

Cost of capital assignment

Business



It also aims to examine the nonentity in group affiliation.

Design/methodology/approach – Using panel data, this study employs two-stage least squares regression with the instrumental variable technique to examine the relationship among capital structure, ownership structure, and performance of group-affiliated firms. Simultaneous equation models are constructed to identify the effects of interdependent decisions. Findings – The empirical results indicate a IS- shaped relationship between insider ownership and performance.

Moreover, the alignment of ownership and control rights determines the relationship between ownership structure and performance for group-affiliated firms. The capital structure decisions of group-affiliated firms are independent of firm performance and insider ownership, supporting the view that capital structure decisions of group-affiliated firms are determined by the overall characteristics of the business group, rather than those of the individual firms.

Practical implications – Business groups can reduce the agency problems that occur in group affiliation by increasing the insider ownership after a certain tunneling point), debt financing, and dividend payout.

Originality/value – Previous studies have paid little attention to the effects of the nonentity is a consequence of the common characteristics of group affiliation or a result of the simultaneity existing among ownership structure, capital structure, and performance is also unknown. This paper fills some of these gaps.

Even without a majority ownership, the controlling shareholders maintain authority by using a pyramid ownership structure, holding different kinds of stocks, or having cross-ownership, among others (Hey et al. , 2001). Thus, insiders who possess control can greatly influence various decisions, enabling group authority to manage the group's business strategy and financial resources freely. Therefore, the affiliated firms' decision-making behaviors become endogenous determinants, which differ from those of non-group-affiliated firms[1].

Acetones and Familial (2005) demonstrated that the wealth of group subsidiaries is endogenously determined by the allocations of controlling stockholders. The absolute and exclusive control possessed by insiders within the group may also cause an increase in agency problems and associated costs for determining the performance of group affiliation.

Classless et al. (2000) observed that wealth is concentrated within a few families in most Asian economies, including Taiwan, because of the pyramid holding structure.

Together with the cross-shareholding structure, such business group models may lead to serious agency problems in group-affiliated firms. By creating such structures, business groups can reduce the value of their own firms[2]. The question that arises is this: why do group-affiliated firms in developing economies still play a significant role? Left (1976) argued that group-affiliated operations can reduce the influence of imperfections in capital, labor, and product market systems in emerging markets.

Several studies also revealed that a group's internal capital market can help firms overcome inefficiency in the external capital market and improve performance (Khan and Irvin, 2001; Castanets, 2007). Unlike stand-alone firms that draw on their own funds, the internal resources of affiliated firms are pooled with those of the group and then reallocated. Through internal capital markets, the group authority can distribute funds among its members, which may lead to economic benefits for financially constrained or temporarily distressed ownership and control structure of group-affiliated firms may lead to greater agency problems.

Therefore, business groups are desirable study subjects because they not only use internal markets extensively, but also help to increase the understanding of corporate governance issues in which they arise (Classless et al. , 2006). The present study examines whether the pyramid holding and cross-holding structures of business groups have significant effects on agency problems and determines how to reduce such costs. Furthermore, the study investigates whether an internal capital market exists within the group and whether group affiliation can benefit firms undergoing cash-flow constraints (e. . Small firms, growth firms, or firms with high R expenditures) through the internal capital market. This study contributes to the literature by exploring agency problems and the internal capital market of group-affiliated firms, which play an essential role in determining the performance of business groups. Group affiliation plays a significant role in emerging economies; however, very few studies have paid attention to the abovementioned issues.

Although previous studies on group affiliation emphasized the importance of controlling endogenous relationships among corporate finance and governance issues, most of them did not consider this problem[3]. More importantly, this study investigates whether nonentity is a consequence of the common characteristics of group affiliation (Hamburger et al. , 1999) or a result of the simultaneity existing among ownership structure, capital structure, and performance. The results from this study can bridge some of the gaps in the literature. 2.

Ownership structure, capital structure, and performance of group-affiliated firms Research on ownership structure originated from the hypothesis of Berne and Means (1932) regarding ownership dispersion, which suggests that an inverse correlation Performance of group affiliation 405 exists between the diffuseness of shareholdings and the firm performance. The convergence of the interest denser and Neckline, 1976) and the entrenchment hypotheses (Jensen and Rubric, 1983) continue to explain the principle-agent problem in corporate finance literature.

