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10 September 2014

Online at <https://mpra.ub.uni-muenchen.de/64607/>
MPRA Paper No. 64607, posted 27 May 2015 06:06 UTC

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Abstract

There is a hot debate on whether internationally diversified and or industrially diversified strategy gains premium or discount on firm value. Most of the empirical studies on this topic were conducted in developed markets. However, Indonesia, as an emerging market, offers its unique characteristic in terms of ownership structure. For instance, Indonesia is dominated by family firms, but its SOEs perform better compared to family firms. This research aims to investigate the role of ownership concentration on the value of international and industrial diversification in Indonesia. We investigate how that relationship works in respect of different firm's identity, such as different ownership level, or different owners (family, government, and foreign). We investigate the value of diversification and ownership structure of Indonesian listed firms over a panel of 2006-2010. We use robust panel regression where we report the probability values based on white robust standard errors that control for heteroscedasticity errors, as well as firm clustering, year clustering, period effect, and industry effect, which induce a within firm serial correlation error structure. To support the results, we also provide graphical evidence of the link between ownership structure, diversification strategy, and firm value. We find that ownership concentration has a prevalent and significant effect on the value of diversification. Further, we also find value discount in the industrial diversification of family firms, and value discount in the international diversification of foreign firms. Overall, our results are consistent with the conjecture that the value of diversification is adversely affected by the agency problem, suggesting that ownership concentration and firm identity play an important role in respect of the value of diversification.

Keywords: diversification, ownership, firm value, family firms

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Abstract

There is a hot debate on whether internationally diversified and or industrially diversified strategy gains premium or discount on firm value. Most of the empirical studies on this topic were conducted in developed markets. However, Indonesia, as an emerging market, offers its unique characteristic in terms of ownership structure. For instance, Indonesia is dominated by family firms, but its SOEs perform better compared to family firms. This research aims to investigate the role of ownership concentration on the value of international and industrial diversification in Indonesia. We investigate how that relationship works in respect of different firm's identity, such as different ownership level, or different owners (family, government, and foreign). We investigate the value of diversification and ownership structure of Indonesian listed firms over a panel of 2006-2010. We use robust panel regression where we report the probability values based on white robust standard errors that control for heteroscedasticity errors, as well as firm clustering, year clustering, period effect, and industry effect, which induce a within firm serial correlation error structure. To support the results, we also provide graphical evidence of the link between ownership structure, diversification strategy, and firm value. We find that ownership concentration has a prevalent and significant effect on the value of diversification. Further, we also find value discount in the industrial diversification of family firms, and value discount in the international diversification of foreign firms. Overall, our results are consistent with the conjecture that the value of diversification is adversely affected by the agency problem, suggesting that ownership concentration and firm identity play an important role in respect of the value of diversification.

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1. Introduction

The value of corporate diversification is a hot debate. Firms can choose to diversify internationally or diversify business segments in various related and unrelated industries. Although international diversification may enable firms to capture valuable operating synergies, firms might incur additional costs and risks when investing in foreign markets, as they will have to contend with exchange rate risk, political risk, and the coordination costs incurred when managing resources over a larger international arena. However, while industry diversification may enable firms to gain efficient resource allocation through the internal capital market, thereby reducing adverse selection, and being industrially productive, becoming industrially diversified might harm a firm's performance through the cost of inefficient capital, information asymmetries, and indeed the agency cost (see Stein, 1997; Stulz, 1999; Khanna and Palepu, 2000; Rajan et al., 2000; Campa and Kedia, 2002).

The value of diversification has been extensively investigated in the developed market (e.g., Stimpert and Duhaime, 1997; Campa and Kedia, 2002; Fauver et al., 2004; Chen and Yu, 2012), but the results cannot be generalised to the emerging markets as their capital markets are not that liquid and are also less integrated. Based on the internal market hypothesis, firms in less developed capital markets, such as emerging countries may be induced to diversify because these firms rely more on the internal capital markets for sources of funding (Gertner et al., 1994; Shackman, 2007). When firms from emerging countries expand their territory to advanced economies, they will enjoy scope and scale advantages from internalizing functions provided by external intermediaries or institutions located in advanced economies (Stulz, 1990; Stein, 1997; Campa and Kedia, 2002). When firms from emerging countries expand their industry, they will enjoy the advantage of efficient resources and cheaper cost of capital (Stulz, 1999; Khanna and Plepu, 2000; Shackman, 2007). These diversified firms should provide more incentives to diversify, as the gain from diversification is greater in both effectiveness and efficiency (Ghemawat and Khanna, 1998; Khanna and Palepu, 1997; Williamson, 1985).

