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# The determinants of China's outward foreign direct investment

Xiaoxi Zhang<sup>a,1</sup>, Kevin Daly<sup>b,\*</sup>

<sup>a</sup> University of Western Sydney, Australia

<sup>b</sup> University of Western Sydney, Campbelltown Campus, Australia

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### ABSTRACT

Globalisation has led to a rapid increase in the growth of foreign direct investment (FDI) globally. Over the last decade China has become the largest recipient of FDI whilst simultaneously increasing its outward FDI dramatically. The growth in China's outward FDI has attracted little attention from scholars in mainstream research publications. The motivation behind this paper is to investigate the factors driving this growth from both economic and strategic backgrounds. The paper employs panel data analysis covering the period 2003–2009 where we quantify the main drivers of China's outward FDI across a range of variables including bi lateral and multi lateral trade, market size, GDP growth, openness and resource endowment.

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## 1. Introduction

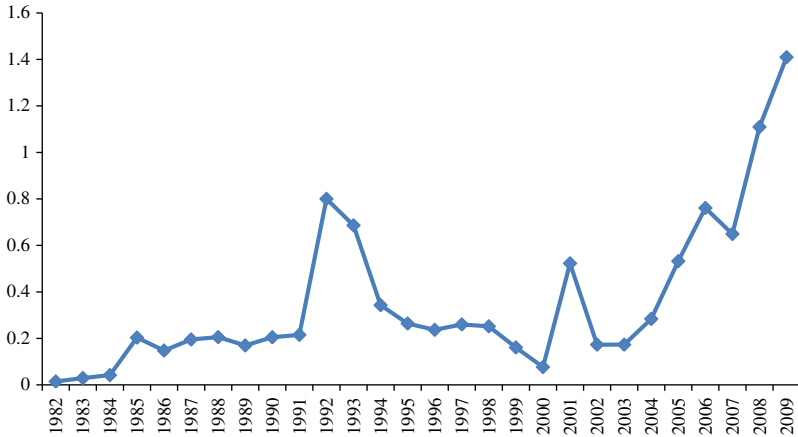
Since the 1980s, globalisation has led to a rapid increase in the growth of foreign direct investment (FDI) all over the world. China, the World's largest developing country in terms of gross domestic output, has become one of the largest recipients of FDI in the world.<sup>2</sup> At the same time, China is rapidly integrating with the rest of the world, thus its outward FDI has also been increasing sharply in recent years (Fig. 1). According to the "World Investment Report, 2010" published by United Nations Conference on Trade and Development (UNCTAD) indicated that China's outward FDI flows and stocks in 2009 was \$48 billion and \$229.6 billion USD respectively, which represents global shares of 5.14% and 1.3% respectively. Fig. 2 indicates that China's outward FDI flows in 2009 was approximately \$48 billion USD ranking China amongst the top six economies in terms of outward investment flows. To date research into China's outward FDI has attracted little attention from scholars especially when compared to the voluminous research concerning China's inward FDI. The

\* Corresponding author. Tel.: +61 2 46 203546; fax: +61 2 46203769.

E-mail addresses: [Xiaoxi.zhang@uws.edu.au](mailto:Xiaoxi.zhang@uws.edu.au) (X. Zhang), [K.Daly@uws.edu.au](mailto:K.Daly@uws.edu.au) (K. Daly).

<sup>1</sup> Tel.: +61 425408180(mobile); fax: +61 2 46203769.

<sup>2</sup> World Investment Report.



Source: UNCTADstat, China's Statistic Year Book 2010

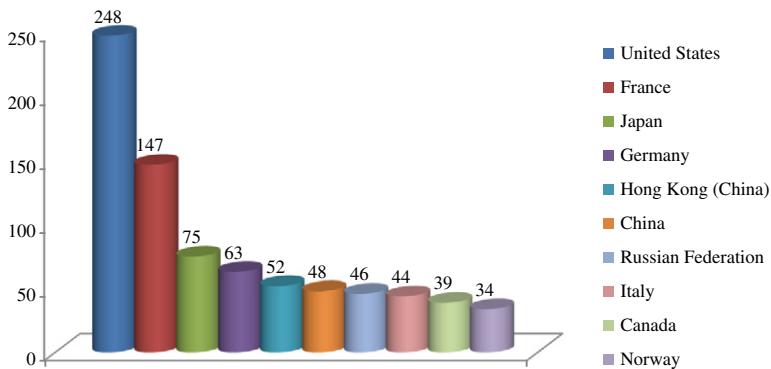
**Fig. 1.** China's OFDI flows as a percentage of GDP, 1982–2009, %.

