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Ownership and Debt Financing: Indonesia Evidence

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Abstract

This study examines whether ownership concentration influences debt financing of firms in Indonesia. Known to be dominated by family owned, firms in Indonesia seem to have certain distinctive characteristics that are evidenced to have significant impact on their debt financing. Apart from the common firm-level determinants, ownership concentration does play an important role in determining the level of debt consumption of the firms. It is revealed that ownership concentration impacts the debt financing positively, reflecting the power and authority of the large controlling shareholders in using debt as controlling mechanism on the entrenched managers. The positive relationship may also be explained by the reluctance of large shareholders to engage with equity financing as to avoid ownership dilution and thus can maintain the control of the firms. In terms of ownership identity, however, family firms in Indonesia seem to consume much lesser debt level due to the alignment of interest between shareholders and managers, which makes issuing debts as manager's disciplinary tool less crucial for family-owned firms. This study contributes to the literature by offering insights on how ownership concentration and family-owned firms decide on their capital structure and how certain distinctive characteristics of the firms influence the financing decision.

Keywords: ownership, ownership identity, family owned, debt financing, emerging, Indonesia

1. Introduction

Ownership structure, an element in corporate governance, is an important mechanism in mitigating the agency problems as evidenced in many capital structure studies. Literature of corporate financing documents that agency problem in ownership structure impacts firm performance significantly. Nevertheless, not many studies tackle the issue of how concentrated ownership structure, particularly family-owned firms, impacts capital structure by taking into account the agency problem especially on emerging markets. [1] argues that the agency conflicts

between the owner and the manager occur when the manager manipulates the capital structure decisions to reap wealth through activities that do not lead to value maximization. When other capital structure theories assume that managers always act in the best interests of shareholders, agency theory is focusing on the agency conflict that may arise when managers pursue their self-serving interests at the expense of the value-maximizing activities of the firm [1]. In this case, debt acts as a disciplinary tool to mitigate such agency conflict by curbing manager's self-interest management and investment decisions [2]. Entrenched managers on the other hand, who have discretion over capital structure choice, may opt to lower debt levels to avoid the disciplining role of debt. These are the most common situations investigated and explored on in the literature relating to the agency conflict when examining the impact of ownership structure on capital structure decision.

Focusing on the emerging market in the East Asian region, these markets were badly hit by the 1997 Asian financial crisis. This turmoil has been frequently documented to be attributed by a very poor corporate governance system [3]. The need for a more strategic and effective corporate governance becomes vital over the years, and ownership structure is one of the crucial mechanisms that need to be scrutinized and studied. As documented by [4], East Asian markets are known with the reputation of having a high level of ownership concentration and family control. In such an environment where high ownership concentration and family control are prevalent, the agency problems may arise between the controlling shareholders and minority shareholders and can consequently give a significant impact on the financial decision of the firms.

Firms with highly concentrated ownership, particularly family owned, have specific goals and visions comparative to nonfamily or firms with diverse ownership. Value maximization is not the only vision as they also strive for non-economic goals too, like continuous control over the firm without any interference from outside [5]. Undiversified portfolios normally carry exaggerated risks. This then cautions them over unnecessary risks that may come with debt employment in capital structure [6]. Anderson and Reeb [7] on the other hand state that family firms would opt to debt over equity to avoid dilution of control over the firm. These specific characteristics and aims of the family owned will definitely affect the financing decisions and thus require further investigation, especially on the emerging market.

Therefore, this study sets out to examine the impact of family-owned structure plus firm-level determinants on capital structure of Indonesian firms, being an emerging market to fill the gap in the literature. By using a set of recent data from the year 2000–2014 extracted from the Datastream database and annual reports over 402 firms with the employment of the Generalized Method of Moment (GMM) technique, this study seeks to examine the impact of family-owned structure plus firm-level determinants on the financing decision of the Indonesian firms. Like her other regional neighbors, Indonesia's capital market is featured by higher ownership concentration and family control [3, 4], weaker legal system and investor protection, and weaker disclosure requirements [8] and thus offers a unique case for this study to examine the impact of concentrated ownership on the financing decisions of the firms. Besides that this study also looks at the influence of the commonly cited firm-level determinants on the financing choices of firms in Indonesia. Finally, to analyze which capital structure theories are

able to explain the financing decisions of the firms in Indonesia. These objectives shine out this study from the existing one and offer policy implication to not just Indonesia but also the rest of other economies as well.

The rest of the study proceeds as follows. The next section deals with capital structure theories through the lens of family-owned firms, a literature review of past studies on related issue, brief explanation of the determinants examined with the development of hypotheses and follows by the data and methodology employed for the purpose of this study. Later comes the analysis of the findings, discussion, and the last section concludes the study.

2. Capital structure theories and family-owned ownership

The most common capital structure theories which are the pecking order theory, the trade-off theory, and the agency theory are mainly originated from the seminal work of [9]. Since then, extensive studies, investigations, and examinations have been carried out throughout the decades as to determine the capability of the theories in explaining the financing decisions of firms regardless of the economic landscapes. The pecking order theory [10] explains that firm adopts a hierarchical order of financing where internal resources are the most preferred source and follows by debt then outside equity as the last resort if an external financing is required. Information asymmetry issues that occur between managers and potential outside financiers can well explain this financing preference and thus limit the firm's choice to external financing. In the context of family-owned firms, this type of ownership concentration is often characterized by informational opacity [11]; thus, asymmetric information problems are more serious. Another distinctive characteristic of family-owned firms is that they have full control over the firm's asset portfolio and thus are able to channel funds to themselves and the family [12]. In this scenario, the financing decisions of these family-owned firms will be solely motivated by the interest to preserve this privilege and minimize any possible interferences from outside via external sources of financing. The preference of internal financing with regard to the information asymmetry issues reinforces the importance of the pecking order theory in this particular framework. Moreover, Thiele and Wendt [13] state that succession is the priority of concerns in family-owned firms. Therefore, dilution of control is very much a worry and seeking external financing is not the main agenda in the financing decision [11]. The concern over the dilution of control over the firms leads managers to focus on internal financing, and should they need external financing debt will be the option comparative to outside equity since debt means a minimum level of intrusion which is then translated into lower risk of dilution of power over the firm.

