.econ-gen.htm

• Statistics on the Web. The internet location:

• Japanese Statistics Bureau & Statistics Centre on the internet, the location:
  http://www.stat.go.jp/1.htm

• China: Statistics, the location: http://www.welcome-to-China.com/china/stats/m.htm

  http://www.envista.com/ebook/index.html
Appendix 3

The Heckscher-Ohlin Trade Model

Eli Heckscher (1879 - 1952)

Was a Swedish economist. He is probably best known for his book “Mercantilist.” Although his major interest is in studying economic history, he also developed the essentials of the factor endowment theory of international trade in a short article in Swedish in 1919. It was translated into English thirty years later.

Bertil Ohlin (1899-1979)

Heckscher’s student, Bertil Ohlin developed and elaborated the factor endowment theory. He was not only a professor of economics at Stockholm, but also a major political figure in Sweden. He served in the Riksdag (Swedish Parliament), was the head of liberal party for almost a quarter of a century. He was Minister of Trade during World War II. In 1979 Ohlin was awarded a Nobel prize jointly with James Meade for his work in international trade theory.

HO Model = 2 x 2 x 2 model (2 countries, 2 commodities, 2 factors)

For example, there are two countries; each country is endowed with 2 homogeneous factors (labour and capital) and produces 2 commodities
Appendix 4

Japanese Chronology

Late Tokugawa Period
1853 Commodore Matthew C. Perry arrives.
1854 Signing of the Treaty of Kanagawa. The period of isolation ends.
1858 Signing of the Treaties with Five Nations (commercial treaties).
1859 Trade with the West begins.

Meiji Era
1868 Meiji Restoration.
1869 Institutional reforms begin.
1871 The yen is made the basic unit of money.
1873 Institution of the land tax.
1874 Saga Rebellion – the first armed rebellion against the new government.
1876 Compulsory commutation of samurai stipends to government bonds.
1877 Satsuma Rebellion, led by Saigo Takamori.
1886 Convertibility of paper notes is restored.
1894 Sino-Japanese War begins
1895 End of the Sino-Japanese War, Taiwan becomes a Japanese colony.
1897 Gold standard adopted.
1901 Yahata Steel Mill begins production.
1904 Russo-Japanese War begins.
1905 End of the Russo-Japanese War. Russia cedes the southern half of Sakhalin, and recognises Korea as being within Japan’s Sphere of interest.
1910 Korea is annexed.
1911 Japan regains tariff autonomy.

Taisho Era
1914 First World War begins.
1915 Economic boom begins in Japan.
1917 Japan goes off the gold standard by imposing an embargo on gold exports.
1918 First World War ends.
1920 Post-war recession begins.
1923 Kanto earthquake destroys most of Tokyo.

Showa Era
1927 Financial crisis.
1930 Japan returns to the gold standard (January).
1931 Manchuria Incident. The gold standard is abandoned (December).
1937 China Incident, which is usually taken as the beginning of the Pacific War.
1941 Japan attacks Pearl Harbor and declares war on the Allied Powers (December).
1946 A new constitution is proclaimed.
1949 The foreign exchange rate is set at 360 yen per dollar.
1950 Korean Conflict begins and triggers the first economic boom in post-war Japan.
1952 Japan regains independence (April).
1952 Armistice of the Korean Conflict signed.
1960 The period of high economic growth begins.
1964 Shinkansen (bullet train) starts operation between Osaka and Tokyo. Olympic Games are held in Tokyo.
1970 Pollution first becomes a serious social issue.
1971 The yen revalued, and the new exchange rate becomes 308 yen per dollar (December)
1973 Flexible exchange rate system adopted. The yen starts to revalue. The oil crisis (October), which triggers a major economic recession.
1974 GNP growth becomes negative for the first time in the post-war period. This ends the high growth period which started around 1960.
1976 The economy recovers from the oil shock. In the next few years, the economy grows at about 5 per cent per annum.
1979 Oil prices begin to rise again, resulting in the second oil crisis.
1980 As the aftermath of the second oil crisis, the growth rate declines to about 4 per cent, and finally stabilises at a level a little below this in 1981-4.
1983 Japan’s per capita income becomes the tenth highest in the OECD group. This is Japan’s first appearance in the list of the top ten countries.
1985 The Plaza Accord. The yen starts to revalue.
1986 The exchange rate becomes 165 yen per dollars
1987 The year revalues further to about 123 yen per dollar towards the end of the year. A massive outflow of investment to South-East Asia, looking for cheaper Production sites.
1990 The third highest in per capita GNP (measured in current exchange rates) among the industrial countries (After Switzerland and Finland)
1992 Economic recession. The growth rate is small but positive; the worst year since the mid-1970s.
1993 The yen begins to revalue again, to about 113 yen per dollar in early April. The economy experiences the worst year since 1974. There is no immediate prospect for economic recovery.
1994 Recognising the constitutional right to the existence for Japan’s Self-Defence.
1996 Japan focused attention on improving relations with other East and South-East states including China, Vietnam. Ending an Embargo with Vietnam. Japan applied her policy to claims for compensation made by former prisoners of war of the allied forces.