Indonesia is the second largest emerging economy behind China, with the 10th largest GDP in the world. Firms in Indonesia ventured their businesses internationally as early as the late 1950s, promoted by the “Light House Policy” of President Soekarno. The ASEAN Free Trade Area (AFTA) has also encouraged Indonesian firms to diversify exponentially over the last two decades. In fact, Pananond (2008) reported that Indonesian outward foreign direct investment has increased enormously from USD86 million in 1990 to USD6,940 million in 2000, and jumped further to USD21,425 million in 2007. The increasing trend of international diversification seems to have continued exponentially as reported in a recent report of UNCTAD in that Indonesian OFDI totalled to USD89,000 million or 9% of the GDP during the period 2004-2012, the highest after Singapore in the Southeast Asia region. This is also reflected in most empirical work. For instance, Claessens et al. (2001) documented that Indonesia had a high percentage (47%) of multi-segment firm-years compared to the US, which had only 20% of multi-segment firm-years, and Indonesian diversified firms had the highest asset size among its peers in Southeast Asia over the period 1990 to 1996.

Mitton (2002) also showed that 46% of Indonesian companies were reported as diversified firms. In a smaller sample, Lins and Servaes (2002) reported that 20% of Indonesian firms were well diversified.

It has been documented that the majority of the listed firms in Indonesia were family-controlled firms (Claessens et al., 2002). These family-controlled firms are closely related to the internal market hypothesis due to their pyramiding and crossholdings, through which funds can be allocated easily among the firms within the group to facilitate better financial firms (e.g., Khanna and Palepu, 2000; Anderson and Reeb, 2003; Claessens et al., 2006). Moreover, the Indonesian government practise protectionism that distorts the value of resources, and makes diversification more viable (Kock and Guillen, 2001). As such, because Indonesia has a less developed financial market, firms extract financing through a diversification strategy (internal market). In addition, Indonesian firms bear a higher currency risk due to the volatile Rupiah. Moreover, the rigidity of the policy may affect the diversification strategy of State-Owned Enterprises (SEO) in Indonesia. Therefore, Indonesia offers a unique environment to investigate the value impact of diversification in the context of corporate governance.

Our paper contributes by investigating whether the value of diversification gives benefits or costs to Indonesian firms. We examine the diversification effect on firm value controlling for both international and industrial diversification. We follow the modified excess value of Fauver et al. (2004) as the proxy for firm value with four control variables, namely, size, profitability, growth and leverage. In terms of corporate governance, we focus on two aspects – ownership concentration and ownership identity. Our results show that there is value discount from industrial diversification, which is in line with our agency cost hypothesis. For ownership identity, we re-run the sub sample based on firm identity, namely, family, foreign, and government and surmise three findings: (1) industrially diversified family firms have value discount, (2) internationally diversified foreign firms have value discount, and (3) there is no effect of diversification strategy and expropriation on government firms' excess value. For robustness, we examine whether the level of ownership concentration moderates the diversification-value link. We set two new thresholds for ownership concentration, higher than 30% and higher than 50%. We find evidence that the value discount of diversified firms diminishes if the ownership concentration threshold is higher than 50%. Overall, the results suggest that diversification

strategy has a different effect on different firm identities. The effects may be diminished if the firms have high ownership concentration, which is consistent with the agency cost hypothesis, or, more specifically, the entrenchment hypothesis.

The rest of the paper is organized as follows. In the next section, related literature is briefly reviewed. Section 3 describes the data, sample selection criteria, and preliminary analysis. Section 4 discusses the methodology concerning the estimation and significance of the results. Section 5 presents the conclusion and implications of the research.

2. Hypothesis Development

2.1 Diversification Strategy, Ownership Structure, and Firm Value

The diversification strategy can be divided into international diversification and industrial diversification, and both strategies play a key role in the strategic behaviour of firms (Hitt, Hoskisson, & Ireland, 1994; Denis et al., 2002). This diversification strategy has both benefits and costs. Firms can benefit from diversification through the internal capital market (Williamson, 1979), or through higher debt capacity (Shleifer and Vishny, 1992). The cost of diversification stems mainly from the agency problem, which arises when managers diversify because of their personal interest, such as prestige, remuneration, job-related risk reduction, and promotion; even though the managers know that expansion might reduce firm value (Bergen et al., 1992; Koch and Nafziger, 2012; Shen, 2012).

