A Comparison of Chinese Outward Direct Investment with Other Regional Peers: Taiwan, Japan and Korea

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1. Introduction

In recent years, the remarkable growth of China has attracted increasing attention from both academics and policymakers. Measured by market exchange rates, China's gross domestic product (GDP) reached US$3.2 trillion in 2007. Facing an ongoing global financial and credit crisis, it is expected that the pace of economic growth of China will slow. However, to combat slower economic growth, the Chinese government has also announced a stimulus package worth more than US$580 billion. Forecasts of the current growth rate of China vary, but most expect that China will still have more than 9% growth in 2008. [1] This may be enough to put China in a position to surpass Germany as the third largest economy in the world.[2]

As China continues to grow, its inward direct investment has also increased substantially. According to UNCTAD (2008), foreign direct investment (FDI) inflows reached US$83.5 billion in 2007. There has been a very large literature on studying various aspects of FDI flowing into China (see. e.g. Fung, Garcia-Herrero, Iizaka and Siu 2005). But a more interesting trend has emerged that has caught the attention of academics, researchers and policymakers in the last few years, namely the surge of FDI outflows from emerging economies like China. Again according to UNCTAD (2008), China's outward FDI flows increased from US$21.2 billion in 2006 to US$22.5 billion in 2007. There are indications that the outflows will continue in the near future. From

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[1] However, the most recent International Monetary Fund (IMF) forecast for China's growth for 2009 has dropped to around 7.2%.

[2] As of the time of writing, Germany has already officially entered into recession, with two consecutive quarters of negative growth.

January to mid-July of 2008, China already announced more than one hundred and thirty

foreign mergers and acquisitions (M &A) deals. In 2007, China's outward M &A

exceeded US$26 billion (Wall Street Journal 2008).

In this paper, we aim to examine the pattern and motives of Chinese outward FDI.

We then would like to compare Chinese outward FDI with FDI from its regional

neighbors such as Japan, South Korea and Taiwan.[3] The organization of the paper is as

follows: in the next section, we provide a literature survey of FDI outflows both in

general and in particular, FDI outflows from China and other Asian economies. In

section 3, we focus on a study of the Chinese FDI outflows. In section 4, we examine

FDI outflows from China's neighbors, including Japan, Taiwan and South Korea. In

section 5, we conclude.

2. A Review of the Literature

In this section we will provide a review of the relevant and up-to-date literature of

the FDI outflows. The general academic literature has at least three strands. From the

macroeconomic and international finance literature standpoint, the most well-known

article on this topic is the one by Lucas (1990), which has led to a vast literature (see for

example Alfaro and Kalemr-Ozcan 2005). The "Lucas paradox" asks the important

question as to why so little capital has been flowing from rich economies to less

developed countries. There have been many attempts to answer this question, but two of

the more important potential answers are related to the poorer quality of the institutions

(such as corruption, rule of law, etc.) and the relative lack of human capital in developing

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[3] For a comparison of Chinese FDI outflows with Indian FDI outflows, see Fung and Garcia-Herrero (2008).

countries. While this important literature on where capital from rich economies has been going is indeed related to our topic of Chinese FDI outflows, it does not provide us with very direct theoretical guidance because the literature is not focused on where capital from a *poor* economy like China should be flowing. In addition, the literature concentrates on total capital flows, whereas our question is only on a particular segment of the flows of capital, viz., FDI. It is quite plausible that FDI flows and portfolio flows have different patterns and motives. We will thus keep this literature in mind but will not stick to its line of arguments directly.

Another line of relevant literature focuses on the recent theoretical development in the modeling of heterogeneous firms in international trade. As an example, according to Antras, Helpman and Yeaples (2005), firms that engage in both FDI and exports have the highest firm-level productivity, with firms that engage only in exports having the second highest productivity and firms that only sell domestically having the lowest productivity. The idea is that there are significant fixed costs facing exporters, with fixed costs being even higher with FDI. This implies that Chinese firms that invest abroad should have the highest productivity among all Chinese companies and where they invest abroad should depend on where the fixed costs of investment are lower. While this set of theories and empirical work is very interesting and relevant, its motivation on FDI is driven by *horizontal* FDI, i.e. companies set up affiliates abroad to sell in the host markets. If for example, it is often alleged that China invests abroad to extract minerals and natural resources, then a comparison of the fixed costs of investment should only be confined to those host economies where such minerals can be found. Instead of comparing the ease of investment in all potential host economies, a Chinese company

may then only compare the difficulty of investing in minerals in certain Latin American economies, parts of Africa, parts of Asia (say Indonesia), Australia, etc.

