THE ROLE OF SPONSOR AND EXTERNAL MANAGEMENT ON THE CAPITAL STRUCTURE OF ASIAN-PACIFIC REITS: THE CASE OF AUSTRALIA, JAPAN, AND SINGAPORE

Dong Chen, Yanmin Gao
Mayank Kaul, Charles Ka Yui Leung
Desmond Tsang

January 2015

The Role of Sponsor and External Management on the Capital Structure of Asian-Pacific REITs: The Case of Australia, Japan, and Singapore

DONG CHEN
Economics and Management School
Wuhan University
Email:chendongwinter@126.com

YANMIN GAO
Department of Accountancy
City University of Hong Kong
Email:yanmigao@cityu.edu.hk

MAYANK KAUL
Real Estate Risk Management Division
Citibank
Email:mayank.kaul@citi.com

CHARLES KA YUI LEUNG
Department of Economics and Finance
City University of Hong Kong
Email:kyc.leung@cityu.edu.hk

DESMOND TSANG
Desautels Faculty of Management
McGill University
Email: desmond.tsang@mcgill.ca

This version: January, 2015

Abstract

This paper studies how the presence of sponsor and external management affect leverage and debt maturity decisions in three major Asian-Pacific REIT markets: Australia, Japan and Singapore. Our empirical results indicate that sponsored REITs opt for higher levels of leverage and loans with longer maturity. On the contrary, externally managed REITs are associated with lower leverage and loans with shorter maturity. Our results are robust to the inclusion of other firm variables and to alternative specifications. Subsequent to the financial crisis, the impact of sponsorship on debt financing decisions has diminished, and borrowing of externally managed REITs is further constrained.

I.   INTRODUCTION

REIT (Real Estate Investment Trust) research in Asia-Pacific area has gained attention in recent years. There are several reasons for that. First, commercial real estate (CRE) constitute a significant amount of corporation asset and yet they are typically not frequently traded.[1] Thus, to properly price CRE, many analysts use REIT, which are publicly traded, as a proxy. Second, the Asian-Pacific REIT markets have experienced tremendous growth in terms of the number of REITs as well as their market valuation, especially over the last decade. As of January 2014, the largest REIT market in the region is Australia, followed by Japan and Singapore. Together, these three REIT markets include 98 publicly-listed REITs with a combined market capitalization of US$202.6 billion.[2] The recent establishment of the REIT structure and the flourishing REIT equity market in the Asian-Pacific region has sparked interest from practitioners and academics to better understand these Asian-Pacific REITs. Given that the Asian-Pacific equity markets are relatively young and these REITs are known to pursue aggressive acquisition strategies (Ooi et al. 2011), one vital puzzle is how these REITs can sustain their growth through financing. This is especially important for entities such as REITs because they are characterized by high dividend distribution which limits their abilities to use internal fund to satisfy their capital needs, and are consequently heavily reliant on long-term debt financing for property acquisition (Ott et al. 2005).

Prior research on financing and capital structure decisions of REITs focuses predominantly on the U.S. market (e.g., Howe and Shilling 1988; Capozza and Seguin 2000; Brown and Riddiough 2003; Feng et al. 2007; Boudry et al. 2010). For instance, Howe and

---

[1] Among others, see Jin et al. (2012), Du et al. (2014) for more discussion.
[2] For comparison purpose, the U.S. REIT market has currently a total of 166 firms and a combined market capitalization of US$683 billion (Source: SNL Database).

Shilling (1988) examine the tax-exempt status of U.S. REITs and argue firms should use little or no debt in their capital structure. Capozza and Seguin (2000) find that cost of debt and equity are higher for more diversified REITs. Brown and Riddiough (2003) find that REITs' financing choice depends on their pre-existing corporate structures, in which firms with higher existing debt (equity) issuing equity (debt) in subsequent offering. They also show that REITs target a long-run leverage ratio with the objective of maintaining an investment grade rating. Feng et al. (2007) show that REITs with historically high market-to-book ratios tend to have persistently high leverage ratios, and they attribute the findings to the existence of the special regulatory environment of U.S. REITs, with limited tax-shield benefits on debt interest payments given their tax-exempt status. Boudry et al. (2010) show that REITs are less likely to issue debt when bankruptcy costs are high and interpret this finding as support of the trade-off theory (e.g., Kraus and Litzenberger 1973), in which the benefits of debt are offset by the risk and cost of debt.

Several other studies switch their focuses from the U.S. REIT market and examine capital structure decisions in other listed real estate companies. Ooi (1999b) find that asset structure (i.e., proportion of non-monetary real estate assets within firms) and the level of involvement in property development are important determinants of corporate debt policy in U.K. property companies. Bond and Scott (2006) show that when U.K. real estate firms turn to external financing, debt constitutes the majority of securities issued. This confirms with the pecking order theory (e.g., Majluf and Myers 1984) in which firms would prefer debt to equity as debt issuance has a small negative impact on stock price. Examining stock price reactions of equity and debt offerings for a sample of European property companies, Brounen and Eichholtz (2001) document significant negative price reactions with equity offering, and variations in stock reaction are

related to size of the issue, pre-offer leverage, underlying property types as well as operating performance.

Leland and Toft (1996) argue that capital structure is not a standalone choice and optimal leverage is a function of a firm's risk as well as its debt maturity. Giambona et al. (2008) and Alcock et al. (2014) highlight the importance of the multidimensionality of capital structure choices in the real estate industry [3] noting that, when REITs issue debt, a crucial and simultaneous decision is to determine the maturity term of the debt contracts. Research in debt maturity choices has found some determinants for maturity in REIT debts. For example, Ooi (1999a) suggests a weak relationship between long-term debt issuance and macroeconomic factors such as interest rate movements. Highfield et al. (2007) find that firms with higher growth issue shorter maturity debts, but find no evidence of future operating performance affecting debt maturity. Nagano (2010) examines J-REITs and shows that REITs which invest in more liquid property types are able to issue longer-term debts. Ghosh et al. (2011), using simultaneous equations for leverage and maturity, examine various corporate governance mechanisms (such as entrenchment and board effectiveness) on the capital structure of REITs. Their findings suggest that entrenched CEOs use less leverage and shorter maturity debts.

Our research objective in this study is to examine capital structure decision making, on leverage and maturity, in the Asian-Pacific REIT markets. In particular, we are interested in how the characteristics of these Asian-Pacific REITs differ from their U.S. / European counterparts and how these differences could affect capital structure choices. Prior research (e.g., Ooi et al. 2006; Wong et al. 2013; Lecomte and Ooi 2013) show that Asian-Pacific REITs have several

---

[3] Studies such as Barclay et al. (2003) and Johnson (2003) have examined the simultaneity of leverage and debt maturity decision in other industrial firms.

unique features that are substantially different from REITs in other regions, in particular the U.S.[4] We conjecture two factors that could have a significant impact on leverage and maturity of Asian-Pacific REITs: the presence of sponsors and the management structure of REITs.