Recent literature documents that diversification strategies are more associated with discount value than premium value (i.e., Berger and Ofek, 1995; Denis et al., 1997; Lins and Servaes, 2002; Lamont and Polk, 2002; Fauver et al., 2004). The expropriation could be a factor because large shareholders have extensive control rights to benefit themselves rather than to benefit the managerial or minority shareholders (Lins and Servaes, 2002; Chen and Yu, 2012). Another explanation for the discount value is the ownership characteristics. Lins and Servaes (1999) explained that the value of diversification is different in Germany, Japan, and the US due to the environment of institutional and ownership characteristics (for example, many Japanese firms are owned by formal industrial groups known as *Keiretsu*, which does not exist in many countries). The difference in the institutional environment and ownership characteristics give different results for the value of diversification. The

results of Lins and Servaes (2002) showed no effect of diversification on the value of the firm in Germany, small value discount of diversification in Japan, and relatively large in the UK and US due to different characteristics of ownership.

Large ownership might be detrimental to the wealth of diversified firms because owners are less likely to squander corporate wealth via poor diversification choice, or manager-owners might derive non-pecuniary benefits of diversification (Morck et al., 1988; Lins and Servaes, 2002). Large ownership may represent their own interests, which does not need to coincide with the interests of minority shareholders (Shleifer and Vishny, 1997). A simpler example can be seen in Figure 1, which shows that the Salim Family has ultimate ownership of more than 50%, and controls Indofood (listed food manufacturer firm) through First Pacific. Not only the business chain, such as raw materials, packaging and shipping, but in exporting the final product to countries in the Middle East it also uses an affiliated/related party to the detriment of minority wealth because of the role of large ownership (entrenchment hypothesis). This is consistent with Gomez-Mejia, Nunez-Nickel and Gutierrez (2001), and Barclay and Holderness (1989) who documented that large ownership stakes reduce the probability of bidding by other agents or ignoring other better firms outside the group, choosing a related party, thereby reducing the value of the firm. This explains why diversified firms with high ownership concentration tend to have discount value.

Specifically, in the international diversification literature, Fauver et al. (2004) found that agency cost does affect the value of international diversification after controlling the ownership structure variables. They concluded that managers go for international expansion because of their personal interests rather than those of the company. Other studies, i.e., Jensen, (1986), Stulz, (1999), and Lee et al. (2012), identified the same findings by suggesting that agency problems are the main driver in the value of international diversification. The rationale behind the failure of international diversification is that firms invest more heavily in intangible assets, such as technology and advertising (Lu and Beamish, 2004). Further, Bodnar et al. (2003) found that the value impact of international diversification in US is discounted. Hence, we hypothesize that:

Hypothesis 1: There is a significant relationship between international diversification and firm value, where internationally diversified firms have a value discount

Another diversification strategy, industrial diversification, has more consistent findings compared to international diversification. The empirical findings of Denis et al. (2002) and Fauver et al. (2004) showed that industrially diversified US firms have an effect on the value of the firm. Lins and Servaes (1999) found a significant relationship between industrial diversification and firm value in Japan and the UK. For the East Asia region, Lins and Servaes (2002), without controlling the ownership structure, found discounted value for industrial diversification in Hong Kong, India, Indonesia, Malaysia, Singapore, South Korea, and Thailand. From the view of agency theory, the plausible explanation for the significant value impact of industrial diversification is that the costs of industrial diversification outweigh the benefits because it potentially benefits corporate managers through increased power and prestige, through compensation arrangements, or through personal risk reduction (Denis et al., 1997; Denis et al., 2002). This leads us to hypothesize that:

Hypothesis 2: There is a significant relationship between industrial diversification and firm value, where industrially diversified firms have a value discount.

2.2 Ownership Concentration as moderating effect

The effects of ownership on the value of firms have been investigated extensively. Jensen and Meckling (1976) argued that ownership concentration provides strong motivation to maximize the firm value, as the ultimate owners are able to collect information and oversee the managers. Shleifer and Vishny (1997), and Claessens et al. (2002) also stated that a large ownership concentration might offset the agency cost as the large shareholders are able to put pressure on managers. Their view is supported by many empirical studies, such as Kim and Nofsinger (2007), who found the role of ownership concentration on agency cost-firm value relationship. In short, we can hypothesize:

Hypothesis 3: Ownership concentration is related to firm value. A higher level of ownership concentration leads to higher firm value

However, the recent trend of ownership empirical research leans towards the moderating role of ownership concentration. Because the alignment and entrenchment effect of ownership concentration might change the predictors of firm values (i.e., Fauver et al., 2004; Davies et al., 2005; King and