Appendix Five

Dalian’s Favourable Tax Policies

General Regulations:
Government regulations provide that income tax for FFEs is 30 percent of taxable income, but for FFEs involved in manufacturing and operating within Dalian municipality, the corporate income tax rate is 24 percent, and for enterprise operating in the Dalian Economic and Technological Development Zone and Dalian bonded areas, the rate is 15 percent. Other benefits include the following:

Corporate Income Tax:
1. Enterprises that plan to operate for more than 10 years are exempt from national corporate income tax in the first and second years after they begin to generate profits, and are required to pay only half the tax from the third through the fifth profitable years.

2. After the above favourable treatment expires, enterprises that export their products are subjects to an annual corporate income tax rate of only 12 per cent if they export 70 percent or more of their gross product for the year, the rate is 12 percent for enterprises operating in the Dalian Economic and Technological Development Zone and Dalian bonded areas.

3. After the above benefits expire, technically advanced enterprises can enjoy three further years of a corporate income tax rate of 12 percent, or 10 percent if they operate in the Dalian Economic and Technological Development Zone and Dalian bonded areas.

Tax Reimbursement for Reinvestment
1. From the fifth year on, foreign investors who reinvest their profits or dividends in China may, with approval, draw back 40 percent of the tax paid on the reinvested amount; and if they reinvest in technically advanced enterprises that export their products, they can draw back all the tax paid on the reinvested amounts.

Local Income Tax.
1. State regulations provide that FFEs must pay a local tax at a rate of three percent of taxable income. The Dalian municipal government exempts FFEs from local tax for seven years after they begin to generate profits.

Withholding of Income Tax
1. Overseas business that have not set up offices or other organisations in China but receive income from dividends, interest, rent, license fees, or other sources in Dalian pay only a 10 percent income tax rate and also receive other tax exemptions.
2. Those who have brought in capital or equipment on favourable terms or transferred advanced technologies will, with approval, be afforded tax cuts or exemptions from income tax.

**Other Taxes**

1. Effective from January 1, 1994, FFEs that were approved for establishment before December 31, 1993, can upon approval, draw back the additional tax already paid for a period of less than five years within their approved operational period as a result of VAT, consumption tax, and/or operational tax; enterprises without a pre-set operational period can, with approval, draw back the additional tax paid as a result of the new taxed with five years.

2. Other tax laws pertaining to FFEs shall also be followed apart from VAT, consumption tax, and/or operational tax; in case no relevant provisions are made by law, regulations of the State Council will be followed.

*(Source: East Asian Executive Reports, July 15, 1996)*
Appendix 6

Simple regression analysis of Effect of JFDI on China’s GDP

Formula: \( Y = \beta_0 + \beta_1 X_1 \)

\( Y \): China’s GDP, \( X_1 \): JFDI in China

- Hypothesis:
  
  \( H_0: \beta_1 = 0 \) (There is no relationship between \( Y \) and \( X_1 \))
  
  \( H_A: \beta_1 \neq 0 \) (There is a relationship between \( Y \) and \( X_1 \))

Analysed data as follows:

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
<td>( \text{China's GDP} ) (Billion Chinese Yuan)</td>
<td>JFDI in China (US$ million)</td>
</tr>
<tr>
<td>1985</td>
<td>896.4</td>
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(Sources: http://www.nri.co.jp.nri/publications/nriqF/94winter/txt03-02.htm; http://www.jetro.go.jp/WHITEPAPER/INVEST97/l09.html

Notes: JFDI in China in US$ million, China’s GDP in billion Yuan)

- Statistical Analysis:
  Setting \( \alpha = 0.05 \), analysing summary of output is as follows:

<table>
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<th>Regression Statistics</th>
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<tbody>
<tr>
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<table>
<thead>
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<th>Coefficients</th>
<th>Standard Error</th>
<th>t Stat</th>
<th>P-value</th>
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<th>Upper 95%</th>
<th>Lower 95.000%</th>
<th>Upper 95.000%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>1137.382107</td>
<td>175.15999983</td>
<td>0.0001123</td>
<td>741.14236</td>
<td>1533.6219</td>
<td>741.1423601</td>
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</tr>
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<td>X Variable 1</td>
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<td>11.15842264</td>
<td>1.427E-06</td>
<td>0.9178132</td>
<td>0.917813204</td>
<td>1.384278069</td>
</tr>
</tbody>
</table>
• Decision rules:

Do not reject $H_0$ if the t-value is between the t-table value (here is $±2.262$, according to t-table in statistical book, df is equal to 9). Reject if the t-value is outside this range. Or using P-value, reject $H_0$ if $\alpha > P$-value.