recent development placing China amongst the top global investors need to be placed in perspective. Before 2004, the size of Chinese overseas direct investment (ODI) was trivial. From 2004, ODI grew significantly, alongside a dramatic expansion of China's current account surplus. Total ODI increased from US\$2.85 billion in 2003 to US\$56.53 billion in 2009, registering an average growth rate of 55% a year. During the same period, its share in global ODI flow also rose from 0.45 to 5.1%. In 2009, China was not only the largest developing country investor but also the fifth largest investor in the world, following the US, France, Japan and Germany.

The main reasons for China's growth in OFDI may relate to its size, China being big in economic terms simply means that a low propensity to invest overseas means a significant addition to global OFDI. China may also be investing overseas in a desire to gain advanced technology, management skills and secure supply of resources in order to guarantee continuous domestic production.

In general we identify three stages in the development of China's OFDI; the initial phase from 1982 to 1991, the fluctuating stage from 1992 to 2000 and the high growth period from 2001 till now. More specifically, the "open door" policy of the late of 1970s resulted in the emergence of China's outward FDI from 1982.

More specifically, the "open door" policy of the late of 1970s resulted in the emergence of China's outward FDI from 1982. In 1985, China's Ministry of Foreign Economic Relations and Trade released its publication



Source: UNCTAD, based on annex table 1 and the FDI/TNC

**Fig. 2.** FDI outflows top 10 source countries, 2009 (billions of USD).

**Table 1**

Top three importing countries for China, 2003–2009, %.

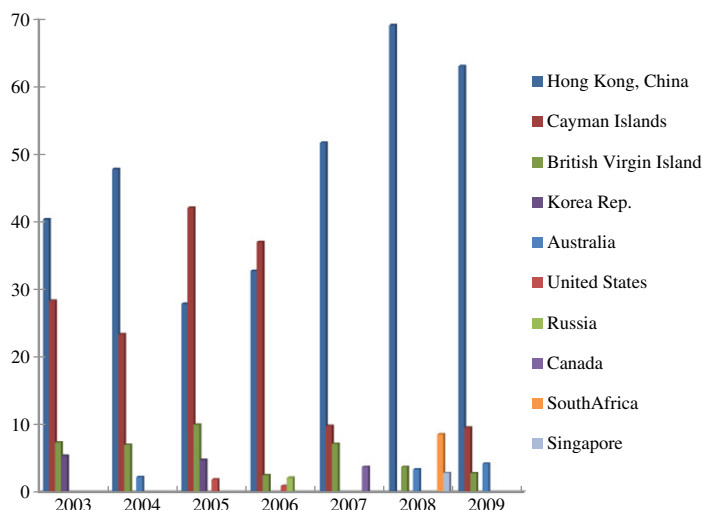
Source: Chinese Statistic Yearbook.

	2003	2004	2005	2006	2007	2008	2009
Japan	19.13	17.09	15.22	14.62	14.01	13.30	13.02
Korea Rep.	11.13	11.61	11.64	11.34	10.86	9.90	10.20
Taiwan, China	12.73	12.08	11.31	11.00	10.57	9.12	8.52

titled ‘Provisions Governing Control and Approval Procedures for Opening Non-Trade Enterprises Overseas’ setting the regulatory framework to guide China’s outward FDI. The document clearly specified five requirements for China’s outward FDI prioritising investment in advanced technology and equipment abroad, securing the long-term supply of raw materials which are essential for China’s economic development, effective in generating foreign currency income for China, utilised for exporting China’s machinery, labour services, materials and engineering, in addition to serving China’s domestic market.