Demesne (1983) first proposed the argument that performance and ownership structure influence each other, and that searchers should consider the nonentity of the two. Succeeding studies on the nonentity problem also found this relationship (McConnell and Serves, 1990; Chem. et al. , 2003). Meanwhile, previous studies found that insiders at the structure of the firm. Kim and Sorensen (1986) observed that the agency cost of debt is reduced as insider ownership increases. In this case, creditors believe that negotiation with managers can reduce agency costs. Short et al. 2002) revealed that increasing insider ownership aligns the interests of insiders

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and creditors. Low agency costs of debt increase debt financing, which show a significant positive relationship between insider ownership and debt financing. On the contrary, Jensen et al. (1992) argued that a negative relationship exists between debt ratio and insider ownership. One reason is that insiders with major stakes are less diversified and have more incentives to reduce their financial risks. The other reason arises from higher insider ownership possibly resulting in higher agency costs of debt.

Scholarly views on the signaling part of the capital structure theory are divided into two thoughts. One views a higher leverage level as a pessimistic signal regarding the true, thus having a negative impact on performance (Greenland et al. , 1984). The other suggests that increasing debt is a healthy signal of future performance. Firms taking the risk of increasing debt, even at higher bankruptcy costs, signify their confidence in future operations. Thus, a higher debt level sends a positive signal of future performance (Ross, 1977).

In addition, Jensen (1986) argued that higher leverage may be used as a disciplinary device to reduce agency costs, thereby leading to performance improvement (the agency cost hypothesis). The adoption of new performance measurement methods in recent years led to new placements in capital structure decisions. Berger and Udell (2006) investigated both the effect of leverage on firm performance and the reverse causality relationship between operational efficiency (obtained from data envelopment analysis (DEAD)) and capital structure.

Two new hypotheses were offered to explain the relationship between leverage and operational efficiency. The first, the efficiency risk hypothesis, assumes that greater efficiency in firms reduces the probability of bankruptcy costs and financial crisis. Therefore, more efficient firms have greater debt capacities and choose higher debt ratios. The second, the franchise value hypothesis, assumes that efficient firms retain their resources to protect their future interests or to deal with any possible future slumps. At this time, firms choose lower debt ratios to avoid high interest costs and to protect their financial strength.

The study showed that the agency cost hypothesis exists in the US banking industry; this condition suggests that higher leverage or lower equity capital ratio in banking is associated with higher operational efficiency. However, the efficiency risk and franchise value hypotheses do not exist over the sample period. If an agency problem is employed as the starting point to examine the relationship among ownership structure, capital structure, and corporate performance, then there may be good reason to believe that firms can increase their leverage to reduce their agency costs and strengthen their performance.

Performance improvement may also increase insider ownership or debt capacity, which, in turn, influences agency problems. The above phenomena indicate that ownership structure, capital structure, and performance may mutually determine one another (Augural and Knobbier, 1996; Bradford et al., 2002). If insider ownership is endogenous in itself, may be misleading. Therefore, simultaneously considering ownership structure, capital structure, and performance is necessary when studying agency problems.

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This consideration is especially important for business groups because group-affiliated firms are linked with one another. However, most of the prior studies only discussed the relationships between ownership structure and performance (McConnell and Servaes, 1990; Steiner, 1996), between capital structure and performance (Berger and Udell, 2006; Margaritis and Skully, 2007), or between ownership structure and capital structure (Bradford et al., 2002; Short et al., 2002). These studies are relatively divergent and their conclusions are inconsistent.

More importantly, the relationships among ownership structure, capital structure, and performance may change because of regional factors (developed or emerging markets) and organization types (independent firms or group-affiliated firms). Hence, a study that focuses on the ownership structure, capital structure, and performance of group affiliation, an important business development model that may involve more complex agency problems, is desirable to achieve a better understanding of the agency problems and internal capital market of business groups in emerging economies.

Group-affiliated firms play an important role in emerging markets characterized by immature legal systems, insufficient transparency, and information disclosure, as well as uncertain economic and political systems. A continuous debate exists on whether these group-affiliated firms have an advantage in emerging markets. The market failure theory posited by Left (1976) shows that group-affiliated firms can avoid market inefficiencies.