• Interpretation

Since t value (6.26) is outside of the crucial range of the t-table ($±2.262$), we can reject the null hypothesis ($H_0$), we conclude there is a positive relationship between China’s GDP and JFDI in China. We can conclude the change of China’s GDP can be explained in 92.5% by the changes of JFDI in China according to the adjusted $R^2$. 

MBA Dissertation
Appendix 7

Simple Regression Analysis of Effect of JFDI on China’s Exports to Japan

Formula: \( Y = \beta_0 + \beta_1 X_1 \)

\( Y \): China’s Exports to Japan, \( X_1 \): JFDI in China

• Hypothesis:

\( H_0: \beta_1 = 0 \) (There is no relationship between \( Y \) and \( X_1 \))

\( H_A: \beta_1 \neq 0 \) (There is a relationship between \( Y \) and \( X_1 \))

Analysed data shown as follows:

JFDI in China, Trade between China and Japan(1985-1995)

<table>
<thead>
<tr>
<th>Year</th>
<th>JFDI in China (US$ million)</th>
<th>China’s imports from Japan (US$ million)</th>
<th>China’s exports to Japan (US$ million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1985</td>
<td>315.07</td>
<td>12,477</td>
<td>6,483</td>
</tr>
<tr>
<td>1986</td>
<td>263.35</td>
<td>9,856</td>
<td>5,652</td>
</tr>
<tr>
<td>1987</td>
<td>219.7</td>
<td>8,250</td>
<td>7,401</td>
</tr>
<tr>
<td>1988</td>
<td>514.53</td>
<td>9,476</td>
<td>9,850</td>
</tr>
<tr>
<td>1989</td>
<td>438</td>
<td>8,516</td>
<td>11,146</td>
</tr>
<tr>
<td>1990</td>
<td>349</td>
<td>6,130</td>
<td>12,054</td>
</tr>
<tr>
<td>1991</td>
<td>579</td>
<td>8,593</td>
<td>14,216</td>
</tr>
<tr>
<td>1992</td>
<td>1,070</td>
<td>11,949</td>
<td>16,953</td>
</tr>
<tr>
<td>1993</td>
<td>1,691</td>
<td>17,273</td>
<td>20,565</td>
</tr>
<tr>
<td>1994</td>
<td>2,565</td>
<td>18,682</td>
<td>27,566</td>
</tr>
<tr>
<td>1995</td>
<td>4,473</td>
<td>21,931</td>
<td>35,922</td>
</tr>
</tbody>
</table>


• Statistical Analysis:

Setting \( \alpha=0.05 \), analysing summary of output is as follows:

**SUMMARY OUTPUT**

<table>
<thead>
<tr>
<th>Regression Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple R</td>
</tr>
<tr>
<td>R Square</td>
</tr>
<tr>
<td>Adjusted R Square</td>
</tr>
<tr>
<td>Standard Error</td>
</tr>
<tr>
<td>Observations</td>
</tr>
</tbody>
</table>

ANOVA
Japanese Foreign Direct Investment in China

December 1997

<table>
<thead>
<tr>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>Significance F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>1</td>
<td>840235310.9</td>
<td>840235311</td>
<td>130.82267</td>
</tr>
<tr>
<td>Residual</td>
<td>9</td>
<td>57804339.28</td>
<td>6422704.4</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
<td>898039650.2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Coefficients</th>
<th>Standard Error</th>
<th>t Stat</th>
<th>P-value</th>
<th>Lower 95%</th>
<th>Upper 95%</th>
<th>Lower 95.000%</th>
<th>Upper 95.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>7410.5299</td>
<td>1026.786209</td>
<td>7.2172082</td>
<td>4.99E-05</td>
<td>5087.776345</td>
<td>9733.2834</td>
<td>9733.2834</td>
</tr>
<tr>
<td>X Variable 1</td>
<td>6.915739</td>
<td>0.604640312</td>
<td>11.437774</td>
<td>1.158E-06</td>
<td>5.547946582</td>
<td>8.2835315</td>
<td>8.2835315</td>
</tr>
</tbody>
</table>

**Decision rules:**

Do not reject $H_0$ if the t-value is between the t-table value (here is $\pm 2.262$, according to t-table in statistical book, df is equal to 9). Reject if the t-value is outside this range. Or using P-value, reject $H_0$ if $\alpha > P-value$.