Early in 1992, Deng Xiaoping’s tour to the south was the turning point in the development of encouraging China’s outward FDI. In September 1992, China’s government announced that “we should encourage enterprises to expand their investment abroad and their transnational operations” (Beijing Review, 1992, P. 20). Numerous local and provincial enterprises began to engage in international business activities, for example, they engaged in the acquisition of resources and commercial property in Hong Kong. During the Asian financial crisis, China’s outward FDI decreased significantly (Ding, 2000; Yu, 2005) whilst the development of China’s MNE’s was slowed due to heavy losses they experienced. In response the central government tightened the approval procedures for outward FDI projects due to capital flight, loss of control over state assets and “leakage” of foreign exchange.

By the end of 2001, China’s entry into the WTO and the “going abroad” strategy announced in the 10th five-year plan encouraged China’s enterprises to invest abroad. In this period, some Chinese enterprises sought out foreign markets which hitherto were protected from foreign competitive pressures (Wong and Chan, 2003; Zhang, 2003). To stimulate outward investment China also developed measures which simplified foreign exchange transactions including “Notice on Simplifying Foreign Exchange Administration Relating to OFDI 2003”, “Further Measures on Foreign Exchange Administration Stimulating OFDI 2005” and the “Supplement Measures of Foreign Exchange Usage for OFDI 2006” (Luo et al., 2010).



Source: Statistical Bulletin of China’s Outward Foreign Direct Investment, 2003–2009

**Fig. 3.** Top destinations of China’s outward FDI flows, 2003–2009, (Percentage).

**Table 2**

Distribution of China's outward FDI flows by sectors, 2004–2008, %.

Source: 2009 Statistical Bulletin of China's Outward Foreign Direct Investment and own calculations.

Sector	2004	2005	2006	2007	2008
Total	100	100	100	100	100
Agriculture, forestry, animal husbandry and fishery	5.25	0.86	0.87	1.03	0.31
Mining	32.74	13.66	40.35	15.33	10.42
Manufacturing	13.74	18.60	4.28	8.02	3.16
Production and supply of electricity, gas and water	1.43	0.06	0.56	0.57	2.34
Construction	0.87	0.67	0.16	1.24	1.31
Transport, storage and post	15.07	4.70	6.50	15.33	4.75
Information transmission, computer services and software	0.55	0.12	0.23	1.15	0.53
Wholesale and retail trades	14.55	18.43	5.26	24.92	11.65
Hotels and catering services	0.03725	0.068	0.018	0.040	0.05
Financial intermediation	0	0	16.68	6.298	25.13
Real estate	0.153	0.943	1.813	3.43	0.61
Leasing and business services	13.63	40.30	21.36	21.15	38.85
Scientific research, technical service and geologic prospecting	0.33	1.06	1.33	1.15	0.30
Management of water conservancy, environment and public facilities	0.02	0	0.04	0.01	0.25
Services to households and other services	1.60	0.51	0.53	0.29	0.30
Education	0	0	0.01	0.03	0
Health, social security and social welfare	0	0	0	0	0
Culture, sports and entertainment	0.02	0	0	0.02	0.04
Public management and social organisations	0	0.01	0	0	0

## 2. Literature review

Traditional theory suggests three primary motivations for FDI: foreign-market-seeking FDI; efficiency-seeking FDI and resource-seeking FDI (Dunning, 1977, 1993). However, as the traditional FDI theory is used to explain foreign investment from the perspective of a developed economy, in the case of emerging economies such as in China, we need more specialised applications of the theory.

In particular capital market imperfections in China has the implication that capital is available at below-market rates for a considerable period of time, creating a semi-permanent disequilibrium in the capital market that outward investors can exploit (Buckley, 2004; Eller et al., 2006). More specifically, state-owned firms may have capital made available to them at below market rates (Lardy, 1998; Scott, 2002; Warner et al., 2004); secondly, inefficient banking systems may make soft loans to potential outward investors, (Antkiewicz and Whalley, 2006; Child and Rodrigues, 2005; Warner et al., 2004); thirdly, conglomerate firms may operate an inefficient internal capital market that effectively subsidises FDI (Liu, 2005); lastly, family owned firms may have access to cheap capital from family members (Child and Pleister, 2003; Erdener and Shapiro, 2005; Fernandez-Arias and Hausmann, 2001; Tsai, 2002).

