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The Influence of Capital Structure and Internationalization on Chinese Multinationals: A Transaction Cost Perspective

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ABSTRACT

In recent times, there has been a boom in Chinese MNE activities. This study intends to identify the factors that Chinese MNEs have utilized to improve their performance during this period. Firstly, a lower cost of capital has provided them with financial slack necessary for facing uncertainty and taking risks in the global market. Secondly, they gave preference to foreign markets in order to exploit market imperfections that can provide greater revenues at lower costs. Thirdly, the influence of capital structure on firm performance is stronger when the level of internationalization and industry technology intensity are both high and both low.

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1 Introduction

Internationalization process theories (Johanson and Vahlne, 1977) suggest that domestic firms from emerging economies would be expecting to face a lot of difficulties as they try to expand internationally and turn into MNEs. This line of thought has received

wide support in the literature. After all, domestic firms in emerging economies often lack the market exposure, knowledge, and financial support necessary for transforming into MNEs (Hitt, Tihanyi, Miller and Connelly, 2006). Such difficulties could be expected to slow their progress and increase their chances of failure. However, the statistics to date

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suggest that many Chinese firms have been successful in taking advantage of their new found freedom to compete in the global market. The cumulative number of Chinese firms that turned into MNEs more than tripled from just 3 230 in 2002 to 9 938 in 2006. Correspondingly, outward FDI from China in foreign countries increased by six times from a mere 2.7 billion dollars in 2002 to 16.24 billion dollars in 2006. Overall, in contrast to their relatively sedated state till 2002, there was a boom in Chinese MNE activity during the period from 2003.

The boom in Chinese MNE activity in recent times suggests that many Chinese firms have taken advantage of certain factors that is giving them the confidence to become "global players" . Using the transaction cost theory (Brouthers and Xu, 2002), the purpose of this study is to identify the factors that Chinese MNEs have utilized to improve their performance during the boom period. Using the transaction cost theory, this study extends MNE theory and literature in three ways. Firstly, this study extends MNE financing theories by suggesting that a lower cost of capital (manifested as a higher equity-to-debt ratio) provides Chinese MNEs with the financial slack needed for facing uncertainty and taking risks in the global market. Secondly, this study extends MNE theories on imperfections in the global market (Buckley and Casson, 1976). It suggests that Chinese MNEs give preference to foreign markets (instead of domestic markets) in order to exploit global market imperfections that can provide greater revenues at lower costs. Thirdly, this study extends MNEs theories by suggesting contingencies that influence the effect of capital structure on a Chinese MNE' s performance. It suggests that especially when Chinese MNEs are highly internationalized and located in an industry with high technology intensity, the higher the equity-to-debt ratio, the higher will be their firm performance.

2 Theoretical Background and Hypotheses

2.1 The influence of equity versus debt holders on firm performance

To overcome challenges in international diversification and improve performance, Chinese MNEs require substantial financial capital from their owners, either equity or debt holders. A lower cost of capital provides MNEs with the financial slack necessary for facing uncertainty and taking risks in the global market (Park, Li and Tse, 2006). The extent to which equity from shareholders versus debt from creditors is used to finance a firm' s activities can influence managerial behavior. High debt can reduce the "margin of error" for managers because poor performance can easily lead to bankruptcy (Chen and Kesner, 1997, p.3). Because high debt increases the risk of bankruptcy, it might motivate managers to become more efficiency conscious and risk averse, and can hamper the international expansion and risk taking ability. In contrast, obtaining necessary financial resources from equity holders avoids the bankruptcy risks of debt, and can give managers the confidence to face uncertainty and take risks in the global market.

MNEs can therefore improve their performance when they have the cushion of high equity and low debt. A high equity-to-debt ratio acts as a financial slack, that is, "a cushion of actual or potential resources...to initiate changes in strategy with respect to the external environment" . It represents a firm' s current reliance on equity shareholders and its confidence that it can utilize its "unused borrowing" capacity in the future if needed. Thus, a high equity-to-debt ratio acts as a buffer against potential failures, gives flexibility to managers, and gives managers confidence to face uncertainty and taking risks in the global market. Hence, we argue that a Chinese MNE with a higher equity-to-debt ratio will have the financial slack necessary to improve performance.