**Interpretation**

Since t value (11.44) is outside of the crucial range of the t-table ($\pm 2.262$), we can reject the null hypothesis ($H_0$), we conclude there is a positive relationship between China's exports to Japan and JFDI in China. We can conclude the change of China's exports to China can be explained in 92.8% by the changes of JFDI in China according to the adjusted $R^2$. 
Appendix 8

Simple Regression Analysis of the Yen Exchange Rate on JFDI

Formula: \( Y = \beta_0 + \beta_1 X_1 \)

\( Y \): JFDI in China, \( X_1 \): Japan’s Yen Exchange Rate

- Hypothesis:
  \( H_0: \beta_1 = 0 \) (There is no relationship between \( Y \) and \( X_1 \))
  \( H_A: \beta_1 \neq 0 \) (There is a relationship between \( Y \) and \( X_1 \))

Analysed data shown as following table:

<table>
<thead>
<tr>
<th>Year</th>
<th>JFDI in China</th>
<th>Yen Exchange Rate (1 US$ base)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1985</td>
<td>315.07</td>
<td>202.75</td>
</tr>
<tr>
<td>1986</td>
<td>263.35</td>
<td>162.13</td>
</tr>
<tr>
<td>1987</td>
<td>219.7</td>
<td>128.25</td>
</tr>
<tr>
<td>1988</td>
<td>514.53</td>
<td>123.63</td>
</tr>
<tr>
<td>1989</td>
<td>438</td>
<td>143.62</td>
</tr>
<tr>
<td>1990</td>
<td>349</td>
<td>133.72</td>
</tr>
<tr>
<td>1991</td>
<td>579</td>
<td>128.07</td>
</tr>
<tr>
<td>1992</td>
<td>1,070</td>
<td>126.62</td>
</tr>
<tr>
<td>1993</td>
<td>1,691</td>
<td>111.2</td>
</tr>
<tr>
<td>1994</td>
<td>2,565</td>
<td>102.21</td>
</tr>
<tr>
<td>1995</td>
<td>4,473</td>
<td>94.06</td>
</tr>
</tbody>
</table>


Statistical analysis: Analysing the same data as the above table 5.4, setting \( \alpha = 0.05 \)

<table>
<thead>
<tr>
<th>Regression Statistics</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple R</td>
<td>0.6646429</td>
</tr>
<tr>
<td>R Square</td>
<td>0.4417502</td>
</tr>
<tr>
<td>Adjusted R</td>
<td>0.3797225</td>
</tr>
<tr>
<td>Square Standard Error</td>
<td>1043.8904</td>
</tr>
<tr>
<td>Observations</td>
<td>11</td>
</tr>
</tbody>
</table>

SUMMARY

OUTPUT
Japanese Foreign Direct Investment in China

<table>
<thead>
<tr>
<th></th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>Significance F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>1</td>
<td>7760693.406</td>
<td>7760693.4</td>
<td>7.1218</td>
<td>0.025678227</td>
</tr>
<tr>
<td>Residual</td>
<td>9</td>
<td>9807363.722</td>
<td>1089707.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
<td>17568057.13</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Coefficients**

<table>
<thead>
<tr>
<th>Intercept</th>
<th>5035.39</th>
<th>1495.297489</th>
<th>3.3674837</th>
<th>0.0083</th>
<th>1652.789483</th>
<th>8417.9905</th>
<th>Lower 95%</th>
<th>Upper 95%</th>
<th>Lower 95.000%</th>
<th>Upper 95.000%</th>
</tr>
</thead>
<tbody>
<tr>
<td>X Variable 1</td>
<td>-29.467018</td>
<td>11.04182383</td>
<td>-2.6686731</td>
<td>0.0257</td>
<td>-54.44537805</td>
<td>-4.486583</td>
<td>-54.44537805</td>
<td>-4.48658252</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Interpretation:
  Using the same decision rule. Since t value (-2.6686) is outside of the crucial range of the t-table (±2.262), we can reject the null hypothesis (H₀), we conclude there is a negative relationship between JFDI in China and Japan’s Yen exchange rate, but F value shows this is not very significant, and the R² is only 0.3797 which means can explain the relationship in 37.97% level. The formula can be rewritten as follows: \( Y = 50335.39 - 29.467 X_1 \)
Appendix 9

Multiple Regression Analysis of Effects of China’s Labour Force and China’s Domestic Investment on JFDI

This study establishes a formula as follows:

\[ Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 \]

\(Y\): JFDI in China; \(X_1\): China’s Labour force; \(X_2\): Capital - domestic investment in China

Analysed Data:

<table>
<thead>
<tr>
<th>JFDI in China (US$ million)</th>
<th>China's labour force (Million People)</th>
<th>China's Domestic Investment (Billion Chinese Yuan)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1985</td>
<td>315.07</td>
<td>501.12</td>
</tr>
<tr>
<td>1986</td>
<td>263.35</td>
<td>515.46</td>
</tr>
<tr>
<td>1987</td>
<td>219.7</td>
<td>530.6</td>
</tr>
<tr>
<td>1988</td>
<td>514.53</td>
<td>546.3</td>
</tr>
<tr>
<td>1989</td>
<td>438</td>
<td>557.07</td>
</tr>
<tr>
<td>1990</td>
<td>349</td>
<td>571.23</td>
</tr>
<tr>
<td>1991</td>
<td>579</td>
<td>587.17</td>
</tr>
<tr>
<td>1992</td>
<td>1070</td>
<td>597.96</td>
</tr>
<tr>
<td>1993</td>
<td>1691</td>
<td>606.4</td>
</tr>
<tr>
<td>1994</td>
<td>2665</td>
<td>619.46</td>
</tr>
<tr>
<td>1995</td>
<td>4473</td>
<td>632.8</td>
</tr>
</tbody>
</table>

(source: same as table 5.1)

Hypothesis:

\(H_0: \beta_1 = \beta_2 = 0\) (There is no relationship between \(Y\) and \(X_1\), \(X_2\))

\(H_A: \) At least one \(\beta\) is not zero

This study uses the Excel computer statistical analysis tool which is regression and correlation analysis.

Evaluating the model as a whole
Setting $\alpha=0.05$, we make multiple regression analysis by Excel analysis tool, the output of summary as follows:

<table>
<thead>
<tr>
<th>ANOVA</th>
</tr>
</thead>
<tbody>
<tr>
<td>df</td>
</tr>
<tr>
<td>----</td>
</tr>
<tr>
<td>Regressi 2</td>
</tr>
<tr>
<td>Residual 8</td>
</tr>
<tr>
<td>Total 10</td>
</tr>
</tbody>
</table>

$F=94.25 >> 4.46 (F_{0.05; 2,8})$, we reject the null hypothesis. This study concludes with 95 percent confidence that linear relationship exists between Y (JFDI in China) and at least one of the independent variables.

**Testing the Individual Partial Regression Coefficients.**

Testing the individual, this study further tests the other coefficients individually to determine which one is significant.

Hypothesis: $H_0 : \beta_1 = 0$ or $H_A : \beta_1 \neq 0$

$H_0 : \beta_2 = 0$ or $H_A : \beta_2 \neq 0$

The sample size is 11, df is 8, we use t-test, t table value is (±2.306)

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>Standard Error</th>
<th>t Stat</th>
<th>P-value</th>
<th>Lower 95%</th>
<th>Upper 95%</th>
<th>Lower 95.000%</th>
<th>Upper 95.000%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>5232.0107</td>
<td>2508.0307</td>
<td>2.0861031</td>
<td>0.0704436</td>
<td>-551.5223</td>
<td>11015.544</td>
<td>11015.544</td>
</tr>
<tr>
<td>X</td>
<td>-11.575576</td>
<td>4.8729347</td>
<td>-2.3754835</td>
<td>0.0448608</td>
<td>-22.812591</td>
<td>-0.338561</td>
<td>-0.338561</td>
</tr>
<tr>
<td>Variable 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.9051103</td>
<td>3.4016593</td>
<td>1.9051103</td>
</tr>
<tr>
<td>X</td>
<td>2.6533848</td>
<td>0.3244895</td>
<td>8.1771065</td>
<td>3.729E-05</td>
<td>1.9051103</td>
<td>3.4016593</td>
<td>1.9051103</td>
</tr>
<tr>
<td>Variable 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Decision rules: Do not reject $H_0$ if the t-value is between the t-table value range; reject $H_0$ if the t value is outside the range. Or we use P-value which is the lowest level of significance at which the null can be rejected. So it will reject $H_0$ if $\alpha >$ P-value.
The t-value (-2.375) of $X_1$ (China's labour force) is outside of the t-table value, reject $H_0$, there is a negative relationship between JFDI in China and China's labour force.

The t-value (8.177) of $X_2$ (China's domestic investment) is outside of the t-table value, reject $H_0$, there is a positive relationship between JFDI in China and China's domestic investment.