The agency theory [1] states that an optimal capital structure can be achieved when the agency conflicts between shareholders, managers, and debt holders are mitigated by using debt as disciplinary mechanism. Looking in the context of family-owned firms, the conflict between shareholders and managers can be regarded as minimal since family owned can naturally align both shareholders' and managers' interests with regard to growth opportunities and risks [1] for the sake of the family as the large shareholders as well as the managers are normally among the family members. In this case, the alignment of interest between shareholders and

managers makes issuing debts as manager's disciplinary tool less crucial for family-owned firms. It is expected that family-owned firms do not suffer from agency cost considering that the owner and the management of firms are the same people, and hence no issue of diverging interests is between the two parties [7]. However, expropriation of wealth at the expense of the minority shareholders still exists which literature considers it as the great disadvantage of concentrated ownership, particularly in family-owned firms [6]. Although debt does not act so much as disciplinary tool in a family-owned firm, it does help to discipline the expropriation of wealth in the firm itself [14].

Looking at the trade-off theory, its main aspect is that firms will strive for optimal debt equity ratio by maximizing benefits that come with debt employment but at the same time minimizing the cost of debt which includes bankruptcy risk and insolvency. The balanced and the equilibrium between benefits of debt and the cost of debts will ensure optimum performance of firms which will then increase firm value. From the lens of family-owned firms by controlling the firms, family gains private benefits. As documented in the body of knowledge, family owned normally pursues lower investment or undiversified due to limited use of debt to finance their operations and investment [15]. The bankruptcy risk and insolvency will also be high due to the lower investment and thus may jeopardize the private benefits. Being undiversified, bankruptcy in the firm means bankruptcy for the family too; thus, family-owned firm would try to lessen the risk by lessening the engagement of debt in their capital structure even though that means that they may sacrifice profitable projects [15]. Family-owned firms are expected to employ less debt in their capital structure. Nevertheless, being a family owned with several particular characteristics like undiversified portfolios, concern with firm and family reputation, longer investment horizons, and desire to pass the firm onto their descendent may modify the negative effect of family owned on the employment of debt. These characteristics of family owned may be translated into a reduction of monitoring cost, thus adding to a more favorable lending condition which then leads to higher level of debt use in the financing decision [11]. This notion is confirmed by [16] with evidence that family ownership is associated with greater availability of credit and a lower cost of debt financing for family firms. The concern over power dilution and control of the firm with the intrusion of outsiders drive these family-owned to engage with higher level of debt if they need to employ external financing over equity and thus follow strategies that are focusing on the survival of the company in the long run rather than pursuing value maximization [13].

3. Past studies on capital structure and ownership concentration

Margaritis and Psillaki [17] investigate the connection between capital structure and ownership structure of a firm. They anticipate that family-owned firms can affect leverage either positively or negatively, depending on the firm's risk level. A more risky firm will employ less debt, whereas a less risky firm will engage on more debt to act as monitoring measure. Anderson and Reeb [7] confirm this argument. Nevertheless, [17] document a significant positive relationship between family firm and debt ratio, indicating that the benefit of debt outweighs the cost of debt. Anderson et al. [18] postulate that family firm focuses more on

long-term firm survival rather than value maximization as their main concerns are family reputation and long-term survival. As discussed earlier, debt financing is very much avoided as family-owned firms tend to be risk averse as confirmed by [19]. Family firms are argued to have a long-term commitment where succession is a vital aim and thus influences their capital structure. All the findings above illustrate the influence of the pecking order theory of capital structure in family-owned firms.

Thiele and Wendt [13] state that family-owned firms tend to use their voting power to monitor the management of the firm as they have sufficient rights to interfere in the decision making. This active monitoring can avoid managerial opportunism and can exercise their power to replace underperforming managers and cut unnecessary managers' self-interest expenditure [6]. A strong controlling power in family-owned firm acts as a signal of good performance of the firm and thus elevates value of the firm. Consequently, as explained by the signaling theory, debt is then seen as a less reliable signaling tool and hence, rationalizes the negative relationship between family-owned and capital structure as reported by [19]. On another strand, [20] in his study on publicly listed firms in Indonesia find that agency problem is very minimal in family-controlled firms, state-owned firms, or institutional-controlled firms comparative to publicly controlled firms or firms without controlling shareholders. This is according to [11] due to the lesser conflict between shareholders and managers. Nevertheless, with the presence of minority shareholders in a family-owned firm, a conflict between the two is likely to occur.

Anderson et al. [18] in their study on the debt policy of family-owned firms in the US with a sample of 252 firms from 1993 to 1998 find that the cost of debt in family-owned firms is comparatively low and thus encourages higher level of debt employment in the capital structure, a positive relationship. This findings support the notion that family-owned firms have fewer agency cost issues due to the incentive structure of family-owned firms in the US. The rationale behind this is that perhaps the main concern of the family-owned firms is their long-term relation with the lender; thus, their reputation is their vital care. Since these family-owned firms' investments are generally undiversified investments, they fear of losing the firms as it means the loss for the family as well. Croci et al. [16] also confirm that family-owned firms' main concern is to maintain good rapport with the lenders for the purpose of long-term orientation. However, on the other hand, as argued by [13], family-owned firms are more worried about preserving their control over the firm rather than worrying about bankruptcy risk and insolvency and thus engage more debt in their capital structure. Other example of positive relationship between capital structure and family-owned firms is by [14] where family-owned firms employ high level of debts in their capital structure. They postulate that those family-owned firms use debts as a replacement for independent directors. They also conclude that family-owned firms in their study employ higher debt level to discipline the managers.