In the international business literature, Dunning (1981, 1991, 1998) argues that the level of per capita income of the home country will determine the direction as well as the magnitude of the FDI outflows. For example, if the per capita gross national product (GNP) of the home country is below US$400, there should not be any FDI outflows. If the per capita income rises to between US$400 and US$2,000, then there should be a small amount of outward FDI. When the per capita GNP increases to between US$2,000 and US$ 4,750, there should be a rapid increase of FDI outflows, but the net FDI inflows should still be positive. Finally, if the per capita income further rises to beyond US$4,750, then FDI outflows should exceed inflows. While this taxonomy is of interest to our topic, it does not really tell us the detailed pattern of outward FDI from a country like China or other Asian economies. In particular, it does not provide us with explanations or determinants of Chinese and East Asian outflows of FDI.

Finally, there is also a small but growing literature focusing on an econometric explanation of the determinants of Chinese FDI abroad. Cheng and Ma (2007), Buckley, et al (2007), Fung and Garcia-Herrero (2008) and Goublomme and Luc (2008) are the studies closest to this paper. Cheng and Ma (2007) use three years of data and focus on the basic gravity model to study he FDI outflows from China. Goublomme and Luc (2008) use a stripped down version of gravity model and discusses the basic determinants of China's FDI. Fung and Garcia-Herrero (2008) explicitly and econometrically examine

and compare the various motives that both China and India may have in engaging in

investing abroad, whereas Buckley et al (2007) focuses on the Chinese case alone. [4]

3. FDI Outflows from China

In this section we first provide an analysis of recent FDI outflows from China. [5] In

Table 1, we first present the flows of outward FDI from China in various years:

Table 1. FDI Outflows from China by Years

Year	Chinese Outward FDI Flows (US$ billion)
1991	1.0
1992	4.0
1993	4.3
1994	2.0
1995	2.0
1996	2.08
1997	2.6
1998	2.7
1999	1.9
2000	1.0
2001	6.9

[4] There are also many studies of Japanese, Korean and Taiwanese FDI outflows. We will refer to some of them in section 4.
[5] Note that starting from 2003, China's outward FDI statistics have been changed to conform to OECD FDI statistics guidelines. Data before and after 2003 may not be directly comparable.

2002	2.7
2003	2.85
2004	5.5
2005	12.26
2006	21.16

In 2006, in terms of stock, 21.5 percent of China's outward direct investment was in commercial services, followed by mining with 19.8 percent and then finance, which has 17.2 percent. In terms of flows, 40.5 percent was in mining and petroleum, with commercial services being second, with 21.4 percent. One unusual characteristic of China's outward FDI is that about half of the 2006 total flow of foreign direct investment is in the service sectors.

The top recipients of China's investment abroad in 2006 are Hong Kong, Cayman Islands, British Virgin Islands, the United States, South Korea, Russia, Australia, Macao, Sudan and Germany. Like many other cases of FDI outflows (e.g. FDI from Hong Kong or Taiwan), China's investment is getting very difficult to track. This is partly because of having many tax haven economies (such as Cayman Island and British Virgin Islands) as the destinations, with the funds likely to be re-directed elsewhere. What are the main determinants and motives for China's FDI outflows? In the literature, we encounter several suggestions. First, there is the *natural resources* hypothesis, which posits that China's invest abroad to extract minerals (e.g. copper, bauxite, aluminium, etc) and oil. Second, China may be investing to sell or facilitate selling in the host economies' *markets*. Third, China may be using its investment to acquire *technology* from abroad.

Fourth, China's investment is affected by its bilateral *exchange rate* with the host economies. For example, a higher Yuan relative to the host economy's currency may mean that it is cheaper to purchase foreign assets and will increase Chinese FDI in that country. We have seen the effects of high currencies on FDI outflows for the case of Japan during the 1980s and early 1990s. With the high yen, Japanese FDI outflows surged. Similar episodes have been witnessed for the case of Taiwan. Lastly, China's FDI abroad may be linked to how *open* the host economies are. If the host country is relatively closed, it is harder to export and foreign sales will be facilitated by investing in factories in that economy. Again we have seen the impact of protectionism on FDI flows. In the 1980s and the first half of the 1990s with the United States arranging automobile and other voluntary export restraints (VERs) and increasing the incidence of antidumping duties, we witnessed a significant increase of Japanese FDI in the United States. To formally evaluate the relevance of these various motives and determinants, we run several regressions with various determinants explaining the Chinese FDI outflows. The basic regression equation is:

$$\ln FDI_{it} = a + b_1 \ln GDP_{it} + b_2 \ln PCGDP_{it} + b_3 \ln D_i + b_4 CB_i +$$

$$b_5 \ln OP_{it} + b_6 FTA_{it} + b_7 \ln X_{it} + b_8 \ln NAT_{it} +$$

$$b_9 \ln Tech_{it} \tag{1}$$

where FDI_{it} is China's outward FDI in the host economy i in year t

GDP_{it} is gross domestic product of the host economy i in year t

$PCGDP_{it}$ is per capita gross domestic product of the host economy i in year t

D_i is the distance between the host economy i and China

CB_i is a dummy variable for continuous border for host economy i and China

OP_{it} is trade openness in host economy i in year t

FTA_{it} is a dummy variable for a free trade agreement between host economy i and China in year t

X_{it} is the bilateral exchange rate between the Yuan and the currency of the host economy i in year t

NAT_{it} is an indicator of natural resource abundance in the host economy i in year t

$Tech_{it}$ is an indicator of technology abundance in the host economy i in year t

The regressions for the determinants of Chinese FDI outflows are given below:

Table 2. Regressions for Chinese FDI Outflows

Determinants	Coefficients
Market Size (GDP)	0.19*** (4.56)
Average Income (PCGDP)	-0.14** (-2.27)
Distance (D)	-0.26*** (-3.80)
Continuous Border (CB)	0.60** (2.17)
Openness (OP)	0.01** (2.30)

Free Trade Agreement (FTA)	0.19***
	(3.39)
Exchange Rate (X)	0.00***
	(5.52)
Share of Fuel in Exports (NAT)	0.01**
	(2.12)
Share of Food in Exports (NAT)	0.00
	(0.38)
Share of Ores and Metals in Exports (NAT)	0.01
	(1.58)
Research & Development Expenditure (Tech)	-0.02
	(-0.13)
IT Expenditure (Tech)	0.04***
	(2.51)

In our regressions, we test a variety of hypothesis and motives and we should keep these results in mind so that we can compare our properties of the Chinese FDI outflows with FDI outflows from its regional peers such as Japan, Korea and Taiwan. [6] We find that there is evidence that China's FDI is market-seeking, flowing to economies where the GDP is higher. However, FDI is also flowing to economies where the average incomes are lower. They tend to go to developing countries. Distance deters Chinese FDI flows. This is partly related to the fact that a large share of Chinese FDI have been going to

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[6] The regressions are run with weighted least square.

Hong Kong, Macao and other Asian economies. Sharing a border with China helps attract more FDI from China also. Openness as measured by total trade as a fraction of GDP as well as having a FTA with China help increase FDI from China. So this is not quite the case that China is jumping over trade barriers to maintain its foreign sales. The Yuan exchange rate is significant in leading to more outflows of FDI; however, the impact is very small since the coefficient is close to zero. The Natural Resource hypothesis has only partial merits since only one indicator of the natural resource abundance is significant (fuel) with the other two not being significant (food and ores and metal). The technology acquisition hypothesis gets also mixed results, with information technology expenditure being significant but research and development expenditure not being significant.

4. FDI Outflows from China's Regional Peers

4.1 Japanese FDI Outflows

For the case of Japan, there were several *hypotheses* concerning the chronological shifting of FDI outflows. In the late fifties and the 1960s the major concerns were like the current case of China, the supply of raw materials and oil to the rapidly growing Japanese economy. There were major Japanese investment projects in the Middle East, parts of Latin America, Australia as well as in a few Asian countries like Indonesia. Also in the 1960s and 1970s, labor costs began to rise significantly in Japan. Firms from several Japanese manufacturing industries first with textile and then televisions began to move their production facilities to cheaper locations. In 1981, the U.S. automobile VERs

began to limit the exports of Japanese cars. Then by 1985, with growing reserves and a

swelling trade surplus (particularly against the United States) the rapidly rising yen gave

a huge shock to the Japanese export industries. U.S. and European protections of their

domestic industries coupled with the yen shock led to an acceleration of the overseas

Japanese FDI, particularly to the developed economies. Some of the Japanese investment

also went to the newly industrializing economies (NIE) and the Association of Southeast

Asian Nations (ASEAN) economies, where the production costs were much lower.