Some previous studies inspire us to consider the presence of a sponsor to be an important factor on the capital structure determination in Asian-Pacific REITs. A publication by the CFA Institute (2011) highlights the sponsor plays a central role in many Asian-Pacific REIT markets. In its simplest form, a REIT sponsor is usually a large real estate company with investment in a REIT and maintains significant control over the REIT manager.[5] It also tends to be the entity that sources the properties placed into the REIT at the time of IPO. Extant finance literature (e.g., Barry et al. 1990; Megginson and Weiss 1991) argue that reputable sponsors provide quality certification which reduces information asymmetry in the IPO market. Recently, Wong et al. (2013) test whether sponsors in Asian REIT IPOs alleviate moral hazard concerns. They find a positive and significant bi-directional relationship between the fraction of shares held by the sponsor in IPO and the level of underpricing, implying the presence of a sponsor indicates to the market that the REIT has the support and guidance of an experienced market participant. Hence, we suppose the debt market would favor lending to a REIT with sponsor as their credit risks can be partially offset by sponsor support. We predict that Asia-Pacific REITs with sponsors raise higher leverage and they are able to issue debts with longer maturity.

We also believe that the management structure of the Asia-Pacific REITs may be important for the corresponding capital structure. First, notice that while the U.S. REIT market has mostly transitioned from externally managed to internally managed REITs (Ambrose and

---

[4] Recently, Packer et al. (2014) provide a global overview of the REIT market worldwide.
[5] The REIT manager can be an external third party in an externally managed REIT, or an internal manager in an internally managed REIT.

Linneman 2001), REITs in the Asian-Pacific region are essentially externally managed (EPRA 2008). The preference for an external management model in the Asian-Pacific REIT markets is a combination of history and precedent at the time of their formation, when Japanese and Singaporean REITs were modelled after the Australian market that was predominantly externally managed at that time following the early U.S. model (APREA 2014). An externally managed REIT requires an appointment of an external party, usually another real estate corporation, responsible for managing the assets owned by the REIT. This external party acts as a manager of these REIT properties and has a fiduciary duty to act in the best interest of REIT shareholders. On the other hand, an internally managed REIT employs its own staff to manage its own assets and operate similar to a normal C-corporation. Prior research (e.g., Capozza and Seguin 2000) document the underperformance of externally managed REITs in the U.S. market in the 1990s, highlighting the agency problems created by the externally managed REIT organization structure and arguing external parties may use their control to extract value from the REIT entities to the detriment of REIT shareholders. Based on the U.S. data, . Cannon and Vogt (1995) show that externally managed REITs are less levered as compared to internally managed firms. As debt financing is typically cheaper than equity financing, the authors interpret their findings as evidence of an externally managed structure having sub-optimal returns due to the conflicts of interest between the REIT shareholders and the external advisors. Following similar reasoning, we conjecture that externally managed Asian-Pacific REITs are less likely to engage in debt financing. Moreover, these externally advisors are less likely to help the REITs to secure debts with longer maturity that minimize liquidity and refinancing risks.

Our empirical analysis utilizes REIT data from Australia, Japan and Singapore over the sample period of 2005-2011. We focus on these three Asian-Pacific markets because they are the

largest REIT markets in the region and at present, data on other markets are relatively sparse. Our findings indicate that our two key variables, *Sponsor* and *External Management*, significantly affect both leverage and debt maturity. We show that sponsored REITs opt for higher levels of leverage and loans with longer maturity. On the contrary, externally managed REITs are associated with lower leverage and they pursue loans of shorter maturity. Our results are robust to the inclusion of other firm variables that influence debt decisions of Asian-Pacific REITs, and to alternative specifications which we model leverage and debt maturity as simultaneous decisions (Giambona et al. 2008; Ghosh et al. 2011; Alcock et al. 2014).

Given that our sample period is coincidental with the recent global financial crisis, we conduct further analysis to examine the impact of financial crisis on the relationship between debt financing and sponsorship and management structure. We show that, subsequent to the financial crisis, the impact of sponsorship on debt financing decisions has diminished while borrowing of externally managed REITs is substantially constrained. Overall, our evidence support the view that external management is detrimental to debt financing as external advisory may opt for higher-cost equity financing at the expense of REIT shareholders, and the presence of sponsor serves as a signal of quality that reduces information asymmetry between REIT management and debt holders allowing for more debt funding with longer repayment terms.

Our study contributes to extant real estate research in the following ways. First, we extend the literature on Asian-Pacific REITs. As the market is relatively young and only a short time series of data are available, there is limited empirical research on Asian-Pacific REITs (e.g., Ooi et al. 2006; Ooi et al. 2011; Wong et al. 2013; Lecomte and Ooi 2013). We focus on the distinctive features of these firms to examine how the presence of sponsors and external management affect their corporate financing decisions. Second, we add to the REIT literature on

capital structure by identifying factors that influence debt decisions for Asian-Pacific REITs. We show that, in the context of Asian-Pacific REITs, there are additional factors one should consider when analyzing capital structure decision making. Third, with the development of REITs currently underway in other major Asian markets such as China and India, our study bears foremost policy implications to firms in these new markets. We show that, despite the popularity of the external managed REIT structure in the region, principal-agent conflicts may prompt these REITs to behave differently in financing decision making.

The remainder of the paper is organized as follows. Section two outlines the research design and depicts our empirical methodology. Section three describes the sample selection process and shows summary statistics of the sample. We present, in section four, the empirical results. Finally, the last section offers some concluding remarks.

II.   RESEARCH DESIGN

Our objective is to examine the impact of sponsorship and external management on the level of leverage and debt maturity in Asian-Pacific REITs. We follow the framework of Ghosh et al. (2011) but include two additional variables to proxy for the presence of sponsor and external management. Our model specifications are depicted as follows:

$$Leverage = \beta_0 + \beta_1\,Sponsor + \beta_2\,External\ Management + \beta_3\,Controls \qquad (1)$$

$$Debt\ Maturity = \beta_0 + \beta_1\,Sponsor + \beta_2\,External\ Management + \beta_3\,Controls \qquad (2)$$

where *Leverage* is defined as the ratio of total debt to total assets (e.g., Alcock et al. 2014), and *Debt Maturity* is the weighted average maturity of all debts in a REIT (e.g., Ghosh et al. 2011).[6] *Sponsor* is a dummy variable equal to one (zero otherwise) if the REIT has a sponsor. To determine whether a REIT has a sponsor, we need a REIT to satisfy two criteria. First, we measure the shareholdings of the top five shareholders[7] and consider a firm as having a sponsor if shareholdings of these top investors are more than 10% because a sponsor should have substantial financial stake in the company. Another requirement of sponsor is that it should have significant involvement in the company. Hence, we verify whether these investors have involvement by manually reviewing the prospectus and annual reports of each REIT. We expect REITs with sponsor have higher levels of leverage and longer maturity debts, and thus positive coefficients for β_1. *External Management* is a dummy variable with value one (zero otherwise) if the REIT is externally managed. We expect externally managed REITs have lower levels of leverage and shorter maturity debts, and thus negative coefficients for β_2.