In relation to China research has indicated that the investment behaviour of China's enterprises is significantly influenced by government policies. Through the approval system and/or currency control mechanisms (Cheung and Qian, 2009), the authorities were able to allocate OFDI according to the objectives of the State. In 2006, 82% of China's non-financial outward FDI was conducted by State-Owned Enterprises (SOEs) (Yeung and Liu, 2008). Of the thirty largest companies ranked by outward FDI, all but two are state-controlled, and though most SOEs are listed on a stock exchange, the state retains the majority of capital and appoints executives, largely from party ranks (Morck et al., 2008).

Given the limited number of research articles related to China's outward investment we could identify only one empirical study which employed panel data on approved Chinese FDI to forty nine countries from 1984 to 2001 (Buckley et al., 2007). This research indicated that China's outward FDI was significantly attracted to countries with natural resources from 1992 to 2001; the results also indicated that investment in countries with poor institutional governance was also a significant draw factor for China's OFDI. The authors suggest that these variables have become more relevant in recent years as explanatory variables for the growth in OFDI following the liberalisation policies associated with Deng Xiaoping's commencing in 1992.

In the following section we test a number of hypotheses in relation to determining the drivers of China's outward investment activities. We emphasise that this is a first study that attempts to identify and quantify

**Table 3**

The determinants of China's OFDI.

Variables	Explanation	Expected Sign	Data Source
OFDI	Annual China's outward FDI flows to host country	n/a	Statistical Bulletin of China's Outward Foreign Direct Investment, China's Statistic Yearbook, UNCTAD
EX	China's exports to the host country	+	China's Statistic Yearbook
IM	China's imports from the host country	+	China's Statistic Yearbook
GDPP	Host country GDP per capita	+	World Bank Development Indicators, <a href="http://www.indexmundi.com/">http://www.indexmundi.com/</a>
ER	Host country official annual average exchange rate against RMB (fixed to US\$)	+	World Bank Development Indicators, <a href="http://www.indexmundi.com/">http://www.indexmundi.com/</a>
CPI	Host country annual inflation, consumer prices	-	World Bank Development Indicators, <a href="http://www.indexmundi.com/">http://www.indexmundi.com/</a>
GGDP	Host country annual GDP growth	+	World Bank Development Indicators, <a href="http://www.indexmundi.com/">http://www.indexmundi.com/</a>
OPEN	Ratio of inward FDI stock to GDP of host country	+	World Bank Development Indicators
R	The ratio of ores and metals exports to merchandise exports of host country	+	World Bank Development Indicators

factors driving China's outward FDI. Our panel study covers the most up to date information relating to these factors, estimated over 2003–2009 for 23 countries.

### 3. Justification for model's variable selection

Table 1 ranks China's top source countries for imports over 2003–2009 and indicates that Japan, Taiwan and Korea in aggregate account for approximately 30% of China's imports over the above period. However, none of these countries appear in China's top five destinations for outward FDI (Fig. 3). In our model we include imports from host countries to China as an independent variable.

One theoretical argument for outward investment is related to the motivation by MNE's to expand their markets. Does China's outward FDI have a positive and significant relationship to China's exports to those host countries? Theoretically, the larger the host market the more FDI will be attracted to that market. In general researchers agree that more opportunities exist for foreign investors if markets are large size, therefore the host country's GDP is generally recognised as a significant determinant of FDI flows (Buckley et al., 2007; Chakrabarti, 2001). However an examination of the destination for China's outward FDI in Fig. 3 suggests that only three countries Hong Kong China, Cayman Islands and British Virgin Islands account for an average of 70% of China's off shore investment activities over 2003–2009 in terms of the percentage of total outward FDI flows. In aggregate these three markets represent less than 1% of China's exports. We therefore include market size of China's host OFDI countries as a variable in our model (Table 2).

Empirical evidence by (Kohlhagen, 1977; Logue and Willet, 1977; Stevens, 1993) suggests that a weaker currency is more favourable for MNE's investment projects. However, China's exchange rate is fixed and controlled by the government and is well known to be significantly undervalued. The related question here is to investigate if China's overseas investment growth is attracted by the depreciation of host country's currency. Exchange rates are therefore included amongst the variables in our model as a driver of China's outward FDI.

