

What Causes the Divestment of Multinational Companies in China? A Subsidiary Perspective

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Abstract

This paper examines the causes of MNCs' divestments in China. The MNCs' profitability, market shares and productivities are negatively related to the possibility of divestment, while the MNCs' debts are positively related to the possibility that foreign investments are divested. These results suggest that divestments are affected by MNCs' performances, and their performances are endogenous shocks for divestment.

Keywords

subsidiary, divestment, causes, performance

1. Introduction

With the process of liberalization and the opening of market, multinational companies (MNCs) have become an important role in China economy. However, MNCs have begun to exit from China in recent years. 16410 MNCs had exited from China market as the end of 2009, 24124 MNCs had exited from China market as the end of 2011, while 30803 MNCs had exited from China as the end of 2013. Previous studies show that many workers would lose their jobs and local economic growth would become lower when MNCs exit from the host country (Li, 2008; He, 2012). It is important to analyze the causes of MNCs divestments in China under the globalized environment.

Table 1. Number of MNCs Exist

Year	Number of MNCs invest	Number of MNCs exist	Mount of MNC exist (million dollar)
2009	27406	16410	31800
2010	22773	17420	21700
2011	23435	24124	34100
2012	27712	26469	31100
2013	24925	30803	53200

Numerous previous studies have examined the causes of MNCs' divestments (Boddewyn, 1983;

Ghemawat & Nalebuff, 1990; Agarwal & Ramaswami, 1992; Dunning, 2000). If a company has firm-specific advantages that generate excess profits, it will have an incentive to enter foreign markets and transfer the advantages to foreign subsidiaries. In contrast, companies will exit from a foreign market if they face financial difficulties in their home country that damage their firm-specific advantages (Dunning, 2000). MNCs that performed poorly in their home country tend to exit from their home country and increase investment in the host country (Buerry, 2009). Chen and Wu (1996) find that capital-intensive firms tend to exit from Taiwan within a shorter period of time than the labor-intensive ones from 1950s to 1990s. A host market's demand has a significant impact on divestment, MNCs that suffered from deteriorating demand are likely to exit from the country, and it shows that smaller firms will be the last to exit when faced with declining demand (Ghemawat & Nalebuff, 1990).

Previous studies have examined the causes of MNCs' divestments from the perspective of home country or host country. These facts suggest MNCs are vulnerable to exogenous shocks that occur in the home country or host country. However, these studies do not analyze the causes of subsidiaries' divestments from the perspective of their performance. We use subsidiaries' profitability, debts, market shares and productivities to represent their performance. We could get the relationships between the possibility of divestments and subsidiaries' performances by examining the logit model used in this paper. The main result of this paper is summarized as follows: the possibility of divestments would decrease when subsidiaries' profitability, markets shares and productivities increase; the possibility of divestments would increase when subsidiaries' debts increase. It suggests that subsidiaries' performances are the important causes of subsidiaries' divestments, and subsidiaries' performances are endogenous shocks for divestment.

The remainder of this article is as follows: the second section of this article presents the main hypotheses of divestment. The third section of this article shows our data and our empirical methodology. The fourth section of this article displays our empirical results. A brief summary is presented in the conclusion.

2. Hypotheses

The main purpose of MNCs' operational activities in the host country is to make profits. Several studies have argued that the profitability will influence firms' divestments. Levinthal and Wu (2009) suggest that firms will seek new product markets when faced with low-value contexts. The MNCs may increase their investments in the host country when they face with huge profits. Conversely, MNCs would sell assets in their less-profitable divisions. Further subsidiaries may exit from the host country when their profits decrease (Maksimovic & Phillips, 2001).

Hypothesis 1. The higher total profits of the subsidiaries have, the lower is the possibility of divestment in the host country.

Previous studies have noted the significance of conditions to the amount of debt financing by firms

(Harris & Raviv, 1991; Jensen, 1993). In Myers' (1977) analysis, debt decreases investment because of "debt overhang". Kovenock and Phillips (1997) point out that increases in debt are associated with a reduction in investment and an increase in the incidence of plant closings.

Hypothesis 2. The higher debts of the subsidiaries have, the higher is the possibility of divestment in the host country.