According to the adjusted R shown by the following statistics

<table>
<thead>
<tr>
<th>Regression Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple</td>
</tr>
<tr>
<td>R</td>
</tr>
<tr>
<td>R Square</td>
</tr>
<tr>
<td>Adjusted R Square</td>
</tr>
<tr>
<td>Standard Error</td>
</tr>
<tr>
<td>Observations</td>
</tr>
</tbody>
</table>

This can be explained in 94.9 percent level.
Appendix 10

Multiple Regression Analysis of Japan’s Labour Force

Japan’s Domestic Investment on JFDI

This study establishes a formula as follows:

\[ Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 \]

(Y: JFDI in China; \(X_1\): Japan’s Labour force; \(X_2\): Capital - domestic investment in Japan)

Analysed Data:

<table>
<thead>
<tr>
<th>Year</th>
<th>JFDI (US$ million)</th>
<th>Japan’s Labour Force (Million people)</th>
<th>Japan’s Domestic Investment (US$ million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1985</td>
<td>315.07</td>
<td>59.6</td>
<td>675.14</td>
</tr>
<tr>
<td>1986</td>
<td>263.35</td>
<td>60.2</td>
<td>564.25</td>
</tr>
<tr>
<td>1987</td>
<td>219.7</td>
<td>60.8</td>
<td>600.4</td>
</tr>
<tr>
<td>1988</td>
<td>514.53</td>
<td>61.7</td>
<td>888.25</td>
</tr>
<tr>
<td>1989</td>
<td>438</td>
<td>62.7</td>
<td>912.65</td>
</tr>
<tr>
<td>1990</td>
<td>349</td>
<td>63.8</td>
<td>980.13</td>
</tr>
<tr>
<td>1991</td>
<td>579</td>
<td>65.1</td>
<td>1094.08</td>
</tr>
<tr>
<td>1992</td>
<td>1070</td>
<td>65.04</td>
<td>973.73</td>
</tr>
<tr>
<td>1993</td>
<td>1691</td>
<td>65.47</td>
<td>889.02</td>
</tr>
<tr>
<td>1994</td>
<td>2595</td>
<td>66.78</td>
<td>839.23</td>
</tr>
<tr>
<td>1995</td>
<td>4473</td>
<td>66.66</td>
<td>883.71</td>
</tr>
</tbody>
</table>

(Source: same as table 5.1)

Hypothesis:

\(H_0: \beta_1 = \beta_2 = 0\) (There is no relationship between \(Y\) and \(X_1, X_2\))

\(H_A: \) At least one \(\beta\) is not zero

This study uses the Excel computer statistical analysis tool which is regression and correlation analysis.

Evaluating the model as a whole
Setting $\alpha=0.05$, we make multiple regression analysis by Excel analysis tool, the output of summary as follows:

**ANOVA**

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>Significance F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>2</td>
<td>13808859.33</td>
<td>6904429.7</td>
<td>14.693411</td>
<td>0.002096456</td>
</tr>
<tr>
<td>Residual</td>
<td>8</td>
<td>3759197.799</td>
<td>469899.72</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
<td>17568057.13</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

$F=14.69>4.46\,(F_{0.05;2,8})$, we reject the null hypothesis. This study concludes with 95 percent confidence that linear relationship exists between $Y$(JFDI in China) and at least one of the independent variables (Japan's labour force and domestic investment).

**Testing the Individual Partial Regression Coefficients.**

Testing the individual, this study further tests the other coefficients individually to determine which one is significant.

Hypothesis: $H_0: \beta_1=0$ or $H_A: \beta_1 \neq 0$

$H_0: \beta_2=0$ or $H_A: \beta_2 \neq 0$

The sample size is 11, df is 8, we use t-test, t table value is ($\pm 2.306$)

<table>
<thead>
<tr>
<th>Coefficients</th>
<th>Standard Error</th>
<th>t Stat</th>
<th>P-value</th>
<th>Lower 95%</th>
<th>Upper 95%</th>
<th>Lower 95.000%</th>
<th>Upper 95.000%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>-55832.037</td>
<td>-5.251</td>
<td>0.000773</td>
<td>-51565.8243</td>
<td>-20098.25</td>
<td>-52156.8243</td>
<td>-20098.25</td>
</tr>
<tr>
<td>X Variable 1</td>
<td>667.01441</td>
<td>5.323</td>
<td>0.0007091</td>
<td>378.0158771</td>
<td>956.01241</td>
<td>378.0158771</td>
<td>956.0124092</td>
</tr>
<tr>
<td>X Variable 2</td>
<td>-6.1954304</td>
<td>-3.082</td>
<td>0.0150691</td>
<td>-10.83082124</td>
<td>-1.560039578</td>
<td>-10.83082124</td>
<td>-1.560039578</td>
</tr>
</tbody>
</table>

Decision rules: Do not reject $H_0$ if the t-value is between the t-table value range; reject $H_0$ if the t value is outside the range. Or we use P-value which is the lowest
level of significance at which the null can be rejected. So it will reject $H_0$ if $\alpha > P$-value.