Santor, 2008), we continue to investigate whether ownership concentration has a moderating role on the diversification-firm value relationship. We find that the literature documents that a certain level of ownership concentration might induce firm performance, but, in a much higher concentration, the premium value is diminished. For instance, Wiwattanakantang (2001) reported that firm value declines at 25% to 50% of ownership, but improves at 75% concentration, which is consistent with the findings of Short and Keasey (1999). Fauver et al. (2004) arrive at a similar conclusion in that the value of diversification strategies strengthen 10-30% but diminish if more than 30%. Lins and Servaes (1999) also concluded that 10-30% ownership gives severe value for industrial diversification.

Hypothesis 4: *Ownership concentration plays an important role in the relationship between industrial diversification and firm value.*

Hypothesis 5: *Ownership concentration plays an important role in the relationship between industrial diversification and firm value.*

2.3 Corporate Governance and Diversification Strategy in Indonesia

Indonesia represents an interesting research context since it is an example of a developing economy in transition. However, despite its remarkable economic growth, there is not much published research concerning how the ownership structure of Indonesian firms affects the diversification value. This is because Indonesia has a different ownership structure and the data are hard to retrieve. The dossiers show that only around 20% of Indonesian companies are owned by the government (Claessens, Djankov, Lang, 1999; Alijoyo et al., 2004), and that these state-owned enterprises play an important role in Indonesia's economy. One example is that the State-Owned Enterprises (SOEs) dominated the Forbes 2000 World biggest Indonesian public companies (see Table 1). One-third of 45 stocks that steer Bursa Indonesia are SOEs. Indonesia as one of the largest extractive countries, benefits the SOEs due to the protectionism policy. The constitution of Indonesia, which instructs that "sectors of production which are important and affect the life of the people shall be controlled by the State" means that SOEs in Indonesia literally control and manufacture all the natural resources. This protectionism makes SOEs in Indonesia perform well economically (Treverton et al., 1998; Astami, Tower, Rusmin, and Neilson, 2010). Interestingly, considering the good performance of Indonesian SOEs, there has been no comprehensive empirical study of SOE characteristics effects and ownership structure on firm performance, especially in gauging international and industrial diversification.

Table 1 List of Indonesian Firm in Forbes Global 2000 based on their Assets

No	World Rank	Name	Industry	Type of Owner
1	446	Bank Mandiri	Banking	Government
2	461	Bank Rakyat Indonesia	Banking	Government
3	613	Bank Central Asia	Banking	Family
4	685	Telekom Indonesia	Telco	Government
5	922	Bank Negara Indonesia	Banking	Government
6	1188	Perusahaan Gas Negara	Oil, Gas, & Mining	Government
7	1378	Gudang Garam	Cigarette	Family
8	1425	Semen Indonesia	Cement	Family
9	1453	Bank Danamon	Banking	Foreign

Note: compiled from Forbes Global 2000 edition year 2012

The domination of Indonesian family firms in economic activities provides a unique characteristic and interesting angle for this study. Claessens et al. (1999) surmised that 67% of listed firms in Indonesia were family owned, and showed that almost 85% of the companies appointed managers belonging to the controlling group. The owners usually participate in the management of the firm, and influence the strategic decisions, including going to international diversification and or industrial diversification. Morck and Yeung (2003) argue that the management of family-controlled firms, acting solely for the controlling family, potentially worsens the agency problem. Further, Indonesia has been characterised as having a weak institutional environment (Patrick 2001), where poor legal enforcement and the absence of a market for corporate control have been claimed as facilitating controlling family-owners in diverting firm resources (Krishnamurti et al., 2005).

Table 2 lists the 10 top family firms in Indonesia to show their diversification strategy industrially. These top 10 family firms have industrial diversification through their groups (holdings). For instance, Djarum group, which is owned by the Hartono family, has diversified from being the biggest cigarette producer in Asia (Djarum) to one of biggest banks in Indonesia, Bank Central Asia. This diversification gives US\$15.5 billion wealth to the ultimate owner – Robert Budi Hartono. Another example is the First Pacific group, which is owned by Salim family, who diversified their industry from being the biggest food producer in Indonesia and Nigeria (Indofood) to the Cement and Telco industry. This industrial diversification gives the ultimate owner, Anthony Salim, a wealth of US\$10.1 billion. However, it is noteworthy, as shown in Table 1, that government firms, which may

avoid aggressive industrial diversification and international diversification, have higher assets than family firms that are like to diversify industrially.¹