The subsidiaries' sales could represent the market share of their products. The higher are the sales of subsidiaries, the higher is the market share of their products, the more obvious are their monopoly advantages in the host country, and the lower is the possibility of divestment in the host country.

Hypothesis 3. The higher sales of the subsidiaries have, the lower is the possibility of divestment in the host country.

Fixed capital is that portion of the total capital outlay that is invested in fixed assets (such as land, buildings, vehicles, plant and equipment). On the one hand, subsidiaries possess more fixed capitals, they own more plants and machineries, and they could produce more products. On the other hand, the fixed capital represents a firm's sunk cost, more fixed capital represents more sunk cost, and it also means that more pre-investment these subsidiaries have paid. Therefore, the more fixed capitals subsidiaries possess, the lower is the possibility of divestment in host country.

Hypothesis 4. The more fixed capitals of the subsidiaries have, the lower is the possibility of divestment in the host country.

3. Data and Methodology

This paper has collected data from Chinese Industrial Enterprises Database including statistics of the firms in China from 1997-2008. Because of the serious missing data of the year in 2007 and 2008, and the missing data does not meet the requirements of logit model, we uses the data of divest subsidiaries in 2006.

To further analyze the causes of subsidiaries' divestments, we conduct logit regression analyses that adopt a dummy variable (*Divestment*) as a dependent variable which takes a value of one for divested subsidiaries and zero for non-divested ones. The independent variables are subsidiaries' profitability (*ROA*), subsidiaries' debts (*Debt*), subsidiaries' sales (*Sale*) and subsidiaries' fixed capitals (*Fix capi*). Subsidiaries' profitability is measured using return on average assets (*ROA*), which is calculated as total profit divided by total assets. Subsidiaries' debts (*Debt*) are calculated using the sum of long-term debt and short debt divided by total assets (Kovenock & Phillips, 1997). Subsidiaries' sales (*Sale*) are calculated using sales divided by total assets. Subsidiaries' fixed capitals (*Fix_capi*) are calculated using fixed capitals divided by totals assets. The control variables: period is calculated using divestment year minus the established year represents subsidiaries' localization capabilities, subsidiaries' total assets (*T_asset*) represents subsidiaries' size. Model 1 represents the relationship between *ROA* and *Divestment*. Model 2 represents the relationship between *Debt* and *Divestment*. Model 3 represents the relationship between *Sale* and *Divestment*. Model 4 represents the relationship

between *Fix_capi* and *Divestment*. ε_i is an error term.

$$Divestment = \alpha_1 + \beta_1 \ln ROA + \gamma_1 \ln Period + \theta_1 \ln T_asset + \varepsilon_i \quad (1)$$

$$Divestment = \alpha_2 + \beta_2 \ln Debt + \gamma_2 \ln Period + \theta_2 \ln T_asset + \varepsilon_i \quad (2)$$

$$Divestment = \alpha_3 + \beta_3 \ln Sale + \gamma_3 \ln Period + \theta_3 \ln T_asset + \varepsilon_i \quad (3)$$

$$Divestment = \alpha_4 + \beta_4 \ln Fix_capi + \gamma_4 \ln Period + \theta_4 \ln T_asset + \varepsilon_i \quad (4)$$

4. Results and Analyses

Table 1 shows the statistics of variables. Because we take a value of one for divested subsidiaries and zero for non-divested ones, the average of *Divestment* indicates 12.5% subsidiaries exited from China in 2006. The exit rate in 2006 is a little lower than that in 2005. But it is still in a relatively high level. We will analyze the causes of divestment from subsidiaries' performances.