The t-value (-5.322) of $X_1$ (Japan's labour force) is outside of the t-table value, reject $H_0$, there is a positive relationship between JFDI in China and Japan's labour force according to the value of coefficient of $X_1$.

The t-value (-3.082) of $X_2$ (Japan's domestic investment) is outside of the t-table value, reject $H_0$, there is negative relationship between JFDI in China and Japan's domestic investment according to the value of coefficient of $X_2$.

According to the adjusted R value shown by the following statistics

<table>
<thead>
<tr>
<th>Regression Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple R</td>
</tr>
<tr>
<td>R Square</td>
</tr>
<tr>
<td>Adjusted R Square</td>
</tr>
<tr>
<td>Standard Error</td>
</tr>
<tr>
<td>Observations</td>
</tr>
</tbody>
</table>

This relationship can be explained in 73.25% level.
Appendix 11

Simple Regression Analysis of the Trend of JFDI in the World and Time

Hypothesis:

$H_{null}: \text{Japanese foreign direct investment in the world is not increasing over time}$

$H_A: \text{Japanese foreign direct investment in the world is increasing over time}$

Establishing a formula as follows: $Y = \beta_0 + \beta_1 X_1$

(Y: JFDI in the world; $X_1$: Time, $\beta_1$: The rate of growth of JFDI), the decision depends on the value of $\beta_1$, if it is negative, we cannot reject $H_0$; if it is positive, we reject $H_0$.

- Formula:
  
  $Y = \beta_0 + \beta_1 X_1$

  (Y: JFDI in the world; $X_1$: Time, $\beta_1$: The rate of growth of JFDI)

- Hypothesis

$H_0: \beta_1 = 0$ (There is no relationship between $Y$ and $X_1$)

$H_A: \beta_1 \neq 0$ (There is a relationship between $Y$ and $X_1$)

Data collected about Japanese foreign direct investment over time are as follows:

<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3.5   2.8   4.6   5    4.7   8.9   7.7   8.1   10.2  12.2  22.3  33.4  47    67.5  56.9  41.6  34.1  36    41.1  50.7</td>
</tr>
</tbody>
</table>


Notes: The figures are the accumulated value of approvals and notification)

- Analysis

Setting $\alpha = 0.05$, analysing the summary of output is as follows:
SUMMARY OUTPUT

Regression Statistics

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple R</td>
<td>0.8412906</td>
</tr>
<tr>
<td>R Square</td>
<td>0.7077699</td>
</tr>
<tr>
<td>Adjusted R Square</td>
<td>0.6915349</td>
</tr>
<tr>
<td>Standard Error</td>
<td>11.534527</td>
</tr>
<tr>
<td>Observations</td>
<td>20</td>
</tr>
</tbody>
</table>

ANOVA

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>df</td>
<td></td>
</tr>
<tr>
<td>SS</td>
<td></td>
</tr>
<tr>
<td>MS</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td></td>
</tr>
<tr>
<td>Significance F</td>
<td></td>
</tr>
<tr>
<td>Regression</td>
<td>1</td>
</tr>
<tr>
<td>5800.149778</td>
<td>5800.1498</td>
</tr>
<tr>
<td>43.595294</td>
<td>3.359E-06</td>
</tr>
<tr>
<td>Residual</td>
<td>18</td>
</tr>
<tr>
<td>2394.815722</td>
<td>133.04532</td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>8194.9655</td>
</tr>
</tbody>
</table>

Coefficients

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Coefficients</td>
<td></td>
</tr>
<tr>
<td>Standard Error</td>
<td></td>
</tr>
<tr>
<td>t Stat</td>
<td></td>
</tr>
<tr>
<td>P-value</td>
<td></td>
</tr>
<tr>
<td>Lower 95%</td>
<td></td>
</tr>
<tr>
<td>Upper 95%</td>
<td></td>
</tr>
<tr>
<td>Lower 95.000%</td>
<td></td>
</tr>
<tr>
<td>Upper 95.000%</td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>-5838.8786</td>
</tr>
<tr>
<td></td>
<td>888.0978032</td>
</tr>
<tr>
<td></td>
<td>-6.5745911</td>
</tr>
<tr>
<td></td>
<td>3.551E-06</td>
</tr>
<tr>
<td></td>
<td>-7704.7038</td>
</tr>
<tr>
<td></td>
<td>-3973.053</td>
</tr>
<tr>
<td></td>
<td>-7704.703844</td>
</tr>
<tr>
<td></td>
<td>-3973.053299</td>
</tr>
<tr>
<td>X Variable 1</td>
<td>2.9533083</td>
</tr>
<tr>
<td></td>
<td>0.44728978</td>
</tr>
<tr>
<td></td>
<td>6.6026733</td>
</tr>
<tr>
<td></td>
<td>3.359E-06</td>
</tr>
<tr>
<td></td>
<td>2.0135866</td>
</tr>
<tr>
<td></td>
<td>3.89303</td>
</tr>
<tr>
<td></td>
<td>2.013586587</td>
</tr>
<tr>
<td></td>
<td>3.893029955</td>
</tr>
</tbody>
</table>