Succeeding studies continuously proved that group-affiliated firms perform better than non-group-affiliated ones in emerging markets (Guile, 2000; Khan and Appeal, 2000; Khan and Irvin, 2001; Castanets, 2007). Moreover, Leafs (1976) theory was extended to the internal capital market hypothesis (Williamson, 1975; Myers and Majors, 1984) to explain how group-affiliated firms often have advantages in the early stages of capital market development.

The internal capital market hypothesis posits that group-affiliated firms can use internal capital markets to obtain the needed funds when experiencing information asymmetries and external financing constraints (Shin and Park, 1999; Pervert and Golfer, 2001). Chang and Hong (2000) sampled group-affiliated firms in Korea and found that, although the performance of group-affiliated firms is not apparent, internal trade may be used to raise profitability. The performance of these group-affiliated firms can also be manipulated by party transactions or accounting measures.

Thus, traditional performance measurement indicators such as return on assets (ROA) and return on equity (ROE) are easily affected by management influence on internal sales to boost the net profit. Classless et al. (2006) found gains from group affiliation for East Asian firms; however, these gains do not automatically occur because costs may also arise due to agency problems. Financially constrained companies such as small entities, fast-growing firms, and those with high R expenses can benefit more from group affiliation.

Man's et al. (2007) demonstrated that intra-group loans are also an important means of transferring funds among Indian group-affiliated firms. Group affiliates are not significantly affected by the availability of non-debt tax shields and the liquidity of their stocks. Conversely, the determinants of their capital structure decisions are affected by certain group-level factors such as the profitability of other group members and the size of the group.

Although many studies demonstrated that group-affiliated firms have a relative advantage in emerging markets, in which these firms use the internal capital market (debt guarantees, equity investments, and internal funds transfer) and transactions to overcome the insufficiencies of externalities, the empirical results do not fully support these arguments. Sings and Gaur (2009) found that the performance of group-affiliated firms in China and India is worse than that of non-group-affiliated firms.

George and Kabuki (2008) showed that inefficient profit redistribution exists among group-affiliated firms, which mainly explains the observed "business group discount." The aforementioned inconsistent conclusions relating to group affiliation may also occur because of the different measures of corporate performance (Short et al., 2007). Previous studies often employed the ROAR, ROE, and Dobbin's Q as performance measurement indicators.

Bedaubed (2009) argued that the ROAR is the referred measure for operating performance to study the relationships between corporate governance compliance and operating performance, because the income measure used in computing the ROAR (I. E. Operating income) is less

influenced by discretionary items than the ROE or net profit margin. Another performance measure, Dobbin's Q, reflects the prospects for the firm's profitability. Demesne and Violating (2001) argued that Dobbin's Q is a community of investors constrained by their market expectations. Most researchers have a better understanding of market constraints than accounting constraints.

This situation favors Dobbin's Q and disregards the accounting profit rates in many previous studies. However, caution should be exercised because the: [.. Accounting profit rate is not affected by the psychology of investors, and it only partially involves estimates of future events mainly in the valuation it places on goodwill and depreciation. Dobbin's Q, however, is buffeted by investor psychology pertaining to forecasts of a multitude of world events, which include the outcomes of present business strategies (Demesne and Violating, 2001, p. 213).

Libertines (1966) suggested that inefficiency caused by agency problems can be assured by the discrepancy between the maximum potential output and the actual the agency costs. Berger and Benefactors did Patti (2006) and Margaritas and Skill (2007) argued that using profit (operational) efficiency as an indicator for measuring agency problems is more accurate than using conventional performance indicators. The financial ratios and stock market returns used in literature are typically industry- adjusted and do not account for important differences across the firms within an industry.

On the contrary, operational efficiency calculated according to the DEAD approach can evaluate how close a firm is to earning the profit that a best-

practice firm will earn when facing the same exogenous conditions. This measurement has the benefit of controlling for firm-specific factors outside the control of the management, which are not part of the agency costs (Berger and Benefactors did Patti, 2006, p. 1067) and are used as a proxy for agency costs.