Anderson and Reeb [7] investigate the variation of capital structure practice between family-owned firms and non-family owned in the US industrial sector using 2018 firms between the years 1993 and 1999. They categorize family-owned firms are those with 5% of stake, and the founder is part of the director. They find no distinctive difference between family owned and

non-family owned, and the founder does not influence debt level of the US industrial firms. Ampenberger et al. [21] discovered that family-owned firms in Germany have a negative impact on the capital structure and this is perhaps due to the involvement of the founder CEO in the management.

Based on what have been reviewed above, literature has been documenting mixed results pertaining to the impact of family owned on firms' debt financing in various countries regardless of the economic landscapes. For instance, [19, 21] find family-owned firms are considerably underleveraged comparative to the non-family-owned firms. In contrast, there are studies that reveal positive relationships, indicating that family-owned firms are more leveraged than the non-family-owned firms [14, 22, 23]. Looking at the financial behavior of the firms, [21] depict family management as the main determinant of lower debt level of family-owned firms. Gottardo and Moisello [22] on the other hand report active family management as the major determinant of high debt level. Other determinants like maintenance of control and influence, growth opportunities, and risk aversion do play a part in the debt financing decisions of family-owned firms [13].

4. Past studies on Indonesia

Indonesia underwent several reformations in its financial system as its financial market activities decades ago were dull and there were a lot of flaws in the firms' financing choices with state-owned banks dominating the debt market and overshadowed the capital market [24]. It was apparent that Indonesian financial systems then needed robust deregulations and reformations. The government control over initial offering prices and the daily movement of stock prices was lifted, providing a fair game between the state and private banks, the choices between debt and equity as well as between internal and external sources of equity. Corporate governance became prevalent in Indonesia since the 1997 Asian financial crisis due to the fact that most firms are exposed to the shock wave of financial crisis. Indonesian government through the capital market regulatory body has started to initiate multiple reforms by starting enacted corporate governance's laws and regulations. Along the way, the government has developed standards and has strengthened enforcement for all listed firms in Indonesian Stock Exchange (IDX) as outlined in the good corporate governance guidelines. All listed firms in IDX should comply with corporate governance regulations [24]. After several financial reformations, trading activities in Indonesia were then started to improve and market capitalization grew alongside the development of Indonesia's financial markets and private sector highlighted by a major bull run in 1990 [25]. At present after several financial reformations and severe experiences during several financial crises, [26] predicts in the long-term perspective of 2016–2020 that Indonesia's average real growth rate is predicted to remain high at 5.5% per year, higher than the average real growth rate of 5.2% of ASEAN (10 countries) compared to China and India of 6.0 and 7.3%, respectively.

Family-owned businesses account for approximately 40% of market capitalization in Indonesia and have substantial impact on several important sectors like property, agriculture, energy, and consumer goods. Data from the Boston Consulting Group show that in the developed

market like the US, many of the family businesses are into their fourth or fifth generations. However, only about 30% of Indonesian family businesses survive the first generation and about 9% move into the third generation. This implies that more than half of the family businesses in Indonesia are still in the growth phase with uncertainties in the future, thus making financial decision a crucial element to study [27]. Secondly, corporate governance in Indonesia is distinguished by the fact that the majority of firms are owned and managed by founding family members. Around 67% of listed firms in Indonesia are family controlled [4].

Looking at the journey of Indonesia's financial market for several decades and where it stands now, several studies have documented interesting findings in the literature. For examples, [28] conduct a survey on capital structure and dividend policy on the CEOs of all 180 firms listed on the IDX. The analysis reveals that firms seem to have good access to various sources of funds like debt and equities. Nevertheless, that access is not because of information asymmetry but because of fairly reasonable interest rates, thus no influence of the pecking order theory in this case. Ruslim et al. [29] analyze a sample of 18 Indonesian firms for the period of 2000–2006 and find that profitability has no significant impact on the debt financing of firms in Indonesia, again implying no evidence of pecking order theory influence in the financing decisions in Indonesia which is in line with [28]. Bunkanwanicha et al. [30], on a different strand, incorporate corporate governance arrangement in their study on Indonesia and find that weaker corporate governance seems to have higher debt level especially during financial crisis. They also highlight that country-level determinants could also impact empirical results.

Moosa and Li [24] when studying the financial structure of firms in Indonesia reveal that some firm-level determinants may not have similar impacts on the firms' capital structure like what have been documented in the body of knowledge. They also discover that the financial reformation experienced by the firms has indeed eliminated the inefficient corporate financial policies and financial market during the dominance of state banks.

Saadah and Prijadi [31] examine the capital structure of 53 manufacturing firms in Indonesia over a study period from 2001 to 2008. Using the determinants representing the main capital structure theories, they reveal that the trade-off theory and pecking order theory are quite pronounced, working side by side in the financing decisions of the firms. This implies that no single theory is able to explain the capital structure of firms and thus supports [32] statement that a collaboration of theories is needed to better explain the financing choices of firms. Hardiyanto et al. [33], using a panel data from year 2005 to 2011 on 228 companies, conclude that firms in Indonesia have specific level of debt ratio in their capital structure and try to maintain that debt ratio level for it is believed to maximize firm value. They also argue that certain firm-level determinants do play significant roles in maintaining the debt ratio; thus, managers should take into account the costs that the firm may incur should they adjust their capital structure in striving for value maximization.

Very recently, Haron [25] investigates 365 listed companies using a panel data from year 2000 to 2011 and concludes that POT has significant influence on the capital structure of firms in Indonesia, with several determinants affecting the financing decisions. This is perhaps, according to [25], due to the effects of the financial deregulations taken place where internal financing is also significantly preferred in financing investments and projects, not merely bank

loans as previously discussed. An indication of market timing theory at work is also traced where firms seem to time their equity issuance.