Hypothesis 1. The higher the equity-to-debt ratio of a Chinese MNE, the greater will be its firm performance.

2.2 The influence of internationalization on firm performance

Financial gains from market imperfections.

Internationalization is the targeting of foreign markets instead of domestic markets — “a strategy through which a firm expands the sales of its goods or services across the borders of global regions and countries into different geographic locations or markets”. The literature has highlighted the inconclusive and controversial nature of findings on the role of internationalization in improving firm performance (Contractor, Kumar, and Kundu, 2007).

Market imperfections are another major driver of performance for Chinese MNEs. Market imperfections — created by Chinese economic and trade policies — provide abnormally higher profit margins from foreign markets rather than domestic markets. Chinese MNEs can capture greater income from abroad because the China’s policy has been to keep its Chinese RMB currency artificially undervalued, creating a favorable exchange rate with the western Dollar/Euro currencies. This, in addition to access to lower labor and production costs and tax deductions in China, international expansion of Chinese MNEs helps them reap abnormally high profits from foreign markets. Moreover, the negative effects of internationalization (e.g., management complexity) may not be prominent for Chinese MNEs when these firms have not experienced a high level of international expansion. Hence, the greater a Chinese MNE’s depth of internationalization, the greater will be its firm performance.

Hypothesis 2. The greater the level of internationalization of a Chinese MNE, the greater will be its firm performance.

2.3 Three-way interaction between equity-to-debt ratio, internationalization, and technology intensity

Financial slack from equity-to-debt ratio is most useful for Chinese MNEs in certain contexts — dictated by the level of

internationalization and the technology intensity of the industry. We argue that during China’s boom period, not only did internationalization positively influenced Chinese MNE performance, but it also played a role in moderating the influence of equity-to-debt ratio on firm performance.

When the technology intensity of an industry is high, the increase in equity-to-debt ratio will result in different performance levels depending on the level of internationalization. If located in a high technology intensive industry, Chinese MNEs will compete in hypercompetitive international high-technology markets due to abundance of high technology competitors around the world (Hitt et al., 2006). If these Chinese MNEs experience a high level of internationalization, they must have financial slack that is essential for strategic flexibility to invest in innovation and survive the hypercompetitive international market. In this case, an increase in equity-to-debt ratio strongly helps to improve firm performance. In contrast, if Chinese MNEs do not have a high foreign sales ratio, they compete primarily in domestic market that is marginally competitive due to government preferential treatment for the Chinese high-tech firms, such as taxing policies on corporate taxes and the treatment of R&D expenses. Thus, an increase in equity-to-debt ratio may not be essential to improve firm performance of those Chinese MNEs because government policies protect these firms in the Chinese market.

On the other hand, when the technology intensity of an industry is low, the increase in equity-to-debt ratio will also result in different performance levels, depending on the level of internationalization. Located in a low technology intensive industry, Chinese MNEs are likely to compete in marginally competitive international low-technology markets and achieve success due to specific factors in China that create favorable market imperfections, as discussed earlier. If these Chinese MNEs experience a high level of internationalization, financial slack may help to confront

international risks. However, much of these risks are counterbalanced by the high profit margins for the cheap Chinese goods due to those favorable market imperfections (e.g., the undervalued currency). Thus, an increase in equity-to-debt ratio may not be essential to improve firm performance. In contrast, if Chinese MNEs do not have a high foreign sales ratio, they compete primarily in domestic market, where the competition is hypercompetitive due to abundance of low-technology competitors in China. Thus, financial slack is essential for strategic flexibility to invest in the improvement on operation efficiencies and survive the hypercompetitive domestic market that is flooded with cheap and locally made low-tech goods. In this case, an increase in equity-to-debt ratio strongly helps to improve firm performance.

