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The disciplinary role of leverage: evidence from East Asian cross-border acquirers' returns☆

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ABSTRACT

We present evidence of an important disciplinary role for leverage in East Asian firms prior to making foreign acquisitions: as firms surpass an optimal leverage level, their excess leverage levels expose shareholders to agency costs which outweigh any benefits from the M&As. We find the disciplinary effect of leverage is present in both common and code law countries.

1. Introduction

Leverage can act as an important governance mechanism (Harris and Raviv, 1991). Jensen (1986) highlights the benefits of leverage: agency theory predicts that limited free cash flows can restrain managerial discretion and can encourage managers to engage in value increasing investments. Altman (1984) and Titman (1984) argue that debt may have a detrimental effect on firm value if leverage levels increase beyond a certain point.

Mergers and acquisitions have the potential to expose investors to heavy agency costs Jensen (1986). Kraus and Litzenberger (1973) discuss the trade-off between the costs and benefits of debt, and posit a non-linear effect of leverage on acquirers' performance. Harford et al., (2009) and Uysal (2011) utilize an optimal capital model and investigate the relation between target leverage deviations and the merger and acquisition (M&A) activities of acquiring firms. They find that overleveraged firms are associated with higher returns, as the reduced availability of cash incentivizes managers to select value-maximizing investments.[1]

We utilize a sample of cross-border M&A acquiring firms from seven East Asian countries over the period 1997–2012. There is strong evidence of an inverse U-shaped relation between leverage before an acquirer's announcement and

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[1] Another explanation for the positive relation between leverage and acquirer returns relates to the findings of Gilson and Vetsuypens (1994) and Barid and Rasmussen (2001). They suggest that creditors monitor the performance of firms' management, to ensure the firms do not fall into financial distress.

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cumulative abnormal returns which points towards a disciplinary role of the acquiring firm's leverage. Our findings suggest leverage is positively associated with higher abnormal returns for acquiring firms *up to* a certain level. Once an optimal level of debt has been reached, higher leverage reduces the cumulative abnormal returns of acquiring firms. The finding is consistent with Hart (2001) who suggests the disciplinary role of leverage can be lost when leverage levels become too large. This result is also supportive of Jensen's (1986) free cash flow hypothesis, suggesting investors perceive overleveraged firms as having excessive free cash flow. Furthermore, also consistent with Jensen's (1986) hypothesis, we report a strong negative relation between firms' levels of free cash flow and abnormal returns.

The remainder of the letter is structured as follows. Section 2 presents the data and methodology. Section 3 discusses the event study and multivariate analysis results. Section 4 presents the robustness tests results and Section 5 concludes.

2. Data and methodology

We utilize the SDC database to obtain merger and acquisition announcement data covering the period 1997–2012. The initial sample consists of 2238 cross-border acquisitions in seven East Asian countries: Hong Kong, Malaysia, Japan, Singapore, Thailand, Taiwan and the Philippines. Deals made by Chinese acquiring firms are excluded due to China's unique legal and institutional systems. Removing highly leveraged financial and utility firms reduced the sample to 1020 deals. Excluding deal values below one million U.S dollars to ensure results are not sensitive to small acquisitions (Fuller et al., 2002 and Alexandridis et al., 2010) reduced the sample to 275 deals. Acquiring firm accounting data and deal characteristic data were collected from Compustat Global and the SDC platinum database. Country level variables were collected from Datastream, World Bank, World Factbook and the OECD. Due to unavailable control variable data and the removal of extreme outliers, the final sample is reduced to 83 cross-border deals. This process to reach the final sample size is consistent with prior literature examining Asian markets. Bhagat et al. (2011) report that data limitations restrict sample sizes in emerging market M&A studies. For example, Aybar and Ficici (2009) examine 58 emerging markets and only utilize a sample of 433 cross-border acquisitions. Boateng et al., (2008) and Chen and Young (2010) examine small samples of 27 and 39 cross-border deals respectively.

To assess the effects of acquisitions on the acquiring firm's share price we employ standard event study methodology calculating bidders' abnormal returns using a market model (Brown and Warner, 1985) where the market portfolio is measured by the variation of the benchmark index for each specific country.[2]

The benchmark return for an individual security is estimated using 255 trading days of daily returns, beginning 266 days prior to the announcement of the acquisition bid. We utilize a range of event windows [−1,0], [−1,+1], [−2,+1], [−2,+2], [−3,+3], [−5,+1] and [−5,+5] to examine the reaction of acquirer acquisition announcements in Asian security markets (Higgins and Beckman, 2006; Ma et al., 2009; Aybar and Ficici, 2009; Higgins, 2013 and Nicholson and Salaber, 2013).[3]

Finally, difference in stock market return *(MARKET R12)*; in order to address the question of the disciplinary effect of leverage, we conduct cross sectional analyses where the dependent variable is the cumulative abnormal returns (CARs) for each bidder for the range of event windows discussed above. The main variable of interest is book leverage *(BOOK LEV)* which we obtain from the financial accounts for the fiscal year prior to the acquisition announcement (following, for example, Masulis et al., (2007); Harford Klasa and Walcott (2009); Karolyi and Taboada 2015)). This is the most recent information on leverage available for the firms in our sample and, given the stability of leverage for periods up to a year (Lemmon, Roberts and Zender, 2008; DeAngelo and Roll, 2015), we expect this to be correlated with acquirers' leverage at the time of the announcement. For robustness we also utilize the variable market leverage *(MKT LEV)*. We control for the firm level characteristics – free cash flow (*FCF),* total assets *(SIZE),* market-to-book ratio *(MTB),* and research and development expenses *(R&D)*. In addition, we follow Erel, Liao and Weisbach (2012) and control for the main determinants of mergers and acquisitions including both deal and country characteristics. Deal-level control variables include deal size *(DEAL SIZE);* cash consideration *(CASH);* related industry *(RELATED);* competing bids *(COMPETING)*. Country level control variables include the difference in the market market-to-book ratio *(MARKET MTB);* the difference in the bilateral currency rate *(CURRENCY R12)*; difference in stock market return *(MARKET R12)*; income tax rate *(TAX)*; difference in gross domestic product growth *(GDP GROWTH)*; difference in gross domestic product per capita (GDP/CAP); currency volatility *(FX VOL)*; country openness *(OPEN)*; same language *(LANGUAGE)* and region *(REGION)*. Table 1 provides detailed information about the control variables and summary statistics for these variables are reported in Table 2.

3. Empirical results

Table 3 displays estimates of the cumulative average abnormal returns (CARs) for cross-border acquisitions over a variety of event windows. In no instance do we find that the CARs to be statistically significant. These CARs, however, represent the

[2] The acquiring firm's return is calculated using the stock price obtained from Compustat Global. We utilized the following acquirer country specific benchmarks when estimating the cumulative abnormal returns; Hong Kong Stock Exchange Hang Seng China Enterprises Index; FTSE Bursa Malaysia EMAS Index; Nikkei 225, Philippines Stock Exchange PSEi Index; FTSE ST All-Share Index; Stock Exchange of Thailand SET Index; Taiwan Stock Exchange Weighted Index.

[3] Lubatkin (1983) argues that in an efficient market future synergies of a merger are instantanesouly reflected in the acquiring firms stock price. Following Karolyi and Taboada (2015) among others, we examine the acquirers' abnormal returns around the initial announcement of the acquirers' bids. To avoid diluting the effect of the acquisition announcement the event windows do not exceed twenty days (MacKinlay, 1997).