No	Family Name	Group Name	Ultimate Owner's wealth	Major Industry Diversification
1	Hartono	Djarum	US\$15.5 billion	Cigarette, Banking, Electronics, Property, Agrobusiness, Multimedia
2	Eka Tjipta	Sinar Mas	US\$13.1 billion	Plantation, Pulp and Paper, Property, Investment, Media
3	Salim	First Pacific	US\$10.1 billion	Banking, FMCG, Cement, Telecommunication
4	Wonowidjojo	Gudang Garam Wilmar	US\$6 billion	Cigarette, Property, Investment, FMCG, Mining
5	Sitorus	International	US\$ 3.7 billion	Plantation, FMCG, Property
6	Bakrie	Bakrie Group	US\$ 2.5 billion	Metal, Telco, Infrastructure, Energy, Plantation
7	Sampoerna	Sampoerna Group	US\$ 2.4 billion	Cigarette, Plantation, Investment, Property
8	Sondakh	Rajawali Group	US\$ 2.4 billion	Cigarette, Mining, Plantation, Property, Telco
9	Riady	Lippo Group	US\$ 2.2 billion	Banking, Property, Plantation, FMCG, Telco, Investment
10	Tanoto	Royal Golden Eye	US\$ 2.1 billion	Pulp and Paper, Plantation, Energy

Table 2 List of Top 10 Family Firms in Indonesia and its Diversification Strategy

Source: Globe Asia

Another important factor to note is the different diversification schemes among Indonesian firms. For instance, the Hartono Family (see Figure 1) does not always diversify its business through its business group. Its main business, cigarettes (Djarum), is directly under the founder-family. Yet, for the diversification strategy, Hartono set up another business group (see the relationship between Farindo, Bank Central Asia, and India Bull). Different from the Hartono family, the Salim group is more aggressive and complicated in its diversification. The Salim family totally uses its business group (First Pacific) to control Indofood Sukses Makmur (hereafter Indofood), the biggest processed food manufacturing in Indonesia. Salim uses Indofood to acquire other business, such as PIPS Investment (Finance) and Bogasari Flour (Flour manufacturer). Moreover, Salim used Indofood for international diversification by acquiring a Singapore based company (IFAR) through its subsidiary. Interestingly, Salim used IFAR to acquire London Sumatera Plantation (one of the biggest plantation companies in Indonesia) meaning that Salim acquired a domestic firm by using an international firm. This is the complexity of the Salim diversification strategy.

Government firms also provide an interesting diversification strategy because they are prudent in implementing the diversification strategy due to the red tape and legal constraints. Figure 1 depicts

¹ It is very hard for Indonesian SOEs to have a diversification strategy industrially and internationally, because SOEs face considerable bureaucracy, in which legal permission from the Minister is needed to comply with UU No.19 tahun 2003 tentang BUMN (Law No. 19 Year 2003 about SOE).

two of the biggest government firms. Telekomunikasi Indonesia (Telkom), which undertakes industrial diversification in the same supply chain of the core business, which is telecommunication. For instance, Telkom acquired Telkomsel (telecommunication provider) and Infomedia Telecommunication, which are also in the telecommunication business line. Similar behaviour was found with Semen Gresik – the largest cement manufacturer – which diversified industrially to real estate business and mining business.

The last part of Figure 1 shows the unique diversification strategies of foreign firms, where those firms tend to have direct diversification in multiple industries. Jardine Matheson (UK-based firm) acquired Astra Indonesia International (ASII) from the Salim family. ASII is used to diversify their business to many sectors, for example, plantation (Astra Agro Lestari), banking (Permata Bank), Automotive spare parts (Astra Auto), heavy equipment (United Tractors), and even IT Solutions (Astra Graphia). Meanwhile, other foreign firms, such as Unilever have a different diversification strategy, which is plain and straight. Unilever Indonesia just diversified their business into the same business line or business support, such as marketing (Anugerah Lever) or distribution (Technopia Lever).