3. Methodology and data

3. Measurement of operational efficiency: DEAD

Using the original input and output variables, the DEAD approach was employed in this study to obtain the operational efficiency of decision-making units (DMS). DEAD ad its early origins in the mathematical programming method of the frontier production function proposed by Farrell (1957) to estimate efficiency values and obtain the efficiency frontier. The term " data envelopment analysis" first appeared in research conducted by Charges et al. (1978) as a new mathematical method (I. E.

CAR model) to evaluate the efficiency of non-profit organizations. Under the continuous efforts of succeeding scholars, DEAD developed into a general mathematical model, from a single-output efficiency model to a multiple-input and multiple-output model. The conventional DEAD models are the CAR and BCC models. The CAR model assumes constant returns to scale (CARS) to measure operational efficiency. Operational inefficiency refers to the difference between the maximum potential output and the observed output while maintaining a given level of input used.

However, not all DMS operate on a similar scale; hence, technical inefficiency may be partly attributed to inappropriate scales. Banker et al. (1984) proposed the BCC model, which assumes variable returns to scale (IVR) in production technology to estimate operational efficiency. The operational efficiency of a group-affiliated firm is calculated using the DEAD model (BCC

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model). In the DEAD model, three input variables and two output variables are employed; assets, number of employees, and capital are the input variables, whereas operating revenues and net profits after taxes are the output variables.

Manufacturing firms mainly utilize plants and equipment, laborers, and invested capital to generate revenue and profits. 3. 2 Simultaneous equations for capital structure, ownership structure, and corporate performance Nonentity between variables causes bias and inconsistent estimates from ordinary least square (OWLS) regression. Previous studies confirmed that nonentity exists between ownership structure and corporate performance (Choc, 1998), between capital structure and performance (Margaritas and Skill, 2007), and between capital structure and ownership structure (Bradford et al. 2002). However, whether nonentity is caused by the common characteristics of group affiliation or whether still unknown and merits further study. Using panel data[4], the present study employed two-stage least squares (SSL) regression with the instrumental variable technique[5[5]o examine the relationship among capital structure, ownership structure, and performance by considering the nonentity problem possibly caused by group affiliation.

At the same time, with operational efficiency as a performance measurement, the debt-equity ratio was used for the capital structure and the insider ownership was used as a proxy variable for the ownership structure. The following simultaneous equations models were constructed to identify the effects of interdependent decisions: Ownership structure equation: $INSIDER = \alpha + \beta_1 \text{PERFORMANCE} + \beta_2 D/E + \beta_3 RISK + \beta_4 SIZE + \beta_5 DB + \beta_6 R\&DD + \epsilon$
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lender; INSIDERS ; PERFORMANCE; RISK; SIZE; PROPER DB. “, R&DD .
 410 Capital structure equation: Performance equation: PERFORMANCE h f??
 lender; INSIDERS ; D= E; GROWTH; SIZE; PROPER DB. , R&DD Variables: DIE
 – debt-equity ratio; INSIDER – insider ownership; INSIDER 2 – insider
 ownership squared; PERFORMANCE – operational efficiency of firms; SIZE –
 total assets of group-affiliated firms; PROOF – operating income generated
 by firms; R&D – research and development expenditures; DIVE – dividend
 payout ratio; RISK – operational risk; GROWTH – growth opportunity. 3. 3
 Sample selection and definition of variables The data on listed manufacturing
 firms were obtained from the Taiwan Economic Journal (TEX) database. The
 selection of group-affiliated firms was defined based on the criteria set by
 the TEX[6[6]/p>

A total of 1, 926 firm-year observations of group-affiliated firms were
 considered over a nine-year period from 1999 to 2007. Ownership structure
 (INSIDER). Demesne and Violating (2001) and Bradford et al. (2002), among
 relationship between ownership structure and corporate value. The present
 study employed the same definition for comparison. Insider ownership was
 discussed in this study because, in the simultaneous equations systems,
 different institutional ownerships are hardly used as dependent variables on
 the left-hand side of the wineries equation.

Insider ownership is measured by the number of shares owned by the
 directors and managers/total number of shares outstanding. Capital
 structure (DIE). The capital structure variables used in previous studies
 include total liabilities/ total book value of equity, total liabilities/total market
 value of equity, and total liabilities/total book value of assets. Bradford et al.
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(2002) used the book value of debt as a proxy for the market value of debt because of the problems in estimating the market values of unlisted debt securities.