We include a set of control variables traditionally used in the literature to explain leverage and debt maturity. Following Ghosh et al. (2011), we include different sets of controls for leverage and debt maturity, and these are the same set of control variables as reported in Table 1 of Ghosh et al. (2011). In model specification (1), we include *Market-to-Book, Firm Size, Profitability (ROA), Cash Flow Volatility, Market Access, Asset Liquidity* and *Firm Age*. In model specification (2), we include *Market-to-Book, Firm Size, Firm Size Squared, Cash Flow Volatility, Earnings Growth, Market Access, Asset Liquidity, Asset Maturity* and *Firm Age*.

---

[6] We follow similar approach as in Ghosh et al. (2011) and calculate the weighted average maturity multiplying the percentage of debts maturing in each time horizon for each REIT reported in the SNL database (i.e., within 12 months, 1-6 years, more than 6 years) by the midpoint of the categories in within 12 months (i.e., 0.5 year) and 1-6 years (i.e., 3.5 years). For debts maturing in more than 6 years, we use a factor of 6. We argue the measure of maturity in Ghosh et al. (2011) make better use of the firm's whole maturity structure.

[7] We also include any ownership termed "Strategic Entities" from Thomson One.

Market-to-Book is measured as total assets minus book equity plus market equity and then divided by total assets, and is used as a proxy for firms' growth opportunities. Myers (1977) and Hart and Moore (1995) show that firms with growth opportunities would underinvest if the benefits go partially to debt holders. Alternatively, growth firms could be more reliant on debt financing to sustain their growth. Hence, we offer no directional prediction on the variable. We include *Firm Size*, the natural logarithm of the book values of total assets. Johnson (2003) and Stohs and Mauer (1996) use this variable to signal firm quality, and we expect it to be positively related to leverage and to debt maturity. We also include *Firm Size Squared* to control for non-linearity in debt maturity (Diamond 1991a) and expect a negative coefficient. Myers (1984) shows firms with higher profitability would prefer to use internal funds to debt financing; hence we include *Profitability (ROA),* an accounting measure of return-on-assets (net income divided by book values of total assets), as a determinant of leverage and expect a negative coefficient. *Cash Flow Volatility*, time-series standard deviation of cash flows from operations, signifies the inherent risks in the firm's cash flows. We expect higher risks constrain the financing ability of firms, and therefore negative impact on leverage and debt maturity. *Earnings Growth* is a proxy for influences of asymmetric information on a firm's capital structure and we measure it by the forward-looking actual growth rate of earnings (measured as change in earnings-per-share from time t to t+1 scaled by share price). We expect negative relation with debt maturity as higher growth implies more favorable information and firm should opt for shorter-term debts to take advantage of the lower cost in refinancing (Flannery 1986; Diamond 1991b; 1993). *Market Access*, a dummy variable equal to one (zero otherwise) for firms with public debt ratings, is included in both leverage and debt maturity equations. Faulkender and Peterson (2006) show a firm's access to the public debt market allows it with more flexibility to adjust their capital

structure, so it can obtain higher leverage and debts with longer maturity (hence we expect positive coefficients). We include *Asset Maturity*, which is the weighted asset maturity based on current assets divided by operating expenses (Barclays et al. 2003), as a determinant of debt maturity because firms have a tendency to match their assets with liabilities on their term structures. Hence, we expect positive coefficient for this maturity matching effect. Giambona et al. (2008) and Nagano (2010) argue that asset liquidity is an important determinant for debt financing decision. Hence, we also include *Asset Liquidity*, measured as an ordinal scale of 1 to 5 based on the property type investment of the REIT.[8] However, we offer no directional prediction as more liquid assets could either lower the needs of debt financing or raise the ability of firms to raise funds. Finally, *Firm Age* is measured by time (in years) since public listing of the firms. As mature firms have lower financing needs (Faulkender and Peterson 2006), negative relationship could exist between firm age and leverage. Alternatively, mature firms are better able to obtain debt financing and firm age can be positively related to both leverage and debt maturity. Thus firm age can be positively or negatively related to the debt financing variables. In our empirical analysis, we also include year and country dummies to control for macroeconomic time effect and institutional differences across the three countries.

III.   DATA AND DESCRIPTIVE STATISTICS

---

[8] The scale is ordered from the most liquid to the least liquid REIT property types: 1. Retail and office; 2. Diversified; 3. Industrial; 4. Hotels and Multifamily; 5. Healthcare. The appropriate measure of *Asset Liquidity* would be the average maturity of the outstanding leases, with longer average maturity indicating higher asset liquidity values. However, we were unable to obtain this data for all the markets. Based on practical experience, we believe the level of investment activity in the various property types reflects the liquidity in a particular asset class.

Our sample includes 81 equity REITs from Australia (22), Japan (33) and Singapore (26) over the sample period of 2005-2011 from the SNL Database. These equity REITs can be classified into seven major property types: retail, office, multi-family, industrial, hotel, healthcare and diversified. We choose 2005 as the first year because the markets of J-REITs and S-REITs grow substantially only since 2005 (FDSC 2013). In total, there are 386 firm-year observations. We eliminate 135 observations due to missing data on leverage and other firm and financial variables. We eliminate another 90 observations with missing information on debt maturity. Our final sample comprises 161 firm-year observations.

Table 1 presents the descriptive statistics for variables used in the empirical analysis. Our dependent variables *Leverage* and *Debt Maturity* report means of 0.38 and 2.82 respectively. The key variables of interest, *Sponsor* and *External Management*, have means of 0.53 and 0.88 respectively. Consistent with expectation, the sponsor structure is quite common among the Asian-Pacific REIT markets and most of these REITs are essentially still externally managed. Table 1 also reports summary statistics of the control variables. On average, our sample firms have a market-to-book ratio of 0.92 and they seem to be relatively young firms with an average age of 4.49 years.

In Table 2, we present descriptive statistics comparing the means of variables for firms with and without sponsor and for firms adopting external versus internal management structure. Firms with sponsors seem to have much higher levels of leverage than firms without sponsor (mean of 0.43 versus 0.34, difference statistically significant at 1%). Moreover, firms that are externally managed report much lower levels of leverage (mean of 0.36) than internally managed firms (mean of 0.50, difference statistically significant at 1%). However, we do not observe any significant differences across the subsample groups in terms of debt maturity. Of the control

variables, we find that firms with sponsor are significantly smaller, more profitable, and with higher asset liquidity. We also find firms with external management are larger, more profitable but with lower earnings growth. These firms also have better access to market and lower asset maturity.