These three major blockholders, family, government, and foreign, have different characteristics to each other. Family firms, for example, relatively, tend to have aggressive behaviour in diversification strategy. This is consistent with previous literature, such as Claessen et al. (2002), and Almeida and Wolfenzon (2006), who suggested that the aggressiveness of Asian family firms in diversification leads to value discount. La Porta et al. (1999) confirmed this by finding the abuse of controlling power in family firms leading to value discount. This is different from the Indonesian government results. Indonesia has a strict regulation concerning losses for government firms. Loss can be interpreted as corruption based on the anti-corruption law No 31 year 1999, which explains the straight formation of government business units, as their managers are fearful of diversification, industrially and internationally. The literature, such as Tian and Estrin (2008), and Prabowo and Simpson (2011), confirmed this by showing the evidence that the bureaucrats that run the government firms might also not be interested in maximizing firm value. In contrast, foreign firms in Indonesia usually just choose either industrial diversification or international diversification. Moreover, similar

to Jardine Matheson, foreign firms tend to industrially diversify on the same product line. If we compare this with the Hartono family or Salim family (family-owned group), we can see that those family groups tend to have all industries in their conglomerate (from plantation, manufacturing, investment, to real estate; see Table 2 for details). This is supported by the literature stating that foreign firms enter the market with expertise in the line of the product, have superior capital (Boardman, Shapiro, and Vining, 1997), and tend to be selective (Suto, 2003). With these advantages, foreign firms are usually found to outperform family firms or even sometimes government firms (see Fauver et al., 2004; Lee et al., 2012). Based on these dossiers we develop our hypothesis as below:

Hypothesis 6: The value of diversification has different effects for different types of firm identity

Hypothesis 7: Family firms underperform in diversification strategies compared to their peer foreign firms and government firms.

3. Methodology

3.1. Excess value

Firm value is measured by the excess value, which was developed by Berger and Ofek (1995), and later modified by Fauver et al. (2004). The excess value is calculated using the natural logarithm of the ratio of actual to imputed market value of each individual firm. Although there are many measures of firm value, such as capital-sales ratio, capital-assets ratio, and/or capital-earnings ratio, they yielded the similar results (see Berger and Ofek, 1995; Bodnar et al., 1999; Denis et al., 2002; Fauver et al., 2004). Because of the lack of segment assets and earnings for our sample data, the capital-sales ratio is chosen as the proxy. The actual value is measured by the consolidated firm's capital-to-sales ratio. For single-segment firms, imputed value is calculated as the median market-to-sales ratio among all single-segment firms in the same industry. For multi-segment firms, imputed value is calculated by taking a weighted-average of the imputed values for each of the firm's segments, where the weights reflect the proportion of the overall firm's sales that come from each segment. Firms have a positive excess value (i.e., a premium) if the overall company's value is greater than the "sum of the parts." In contrast, firms have a negative excess value if their value is less than the imputed value that would be obtained by taking a portfolio of pure-play firms that operate in the same industries as the diversified firm.