Literature on Indonesia has also been compiling evidences where firms with highly concentrated ownership structure suffer with agency problems between the controlling shareholders and minority shareholders [11, 12, 34, 35]. This study therefore reveals the insights on how ownership concentration in Indonesia impacts the financing decisions and can perhaps be inferred to by her neighboring countries for which they are reported to share similar ownership concentration structure and thus fill the gap in the literature.

5. Determinants of capital structure and hypotheses development

5.1. Firm-level determinants

The corporate financing literature has acknowledged the significant impact of ownership concentration on capital structure thus be regarded as important determinants to be examined [34]. Literature has been compiling evidences on several firm-level determinants having significant influence on debt financing decisions and is relevant to either one specific capital structure theory or a mixture of more than one theory at work. The most commonly cited firm-level determinants discussed in the literature are non-debt tax shield (NDTS), firm size, business risk, tangibility, liquidity, profitability, intangibility, growth, age of firms, and share price performance. Frank and Goyal [36] identified and highlighted these determinants as the core factors that are frequently used in empirical capital structure research.

5.2. Ownership concentration

Large shareholders have the incentive and power to monitor and control the action of managers [6]. Debt acts as the controlling mechanism, making it difficult for managers to adjust capital structure according to their own interests. Besides, family-owned firms may prefer debt than equity financing to avoid ownership dilution and thus retain control on the firm. This suggests a positive relationship between family-owned concentrated ownership and capital structure. Li et al. [37] find that ownership structure positively influences debt financing decision of state-owned firms in China. Several studies also find positive relationship between concentrated ownership and leverage like [34, 38, 39].

In contrast, large controlling shareholders in a concentrated ownership can act as a controlling mechanism as a substitute of debt to monitor management activities [1]. Thus, a negative relationship between ownership concentration and debt financing is expected. In addition, large controlling shareholders are also at the position to expropriate their personal interests at the expense of minority shareholders [6]. This increases agency cost for debt, and large controlling shareholders would prefer equity financing to expropriate from minority shareholders; hence, it explains the negative relationship [40]. Ownership concentration is measured based on the shareholdings of 5% and above [11, 35]. The hypothesis for this variable is that: H_1 : ownership concentration has a positive influence on debt financing.

5.3. Ownership Identity

Ownership identity can affect capital structure decisions both positively and negatively [17]. Family-owned firms always put long-term commitment as their main priority, making sure it spans at least for two family generations [34]. Having good rapport with the lenders, family ownership is associated with greater availability of credit and much lower cost of debt financing [13]. Thus, family-owned firms become more leveraged comparative to other types of ownership structure or non-family-owned firms. Studies like [14, 22, 23] report a positive relationship between ownership identity (family owned) and leverage.

Nevertheless, ownership identity can also affect debt financing negatively depending on the management's interests and main agenda [34]. Carrying the reputation of being undiversified and risk averse, taking higher level of risk by engaging with more debt will not be in their main financial strategy. Family-owned firms comparative to non-family owned are very much concern over their social reputation, and the fear of a tarnished reputation due to financial distress will keep them away from debt consumption. Thus, these firms will be very much underleveraged as compared to their non-family-owned firms. The alignment of interest between shareholders and managers being a family-owned firm minimizes the agency cost and thus makes issuing debts as manager's disciplinary tool less crucial. Studies like [19, 21] confirm the negative relationship between family owned and leverage. This study therefore hypothesizes that H_2 : ownership identity has significant influence on debt financing. This study uses dummy code of '1' for family-owned firms while "0" for non-family-owned firms. The status of the firm, either family owned or non-family owned, is based on the name of the biggest shareholder in the annual report of the firm for the respective years [41].

5.4. Non-debt tax shield (NDTS)

After the MM irrelevance theory, taxes are included in capital structure study and reveal that firms can reap substantial gains from tax shield. But firms are cautioned of the possibility of default in interest payments if debt is employed excessively in the capital structure and thus may lead to financial distress and eventually face bankruptcy risk [36]. To safeguard from such risks of using debt financing, firms may opt to tax loss carry forward, investment tax credits, and depreciation or also known as non-debt tax shield (NDTS). Frank and Goyal [36] argue that NDTS should be negatively correlated with leverage as NDTS is the alternative to tax shields provided by debt financing. Significant negative relationship between NDTS and leverage is reported in [42] on Indonesian firms, supporting [36]. NDTS is represented by annual depreciation expenses to total asset [36]. Thus, following the literature, this study hypothesizes that H_3 : NDTS has a negative influence on debt financing.

5.5. Firm size

Size of firm is also documented to have a significant influence on debt financing. Larger firms are seen to have better access to a bigger debt consumption as they are more diversified, thus lesser tendency to fail. This indicates a positive relationship which supports the trade-off theory. Larger firms should be less affected by information asymmetry problems as information regarding the firms is much easier to obtain and more accessible comparatively; thus, debt

financing is easily accessible to them. Ameer [42] and De Jong et al. [43] support this trade-off theory explanation on the relationship between firm size and debt financing. However, [25] depicts significant negative relationship between size and debt financing. Perhaps according to [25], the negative relationship is due to the effects of Indonesian financial market deregulation activities where the control over initial offering prices and the daily movement of stock prices were lifted and thus encouraged large firms to issue equity over debt. Firm size is represented by natural logarithm of total asset [25]. The hypothesis is that H_4 : firm size has a positive influence on debt financing.

5.6. Business risk

Earnings before interest and taxes (EBIT), also known as operating profit, is a core profit a firm earns from the business it is in and is related to a firm's normal operations and are expected to recur every year unlike the non-recurring items such as gain or loss on sale of assets. Hence, EBIT is a good gauge of how well a firm is being managed and is watched closely by all stakeholders and it measures both sales and cost of a firm. EBIT is also closely linked to firm-level economic factors as changes in economy will affect changes in a firm's earnings (earnings volatility). Earning volatility is commonly translated as business risk of firms as well. Higher earnings volatility may increase the risk of default on debt payments. Therefore, debt financing should be avoided, indicating a negative relationship. Haron [25], Ameer [42], and De Jong et al. [43] find business risk having a significant negative relationship with debt financing among firms in Indonesia. Firms with high degree of risk may prefer equity issuance to debt for business expansion and competencies. As a result, equity holders would seek for higher return as compensation to the higher risk taken on investment. Business risk is represented by yearly change in the firm EBIT [25]. Here, the hypothesis is that H_5 : business risk has a negative influence on debt financing.