IV.   EMPIRICAL ANALYSIS

Our main empirical results are presented in Tables 3 and 4. Table 3 shows regression results of the impact of sponsor and external management on leverage. Given the concern of possible correlations between observations across firms in the same country, as well as time-specific effect (for instance, the bankruptcy of Lehman Brothers occurred in 2008 may impact the global capital market and hence the financing of REITs), we adopt the Generalized Least Square (GLS) regressions in the empirical analysis.[9] The first two columns in Table 3 show results of the GLS regressions. The first column shows results of regressing *Leverage* on *Sponsor* and *External Management*. We find that *Leverage* is positively related to *Sponsor* and negatively related to *External Management* (both statistically significant at the 1% levels). It is true when the country fixed effect is taken into account. The findings confirm our notion that sponsor has a positive impact on debt financing for the Asian-Pacific REITs. With the presence of sponsor, banks are more willing to extend credit to these REITs. It could be due to sponsor serving a monitoring and governance role in the company, increasing the confidence of creditors lending to these firms. It could also be that sponsor may possibly bail out the REIT in trouble,

---

[9] Hsiao (2009), Hsiao and Tahmiscioglu (2008), among others, show that through a specially designed data-transformation, it is possible to obtain unbiased estimates in a panel data set with both (cross-sectional) firm-level fixed effect and (inter-temporal) time-specific effect with GLS. For an application of this method in the real estate literature, see Dong et al. (2012), among others.

lowering the risks of nonpayment from the perspective of creditors. The findings also reinforce the negative relationship between external management and leverage, indicating externally (internally) managed firms are less (more) likely to obtain debt financing. External REIT managers could be less devoted in securing the cheapest way of debt financing for the REITs and may opt for equity financing instead. Moreover, the lenders, fully realizing the principal-agent conflicts in externally-managed REITs, could become more concerned extending credit to these firms. Table 3, second column, presents the empirical results of the full model with the control variables. We find that leverage tends to be negatively related to profitability and asset liquidity, and positively related to cash flow volatility,[10] market access and firm age. We continue to find significant positive coefficient for *Sponsor* and significant negative coefficient for *External Management*.

Alcock et al. (2014) show that leverage and debt maturity are joint financing decisions for U.S. listed real estate firms. Hence, leverage and debt maturity could be simultaneously determined. Consequently, we adopt an instrumental variable (IV) approach to examine the impact of sponsor and external management on these financing decisions. In our first stages, we regress leverage and debt maturity on the explanatory variables using specification (1) and (2) respectively. The residuals of these first-stage regressions are presumed to be orthogonal to the other factors and they serve as the instrumental variables in the second-stage regressions. In other words, we use the residuals of the first-stage leverage (debt maturity) regressions as instruments for the debt maturity (leverage) in the second-stage regressions.

---

[10] We note our findings are in contrast to prior findings such as Bradley et al. (1984). We believe a possible explanation can be attributed to the trade-off theory (Hart 1993), which posits when undertaking unprofitable new investment projects poses greater threat to the firms' value than inefficient liquidation, optimal leverage will increase with cash flow volatility. In particular, the Asian-Pacific REIT markets are characterized by primarily borrowing from the bank loan market, which are shown to have low threat of inefficient liquidation (Berlin and Loeys 1988).

We present the findings of the impact of sponsor and external management on leverage under the instrumental variable (IV) approach in the third to fourth columns in Table 3. We find our main results remain intact, that is, sponsor continues to positively influence leverage and external management continues to negatively influence leverage. Though we find leverage and debt maturity are negatively related in column three, the correlation becomes insignificant once we include the set of control variables in the fourth columns.

We now focus on the impact of sponsor and external management on debt maturity. Table 4, columns one to two, report the results of the GLS regressions. We find significant positive coefficients for *Sponsor*, indicating with the presence of sponsor, REIT firms are able to obtain loans with longer term to maturity. We also find significant negative coefficient for *External Management* in column two, implying that externally managed REITs fail to negotiate for longer-term loans. Of the control variables, we find debt maturity is positively related to the *Market-to-Book* ratio and *Market Access*, and negatively related to *Asset Liquidity*. In the third to fourth columns, we report the results under the instrumental variable (IV) approach. We continue to find the positive impact of *Sponsor* and the negative impact of *External Management* on debt maturity. Interestingly, *Leverage* is also a significant determinant of debt maturity in columns four. The results suggest that, though leverage and debt maturity appear to be joint financing decisions, the decision of debt maturity is more dependent on the level of firm leverage than vice versa. And again, we allow for country fixed effects and they turn out to be statistically insignificant.

The Impact of Financial Crisis

The recent global financial crisis has had a huge impact on financial, especially real estate, markets around the world. Though one can argue the real estate markets in Asia were less hit, Kim (2009) shows that linkages between the U.S. and Australia REIT sectors are strong and Liow (2012) shows REIT sectors among countries in the Asia-Pacific regions are relatively co-integrated. Moreover, Claessens and Fan (2002) show that corporate governance is typically weak in Asia as conventional corporate governance mechanisms have limited effectiveness in Asian countries with weak institutions and poor property rights. We therefore conjecture bank lenders would be less likely to extend loans to Asian-Pacific REITs subsequent to the financial crisis. In particular, lenders would be more concerned with REITs that are non-sponsored and externally managed since these firms signify weaker governance and higher principal-agent conflicts. We focus on the post-crisis period instead of the crisis period because while the Asian-Pacific REIT markets were less affected during the crisis, the lending practices of the Asian banks may change after the crisis.[11] In fact, it is evident that the financial crisis has led to a huge wave of financial reforms at banks around the world only after the crisis.[12] We empirically investigate the effect of the global financial crisis on the relationship between sponsor and external management with debt financing decisions by augmenting the specifications (1) and (2) with the introduction of a *Post Financial Crisis* (*PFC*) variable and the interaction terms of *Post Financial Crisis* with *Sponsor* and *External Management*.[13] Following Devos et al. (2013), we

---

[11] There is growing empirical evidence for changes in bank lending practices, including Kwan (2010) for the U.S. banks, Fraser (2012) for the Banks in U.K., Solheim and Vatne (2014) for the banks in Norway.

[12] In unreported analysis, we also investigate the effect of the financial crisis by analyzing the impact on debt financing decisions *during* the financial crisis instead of *post* crisis. We find the relationships of debt financing and *Sponsor* and *External Management* remain unaffected in the crisis period, confirming with our conjecture that debt financing decisions have been altered for the Asian-Pacific REITs only after the crisis. See also James et al. (2014) and the reference therein for more discussion on this topic.

[13] We do not include year dummies in the regressions because of the correlated nature between our crisis variable and the year dummies.

define the financial crisis from the beginning of 2007 to the beginning of 2009, and thus our *PFC* variables is equal to one if the observation lies in the period of 2009-2011, zero otherwise.