3.2 Control Variables

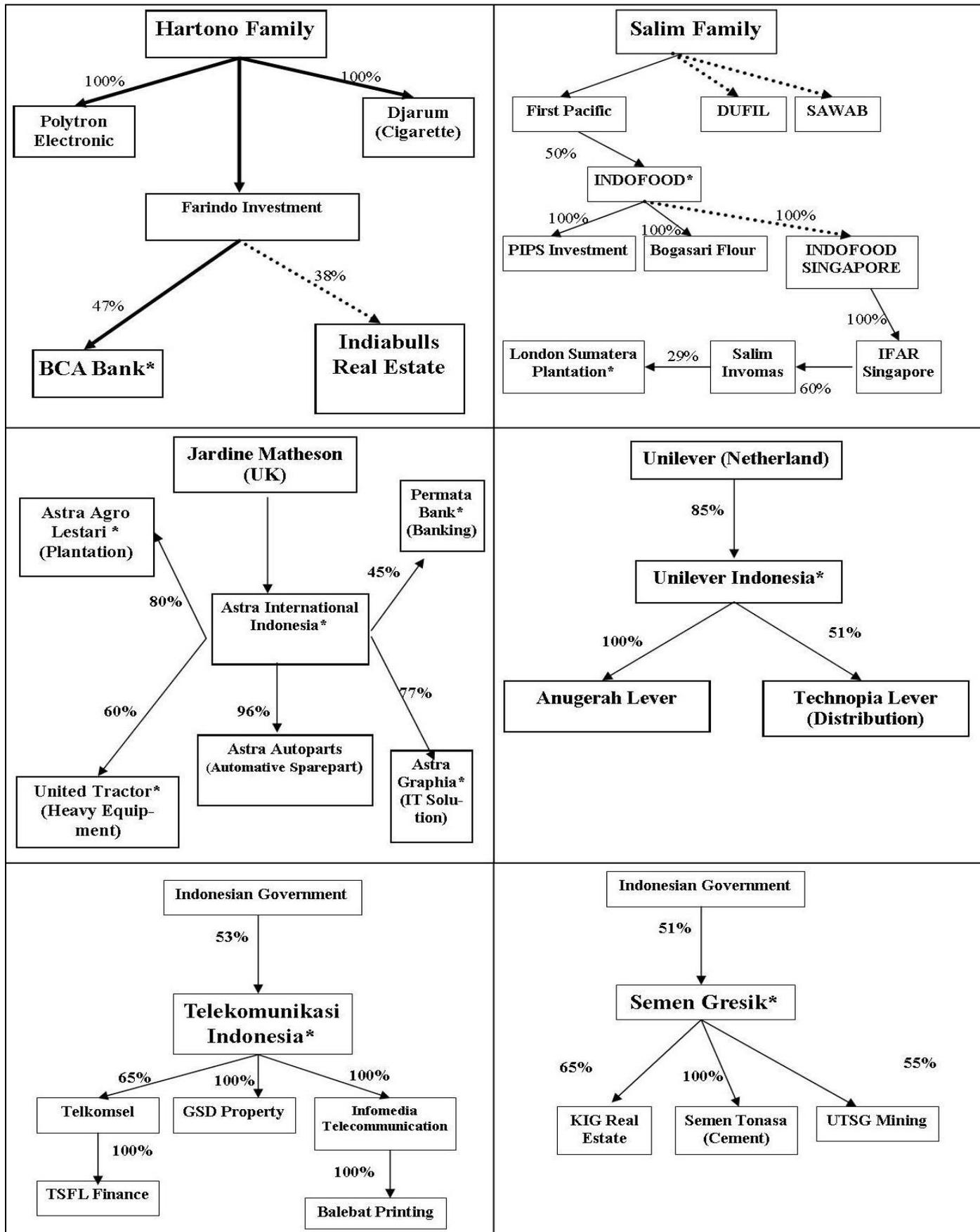
Prior research in estimating the excess value (e.g., Berger and Ofek, 1995; Fauver et al., 2004) showed that there are four factors that could affect the firm market-sales ratio, namely, firm size, firm profitability, growth opportunity, and leverage. The basic model is given below:

$$\text{excess value} = f(\text{Size}, \text{Growth Opportunitites}, \text{Profirability}, \text{Leverage})$$

In measuring the firm size, we follow the commonly used proxy, Bain (1968) firm size proxy, which is measured by using the log of assets (LTA). Meanwhile, other control variables have been developed by following previous research in corporate governance (Kim and Lyn, 1984; Lang and Stulz, 1994; Lins and Servaes, 1999; Fauver et al., 2004; Chu, 2009), where growth opportunities is measured by the capital expenditure-sales ratio (CES). Meanwhile, profitability is measured by the ratio of operating income – sales ratio (OIS), and leverage is measured by using the ratio of debt to common share equity. Therefore, for all the four explanatory variables, we deduct it with the annual industry average to obtain four new series, i.e., relative LTA (RLTA), relative OIS (ROIS), relative CES (RCES), and relative LEV (RLEV). Hence, the empirical regression model is as follows:

$$\text{Value} = \alpha + \beta_1 \text{RLTA}_{i,t} + \beta_2 \text{ROIS}_{i,t} + \beta_3 \text{RCES}_{i,t} + \beta_4 \text{RLEV}_{i,t} + \varepsilon_{i,t} \quad (1a)$$

Figure 1 The scheme of Business Model in Diversification strategy



Note: Hartono family and Salim family are family groups. Astra Indonesia and Unilever Indonesia are foreign firms. Telekomunikasi Indonesia and Semen Gresik are Government firms. * means the firm is listed on Indonesian stock exchange. The scheme is based on 2010 annual report. Straight line (→) means industry diversification. Dashed line (---▶) means international diversification.

3.3 International Diversification and Industrial Diversification

This study categorized firms into three categories based on each firm's international and industrial diversification. The category is a binary dummy variable that equals 1 for internationally diversified firms, or industrially diversified firms, or both internationally and industrially diversified firms, and equals 0 otherwise. This method follows Fauver et al. (2004).