5.7. Tangibility

Tangible assets help firms obtain more debt from lenders as tangible assets act as collateral, making debt less risky. Lenders are more willing to lend to firms with high tangible assets as these assets are easier to repossess in bankruptcy; thus, a positive relationship is anticipated between tangible assets and debt financing as explained by the trade-off theory. Moosa and Li [24], Bunkanwanicha et al. [30], and De Jong et al. [43] all share similar significant positive relationship between tangibility and debt financing in their studies on Indonesian firms. Tangible asset is represented by net fixed asset over total asset [25, 43]. As for tangibility, the hypothesis is that H_6 : asset tangibility has a positive influence on debt financing.

5.8. Liquidity

When a firm is said to be liquid, the internal funds will be quite substantial; thus, the need for debt financing will be lessen. This is explained well by pecking order theory that firms with high liquidity need less debt financing and opt to internal funding given the huge retained earnings of the firm. This reflects a negative relationship between liquidity and debt financing, and this notion is well supported by [24, 25]. Firm liquidity is represented by current asset to

current liabilities [24, 25]. The hypothesis is that H_7 : firm liquidity has a negative influence on debt financing.

5.9. Profitability

Asymmetric information problem is a concern and can affect the financing choice of a firm. Managers of firms with high profit and cash flows might opt to internal resources first when deciding on investment financing as a mean to mitigate information asymmetry [10] as these are the cheapest funds rather than using external financing, either debt or equity. Hence, profitability is expected to affect debt financing negatively, indicating the support of the pecking order theory. Moosa and Li [24], Haron [25], Ameer [42], and De Jong et al. [43] all share similar result of negative relationship between profitability and debt financing in their studies on Indonesian firms. Firm's profitability is represented by EBIT over total asset [25]. Thus, the hypothesis for this variable is that H_8 : firm's profitability has a negative influence on debt financing.

5.10. Intangibility

Intangible assets like copyright, goodwill, patent, trade mark, and research and development costs do have significant impact on debt financing of firms [44]. The trade-off theory and the agency theory suggest a negative association between intangible assets and debt financing, while the pecking order theory implies that firms with more intangible assets confront more asymmetric information problem and thus use more debt financing. Chen and Strange [44] find positive relationship between intangibility and leverage in their study on the Chinese listed firms. Chen and Strange [44] find that intangible assets do help firms in China in confronting information asymmetry problems as intangible assets like goodwill are capable to increase borrower's access to debt in order to mitigate this problem. Intangibility is measured by the ratio of intangible assets to total assets [44]. The hypothesis is that H_9 : intangibility has a positive influence on debt financing.

5.11. Growth

Firms with good growth record require huge funds to continue its encouraging growth and investment opportunities for expansion. The agency theory explains that growth firms will choose to issue equities to fund their operations and investments as a signal to the outsiders that they are not facing any underinvestment and asset substitution problems. Therefore, growth is expected to relate negatively with leverage. POT also sees a negative relationship between growth and debt financing as being large firms they are expected to have substantial retained earnings. De Jong et al. [43] support this negative relationship in their cross-country studies that include Indonesian firms. Growth is represented by market value of equity over book value of equity. Following literature, the hypothesis is that H_{10} : firm growth has a negative influence on debt financing.

5.12. Age

With regard to age, the hypothesis is that the older the firm is, the more it is able to accumulate funds and the less it will need to borrow either long term or short term. In other words, a new

firm will not have time to retain funds and may be forced to borrow. Consequently, age is likely to be negatively related to debt financing [45]. Older firms have longer track records and therefore a higher reputational value. Age of firm is measured from the year of listing on the stock exchange [44]. The hypothesis is that H_{11} : age has a negative influence on debt financing.

5.13. Share price performance

Equity issuance will be preferred if a firm accumulates a strong share price performance with the present market values comparatively higher than the past market values. On the other hand, firm will repurchase equity if the situation is otherwise. This notion is based on the market timing theory, indicating a negative relationship between share price performance and debt financing. Haron [25] find significant negative relationship between share price performance and debt financing on Indonesian firms. Share price performance is represented by yearly change in year-end share price [24, 25]. The hypothesis for this variable is that H_{12} : share price performance has a negative influence on debt financing.

6. Data and Methodology

6.1. Data

This study analyzes 402 non-financial listed Indonesian firms between 2000 and 2014 (4737 total observations) with data extracted from the Datastream and annual reports of firms. As a normal practice in capital structure research, financial firms (banks, insurance companies, and investments trusts) are excluded from the sample. The 402 sample firms consist of 75% out of 537 listed firms on the IDX (as of December 2016), and this proportion could be regarded as the whole population of firms for generalization purposes. The sample firms cover firms from the various industries of listing that include agriculture, consumer products, industrial, infrastructure and utilities, mining, properties, trade and services, and miscellaneous industry.

Only firms with a minimum of three consecutive observations toward the end of the study period are included in the dataset [25], meaning that the firms should at least be listed on the IDX from the year 2012. Unbalanced panel data are utilized due to the different listing dates of firms within the study period of 2000–2014. **Table 1** presents the structure of the panel data on sample firms for this study.

6.2. Methodology

Debt financing (leverage) in this study, as applied in other capital structure studies, is defined as the ratio of total debt to total asset (at book value) [17, 30, 46]. To examine the determinants of leverage, this study employs the Generalized Method of Moment (GMM). This technique has the advantage of addressing bias due to the presence of lagged dependent variables, or endogeneity of other explanatory variables, associated with the fixed effects in short panels [47], and GMM can be used to control for these issues [48].