Results presented in Table 5 shows the relationship of leverage and *Sponsor* and *External Management*. GLS results in the first two columns show that *Sponsor* continues to exert a positive impact on leverage over the sample period, although the effect is weaker than before. Yet, the interaction term of *PFC* and *Sponsor* is surprisingly negative and significant in column two. We interpret the results as follows. Devos et al. (2013) show that during the crisis, institutional owners have fled the U.S. REIT market despite that they are supposed to serve the monitoring role for these firms. Hence, Asian banks might have similar concerns with these sponsors with Asian-Pacific REITs, and thereby constraining the lending practices to sponsored REITs accordingly subsequent to the crisis. The GLS results also show that the main effect of *External Management* is no longer significant but the interaction term between *PFC* and *External Management* is highly significant at the 1% levels, indicating externally managed REITs have substantially lower leverage mostly in the post-crisis period. As expected, we find that the financial crisis variable *PFC* has negative coefficients on leverage. Moreover, the country fixed effect of Australia is consistently negative (relative to Japan).[14] This result may be related to the fact that in the post-crisis period, major central banks adopt unconventional monetary policies, which leads to a significant increase in commodity prices. As a commodity-exporting country, Australia authorities respond by adjusting monetary policies and macro-prudential policies, which have consequences on the real estate markets and the leverage of

---

[14] In contrast, the positivity of country fixed effect of Singapore vanishes, once we control for other variables, such as *Cash Flow Volatility* and *Market Access*.

REITs.[15] The third to fourth columns of Table 5 show similar findings under the Instrumental Variable (IV) approach.

The country fixed effect for Singapore (relative to Japan) is also significant but the story may be different. Notice that while Australia practices inflation-targeting type monetary policy, Singapore adopts an exchange rate anchor type policy, which leads Singapore's responses to crisis different from Australia.[16] And according to Doraisami (2011), the GDP of Singapore contracted by more than 6% in the first half of 2009 and exports fell by more than 20% in the first quarter of 2009. Singapore government responded with a fiscal stimulation package, which amounted to about 8% of GDP at the time. Thus, the negative fixed-effect may be the result of the "contraction effect" of the global financial crisis.[17]

Lastly, Table 6 reports results which we examine the relationship between debt maturity and *Sponsor* and *External Management* in light of the financial crisis. We find that the results here are somehow different from those on leverage. In particular, the *interaction terms* of *PFC* and *Sponsor* are no longer important. Instead, the interaction terms of *PFC* and *External Management* significantly affect debt maturity. Thus, Table 5 seems to suggest that *Sponsor* and *External Management* do affect how much a REIT can borrow. Table 6, at the same time, suggests that conditioning on the amount a REIT can borrow, *Sponsor* may not but *External Management* may play a role on how long that REIT can borrow. Column two also indicates that the *Market-to-Book* ratio, and *Cash Flow Volatility* affect the debt maturity. Country fixed

---

[15] Among others, see Reserve Bank of Australia (2012), Ellis (2013), Leung et al. (2013), Shi et al. (2014) for related discussion.

[16] Among others, see Monetary Authority of Singapore (2013), Shirai (2014) and the reference therein for more related discussion.

[17] See also Obstfeld (2014), among others, which provides a detailed analysis of the limited effect of government policies in emerging market economies in the face of global financial crises.

effects do not matter. Column three and four report the results under the Instrumental Variable (IV) approach, which are similar.

In unreported robustness tests, we also reexamine the relationship between debt financing and *Sponsor* and *External Management* with different measures of the dependent variables. We measure leverage alternatively by market leverage, measured as total book debt divided by (total assets minus book equity plus market equity). We alternatively measure debt maturity as the ratio of long-term debt to total debt. Of the control variables, we include different combinations of the explanatory variables as controls in specification (1) and (2). Our findings remain qualitatively unchanged with these alternative model specifications and measures.

V.   CONCLUDING REMARKS

Debt financing decisions are some of the most important for REITs given the lack of internal cash flows and high dividend distributions. In this study, we specifically highlight the distinctive and unique characteristics of Asian-Pacific REITs, namely sponsorship and external management. We show that the presence of a sponsor enables REITs to engage in more aggressive debt financing practices with higher leverage and loans with longer maturity. We also show externally managed REITs to be less competitive in the debt market, as evident with lower leverage and loans with shorter maturity. Other things being equal, we find that lenders have become more cautious about REIT borrowing subsequent to the financial crisis and that the existence of a sponsor becomes less effective at helping REITs to secure debt financing . Leverage is also substantially lower for externally managed REIT in the post crisis period. Thus, it may be more difficult to channel capital into the Asian-Pacific REIT markets. As the degree of

urbanization in Asian-Pacific region has yet caught up with the Western countries, there is an expectation that the development of REIT markets could enhance the urbanization process and economic development.[18] Our study suggests that the financial crisis could have a negative effect on the development of the REIT markets in the region. Clearly, this is an important topic and more research efforts are needed.

Future research should explore how the global financial crisis might have changed the financing and capital structure of Asian firms. The current study focuses on REITs, which are required to distribute most of the profit in the form of dividend in many countries. For general stocks, this requirement is absent and hence firms could adjust in the margin of dividend distribution. Banks can also reallocate the loans to different types of firms after the global financial crisis; especially many financial reforms have taken place. In addition, the global financial crisis also leads major central banks to adopt unconventional monetary policies at least for a few years. Those policies can have important consequences to different asset markets.[19] The resulting equilibrium would be interesting to explore.

---

[18] Among others, see Packer et al. (2013), Malpezzi (2012) for related discussion.

[19] Clearly, the literature is too large to be reviewed here. Among others, see Leung and Tang (2012), Leung et al. (2013), Roache and Rousset (2013), Rogers et al. (2014).

REFERENCES

Alcock, J., E. Steiner, and K. Tan. (2014). Joint Leverage and Maturity Choices in Real Estate Firms: The Role of REIT Status. Journal of Real Estate Finance and Economics, Forthcoming.

Ambrose, B.W. and P. Linneman. (2001). REIT Organization Structure and Operating Characteristics. Journal of Real Estate Research, 21(3), 141-162.

APREA (2014). Asia Pacific REITs: A Comparaitive Regulatory & Tax Study. Asia Pacific Real Estate Association.

Barclay, M.J., L.M. Marx and C.W. Smith. (2003). The Joint Determination of Leverage and Maturity. Journal of Corporate Finance, 9, 149–167.

Barry, C.B., C.J. Muscarella, J.W. Peavy III, and M.R. Vetsuypens. (1990). The Role of Venture Capital in the Creation of Public Companies: Evidence from the Going-public Process. Journal of Financial Economics, 27(2), 447–471.

Berlin, M. and J. Loeys. (1988). Bond Covenants and Delegated Monitoring. Journal of Finance, 43 (2), 397-412.

Bond, S.A. and P.J. Scott. (2006). The Capital Structure Decision for Listed Real Estate Companies. Retrieved December 22, 2011 from http://papers.ssrn.com/sol3/Delivery.cfm/SSRN_ID876429_code253011.pdf?abstractid=876429&mirid=1

Boudry, W., J. G. Kallberg, and C. H. Liu. (2010). An Analysis of REIT Security Issuance Decisions. Real Estate Economics, 38(1), 91-120.