FDI will be attracted to a host country with stable and predictable inflation rate as it will strengthen foreign investors' faith by creating certainty and by assisting long-term corporate planning, especially in respect to price-setting and profit expectations. Also, high inflation rates are a sign of domestic currency devaluation in the future, which may lead foreign investors to suspend their investment as further devaluation will reduce the real value of earnings in local currency. We expect that inflation in China's outward FDI host countries will appear with a negative relationship with outward FDI.

GDP growth rates reflect a country's economic growth as a consequence more FDI will flow to countries with high growth or prospects for increasing growth due to the increasing investment opportunities that arise along with the rapid economic development. Thus, we expect a positive relationship to appear between China's outward FDI and host countries GDP growth rate.

**Table 4**

Destination of China's Outward FDI by Continent, 2003–2009, %.

Source: Statistical Bulletin of China's Outward Foreign Direct Investment 2003–2009 and own calculations.

Year	Asian	Latin America	Europe	Africa	North America	Oceania
2003	52.5	36.5	5.3	2.6	2	1.1
2004	54.6	32	3.1	5.8	2.3	2.2
2005	35.6	52.6	4.2	3.3	2.6	1.7
2006	43.5	48	3.4	2.9	1.5	0.7
2007	62.6	18.5	5.8	5.9	4.3	2.9
2008	77.9	6.6	1.6	9.8	0.6	3.5
2009	71.4	13	5.9	2.6	2.7	4.4
Average	56.9	29.6	4.2	4.7	2.3	2.4

The higher the degree of openness of a country to international investors, the more attractive it is likely to be as a destination for FDI (Chakrabarti, 2001). As a result, we include openness to FDI in our investigation as an independent variable with the expectation of a positive relationship between outward FDI and host countries' openness.

One of the most important motivations for China's outward FDI is to ensure ongoing supply of resource inputs (Ye, 1992; Zhan, 1995). Numerous studies have suggested that China's preference to invest in natural resource rich countries is to obtain greater security of access to coal and iron ore along with other natural resources (Cheng and Ma, 2009; Deng, 2004; Hong and Sun, 2006; Morck et al., 2008). In 2009, China's outward FDI acquisitions in natural resource areas were US\$ 13.34 billion, which accounted for 23.6% of total outward investment just following leasing and business services industry.<sup>3</sup> We therefore include investment in natural resource sectors as having a positive relationship to China's outward FDI.

#### 4. Data and methodology

According to the previous discussion, we build up the following model:

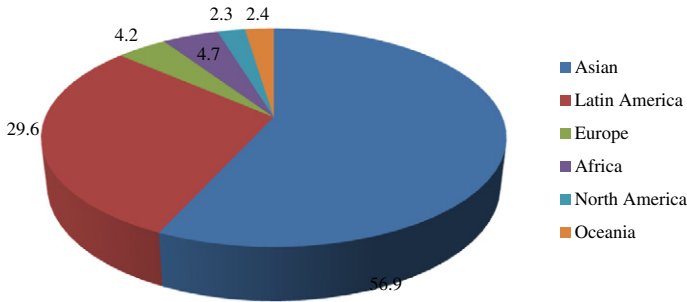
$$OFDI = \alpha + \beta_1 EX + \beta_2 IM + \beta_3 GDPP + \beta_4 ER + \beta_5 CPI + \beta_6 GGDP + \beta_7 OPEN + \beta_8 R + \varepsilon_{it}$$

Table 3 shows the proxies used for the main variables and the data sources. Our dependent variable is China's annual outward FDI flows to a host country. In our data set, twenty three countries are host to China's outward FDI, each of which appears in the top detestations at some of point over the period 2003 to 2009. In summary the variables included in our modelling are: trade relationships (China's exports and imports with host country), host market size (host country's GDP per capita), the stability of the host country's economy (host country official annual average exchange rate against RMB), host country's inflation rate, host country's GDP growth rate, openness to foreign investors and host countries' natural resource endowments.

