Family firms' credit rating, idiosyncratic risk, and earnings management ☆

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ABSTRACT

This study examines the effects of idiosyncratic risk of a family firm on its credit risk and tests the relationship between credit risk and accrual or real earnings management under the condition of idiosyncratic risk. Findings indicate that debt financing and equity financing activities negatively affect the credit risk of a family firm when market models or Fama–French three-factor model measure idiosyncratic risk. The higher the idiosyncratic risk, the higher the credit risk for a family firm. Controlling for idiosyncratic risk, accrual-based earnings management positively affects credit risk but real earnings management negatively affects credit risk.

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1 . Introduction

Credit rating mechanism represents an important indicator of investment market stability. Firms may adopt discretionary accrual-based or real earnings management to increase credit rating to attract investment and acquire funds with lower capital costs. Graham, Harvey, and Rajgopal (2005) find that managers tend to manipulate real activities by reducing discretionary expenses or capital expenditures rather than manipulating accrual items to manage earnings. Zang (2012) suggests that accrual-based and real activities earnings management differ to a certain extent, so managers trade off the two earnings management methods according to relative costs.

Previous researchers discuss the relationship among earnings management, credit risk, and credit ratings (Jiang, 2008), but they do not consider firms' idiosyncratic risk. Jiang (2008) measures a firm's cost of debt using credit ratings and finds that beating earnings benchmarks increases probability of rating upgrade (lower cost of debt). However, beating benchmarks by manipulating earnings reduces that advantage.

Investors face market and non-market risks. Non-market risk is diversifiable and receives the name of idiosyncratic risk. A firm that can control idiosyncratic risk can increase its influence on stock returns. Therefore, firms may manage earnings by controlling idiosyncratic risk. Prior studies on stock returns emphasize the relationship between market risks and stock returns but do not consider idiosyncratic risk (Merton, 1987). Although idiosyncratic risk is diversifiable, investors

should know this information when constructing an investment portfolio. Moreover, idiosyncratic risk is an important research topic to corporate governance. Considering idiosyncratic risk in relation to credit risk, credit ratings, and earnings management is an essential research issue.

Past research focuses on the operating performance of family firms (Miller, Breton-Miller, Lester, & Cannella, 2007), the hiring of professional managers (Zellweger, Kellermanns, Chrisman, & Chua, 2012), agency problems (Chrisman, Chua, & Litz, 2004), and earnings management (Bhaumik & Gregoriou, 2010). However, little research exists regarding the effects of family ownership and idiosyncratic risk, earnings management, and credit risk.

Studies of family firms in Eastern countries such as Hong Kong (Cheung, Chung, Tan, & Wang, 2013) and those in Western countries such as Switzerland (Isakov & Weisskopf, 2014) have different empirical findings. Family influence is crucial in Asian countries (Chen & Hsu, 2009), specially in Taiwan. In Taiwan, 76% of companies in the list are family firms and 66.45% of boards of directors are under family control (Yen, Lee, & Woidtke, 2001). Claessens, Djankov, and Lang (2000) find that Taiwanese family firm's pyramids with ultimate owners, cross-holdings and management are different from those of other Asian countries (e.g., Indonesia, Thailand, and Hong Kong). Therefore, research using Taiwan as a sample may be representative.

This study attempts to answer two questions: (1) Will family firms' credit risk be higher if its idiosyncratic risk is higher? and (2) Controlling for idiosyncratic risk, if family firms engage in accrual-based or real activities earnings managements, will credit risks be higher? This study makes two major contributions. First, family firms possess unique assets and capabilities that these firms can effectively use as they venture abroad (Zahra, 2003). Given the scarce empirical studies that identify the idiosyncratic risk contributing to the international expansion of family firms, this study fills this gap in literature. Second, this study increases the understanding that family firm control of idiosyncratic risk may create problems for practitioners.

This study has the following structure: Section 2 discusses previous literature on idiosyncratic risk, earnings management, and credit risk and develops research hypotheses. Section 3 states the research design. Section 4 presents the empirical findings. Section 5 summarizes conclusions.

2 . Literature review and hypotheses

2.1 . Idiosyncratic risk and credit risk

This study investigates the relationship among idiosyncratic risk, credit ratings, credit risk, and earnings management for family firms. The organizational characteristics are significantly different between family firms and non-family firms (Yen et al., 2001). When family firms benefit from conflicts with family interests, family interests take priority for family members over overall firm interests. Fan and Wong (2002) note that when a family effectively controls a firm, they can control output and reporting of financial information. In sum, controlling shareholders of family firms and those of non-family firms have different objectives. Fu (2009) proves that firms with high-expected idiosyncratic volatility have higher expected returns and idiosyncratic risk has a positive relation with *BETA*. Jin and Myers (2006) claim that less transparency of accounting information would generate lower heteroskedasticity and higher idiosyncratic risk. Panousi & Papanikolaou (2012) find that firms' investment will decrease as idiosyncratic risk increases. The lower the risk of contract violation is, the lower the credit risk will be, and the better credit ratings will be for family firms. This study expects the idiosyncratic risk of family firms to positively affect credit risk:

H1. The higher the idiosyncratic risk of a family firm is, the higher the credit risk will be.

2.2 . Accruals, real earnings management, and credit risk

Ashbaugh-Skaife, Collins, and LaFond (2006) find that, after controlling for firm-specific risk characteristics, credit ratings positively affect accrual quality. Firms that just achieve important earnings benchmarks use less accruals and more real earnings management after SOX when compare to similar firms before SOX (Cohen, Dey, & Lys, 2008). Cohen and Zarowin (2010) show that SEO firms engage in real activities manipulation and that accrual reversals lead to the decline in post-SEO performance that reflects the real consequences of operational decisions to manage earnings.