Bradley, M., G. A. Jarrell, and E. H. Kim. (1984). On the Existence of an Optimal Capital Structure: Theory and Evidence. Journal of Finance, 39, 857-878.

Brounen, D. and P.M.A. Eichholtz. (2001). Capital Structure Theory: Evidence from European Property Companies' Capital Offerings. Real Estate Economics, 29(4), 615–632.

Brown, D T and T. J. Riddiough. (2003). Financing Choice and Liability Structure of Real Estate Investment Trusts. Real Estate Economics, 31(3), 313-346.

Cannon, S.E. and S.C. Vogt. (1995). REITs and Their Management: An Analysis of Organization Structure, Performance, and Management Compensation. Journal of Real Estate Research 10(3), 294-317.

Capozza, D.R. and Seguin P.J. (2000). Debt, Agency, and Management Contracts in REITs: The External Advisor Puzzle. Journal of Real Estate Finance and Economics, 20(2), 91-116.

CFA (2011). Asian-Pacific REITs: Building Trust through Better REIT Governance. CFA Institute.

Chang, K. L.; N. K. Chen and C. K. Y. Leung (2012). The Dynamics of Housing Returns in Singapore: How Important are the International Transmission Mechanisms?, Regional Science and Urban Economics, 42, 516-530.

Claessens, S. and J.P.H. Fan (2002). Corporate Governance in Asia: A Survey. International Review of Finance, 3(2), 71-103.

Devos, E., S-E Ong, A.C. Spieler and D. Tsang (2013). REIT Institutional Ownership Dynamics and the Financial Crisis. Journal of Real Estate Finance and Economics, 47, 266-288.

Diamond, D. (1991a). Debt Maturity Structure and Liquidity Risk. Quarterly Journal of Economics, 106, 709-37.

Diamond, D. (1991b). Monitoring and Reputation: The Choice between Bank Loans and Privately Placed Debt. Journal of Political Economy, 99, 689-721.

Diamond, D. (1993). Seniority and Maturity Structure of Debt Contracts. Journal of Financial Economics, 33, 341-368.

Dong, Y., C. K. Y. Leung, and D. Cai, (2012). What Drives Fixed Asset Holding and Risk-Adjusted Performance of Corporates in China? An Empirical Analysis. International Real Estate Review, 15(2),141-164.

Doraisami, A. (2011). The Global Financial Crisis: Countercyclical Fiscal Policy Issues and Challenges in Malaysia, Indonesia, the Philippines, and Singapore, Asian Development Bank Institute, working paper.

Du, Julan; Charles Ka Yui Leung and Derek Chu, 2014, Return Enhancing, Cash-rich or simply Empire-Building? An Empirical Investigation of Corporate Real Estate Holdings, International Real Estate Review, 17(3), 301-357.

Ellis, L. (2013). Macroprudential Policy: What Have We Learned? Reserve Bank of Australia, mimeo.

EPRA (2008). Global REIT Survey. European Public Real Estate Association.

Faulkender, M. and M. Peterson. (2006). Does the Source of Capital Affect the Capital Structure? Review of Financial Studies, 19, 45-79.

Feng, Z, C. Ghosh, and C. F. Sirmans. (2007). On the Capital Structure of Real Estate Investment Trusts (REITs). Journal of Real Estate Finance and Economics, 34(1), 81-105.

Financial Services Development Council (FSDC) (2013), Developing Hong Kong as a Capital Formation Centre for Real Estate Investment Trusts, Research Paper No. 04.

Flannery, M. (1986). Asymmetric Information and Risky Debt Maturity Choice. Journal of Finance, 41(1), 19-37.

Fraser, S. (2012). The Impact of the Financial Crisis on Bank Lending to SMES. Warwick Business School, working paper.

Ghosh, C.; E. Giambona, J. Harding, and C.F. Sirmans. (2011). How Entrenchment, Incentives and Governance Influence REIT Capital Structure. Journal of Real Estate Finance and Economics, 43(1-2), 39-72.

Giambona, E, J. Harding, and C.F. Sirmans. (2008). Explaining the Variation in REIT Capital Structure: the Role of Asset Liquidation Value. Real Estate Economics, 36(1), 11-137.

Hart, O. (1993). An Economist's View of Fiduciary Duty. University of Toronto Law Journal, 43, 299-313.

Hart, O. and J. Moore. (1995). Debt and Seniority: An Analysis of the Role of Hard Claims in Constraining Management. American Economic Review, 85(3), 567-585.

Highfield, M. J., K. D. Roskelley, and F. Zhao. (2007). The Determinants of the Debt Maturity Decision for Real Estate Investment Trusts. Journal of Real Estate Research, 29(2), 173-200.

Howe, J. and J. Shilling. (1988). Capital Structure Theory and REIT Security Offerings. Journal of Finance, 43, 983-93.

Hsiao, C. (2009). Panel Data, University of Southern California, unpublished research notes.

Hsiao, C. and A. K. Tahmiscioglu. (2008). Estimation of Dynamic Panel Data Models with Both Individual and Time Specific Effects, Journal of Statistical Planning and Inference, 138, 2698-2721.

James, E., K. McLoughlin, and E. Rankin. (2014). Cross-border Capital Flow Since the Global Financial Crisis. Reserve Bank of Australia Bulletin, June, 65-72.

Jin, Yi; Charles Ka Yui Leung and Zhixiong Zeng 2012, Real Estate, the External Finance Premium and Business Investment: A Quantitative Dynamic General Equilibrium Analysis, Real Estate Economics, 40(1), 167-195.

Johnson, S.A. (2003). Debt Maturity and the Effects of Growth Opportunities and Liquidity Risk on Leverage. Review of Financial Studies 16, 209–236.

Kim, B.S. (2009). The Impact of the Global Financial Crisis on Asia-Pacific Real Estate Markets: Evidence from Korea, Japan, Australia and U.S. REITs. Pacific Rim Property Research Journal, 15(4), 398-416.

Kraus, A. and R.H. Litzenberger. (1973). A State-Preference Model of Optimal Financial Leverage. Journal of Finance, 28(4), 911-922.

Kwan, S. (2010). Financial Crisis and Bank Lending, Federal Reserve Bank of San Francisco, working paper.

Lecomte, P. and J.T.L. Ooi. (2013). Corporate Governance and Performance of Externally Managed Singapore REITs. Journal of Real Estate Finance and Economics, 46(4), 664-684.

Leland, H. E. and K.B. Toft. (1996). Optimal Capital Structure, Endogenous Bankruptcy, and the Term Structure of Credit Spreads. Journal of Finance, 51, 987-1019.

Leung, C. K. Y., S. Shi and E. C. H. Tang. (2013). Commodity House Prices. Regional Science and Urban Economics, 43, 875-887.

Leung, C. K. Y. and E. C. H. Tang. (2012). Comparing Two Financial Crises: the Case of Hong Kong Real Estate Markets, in "Global Housing Markets: Crises, Institutions and Policies", eds. by Ashok Bardhan, Robert Edelstein and Cynthia Kroll. New York: John Wiley & Sons, Chapter 17, 377-398.