To test the hypotheses, the following regression model is employed:

$$\begin{aligned} Lev_{it} = & \beta_0 Lev_{it(-1)} + \beta_1 OWN_{it} + \beta_2 OWNID_{it} + \beta_3 NDTs_{it} + \beta_4 SIZE_{it} + \beta_5 RISK_{it} \\ & + \beta_6 TANG_{it} + \beta_7 LIQ_{it} + \beta_8 PROF_{it} + \beta_9 INTANG_{it} + \beta_{10} GROW_{it} + \beta_{11} AGE_{it} \\ & + \beta_{12} SPP_{it} + \varepsilon_{it} \end{aligned} \quad (1)$$

where the dependent variable, Lev_{it} , represents the leverage level of firm i at time t . $Lev_{it(-1)}$ represents the lag leverage and firm-level determinants comprising of ownership concentration (OWN), ownership identity ($OWNID$), non-debt tax shield ($NDTS$), firm size ($SIZE$), business risk ($RISK$), asset tangibility ($TANG$), liquidity (LIQ), profitability ($PROF$), intangibility ($INTANG$), growth ($GROW$), firm age (AGE), and share price performance (SPP), and ε_{it} is the error term.

This study takes the first difference of Eq. (1) to eliminate the firm's fixed effects, thereby avoiding any correlation between unobserved firm-specific effects and the explanatory variables.

$$\Delta Lev_{it} = \beta_0 \Delta Lev_{it(-1)} + \sum_{n=1}^N \beta_k \Delta X_{kit} + \Delta \varepsilon_{it} \quad (2)$$

Eq. (2) denotes the model estimated based on the GMM (first difference). One of the advantages of GMM is that it can handle important modeling concerns, namely the fixed effects and endogeneity of regressors, while avoiding dynamic panel bias. It is important to note that the flexible GMM framework accommodates unbalanced panels, a characteristic of micropanel dataset in this study, as well as endogenous variables [25]. Hence, this study uses GMM for the purpose of estimation.

No. of annual observations for each firm	Number of firms	No. of observations
3	5	15
4	13	52
5	19	95
6	19	114
7	27	189
8	34	272
9	15	135
10	11	110
11	22	242
12	6	72
13	8	104
14	8	112
15	215	3225
Total	402	4737

Table 1. Panel data structure.

To ensure the efficiency of the GMM estimator, this study performs three diagnostic tests which are the Wald test to assess the joint significance of the determinants of leverage (null: all coefficients on the determinants of leverage are jointly equal zero); the AR(2) or second-order autocorrelation test (null: no second-order autocorrelation in the residuals); and the *J*-test, a test for the validity of the instrumental variables representing $Lev_{it(-1)}$ (null: instrumental variables are valid). Estimates derived from the GMM are only consistent if there is no second-order autocorrelation in the residuals and instrumental variables representing $Y_{it(-1)}$ are valid. To check for multicollinearity, this study performs the variance inflation factor (VIF) on each independent variable in the regression model. As a rule of thumb, the VIF for each independent variable should be less than 10 to avoid multicollinearity problem.

7. Analysis and findings

7.1. Descriptive statistics

Table 2 summarizes the descriptive statistics of all variables in this study. Indonesian firms employ mean leverage of 0.3691 in their capital structure. Ownership concentration shows on average 47.64% ownership exceeds 5% shareholding with the maximum and minimum of 100% and 0, respectively. This statistic shows that the ownership structure of public Indonesian firms is highly concentrated. Utama et al. [11] posit that it is quite prevalent for public firms in Indonesia to have only a few shareholders with substantially large holdings (i.e., at least 5%). Profitability shows a mean of 0.0654 ranging from -2.9565 to 2.8310 . Business risk on firms as represented by yearly change in firms' EBIT is found to be substantial, shown by

Variable	Mean	Maximum	Minimum	Median	Standard deviation
TD/TA	0.3691	0.9020	0.0998	0.3355	0.1872
Ownership	0.4764	1.0000	0.0000	0.5700	0.3383
Ownership identity	0.5643	1.0000	0.0000	1.0000	0.4959
NDTS	0.0310	0.6045	0.0000	0.0244	0.0384
Firm size	11.5277	16.8969	4.1109	11.5955	1.7817
Risk	-0.0594	28.5000	-29.7739	-0.0275	3.0502
Tangibility	0.3922	0.9852	0.0000	0.3677	0.2504
Liquidity	2.1793	29.8679	0.1027	1.4378	2.6678
Profitability	0.0654	2.8310	-2.9565	0.0672	0.1791
Intangible	0.0164	0.9650	0.0000	0.0000	0.0621
Growth	8.3666	97.8479	0.6000	2.9101	14.2480
Age	15.4104	38.0000	3.0000	15.0000	7.6098
Share price performance	0.0058	2.7810	-4.8121	0.0010	0.2038

Notes: Number of all firms = 402; Number of observations = 4737.

Table 2. Descriptive statistics.

the standard deviation of 3.0502, bigger than the mean of -0.0594 . Tangible asset has a much higher mean of 0.3922 compared to intangible asset, 0.0164 as recorded. On firm age, firms in Indonesia have been listed on the stock exchange for 15.4104 years on average, with the longest and shortest listing of 38 years and 3 years, respectively.

7.2. Determinants of leverage

Based on **Table 3**, nine determinants which are ownership, ownership identity, NDTs, size, risk, tangibility, liquidity, profitability, and age of firm are found to significantly influence the debt financing of Indonesian firms throughout the period understudy.