However, it also seems that due to the complex just-in-time production methods used by

Japanese automobile and consumer electronic firms, Japanese investors are also much

more concerned with the quality of labor in the host countries (Fung, Iizaka and Siu

2002). In Latin America, during the 1980s, as some of the host countries began to

liberalize their economies, Japanese affiliates in automobile and in electronics, including

those in Brazil and Chile also shifted from manufacturing to services related to imports.

Mexico seems to be the major exception, where Japanese companies maintained and may

even have expanded their production facilities (Tsunekawa 1995).   In the next table, we

present our results based on regressions of Japanese FDI outflows.[7] In addition to

potential variables such as market size, distance, the natural resource abundance and the

technology abundance, we also add in an index for the quality of labor in the host

countries. Furthermore, given that Japanese domestic macroeconomic (H) and

international financial conditions can be driving the yen exchange rate as well as its

overall wages and prices, we also augment our regression equation (1) by adding in

Japanese real growth rates (HGDPG), the level of nominal Japanese GDP (HGDP),

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[7] The econometric studies for the Japanese FDI outflows are done with panel, random effects regressions.
In later subsections 4.2 and 4.3, the regressions with Korean and Taiwanese FDI outflows are also done
with random effects.

Japanese current account balance (HCA), Japanese money supply (HM2) and Japanese

foreign exchange reserves (HFX).

Table 3. Regressions for Japanese FDI Outflows

Determinant	Coefficient
Market Size (GDP)	3.3198*** (0.8153)
Distance (D)	-1.7589 (-1.3059)
Openness (OP)	4.3803*** (1.4154)
Share of food in Exports (NAT)	1.9955* (1.1779)
Share of Ores and Metals in Exports (NAT)	1.7213* (1.0466)
Research & Development Expenditure (Tech)	-0.4826 (-1.1925)
Information Technology Expenditure (Tech)	3.8419* (2.1448)
Quality of Labor (Schooling)	5.5922 (4.6618)
Home GDP Growth (HGDOG)	2.0665 (1.4741)

Home GDP (HGDP)	16.8003*
	(9.3314)
Home Current Account (HCA)	5.8828
	(6.3010)
Home Money Supply (HM2)	73.4353
	(64.8493)
Home Foreign Exchange Reserves (HFX)	6.4419
	(4.7641)

In general, as in the Chinese case, the market-seeking hypothesis holds for Japanese FDI outflows. However, distance is no longer significant. There is some evidence that Japanese FDI has been trying to secure natural resources. The technology acquisition hypothesis is mixed however, with again the information technology expenditure as a proxy being significant. The host country's quality of labor is however not significant. But openness is an important determinant for Japanese FDI outflows. For the home economy's macroeconomic variables, only the Japanese GDP is significant.[8]

4.2 Korean FDI Outflows

The Korean FDI outflows seem to be motivated by gaining market access, utilizing lower production costs abroad as well as investing to develop or secure natural resources (Kumar 1995, Yoon 2007). Recently, the Korean Export-Import Bank

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[8] The regression results here are preliminary. Further specification and robustness tests will be conducted.

conducted a survey asking Korean multinationals about their motives to go abroad. The

survey results are presented in Table 4.

Table 4. Motivations of Korean FDI by period (in % of companies)

Motive	1968— 1993	1994— 1996	1997— 2001	After 2002
Securing or developing local or third-country markets	28.9	50.2	52.4	47.1
Utilizing local labor costs	14.7	37.2	30.3	38.5
Avoiding trade barriers	1.7	2.5	2.3	3.1
Securing raw materials	3.8	4.8	3.9	4.4
Acquiring advanced technology or management know-how	1.1	2.6	7.7	4.1
Developing natural resources	49.9	2.7	3.3	2.8

Source: Yoon (2007)

It can be seen from Table 4 that up until 1993, the number one motive to invest abroad by

Korean companies is to develop natural resources, followed by securing or developing

local or third markets. After that period, securing and developing local or third markets

and utilizing local labor costs became the first and second most important motives. After

1997, acquiring advanced technology has become the third most important motive for

Korean FDI. In most years, Asia has become the most important destination of Korean

FDI. In 2006, Korean FDI in Asia amounts to US$60.6 billion, with North America and

Europe each getting US$21.4 billion. Within Asia, it is clear that China has been

receiving a large amount of Korean FDI. In 2006, Korea invested US$ 16.98 billion in

China. Hong Kong is the second most important destination, with US$2.99 billion.