Table 2. Summary Statistics of Variables

Variable	Obs	Mean	Std. Dev	Min	Max
<i>Divestment</i>	28721	0.1245778	0.3302454	0	1
<i>LnROA</i>	22146	7.6995	2.037826	1.64997	15.7742
<i>LnDebt</i>	28638	9.620847	1.750329	0.3540943	17.11524
<i>LnSale</i>	28709	10.74138	1.439942	0.4064675	18.87176
<i>LnFix_capi</i>	28701	9.094508	1.803424	0.6931472	16.64646
<i>LnPeriod</i>	28721	1.96169	0.5758949	0.0111681	4.672829
<i>LnT_asset</i>	28721	10.50873	1.49084	0.7670044	17.49813

Table 3. Correlations

	<i>Divestment</i>	<i>ROA</i>	<i>Debt</i>	<i>Sale</i>	<i>Fix_capi</i>	<i>Period</i>	<i>T_asset</i>
<i>Divestment</i>	1.0000						
<i>ROA</i>	0.0081	1.0000					
<i>Debt</i>	0.045	-0.0418	1.0000				
<i>Sale</i>	-0.0007	0.1855	-0.0077	1.0000			
<i>Fix_capi</i>	-0.0154	-0.0089	-0.1242	0.0106	1.0000		
<i>Period</i>	-0.0339	-0.0109	0.0002	-0.0629	-0.0653	1.0000	
<i>T_asset</i>	-0.0355	-0.001	0.0244	-0.0275	0.0448	0.0751	1.0000

Column 1 in Table 4 shows that subsidiaries' *ROA* has a significant and negative impact on the possibility of divestment. The result suggests that the possibility of divestment would decrease when subsidiaries' *ROA* increases. It is likely that FDI's main purpose is to make profits in host markets, subsidiaries' managers are more likely to invest when the subsidiaries have huge profits. In contrast, subsidiaries are more likely to exit when they are in an unprofitable market. Buerry's (2009) paper shows similar conclusion. This result of column 1 supports our hypothesis 1.

Column 2 in Table 4 shows that subsidiaries' debts (*Debt*) have a significant and positive impact on the possibility of divestment. The result suggests that subsidiaries are more likely to exit from host country when they are facing with increased debts. Increased debt will worsen subsidiaries' capital structure, and higher the possibility of divestment. Myers (1977), Kovenock and Phillips (1997) show the similar conclusions. Our result in column 2 supports our hypothesis 2.

Column 3 in Table 4 shows that subsidiaries' sales (*Sale*) have a significant and negative impact on possibility of divestment. The result suggests that the possibility of divestment would decrease when subsidiaries face with increased sales. It is likely that subsidiaries' sales could represent the market share of their products, the higher are the sales of subsidiaries, the higher is the market share of their products, the more obvious of their monopoly advantages in the host country, the lower possibility of divestment in the host country.

Column 4 in Table 4 shows that subsidiaries' fixed capitals (*Fix_capi*) have a significant and negative impact on the possibility of divestment. The result suggests that the possibility of divestment would decrease when subsidiaries face with increased fixed capitals. It is likely that subsidiaries' increased fixed capitals mean they spend more money to buy plants and machineries, which will enhance their productivity, and increase their sunk cost. The increased productivity and sunk cost will reduce the possibility of divestment. The result of column 4 supports our hypothesis 4.

Each column in Table 4 shows that subsidiaries' operating periods (*Period*) have a significant and negative impact on possibility of divestment. The result suggests that the subsidiaries that have longer operating periods are less likely to exit from host country. It is likely that subsidiaries with longer operating periods have stronger abilities to resolve disputes with local government. The longer operating periods could reduce the possibility of divestment.

Each column in Table 4 shows that subsidiaries' total assets (*T_asset*) have a significant and negative impact on possibility of divestment. It suggests that the possibility of divestment would decrease when subsidiaries' total assets increase. It is likely that the total assets represent subsidiaries' technology skills and assets power, larger subsidiaries have stronger assets power and more advanced technology skills, they could rely on their stronger assets power to lower procurement costs when they negotiate with suppliers. Subsidiaries that have stronger assets power are less likely to exit. Agarwal and Ramaswami (1991) find the similar conclusion.