Hypothesis 3 (3-way interaction). The level of internationalization and technology intensity of industry moderate the association between equity-to-debt ratio and firm performance. The association will be stronger when the level of internationalization and technology intensity of industry are both high or low.

3 Methods

3.1 Sample and procedure

Because the purpose of this study is to identify the influence of ownership structure of Chinese MNEs on the improvement of their performance during the boom period starting from 2003, we create a unique dataset for the 2003-2006 time periods. Firstly, a list of all publicly traded firms was obtained from the Shanghai and Shenzhen stock exchanges in China. Secondly, the UNCTAD definition of an MNE was used to select 'multinational' firms, that is, a firm should have one or more foreign affiliates to be regarded as an MNE. Thirdly, to guarantee that the firms publicly listed on these Chinese stock exchanges were actually 'Chinese', it was additionally verified that the original owners of these firms were Chinese

entities (government or individuals / families). Fourthly, a detailed data on measures were collected for these public traded firms from multiple sources that include Forbes China, China Daily, Shanghai and Shenzhen stock exchanges, annual reports, and internet websites of the Chinese MNEs. After using the above procedures, a final sample size of 244 Chinese MNEs spread across a wide range of thirty-five industries were obtained.

3.2 Measures for dependent and independent variables

Firm Performance. Firm Performance is the dependent variable. Consistent with previous studies on international diversification (Hitt et al., 2006), return on assets (ROA) is used as the measure of firm performance. The data source for this variable is information disclosed by the two Chinese stock exchanges. **Equity/Debt Ratio.** Equity-to-debt ratio is, the ratio of total equity raised from shareholders in stock markets to total debt borrowed from creditors (Chen and Kesner, 1997). Data for this variable is obtained directly from stock exchanges. **Internationalization.** The level of internationalization is commonly measured as the ratio of sales in foreign markets to the total sales (Hitt et al., 2006). This ratio is "a good relative indicator" and a widely-used measure for the level of a firm's internationalization. Data for this variable is obtained directly from stock exchanges. **Industry Technology Intensity.** A dummy variable was coded as 1 if the firm is located in a high-technology industry, and as 0 if the firm is in a low-technology industry.

3.3 Measures for control variables

This study on control for variables that have been consistently found important by previous studies on developed country MNEs. Industry dummies are included based on SIC industry divisions to control for home country effects on firm performance. **R&D Intensity** is measured as the ratio of research and development expenditures to a firm's total number of

employees. **Product Diversification** is calculated using the traditional product diversity entropy (PDT) score, which is defined as : $PDT = \sum_i [P_i * \ln(1/P_i)]$, where P_i is the sales attributed to segment i and $\ln(1/P_i)$ is the weight given to each segment, or the natural logarithm of the inverse of its sales. **Geographic Diversification** is measured by the number of foreign countries in which an MNE has operating subsidiaries and/or sells its products. **International experience** is measured by the number of years since the firm first sold products abroad and logged. **Firm size** is measured by total sales and logarithmically transformed to account for skewness.

4 Results

Table 1 reports the means, standard deviations, and correlations. All the hypothesized main effects show significant correlations ($p < 0.05$) except State Shareholding. Hierarchical OLS regressions are carried out to test the hypothesized effects (see Table 2).

Control variables are entered in Model 1, and variables with hypothesized main effects on performance are entered in Model 2 to test hypotheses 1 and 2. Moderator variables, which are not hypothesized as main effects, are entered separately in Model 3.

Interaction terms are entered in Model 4 for testing the interaction between moderators and main effects stated in hypotheses 3.

The maximum variance inflation factor (VIF) found is 1.44, which is well below the rule-of-thumb cut-off of 10, and hence there is no evidence of multi-collinearity problems.