Globally, in 2006, Korea invested the largest amount in manufacturing, followed by

wholesale and retail and   mining. To get a more formal study of the motives of Korean

FDI outflows, we again run regressions concerning the determinants of Korean FDI. The

results are reported below:

Table 5. Regressions for Korean FDI Outflows

Determinant	Coefficient
Market Size (GDP)	3.7694*** (0.4586)
Distance (D)	-4.8585*** (-1.29000)
Openness (OP)	2.6112** (1.2404)
Share of Food in Exports (NAT)	2.3727*** (0.5846)
Ores and Metals in Exports (NAT)	0.6523* (0.3505)
Research & Development Expenditure (Tech)	1.6439** (0.6653)

As can be seen above, the market access determinant is again significant. Unlike the

Japanese case, distance is important for Korean FDI. Korean corporations invest in

economies with higher degree of openness. There is evidence to support the natural

resource development or extraction hypothesis. There is also some evidence showing

that Korean firms are seeking technology abroad via its FDI outflows.

4.3 Taiwanese FDI Outflows

According to the Investment Commission of the Ministry of Economic Affairs in Taiwan, about 60 percent of Taiwanese FDI outflows are to China in 2007.[9] Of the remaining 40 percent, the United States received US$1.35 billion, and Singapore received US$1.19 billion. Within China, the most popular regions include Guangdong, Jiangsu, Zhejiang and Fujian. The industries that are most popular with Taiwanese companies include electronic parts and components, computer and electronic products and machinery equipment. According to Kumar (1995), Taiwanese FDI abroad was severely restricted before 1978. In the 1980s, the Taiwanese Export-Import Bank provided insurance, credits and information to firms that would like to invest abroad. Again the pressures of Taiwanese manufacturing firms to go abroad are similar to the Japanese and Korean cases. Starting in the mid-1980s, the NT dollar appreciated substantially and labor costs also increased. Coupled with a large pool of exchange reserves which led to inflation, Taiwanese exporters and subcontractors started to experience an erosion of competitiveness. This creates a set of motives to go abroad. More recently, many Taiwanese high-technology companies need to survive the intense competition of the industry and they also try to acquire advanced technology as well as better trained personnel from overseas, particularly from the developed economies. To more formally test the various motives, we run another set of regressions focusing on the Taiwanese case. The results are presented below:

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[9] It is well-known that official data on Taiwanese investment outflows are underestimated. This is partly due to the heavy outflows to tax haven economies in the Caribbean and also partly due to official restrictions by the Taiwanese government, which lead to Taiwanese companies forming shell companies abroad to act as a conduit to invest in China.

Table 6. Regressions on Taiwanese FDI Outflows

Determinant	Coefficient
Market Size (GDP)	0.7039** (0.3529)
Distance (D)	-0.5117 (-0.3891)
Research & Development Expenditure (Tech)	0.0428 (0.6476)
Information Technology Expenditure (Tech)	3.2017** (1.3546)
Quality of Labor (Schooling)	6.7575* (3.6386)
Home Foreign Exchange Reserves (HFX)	0.9370* (0.5321)

As can be seen from the above table, the market access hypothesis holds, just as the case for China, Japan and Korea. However, distance is not significant. The technology acquisition hypothesis is partially supported, with information technology being significant. Quality of labor is also significant, as is Taiwanese foreign exchange reserves.

5. Conclusion

In this paper we examine the increasingly important phenomenon of China's FDI outflows. We examine both informally as well as more formally the various motives and determinants of China's investment abroad. We then compare the FDI outflows from China to those from Japan, Korea and Taiwan. While our regression results are still preliminary and they can be subjected to changes, we can state tentatively the following: (1) it seems to be the case that China, Japan, Taiwan and Korea all engage in some degrees of natural resource-extracting FDI (2) market access as a motive is uniformly supported for all four economies; (3) surprisingly, distance does not always deter FDI outflows; (4) the technology acquisition hypothesis receives only mixed support for all the cases, with one indicator being significant but not the other; (5) openness of the host countries are important for China, Japan and Korea; (6) financial or macroeconomic variables such as the exchange rate or home foreign reserves can be significant. But they are not uniformly so and their impact can be small.

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