This study depicts a positive relationship between ownership and debt financing. Higher level of concentrated ownership has a positive influence on debt financing ($p = 0.01$), and H_1 is thus supported. This finding supports the findings by [17, 34, 39]. The positive relationship depicted in this study reflects the power and authority of the large controlling shareholders in a highly concentrated ownership environment employing debt as controlling mechanism on

Leverage	TD/TA	VIF
Explanatory variables	(BV)	
Leverage (−1)	0.5348*** [15.0492]	
Ownership	0.1336*** [6.7850]	1.02
Ownership identity	−0.0524* [−1.71113]	1.03
NDTS	−0.7378*** [−3.8734]	1.75
Size	−0.2187*** [−14.7435]	1.12
Risk	−0.0004* [−1.7384]	1.01
Tangibility	0.3063*** [7.1220]	1.25
Liquidity	0.0159** [2.1750]	1.03
Profitability	−0.3759*** [−97.2889]	1.58
Intangible	0.0012 [0.0049]	1.07
Growth	−0.0002 [−0.1438]	1.09
Age	0.0087***[3.4140]	1.06
Share price performance	−0.0794 [−1.5366]	1.03
AR(1) <i>m</i> -statistic	−1.1835	
<i>p</i> -Value	0.2366	
AR(2) <i>m</i> -statistic	0.2431	
<i>p</i> -Value	0.8080	
<i>J</i> -Statistic	89.3520	
<i>p</i> -Value	0.1997	
Wald test (<i>F</i> -statistic)	3932.7750***	
<i>p</i> -Value	0.0000	
Observations	4737	

Notes: ***, **, *denote probability values significant at 1, 5, and 10% levels, respectively. The *t*-statistics in parenthesis are the *t*-values adjusted for White's heteroscedasticity consistent standard errors. The Wald test statistic refers to the null hypothesis that all coefficients on the determinants of debt financing are jointly equal to zero; the *m*-statistic for AR(2) refers to the null of no second-order correlation in the residuals; the *J*-test statistic for the null that the over identifying restrictions are valid. The VIF test of less than 10 confirms that there is no multicollinearity problem.

Table 3. Determinants of debt financing.

the managers. The positive relationship may also be explained by the reluctance of large shareholders to engage with equity financing as to avoid ownership dilution and thus can maintain the control of the firms.

In terms of ownership identity, the result shows that ownership identity has significant influence on debt financing ($p = 0.10$), thus H_2 is supported. Family-owned firms are found to consume lesser debt financing compared to the non-family-owned firms. This is well explained by the fact that family-owned firms are known with the reputation of being risk averse [19]; thus, debt engagement is very much avoided. The lesser consumption of debt by the family-owned firms depicted could also be the result of the alignment of interest between shareholders and managers, which makes issuing debts as manager's disciplinary tool less crucial for family-owned firms. It is expected that family-owned firms do not suffer from agency cost considering that the owner and the management of firms are the same people, and hence no issue of diverging interests is between the two parties [7].

This study records a negative relationship between NDTS and debt financing ($p = 0.01$); thus, H_3 is supported. Following the trade-off theory, since engaging to debts means bringing in risks and insolvency to the firms, firms may opt to NDTS. Frank and Goyal [36] argue that NDTS should be negatively correlated with debt financing as NDTS is the alternative to tax shields provided by debt financing. Significant negative relationship between NDTS and debt financing is reported in [42] on Indonesian firms. Looking from the lens of family-owned firms, debt is very much avoided being risk averse and the active monitoring by the family in the firm makes debt less needed as disciplinary tool on the managers and hence explains the negative relationship.

A negative relationship is reported between size and debt financing ($p = 0.01$), in contrast to H_4 in which a positive relationship is expected. Haron [25] also depicts significant negative relationship between size and debt financing. Perhaps according to [25], the negative relationship is due to the effects of Indonesian financial market deregulation activities where the control over initial offering prices and the daily movement of stock prices were lifted and thus encouraged large firms to issue equity over debt. Nonetheless, looking at the nature of family-owned firms, the fear of power dilution and the concern over business risk and insolvency have hindered the firms to employ higher level of debt in the capital structure. The larger the firms, the more retained earning they have accumulated; thus, debt is the least choice of financing, following the pecking order theory.

Risk is also found to negatively related to debt financing ($p = 0.10$), and H_5 is then supported. Trade-off theory explains that the higher the debt employment the riskier it gets for the firms in case of default payments; thus, debt financing should be avoided. Haron [25], Ameer [42], and De Jong et al. [43] find business risk having a significant negative relationship with debt financing among firms in Indonesia. One of the distinctive characteristics of family-owned firms is being risk averse for fear of losing the firm in case of bankruptcy risk and insolvency. It is therefore expected of these family firms to avoid debt employment in their capital structure as to avoid the risks that come with it.

This study depicts a positive relationship between tangibility and debt financing ($p = 0.01$). This finding supports H_6 . Tangible assets help firms obtain more debt from lenders as tangible assets act as collateral, making debt less risky. Moosa and Li [24], Bunkanwanicha et al. [30],

and De Jong et al. [43] all share similar significant positive relationship between tangibility and debt financing in their studies on Indonesian firms. Degryse et al. [49] argue that the positive effect of tangibility on total debt comes entirely from long-term debt as these tangible assets are used to secure long-term debt. This argument confirms the characteristics of family-owned firms in Indonesia where for the case of family-owned firms, long-term orientation is very crucial in keeping the firm to the family for the next generation as suggested by [16].

Liquidity is reported to relate positively with debt financing ($p = 0.05$), in contrast to H_7 in which a negative relationship is expected. When firms in Indonesia have high liquidity level, they seem to increase their debt consumption perhaps to reap the tax shield advantage supporting the trade-off theory. Looking at the case of family-owned firms in Indonesia, this finding is in line with the argument by [50] where liquidity is found to positively relate to long-term debt and again being family-owned firms, long-term debt ensures continuity of controlling power for the family which is the main concern for such firms, thus rationalizes the positive relationship depicted in this study.