Bowman (1980) also argued that although the market value of debt is a more accurate measure of leverage, using the book value of debt is not expected to distort the leverage ratios. The present study employed the definition of Bradford et al. (2002), total liabilities/total market value of equity, as a measure of the firm debt-equity ratio (DIE). Performance (OPERATIONAL EFFICIENCY). Most early studies on performance measurement used accounting data such as the ROAR and ROE.

These accounting measurements are constrained by the use of accounting earnings, which makes them easily and directly affected by the numbers on financial statements. Thus, measuring business performance by accounting standards may produce biased results. Merck et al. (1988) argued that Dobbin's Q is a good indicator of the discounted value of the future cash flow because it considers the time value of money and the cost of capital. During the sample period, Taiwan experienced the effects of the severe acute respiratory syndrome and the 2004 Taiwan presidential elections debacle.

These two extraordinary events significantly influenced investor psychology, thereby generating unusual fluctuations in the Taiwan Weighted Stock Index (TWIST). The differences between the high and low points for the TWIST were 45 percent in 2002, 48 percent in 2003, 35 percent in 2004, and 42 percent in 2005-2006. According to Demesne and Violating (2001), Dobbin's Q is more

strongly buffeted by investor psychology (in relation to the forecasts of numerous world events) than accounting profit rates.

This condition leads us to obviate Dobbin's Q as a performance measure. Berger and Benefactors did Patti (2006) and Margaritas and Skill (2007) claimed that using profit (operational) efficiency as a proxy for agency costs is more advantageous than using the traditional, financial data-based measures of firm performance, because using operational efficiency can leave out specific factors outside management control that are not part of the agency costs. Hence, the present study employed operational efficiency to measure firm performance.

The selection of control variables is dictated by the literature and data availability, which are described as follows. Firm size (SIZE). Small firms have difficulty obtaining financing from external financial markets because of information asymmetries; thus, access to internal capital markets is more valuable to small firms than to larger firms. This argument supports the view that small firms are expected to benefit from group affiliation (Classless et al. , 2006) grow in size, the monitoring and agency costs also increase.

This condition leads to increased outsider monitoring, which then causes the intent to increase leverage to decline. In general, large firms have more information transparency and are more easily subject to the monitoring of directors or external rating agencies. Increasing transparency reduces agency costs, leading to a decrease in insider ownership Hamburger et al. , 1999). The present study employed the natural logarithm of total assets as

the proxy variable for firm size to eliminate the occurrence of large variation. Profitability (PROOF).

The pecking order theory suggests that operating income represents the internal funds available for firm use. When the internal funds grow, firms reduce their borrowing from the external financial market, resulting in an inverse relationship between profitability and leverage (Myers and Majors, 1984). The present study used data from listed manufacturing companies that have existed for nine years. If the total sales serve as the denominator, then greater volatility may occur because the total sales are easily affected by economic fluctuations.

Hence, the study employed earnings before interest and taxes (BIT)/total assets to measure profitability. Growth opportunity (GROWTH). High-growth firms are more likely to have greater financing needs that are harder to obtain through external financial markets. Therefore, high-growth firms are expected to benefit from group affiliation (Classless et al. , 2006), and a positive relationship between growth opportunity and reference is expected.

However, if an affiliated firm's performance is dominated by the group authority, the effect of a growth opportunity on firm performance may not be related. In this study, the annual growth rate of total assets was used as the proxy variable to measure growth opportunities. Dividend payout ratio (DIVE). A dividend payout may reduce the agency costs, which results in a positive relationship between the dividend payout ratio and the performance (Jensen et al. , 1992). Conversely, a high dividend payout ratio may indicate

that there are no better investment opportunities in the future for the company.

If this situation continues in the long term, it can lead to a decline in the firm's value, resulting in a negative relationship. 411 412 As the dividend payout ratio increases, the internal cash flow decreases and the demand for external funds grows. Under the assumption that the CM is a cheaper capital source than the external capital market, if group affiliation can provide the economic benefits of internal funds financing, a negative relationship exists between the dividend payout ratio and the capital structure. If insiders prefer firms with high