Liow, K.H. (2012). Co-Movements and Correlations across Asian Securitized Real Estate and Stock Markets. Real Estate Economics, 34(3), 399-428.

Majluf, N. S. and S. C. Myers. (1984). Corporate Financing and Investment Decisions When Firms Have Information That Investors Do Not Have. Journal of Financial Economics, 13(2), 187-221.

Malpezzi, S. (2012). Lecture Notes on Urban Economics. University of Wisconsin-Madison, unpublished.

Megginson, W.L. and K.A. Weiss. (1991). Venture Capitalist Certification in Initial Public Offerings. Journal of Finance, 46(3), 879-903.

Monetary Authority of Singapore (2013). Monetary Policy Operations in Singapore. mimeo.

Myers, S.C. (1977). Determinants of Corporate Borrowing. Journal of Financial Economics, 5, 147-75.

Myers, S.C. (1984). The Capital Structure Puzzle. Journal of Finance, 39(3), 574-592.

Nagano, M. (2010). Real Estate Securitization and the Debt Maturity Structure: Evidence From J-REITs. Retrieved on December 22, 2011 from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1684414

Obstfeld, M. (2014). Trilemmas and Tradeoffs: Living with Financial Globalization, University of California, Berkeley, working paper.

Ooi, J. T. L. (1999a). The Debt Maturity Structure of UK Property Companies. Journal of Property Research, 16(4), 293-307.

Ooi J. T. L. (1999b). The Determinants of Capital Structure Evidence on UK Property Companies. Journal of Property Investment & Finance, 17(5), 464-480.

Ooi, J. T. L., G. Newell, and T. Sing. (2006). The Growth of REIT Markets in Asia. Journal of Real Estate Literature, 14(2), 203-222.

Ooi, J. T. L., S. E. Ong and P. H. Neo. (2011). The Wealth Effects of Property Acquisition: Evidence from REITs. Real Estate Economics, 39(3), 487-505.

Ott, S. H., T. J. Riddiough, and H. C. Yi. (2005). Finance, Investment and Investment Performance: Evidence From the REIT Sector. Real Estate Economics, 33(1), 203-235.

Packer, F., T. Riddiough and J. Shek. (2013). Can Securitization Work? Lessons from the U.S. REIT market. Bank of International Settlements, working paper.

Packer, F., T. Riddiough and J. Shek. (2014). A Global Tour of Commercial Property and REIT Markets. International Real Estate Review, 17, 241-274.

Reserve Bank of Australia. (2012). Macroprudential Analysis and Policy in the Australian Financial Stability Framework, mimeo.

Roache, S. and M. Rousset. (2013). Unconventional Monetary Policy and Asset Prices. International Monetary Fund (IMF), working paper.

Rogers, J., C. Scotti and J. Wright. (2014). Evaluating Asset-Market Effects of Unconventional Monetary Policy: A Cross-Country Comparison. Federal Reserve Board, working paper.

Shi, S., J. B. Jou and D. Tripe (2014). Can Interest Rates Really Control House Prices? Effectiveness and Implications for macroprudential policy. Journal of Banking and Finance, 47, 15-28.

Shirai, S. (2014). Recent Monetary Policy Trends in Advanced Economies and the Asia-Pacific Region, Bank of Japan, mimeo.

Solheim, H. and B. H. Vatne (2014). Evidence of a Change in Banks' Lending Practices after the Financial Crisis. Norges Bank.

Stohs, M.H. and D.C. Mauer. (1996). The Determinants of Corporate Debt Maturity Structure. Journal of Business, 69, 279-312.

Wong, W. C., S.E. Ong and J.T.L. Ooi. (2013). Sponsor Backing in Asian REIT IPOs. Journal of Real Estate Finance and Economics, 46(2), 299-320.

Table 1: Descriptive Statistics

Variable	Mean	Standard Deviation	Q25	Median	Q75
Dependent Variables					
Leverage	0.38	0.13	0.30	0.37	0.46
Debt Maturity	2.82	0.75	2.52	2.99	3.46
Asia-Pacific Specific Factors					
Sponsor	0.53	0.50	0.00	1.00	1.00
External Management	0.88	0.32	1.00	1.00	1.00
Firm & Financial Variables					
Market-to-Book	0.92	0.22	0.75	0.88	1.07
Firm Size	21.18	0.71	20.68	21.17	21.58
Profitability (ROA)	3.74	5.02	1.92	3.08	6.83
Cash Flow Volatility	2.88	8.88	0.01	0.02	14.12
Earnings Growth	0.05	0.17	-0.01	0.01	0.05
Market Access	0.60	0.49	0.00	1.00	1.00
Asset Maturity	2.15	1.55	0.94	1.82	2.56
Asset Liquidity	2.55	1.10	2.00	2.00	3.00
Firm Age (Years)	4.49	1.97	2.96	4.29	5.64
No. of Observations			161		

This table presents the summary statistics of the total sample.

Table 2: Descriptive Statistics with Sponsor and External Management

Variable	Sponsor	Without Sponsor	t-test difference	Internal Management	External Management	t-test difference
Dependent Variables						
Leverage	0.43	0.34	4.70***	0.50	0.36	4.56***
Debt Maturity	2.84	2.79	0.42	2.96	2.80	1.06
Firm & Financial Variables						
Market-to-Book	0.91	0.94	-0.87	0.85	0.93	-1.57
Firm Size	21.07	21.30	-2.05**	20.73	21.24	-3.00***
Profitability (ROA)	5.10	2.22	3.79***	1.50	4.04	-2.09**
Cash Flow Volatility	2.68	1.99	1.21	1.85	1.75	0.50
Earnings Growth	0.04	0.06	-0.73	0.20	0.03	4.19***
Market Access	0.60	0.59	0.10	0.37	0.63	-2.17**
Asset Maturity	2.32	1.97	1.41	3.98	1.91	6.02***
Asset Liquidity	2.85	2.19	3.98***	2.47	2.55	-0.31
Firm Age (Years)	4.47	4.50	-0.10	4.55	4.48	0.14
No. of Observations	85	76		19	142	

This table shows summary statistics of the subsample groups with and without sponsor, and internal versus external management. *** 1% significance; ** 5% significance.