Burgstahler & Eames (2006), and Ortega & Grant (2003) think manager would choose an accounting method to manipulate earnings, so earnings level meets the expectation from the financial analyst or investor, and then affects company stock price. Credit rating is the evaluation of entire credit risk and debt-paying ability of a firm by credit risk rating agency. Credit rating agencies assert to rely on financial information from issuers and to value rating stability as well as accuracy (Demirtas & Cornaggia, 2013). Firms can use the discretion that GAAP affords to obtain the most favorable credit ratings, for example, to record fewer bad debts or depreciation expenses to raise earnings (Demirtas & Cornaggia, 2013). Kanagaretnam, Lobo, and Yang (2005) indicate that earnings variability and degree of income smoothing positively affect bank managers' propensity to signal private information.

However, some past studies show that credit rating agency can detect firms' earnings management activities. Earnings management will negatively affect credit ratings. When a firm issues convertible bonds (Chou, Wang, Chen, & Tsai, 2009), and finances debt (Liu, Ning, & Davidson, 2010), the firm will have incentives to engage in earnings management. Purpose are to affect company stock prices, issue stocks with higher prices, finance debt to lower capital cost, and prevent contractual violation.

Ali, Chen, and Radhakrishnan (2007) claim that report from family firms has better earning quality and is willing to disclose negative news. However, most empirical studies show that family firm has worse information disclosure quality (Fan & Wong, 2002). Due to the inconsistent results of the relationship between earnings management and credit rating agency, this study uses family firm sample to re-examine this relationship:

H2a. Controlling for idiosyncratic risk, family firms that engage in accrual-based earnings management lead to higher credit risk.

H2b. Controlling for idiosyncratic risk, family firms that engage in real earnings management lead to higher credit risk.

3 . Research design

3.1 . Data and sample

Initial sample comes from *Taiwan Economic Journal* (*TEJ*) database for period 2003–2009. The calculation of idiosyncratic risk results from the return on individual firms' stock during the current and previous two years (36 months in total). Thus, data for other variables covers the period 2003–2009, while the research period is 2005–2009. Initial sample size is 3281, and test excludes 913 firms from non-family firms' calculation. Final sample consists of 2368 family firm–year observations. From the sample, 402 are family firms.

3.2 . Empirical models

Firstly, this study adopts an OLS regression and a Wooldridge test to examine the relationship between family firms' credit risk, idiosyncratic risk, and earnings management. Findings reveal that auto-correlation problems exist. To avoid these problems, this study adopts NEWEY regression to run Eqs. (1a), (1b), (2a) and (2b). To perform an empirical model analysis, the study adopts random-effects GLS regression to run Eqs. (3a) and (3b). To reduce outliers' effect, this study winsorizes all independent variables at the 1% and the 99% of their empirical distribution.

$$
\begin{aligned}
TCRI_{it} = {} & \alpha_0 + \alpha_1 DebtF_{it} + \alpha_2 EquitF_{it} + \alpha_3 IdoVo_{it} + \alpha_4 Beta_{it} \\
& + \alpha_5 Grow_{it} + \alpha_6 Size_{it} + \alpha_7 ROA_{it} + \alpha_8 Lever_{it} + \alpha_9 \sum_{2005}^{2009} Year_i \\
& + Industry + \varepsilon_{it}
\end{aligned}
\tag{1a}
$$

$$
\begin{aligned}
TCRI_{it} = {} & \alpha_0 + \alpha_1 DebtF_{it} + \alpha_2 EquitF_{it} + \alpha_3 IdoVo_{it} + \alpha_4 Beta_{it} \\
& + \alpha_5 Grow_{it} + \alpha_6 Size_{it} + \alpha_7 ROA_{it} + \alpha_8 Lever_{it} + \alpha_9 GI_{it} \\
& + \alpha_{10} \sum_{2005}^{2009} Year_i + Industry + \varepsilon_{it}
\end{aligned}
\tag{1b}
$$

$$
\begin{aligned}
TCRI_{it} = {} & \beta_0 + \beta_1 DebtF_{it} + \beta_2 EquitF_{it} + \beta_3 IdoVo_{it} + \beta_4 Accrual_{it} \\
& + \beta_5 IdoVo_{it} \cdot Accrual_{it} + \beta_6 Beta_{it} + \beta_7 Grow_{it} + \beta_8 Size_{it} \\
& + \beta_9 ROA_{it} + \beta_{10} Lever_{it} + \beta_{11} \sum_{2005}^{2009} Year_i + Industry + \varepsilon_{it}
\end{aligned}
\tag{2a}
$$

$$
\begin{aligned}
TCRI_{it} = {} & \beta_0 + \beta_1 DebtF_{it} + \beta_2 EquitF_{it} + \beta_3 IdoVo_{it} + \beta_4 Accrual_{it} \\
& + \beta_5 IdoVo_{it} \cdot Accrual_{it} + \beta_6 Beta_{it} + \beta_7 Grow_{it} + \beta_8 Size_{it} \\
& + \beta_9 ROA_{it} + \beta_{10} Lever_{it} + \beta_{11} GI_{it} + \beta_{12} \sum_{2005}^{2009} Year_i + Industry + \varepsilon_{it}
\end{aligned}
\tag{2b}
$$