Decision rules:
Do not reject H₀ if the t-value is between the t-table value (here is ±2.101, according to t-table in statistics book, df is equal to 18). Reject is the t-value is outside of this range. Or using P-value, reject if α > P-value.

Interpretation:
Since t-value is 6.603 is outside of the t-table value range, we can reject the null hypothesis (H₀; β₁ = 0). We conclude there is a relationship between JFDI in the world and time. Further more, the formula can rewritten as:
Y = -5838.88 + 2.953X₁, since β₁ is positive, this study concludes that we can accept the Hₐ which says the JFDI in the world is increasing over time. This can also be explained in 69.1% level.
Appendix 12

Simple regression analysis of the trend of JFDI in China and time

Hypothesis

H_{null}: JFDI in China is not increasing over time

H_{a}: JFDI in China is increasing over time

Establishing a formula as follows: \( Y = \beta_0 + \beta_1 X_t \)

(\( Y: \) JFDI in China, \( X_t: \) Time, \( \beta_1: \) The rate of growth of JFDI), the decision depends on the value of \( \beta_1 \), if it is negative, we cannot reject \( H_0 \); if it is positive, we reject \( H_0 \)

- Formula:
  \( Y = \beta_0 + \beta_1 X_t \)
  (\( Y: \) JFDI in China, \( X_t: \) Time, \( \beta_1: \) The rate of growth of JFDI)

- Hypothesis

\( H_0: \beta_1 = 0 \) (There is no relationship between \( Y \) and \( X_t \))

\( H_A: \beta_1 \neq 0 \) (There is a relationship between \( Y \) and \( X_t \))

Analysed data shown as follows:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount</td>
<td>315.07</td>
<td>263.35</td>
<td>219.7</td>
<td>514.53</td>
<td>438</td>
<td>349</td>
<td>579</td>
<td>1070</td>
<td>1691</td>
<td>2565</td>
<td>4473</td>
</tr>
</tbody>
</table>

(\( Y: \) JFDI in China (1985 to 1995 in USS million)

| Sources: China's Statistical Year book, Various Issues, China's State Statistical Bureau)

Summary output

| Multiple R | 0.8112386 |
| R Square | 0.658108 |
| Adjusted R Square | 0.62012 |
| Standard Error | 816.93046 |
| Observations | 11 |

ANOVA

<table>
<thead>
<tr>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>Significance F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>1</td>
<td>11561678.76</td>
<td>11561679</td>
<td>17.324102</td>
</tr>
<tr>
<td>Residual</td>
<td>9</td>
<td>6006378.371</td>
<td>667375.37</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
<td>17568057.13</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

MBA Dissertation 120

The Faculty Of Business
Northern Territory University
Japanese Foreign Direct Investment in China

<table>
<thead>
<tr>
<th>Coefficients</th>
<th>Standard Error</th>
<th>t Stat</th>
<th>P-value</th>
<th>Lower 95%</th>
<th>Upper 95%</th>
<th>Lower 95.000%</th>
<th>Upper 95.000%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>-644025.3</td>
<td>155003.8092</td>
<td>-4.1548998</td>
<td>-994868.54</td>
<td>-293382.05</td>
<td>-994668.5408</td>
<td>-293382.0519</td>
</tr>
<tr>
<td>X Variable 1</td>
<td>324.20082</td>
<td>77.89126305</td>
<td>4.1622231</td>
<td>0.0024396</td>
<td>147.998405</td>
<td>147.9984053</td>
<td>500.4032311</td>
</tr>
</tbody>
</table>

• Decision rules:
Do not reject $H_0$ if the t-value is between the t-table value (here is ±2.262, according to t-table in statistics book, df is equal to 9). Reject is the t-value is outside of this range. Or using P-value, reject if $\alpha > P$-value.

• Interpretation:
Since t-value is 4.16 is outside of the t-table value range, we can reject the null hypothesis ($H_0$). We conclude there is a relationship between JFDI in China and time. Further more, the formula can rewritten as: $Y = -644025.3 + 324.2X_1$. Since $\beta_1$ is positive, this study concludes that we can accept the $H_A$ which says the JFDI in China is increasing over time. This can also be explained in 62.01% level.