Table 1 Descriptive statistics and correlations

Variables	Mean	SD	1	2	3	4	5	6	7	8
1. Firm Performance (ROA)	0.04	0.04								
2. R&D intensity	2.56	12.08	-0.03							
3. Product Diversity	0.91	0.46	0.09	-0.10						
4. Geographic Diversity	3.38	0.65	-0.03	0.05	-0.03					
5. International Experience	2.37	0.42	0.10	-0.01	0.02	0.27				
6. Equity to Debt	1.46	1.46	0.15	-0.06	-0.04	-0.04	0.15			
7. Internationalization	0.37	0.24	0.18	0.17	-0.05	-0.02	0.14	0.06		
8. Tech Intensity	0.33	0.47	-0.06	0.19	0.03	-0.07	-0.06	0.02	0.04	
9. Firm Size [#]	7.06	1.11	-0.07	0.16	0.04	0.28	0.09	-0.23	-0.12	-0.16

Significant at 0.05 level (two-tailed) when |correlations| > 0.13.

Sample N=244 Chinese MNEs. [#]Log transformed.

Table 2 Hierarchical regression model

Dependent Variable	Parameter Estimates β (Standardized β' within brackets)			
	Model 1 Controls	Model 2 Predictors	Model 3 Moderators	Model 4 Interactions
Firm Performance (ROA)				
Intercept	0.045 (0.00) ***	0.045 (0.00)***	0.045 (0.00)***	0.045 (0.00)***
<i>Control Variables</i>				
R&D intensity	0.000 (-0.02)	0.000 (-0.02)	0.000 (0.00)	0.000 (0.06)
Product diversity	0.007 (0.08)	0.008 (0.10) †	0.009 (0.11) †	0.007 (0.09)
Geographic diversity	-0.004 (-0.06)	-0.001 (-0.02)	-0.002 (-0.03)	-0.002 (-0.03)
International experience	0.011 (0.12) †	0.004 (0.05)	0.004 (0.05)	0.004 (0.04)

Firm size	0.000 (-0.01)	-0.001 (-0.02)	0.000 (-0.01)	-0.001 (-0.04)
Independent Variables				
H1: Equity to debt #		0.019 (0.21)***	0.020 (0.21)**	0.019 (0.21)**
H2: Internationalization #		0.035 (0.16)*	0.036 (0.16)*	0.030 (0.13)*
Moderating Variables				
Technology Intensity			-0.007 (-0.08)	-0.005 (-0.07)
Interaction Terms				
[Equity to debt x Internationalization]				0.033 (0.06)
H3: [Equity to debt x Internationalization x Technology intensity]				0.158 (0.13)*
R ² (Adj- R ²)	0.02 (0.01)	0.12 (0.08) ***	0.12 (0.08)***	0.20(0.14) ***
Δ R ²		0.10 ***	0.00	0.08 **
*** p ≤ 0.001, ** p ≤ 0.01, * p ≤ 0.05, † p ≤ 0.10 level; # variables log transformed to normalize skewed distribution; sample size N= 244 Chinese MNEs; Industry/year dummies included; All variables centered; Maximum VIF = 1.44				

Hypothesis 1 is supported (standardized $\beta' = 0.21$, $p < 0.001$), which suggests that the higher the equity-to-debt ratio, the greater will be firm performance of Chinese MNEs. Hypothesis 2 is also supported (standardized $\beta' = 0.16$, $p < 0.05$), which suggests that the greater the level of internationalization, the greater will be firm performance of Chinese MNEs. For the three-way interaction term in Hypothesis 3, centered continuous variables (equity-to-debt ratio and internationalization) are used in the regression equation. Hypothesis 3 is supported ($\beta' = 0.13$, $p < 0.05$), which suggests that both the technology intensity and the level of internationalization positively moderates the positive association between equity-to-debt ratio and firm performance.

5 Discussions

This study noted that there has been a boom in Chinese MNE activity starting from 2003. We investigated the influence of capital structure and internationalization on Chinese MNEs' firm performance and proposed a contingency on the relationships. The findings of this study provide substantial support for our arguments. Overall, transaction costs in international activities influence strategic decisions and

subsequent performance when Chinese firms expand internationally. Based on these interesting findings, we discuss theoretical and managerial implications below.