To estimate our model we used panel data to analyse the determinants of China's outward FDI, then we made three regressions by using pooled ordinary least squares (POLS).<sup>4</sup> First, we investigated the full sample of twenty three countries across six regions (Table 4). As data for all countries were not available over the entire sample period (2003–2009) we selected only sixteen countries (those with complete national data) for the second regression. Finally, we chose ten Asian countries from our full sample to estimate out third regression; in part this was due to the fact that Asia is the most important investment region for China (as indicated in Table 4 and Fig. 4).

<sup>3</sup> Statistical Bulletin of China's Outward Foreign Direct Investment 2009.

<sup>4</sup> 23 countries: Hong Kong, Cayman Islands, British Virgin Island, Korea Rep., Denmark, United States, Thailand, Macao, Russia, Indonesia, Sudan, Australia, Singapore, Nigeria, Germany, Kazakhstan, Saudi Arabia, Algeria, Mongolia, Canada, Pakistan, United Kingdom and South Africa. 16 countries: Hong Kong, Korea Rep., United States, Thailand, Macao, Russia, Sudan, Australia, Singapore, Nigeria, Germany, Kazakhstan, Algeria, Canada, United Kingdom and South Africa. 10 Asian countries: Hong Kong, Korea Rep., Thailand, Macao, Indonesia, Singapore, Kazakhstan, Saudi Arabia, Mongolia, Pakistan.



Source: Statistical Bulletin of China's Outward Foreign Direct Investment 2003-2009 and own calculations.

Fig. 4. Destination of China's outward FDI by continent, average from 2003 to 2009, %.

### 5. Results

Table 5 presents results from the correlation matrix between outward FDI and all variables used in our model. The highest positive correlation (0.91) occurs between outward FDI and Openness whilst the lowest positive correlation (0.143) is that between outward FDI and GDP growth. In terms of negative relationships the highest is that between outward FDI and Resources (−0.54) and the lowest is that between outward FDI and Imports (−0.20).

Table 6 presents the main results from our regressions. In regression 1 (full sample), we find the relationship between outward FDI and exports from China to host country, GDP per capita (host country), annual GDP growth (host country) and degree of openness in host country to be all significant and correctly signed. These results strongly support our expected relationships in terms of sign and statistical significance. With regard to our other independent variables, we find an insignificant relationship between outward FDI and Imports, Exchange Rates, CPI and Resources. In regression 2 (16 countries covering 2003–2009), the results indicate that GDP per capita, exchange rates (host country currency to RMB) and inflation rates are insignificant whilst our other variables are significant and correctly signed. In regression 3 (10 Asian countries), only outward FDI and exports from China is significant and correctly signed.

Firstly, our results from regressions 1, 2 and 3 indicate that exports from China to host countries has a definitely positive influence with China's outward FDI, with a 1% increase in the exports raising China's outward FDI by 0.339%, 0.523% and 0.16%, respectively over the time period 2003–2009. Secondly China's outward FDI is negatively associated with imports to China from 16 host countries, with a 1% increase in the imports decreasing China's outward FDI by 0.103% (regression 2). Here Market size is found to be

Table 5  
Correlation matrix.

	OFDI	Exports	Imports	GDP per capita	Exchange rate	CPI	GDP growth	Openness	Resource
OFDI	1								
Exports	0.146104003	1							
Imports	−.202609293	0.93495	1						
GDP per capita	−.344713612	0.62855	0.7133	1					
Exchange rate	0.259992188	−0.3076	−0.3685	−0.8996	1				
CPI	−.478254199	−0.0112	0.1657	−0.32732	0.632249	1			
GDP growth	0.143353716	−0.5321	−0.5707	−0.9127	0.942629	0.61	1		
Openness	0.911341867	−0.124	−0.4486	−0.28891	0.041013	−0.7	0.0289178	1	
Resource	−.538848495	−0.3808	−0.2586	0.102418	−0.10782	0.28	0.19344054	−0.36987	1

**Table 6**

POLS regression results, 2003–2009.