Table 4. Regression Results

	(1)	(2)	(3)	(4)	(5)
Variable	<i>Divestment</i>	<i>Divestment</i>	<i>Divestment</i>	<i>Divestment</i>	<i>Divestment</i>
Year	2006	2006	2006	2006	2006
LnROA	-0.109*** (-7.61)				-0.030* (-1.81)
LnDebt		0.077*** (3.50)			0.089*** (3.11)
LnSale			-0.507*** (-22.79)		-0.362*** (-10.68)
LnFix_capi				-0.093*** (-4.84)	-0.065*** (-2.69)
LnPeriod	-0.282*** (-7.23)	-0.284*** (-9.06)	-0.320*** (-10.21)	-0.295*** (-9.40)	-0.291*** (-7.40)
LnT_asset	-0.281*** (-16.84)	-0.279*** (-20.56)	-0.420*** (-26.40)	-0.269*** (-19.75)	-0.368*** (-18.98)
_Cons	0.986*** (5.62)	1.534*** (10.62)	3.058*** (18.22)	1.237*** (8.45)	2.238*** (9.71)
Pseudo R2	0.0296	0.0286	0.0524	0.0287	0.0377
Log likelihood	-7257.9401	-10453.416	-10224.212	-10460.099	-7162.987
N	22146	28638	28709	28701	22074

Note. *** Significant at the 1% level;

** Significant at 5% level;

* Significant at 10% level.

We also run an additional set of robustness tests of our main findings in which we specify alternative dependent variables in 1998. The independent variables: we use total profits (T_prof) represents subsidiaries' profitability, debts ($Debt$) which is equal to the sum of long-term debt and short-term debt, sales ($Sale$) represents subsidiaries' market share and fixed capitals (Fix_capi) represents subsidiaries' productivities. The control variables are subsidiaries' operating periods ($Period$) and subsidiaries' total assets (T_asset).

Results in Table 5 show that T_prof , $Sale$ and Fix_capi have a significant and negative impact on the divestment probability, $Debt$ has a significant and positive impact on the possibility of divestment. Our results in Table 5 suggest that the main motivations for divestment are likely to be low total profits, low sales, low fixed capitals and huge debts of subsidiaries. The robustness checks in Table 3 are consistent with all results in Table 4.

Table 5. Robustness Tests

	(1)	(2)	(3)	(4)	(5)
Variable	Divestment	Divestment	Divestment	Divestment	Divestment
Year	1998	1998	1998	1998	1998
LnROA	-0.123*** (-3.73)				-0.021 (-0.57)
LnDebt		0.635*** (8.86)			0.796*** (7.44)
LnSale			-0.191*** (-3.76)		-0.232*** (-2.67)
LnFix_capi				-0.221*** (-3.08)	0.067 (0.65)
LnPeriod	-1.492*** (-14.49)	-1.542*** (-19.35)	-1.482*** (-18.66)	-1.536*** (-19.12)	-1.489*** (-14.39)
LnT_asset	0.001 (0.02)	-0.859*** (-10.28)	-0.020 (-0.33)	0.012 (0.15)	-0.798*** (-4.18)
_Cons	4.896*** (8.04)	6.954*** (14.44)	6.123*** (13.22)	6.121*** (13.25)	6.665*** (9.70)
Pseudo R2	0.1533	0.1775	0.1593	0.1575	0.1796
Log likelihood	-974.62638	-1583.0605	-1618.9806	-1620.9357	-942.17793
N	1703	2824	2826	2823	1698

Note. *** Significant at the 1% level;

** Significant at 5% level;

* Significant at 10% level.

5. Conclusion

Subsidiaries are likely to play a key role in Chinese market by improving the speed of China economy, they would provide jobs and stimulate local economy (Li, 2008; He, 2012). However, subsidiaries have begun to exit from China market in recent years. Previous studies analyze the causes of MNCs' divestments from the perspective of home country or host country (Dunning, 2000; Chemanwat & Nalebuff, 1990; Chen & Wu, 1996; Buerry, 2009). These facts suggest that MNCs are vulnerable to exogenous shocks that occur in the home country or host country. This paper has analyzed the causes of divestments from the perspective of subsidiaries' performance. Our main results are summarized as follows. The subsidiaries' profitability, market shares and productivities are negatively related to the likelihood of divestment, the subsidiaries' debts are positively related to the likelihood that foreign investments are divested. This paper suggests that subsidiaries' poor performances give them an

incentive to exit from host country. But this paper does not mention how to improve subsidiaries' performances.

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Notes

Note 1. The data is from China Bureau of Statistics and China Foreign Exchange Administration.

Note 2. If a subsidiary's code of representative can be found in 2005, but does not exist in 2006, it means the subsidiary has divested from China in 2006.