5.1 Theoretical implications

Though the MNE literature has suggested that international experience and R & D capabilities are important predictors of firm performance (Hitt et al., 2006), our findings suggest that these have not been as important for Chinese MNEs. The factors that influence performance of Chinese MNEs are "distinctive in certain respects" (Buckley et al., 2007, p. 500), and have contributed to the astonishing Chinese MNE boom. This study offers the following theoretical implications for future research.

Firstly, this study extends the transaction cost theory literature by emphasizing different impacts of equity and debt holders on firm performance of Chinese. Earlier, scholars had suggested that bankruptcy risk of MNEs is low because MNEs diversify their borrowings of debt across many countries and this encourages them to borrow even more debt. In contrast, more recent studies provide evidence that MNEs (when compared to domestic firms) prefer to avoid debt financing. This is because

MNEs need financial slack to face “exchange rate risks, political risks, and agency costs” in the global market (Mansi and Reeb, 2002, p. 131), but the need to make debt payments can push the firm toward bankruptcy rather than offering financial slack.

Secondly, this study extends MNE theories on global market imperfections (Buckley and Casson, 1976). Traditionally, the literature on developed country MNEs have highlighted the problems and dangers that MNEs face because of global market imperfections. In contrast, many Chinese MNEs are actually winning global competition by exploiting global market imperfections. Imperfections in the market are often due to government interventions. Chinese government has created preferential economic and trade policies (e.g., through tax incentives and currency exchange rates) that result in market imperfections (Park et al., 2006). Consequently, Chinese MNEs can improve their performance by giving preference to foreign markets so as to exploit the market imperfections.

More interestingly, we found support on an interesting three-way interaction between equity-to-debt ratio, internationalization and the industry technology intensity for Chinese MNEs. When Chinese MNEs are highly internationalized and located in an industry with high technology intensity, the higher the equity-to-debt ratio, the higher will be their firm performance because of the competitive international environment and subsequent strategic decisions preferred by those firms. Thus, the finding suggests the importance of considering contingencies that have impacts on the proposed relationship. In conclusion, the findings of our study are consistent with these recent studies suggesting that lower debt is better for MNEs that face uncertainty and need to take risks in the global market (Chen et al., 1997) and extend the transaction cost theory literature by considering the contingencies that influence the association between equity-to-debt ratio and firm performance.

5.2 Managerial implications

This study also offers managerial implications to managers in MNEs from emerging markets. With the equity markets in emerging economies like China gradually improving their regulations and functioning, Chinese MNEs can now take advantage of equity and reduce dependence on debt, allowing them to undertake risky international activities. Moreover, as long as emerging economies like China has trade and economic policies that create self-favoring market imperfections, its MNEs will benefit from internationalization because they can generate higher rents in foreign markets rather than domestic markets. In addition, if a multinational in China is located in an industry with high technology intensity and internationalized to a high level, the more the firm relies on equity holders rather than debt holders, the greater the improvement on firm performance. These factors contributed to the Chinese MNE boom. These findings provide insights to both managers and policy makers on how firms from emerging economies can turn into high performing global players.

6 Conclusions

By investigating capital structure and the level of internationalization that help Chinese MNEs to improve performance, this study provided evidence that offers interesting theoretical insights on MNEs from emerging economies. The MNE literature has been dominated by studies from developed countries such as US and Japan, and many of the predictors suggested by the MNE literature (e.g. international experience and R&D intensity) did not hold in the context of Chinese MNEs. Firstly, the opening of stock markets had reduced the cost of capital by boosting liquidity and choice in Chinese capital markets. Chinese MNEs could obtain financial capital from shareholders in stock markets, rather than borrow from creditors in the debt market. This gave them the financial slack necessary to face risks with a lower cost of capital. Secondly,

many Chinese MNEs are aggressively moving into foreign markets, because they can exploit market imperfections that provide greater rents in foreign markets rather than domestic markets. Lastly, the influence of capital structure on firm performance of Chinese MNEs is more prominent for those that are highly internationalized and located in high technology industry. In summary, the findings suggest that the factors that result in Chinese MNEs' success in the international markets are rather unique, and hence suggest the need for greater research on MNEs from emerging economies.

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