	Regression 1	Regression 2	Regression 3
Exports	0.339*	0.523*	0.160*
Imports	−0.184	−0.103*	−0.587
GDP per capita	1.85E-05*	3.44E-05	−1.58E-05
Exchange rate	0.001	−0.015	−0.001
CPI	0.027	0.012	0.185
GDP growth	0.272*	0.224*	−0.082
Openness to FDI	0.369*	0.304*	−0.004
Resource endowment	0.030	0.102*	0.006
Obs	79	69	35
R <sup>2</sup>	0.472	0.527	0.643

\* Indicated 95% significance.

positive and significant over the whole sample which means China invests in large markets in general, but in Asia it is insignificant. *Thirdly*, we find no support for the hypotheses that China's firms have been motivated by a depreciation of host country's currency and low inflation rates. GDP growth has a positive effect in attracting China's outward FDI but in the case of Asia the effect is not significant. Also, China's firms prefer to invest in countries which are more open for FDI, whilst the results from Asian countries appear insignificant. As for resource seeking, the expected positive relationship was not supported in all our regressions; only in 16 countries have we found there to be a positive and significant relationship between China's outward FDI and resources.

Table 7 shows the results written by Kolstad and Arne in 2010, which is the newest research about China's outward FDI. Compared with their study, we update the data until 2009. Also, we changed some variables so the R-sq is higher than in their model. Lastly, we use panel data to analyse the model whilst they use the average of China's outward FDI to the host countries for the period 2003 to 2006 to run OLS estimations.

**Table 7**

OLS regression results, dependent variable Chinese outward FDI 2003–2006.

	Regression 1	Regression 2	OECD	Non-OECD
GDP	1.24e-11*** (2.50e-12)	1.15e-11*** (2.68e-12)	1.08e-11* (5.63e-12)	6.96e-11** (4.87e-11)
Trade	−0.007 (0.069)**	−0.010 (0.073)**	−0.237 (0.308)	0.068 (0.048)**
Inflation	0.102 (0.166)	0.087 (0.144)	0.832 (0.824)	0.105 (0.157)
Distance	−0.002*** (0.001)	−0.002*** (0.001)	−0.008*** (0.009)	−0.001*** (0.001)
Institutions	−2.046 (3.364)	2.106 (3.560)	420263 (34.331)	−1.898 (3.364)
Natural resources	25.841 (20.682)	29.906 (18.911)	3655.282 (2584.299)	33.085 (14.760)
Institutions* Nat. Resources		−46.473 (21.263)	−1960.285 (1386.431)	−42.514 (20.382)
Constant	21.923 (158.976)	21.625 (15.944)	13.258 (71.861)	4.339 (7.724)
Obs	104	104	25	79
R-sq	0.236	0.263	0.388	0.261

(Kolstad and Wiig, 2010).

White standard errors in parentheses.

\* Indicates significance at the 10% level.

\*\* Indicates significance at the 5% level.

\*\*\* Indicates significance at the 1% level.



## 6. Conclusion

This paper performs an empirical investigation into the determinants of China's outward FDI employing unbalanced panel data analysis approach. The motivation for this research is to test several hypotheses suggested by theory and empirical evidence regarding the determinants of China's outward FDI. In summary we find that China's overseas investments are positively related to international trade, market size, economic growth, degree of openness and endowments of natural resources. To be more specific, we found that China's outward FDI is attracted to countries with high volumes of exports from China, large GDP per capital and rapid GDP growth. Also, China's outward investment is promoted by open economic regimes and resources-rich countries. The above explanatory variables suggest that there are clear differences between China's OFDI and that of developed economies.

This study contributes to our understanding of the determinants of China's outward FDI, but we should acknowledge that there are still some limitations. First, our independent variables did not consider foreign government's role in attracting FDI. Future work can add more independent variables such as corporate tax rate and regulatory environment in host countries. Some constraints also prevent us from investigating at the firm level in particular the lack of comprehensive firm-level data.

Finally we should mention that the industry distribution of Chinese ODI differs markedly from that of other countries. The primary sector (including resources) accounted for 18.7% of China's total OFDI flow between 2006 and 2008. In comparison, those of the developed and developing economies were only 7.84 and 8.38%, respectively. These large differences were mainly contributed by investments in mining, quarrying and the petroleum industry – the latter contributing 97% of Chinese ODI in the primary sector. This may reflect strategic use of Chinese OFDI to secure a long-term resource supply.

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