Table 3: The Impact of Sponsor and External Management on Leverage (GLS and IV Approach)

Variable	Dependent variable: leverage			
	GLS		Instrumental Variable Approach	
Constant	-0.04***	-0.01	-0.04***	-0.01
	(0.00)	(0.22)	(0.00)	(0.24)
Sponsor	1.17***	1.02***	1.07***	1.03***
	(0.00)	(0.00)	(0.00)	(0.00)
External Management	-0.76***	-0.76***	-0.64***	-0.91***
	(0.00)	(0.00)	(0.00)	(0.00)
Debt Maturity			-0.01***	-0.01
			(0.00)	(0.17)
Market-to-Book		-0.01		0.01
		(0.95)		(0.43)
Firm Size		0.02		0.02
		(0.33)		(0.30)
Profitability(ROA)		-0.01***		-0.01***
		(0.00)		(0.00)
Cash Flow Volatility		0.01**		0.01**
		(0.02)		(0.01)
Market Access		1.78***		1.93***
		(0.00)		(0.00)
Asset Liquidity		-0.92***		-0.98***
		(0.00)		(0.00)
Firm Age		0.01**		0.01**
		(0.04)		(0.04)
Australia	0.01	0.01	0.01	0.01
	(0.56)	(0.62)	(0.46)	(0.61)
Singapore	-0.00	0.00	0.00	0.00
	(1.00)	(0.76)	(0.24)	(0.78)

Year	yes	yes	yes	yes
Wald chi2	68.12***	65071.81***	180.50***	206.07***

This table presents regression results on the total sample of 161 observations. *** 1% significance; ** 5% significance; * 10% significance.

Table 4: The Impact of Sponsor and External Management on Debt Maturity (GLS and IV Approach)

Variable	Dependent variable: debt maturity			
	GLS		Instrumental Variable Approach	
Constant	-0.19***	-0.01	-0.18***	-0.00
	(0.00)	(0.66)	(0.00)	(0.87)
Sponsor	0.93***	0.87***	0.90***	0.82***
	(0.00)	(0.00)	(0.00)	(0.00)
External Management	-0.19	-0.99***	-0.37	-0.89***
	(0.82)	(0.00)	(0.69)	(0.00)
Leverage			-0.45	-0.57**
			(0.11)	(0.04)
Market-to-Book		0.35***		0.38***
		(0.00)		(0.00)
Size		0.21		-0.31
		(0.93)		(0.89)
Size square		-0.01		0.01
		(0.96)		(0.88)
Cash Flow Volatility		0.01		0.01
		(0.46)		(0.50)
Earnings Growth		-0.07		-0.12
		(0.51)		(0.21)
Market Access		1.06***		1.00***
		(0.00)		(0.00)
Asset Maturity		0.01		0.01
		(0.50)		(0.31)
Asset Liquidity		-0.62***		-0.59***
		(0.00)		(0.00)
Firm Age		-0.01		0.01
		(0.82)		(0.63)

Australia	-0.01	-0.02	-0.01	-0.01
	(0.58)	(0.65)	(0.59)	(0.66)
Singapore	-0.02	-0.01	-0.02	-0.01
	(0.24)	(0.50)	(0.24)	(0.40)
Year	yes	yes	yes	yes
Wald chi2	69.10***	162.90***	71.23***	192.07***

This table presents regression results on the total sample of 161 observations. *** 1% significance; ** 5% significance; * 10% significance.

Table 5: The Impact of Sponsor and External Management on Leverage Subsequent to Financial Crisis (GLS and Instrumental Variable Approach)

Variable	Dependent variable: leverage			
	GLS		Instrumental Variable Approach	
Constant	-0.01	0.05***	-0.01	0.04***
	(0.98)	(0.00)	(0.73)	(0.01)
Sponsor	0.26*	0.80*	0.26*	0.71*
	(0.09)	(0.07)	(0.08)	(0.09)
External Management	-0.05	-0.06	-0.01	-0.07
	(0.47)	(0.70)	(0.94)	(0.67)
Post Financial Crisis (PFC)	-0.08***	-0.01	-0.08***	-0.02**
	(0.00)	(0.96)	(0.00)	(0.04)
PFC*Sponsor	-0.02	-0.01**	-0.02***	-0.02***
	(0.15)	(0.05)	(0.00)	(0.00)
PFC*External Management	-0.08***	-0.08***	-0.08***	-0.08***
	(0.00)	(0.00)	(0.00)	(0.00)
Debt Maturity			-0.01***	-0.01**
			(0.00)	(0.01)
Market-to-Book		0.01		0.01
		(0.72)		(0.74)
Size		0.02		0.01
		(0.33)		(0.89)
Profitability(ROA)		-0.01		-0.01**
		(0.10)		(0.04)
Cash Flow Volatility		0.01***		0.01***
		(0.00)		(0.00)
Market Access		0.92***		0.71**
		(0.00)		(0.03)

Asset Liquidity		-0.37*		-0.28
		(0.06)		(0.17)
Firm Age		0.01		0.01*
		(0.19)		(0.10)
Australia	-0.03*	-0.04**	-0.03*	-0.03**
	(0.10)	(0.03)	(0.09)	(0.04)
Singapore	0.01***	0.01	0.01***	0.01**
	(0.00)	(0.42)	(0.00)	(0.02)
Wald chi2	42.38***	65.20***	56.67***	105.68***

This table presents regression results on the total sample of 161 observations. *** 1% significance; ** 5% significance; * 10% significance.

Table 6: The Impact of Sponsor and External Management on Debt Maturity Subsequent to the Financial Crisis (GLS and Instrumental Variable Approach)

Variable	Dependent variable: debt maturity			
	GLS		Instrumental Variable Approach	
Constant	0.03	0.29***	0.02	0.28***
	(0.39)	(0.00)	(0.50)	(0.00)
Sponsor	0.12	0.69***	0.07	0.63***
	(0.83)	(0.00)	(0.90)	(0.00)
External Management	-0.78	-0.79***	-0.60***	-0.64
	(0.17)	(0.00)	(0.01)	(0.25)
Post Financial Crisis (PFC)	-0.17***	-0.64***	-0.12*	-0.61***
	(0.01)	(0.00)	(0.07)	(0.00)
PFC*Sponsor	-0.01	-0.02	-0.03	-0.02
	(0.80)	(0.38)	(0.38)	(0.29)
PFC*External management	0.16***	0.17*	0.12**	0.16*
	(0.01)	(0.06)	(0.05)	(0.07)
Leverage			-0.96***	-0.71**
			(0.00)	(0.01)
Market-to-Book		0.42***		0.40***
		(0.00)		(0.00)
Size		-0.26		-0.70
		(0.92)		(0.76)
Size square		0.01		0.02
		(0.88)		(0.74)
Cash Flow Volatility		0.04***		0.04***
		(0.00)		(0.00)
Earnings Growth		-0.13		-0.14
		(0.27)		(0.22)

Market Access		-0.65		-0.10
		(0.68)		(0.95)
Asset Maturity		0.02		0.01
		(0.26)		(0.48)
Asset Liquidity		1.18		0.74
		(0.22)		(0.42)
Firm Age		0.02		0.03**
		(0.13)		(0.03)
Australia	0.06	0.08	0.05	0.09
	(0.20)	(0.22)	(0.25)	(0.15)
Singapore	-0.03	-0.01	-0.02	-0.01
	(0.23)	(0.63)	(0.57)	(0.68)
Wald chi2	20.78***	333.99***	36.22***	377.88***

This table presents regression results on the total sample of 161 observations. *** 1% significance; ** 5% significance; * 10% significance.