Profitability is found to relate negatively with debt financing ($p = 0.01$). H_8 is thus supported. Highly profitable firms in Indonesia choose to use their retained earnings to finance their investments, thus reflecting the influence of pecking order theory in their debt financing decisions. Supporting [24, 30] the negative relationship reported may be the results of the financial reformations taken place in Indonesia which have opened up and encouraged firms to turn to their retained earnings instead of merely bank loans to finance their investments. For the case of family-owned firms, using retained earnings can become the main agenda as to avoid dilution of power and unnecessary intrusion from outsiders via equity financing [13].

Age of firm is positively related to debt financing ($p = 0.01$), H_{11} is thus supported. Conforming to what has been argued previously in past studies, the older the firm, apparently, will have more impressive track record and thus become less risky comparative to new firms. Being considered as less risky encourages lender to lend more and firms can reap the benefits of debt following the trade-off theory. From the view of family-owned firms, with the impressive track record over the years, these aged family-owned firms enjoy greater availability of credit [16] and a lower cost of debt financing [23].

Nonetheless, results of this study show that three determinants (intangibility, growth, and share price performance) appeared to be insignificant in the debt financing decisions of Indonesian firms despite being reported as important factors in capital structure studies.

8. Conclusion

This study examines the impact of ownership concentration, ownership identity, and other firm-level determinants on debt financing decisions of firms in Indonesia based on the GMM technique. The result from this study is robust to heterogeneity, autocorrelation, endogeneity, and multicollinearity concern. Debt financing in this study is defined as total debt to total asset.

Certain firm-level determinants like ownership concentration, ownership identity, NDTs, size, risk, tangibility, liquidity, profitability, and age of firm do have significant influence on the debt financing of the firms under study. However, certain hypotheses cannot be supported like size, liquidity and age where the study reveals contrasting results from what have been hypothesized.

The concentrated ownership phenomenon among the emerging market and in this case Indonesia does have a significant impact on debt financing of firms. The positive relationship recorded in this study may be explained by the reluctance of large shareholders to engage with equity financing as to avoid ownership dilution and thus can maintain the control of the firm. In terms of family-owned firms, it is revealed that family-owned firms in Indonesia consume lesser leverage compared to the non-family-owned firms perhaps for several reasons depending on the management of the firm. Literature acknowledges family-owned firms as being risk averse [19]; thus, debt engagement is very much avoided. The lesser consumption depicted could also be the result of the alignment of interest between shareholders and managers, which makes issuing debts as manager's disciplinary tool less crucial for family-owned firms. It is expected that family-owned firms do not suffer from agency cost considering that the owner and the management of firms are the same people, and hence no issue of diverging interests is between the two parties [7].

From the study, it is apparent that large firms with higher profitability in Indonesia seem to employ low level of debt for they fear of bankruptcy risk and insolvency. These large firms seem to use the non-debt tax shield in their capital structure as to avoid the cost of debt. The riskier it gets, the lesser debt engagement it would be for these firms, and they would opt to retained earnings accumulated being a large firm with a high profitability level. The fear of business risk and insolvency reflects the effect of trade-off theory, and at the same time the pecking order theory is also in the picture when internal financing is more preferred. Nevertheless, aged firms with high tangible assets and high level of liquidity seem to engage with a higher level of debt in their capital structure. This must be due to the tax shield advantage that comes with debt employment as explained by the trade-off theory. Another possible explanation is that these aged, very liquid firms with high tangible assets employ debt to mitigate agency conflict that may occur.

The finding from this study has important policy implications. This study reveals that firms in Indonesia do not seem to consider equity issuance as an alternative to debt financing with insignificant impact on the influence of share price performance being detected from the analysis. This may be perhaps, according to Ref. [51], Indonesia has a limited number of non-bank financial institutions and the equity and debt markets are still under developed. This phenomenon also reflects the distinctive characteristic of family-owned firms where controlling power and succession of firms onto the next generation being the main agenda instead of economic advantage. The fear of dilution of power from the intrusion of outsiders through equity issuance has slashed out equity financing in their capital structure agenda. Managers should be sensitive over the interests of the shareholders who are normally the board of directors of the firms to preserve the controlling power among the family forever without any

interference from outside. The large shareholders should also be aware of the possibility of expropriation of wealth in the expense of the minority shareholders that may exist.

Therefore, looking what have been revealed from the findings, this study contributes significantly to the existing literature with a deeper insight of the determinants of debt financing of firms in Indonesia. The very recent dataset used and the robust methodology employed have indeed enriched the literature on Indonesia being an emerging market. The nature of family-owned firms does have great influence in the debt financing decisions, and this input is a valuable contribution to the literature of corporate governance particularly regarding ownership concentration in terms of family-owned firms. The policy implications discussed earlier could definitely help in constructing better and more efficient policy in the future.

Being an emerging market, the findings can definitely be extended as a base for future research in the area of corporate financing regardless of the economic landscape, whether developed or emerging market as both markets have been evidenced to share similar significant determinants in deciding the debt financing of the firms. Both developed and emerging markets can also learn from this case study of Indonesia especially on the impact of family-owned firms on debt financing decisions. Other emerging markets particularly can also infer their economic and legal systems standing and learn from Indonesia for being an emerging market they are known to have weak legal systems with less developed financial market comparative to their developed market counterparts. Other emerging markets with high ownership concentration level in their corporate governance can also learn from Indonesia as depicted in this study. Debt can be an effective controlling mechanism to discourage managers to manage cash flows and investments at their own self-interest. Debt can also act as a safeguarding mechanism as to avoid ownership dilution; thus, the large shareholder can maintain their controlling power in the firm.

This study, however, has limitation. Despite relatively utilizing recent data and bigger sample firms compared to the previous limited studies on Indonesia, the results of this study, however, need to be cautiously interpreted. This study does not perform each industry regression individually. All the industries are pooled together as the main focus of this study is to examine the factors affecting debt financing of firms in general without giving particular attention to individual industry. Perhaps for future research, study can be done on individual industry as firms in different industry react differently, responding to certain characteristic of each individual industry.

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