$$D_{INT} \begin{cases} 1 & \text{If firm has } > 10\% \text{ foreign sale} \\ 0 & \text{If firm has } \leq 10\% \text{ foreign sale} \end{cases}$$

$$D_{IND} \begin{cases} 1 & \text{If firm has } > 1 \text{ segmental industry} \\ 0 & \text{If firm has } \leq 1 \text{ segmental industry} \end{cases}$$

$$D_{INTIND} \begin{cases} 1 & \text{If firm has } > 10\% \text{ foreign sale, and } > 1 \text{ segmental industry} \\ 0 & \text{If firm has } \leq 10\% \text{ foreign sale, or } \leq 1 \text{ segmental industry, or both} \end{cases}$$

$$Value = \alpha + \beta_1 RLTA_{i,t} + \beta_2 ROIS_{i,t} + \beta_3 RCES_{i,t} + \beta_4 RLEV_{i,t} + \beta_5 DINT_{i,t} + \beta_6 DIND_{i,t} + \beta_7 DINTIND_{i,t} + \varepsilon_{i,t} \quad (1)$$

3.4 Ownership Structure

As the objective of this study is to investigate the role of ownership structure on the impact of international and industrial diversification, this study employs ultimate ownership (UO) to represent ownership concentration. It is appropriate to use UO since pyramidal and cross-holding ownership structures among firms are pronounced in many East Asian countries where the control rights are not equal to cash flow rights. The separation of the control rights and ownership (or cash flow rights) is created to benefit the large shareholders (La Porta et al., 1999) where control rights consequently exceed cash flow rights. Following Claessens et al. (2002), we use the control rights of the ultimate owner of the largest shareholder comprised of direct and indirect shareholdings as a proxy for UO to determine the ownership concentration. The use of cash flow rights may not be appropriate since a number of firms in Indonesia are owned indirectly through a chain of firms that are privately held (Arifin, 2003). Cash flow rights refer to direct shareholdings of the owner through the purchase of

shares, while control rights refer to the total of direct and indirect shareholdings of the owner. A person is said to have indirect shareholdings in firm A when he has shareholdings in firm B, which, in turn, owns shares in firm A. Obviously, the gap between the cash flow and control rights only arises when there are indirect shareholdings by the ultimate owner. In other words, when an owner only owns a firm through direct shareholdings, the cash flow rights are equal to the control rights. Furthermore, from the corporate governance perspective, the concentration of control rights has better explanatory power than the cash flow rights (Claessens et al., 2000). This research aims to investigate further the role of ownership concentration on the link of diversification-performance. For this reason, we modify equation 1 by adding in the interactive terms. Note that our threshold for ownership concentration is 20%. The model is as follows:

$$\begin{aligned}
Value = & \alpha + \beta_1 RLTA_{i,t} + \beta_2 ROIS_{i,t} + \beta_3 RCES_{i,t} + \beta_4 RLEV_{i,t} + \beta_5 D_{INT,i,t} + \beta_6 D_{IND,i,t} + \\
& \beta_7 DINTIND_{i,t} + \beta_8 UO_{i,t} + \beta_{10} (INT * UO)_{i,t} + \beta_{11} (IND * UO)_{i,t} + \\
& \beta_{12} (INTIND * UO)_{i,t} + \varepsilon_{i,t}
\end{aligned} \tag{2}$$

For robustness, we follow Fauver et al. (2004) in investigating further the value of diversification by introducing the identity of firms. There are three categories of firms: Family Owned, Government Owned, and Foreign Owned. We repeat Model (2) according to each type of firm identity. By doing this, our expectation is to reveal which type of firm has premium/discount value of diversification, and, moreover, we can explore further whether the dominant type of firm in Indonesia, family firms, manage to outperform the value of foreign firms and government firms in terms of diversification.

3.4 Data

We retrieve data from the Worldscope database to collect a panel set of annual financial data for Indonesian publicly listed firms from the years of 2006 to 2010. Our initial sample covers all 931 publicly listed firms on the Indonesian stock exchange. We follow Fauver et al. (2004) in using two-digit SIC codes to classify industrial segments. In fact, our database provides the sales into geographic and product segment data based on the SIC codes. Consistent with previous studies (Fauver et al.,

2004; Lins and Servaes, 1999), the financial services industry was excluded from our sample. Firms with missing data throughout the five-year period were also excluded. Our final sample comprised 319 firms.

The ultimate ownership data were retrieved from the annual reports of the sample firms, particularly through the list of substantial shareholders. We traced the annual reports of particular listed firms in order to identify the ultimate owner. The ultimate ownership of a firm that was owned by privately held firms is identified based on the information of the notes disclosed under the list of substantial shareholders. In some cases, the ultimate ownership structure on the intermediary privately held firms is not disclosed, but we still included the firms in our sample as long as the identity of the ultimate owner is disclosed. Finally, we classified the identity of ownership into family, government, and foreign.

4. Results

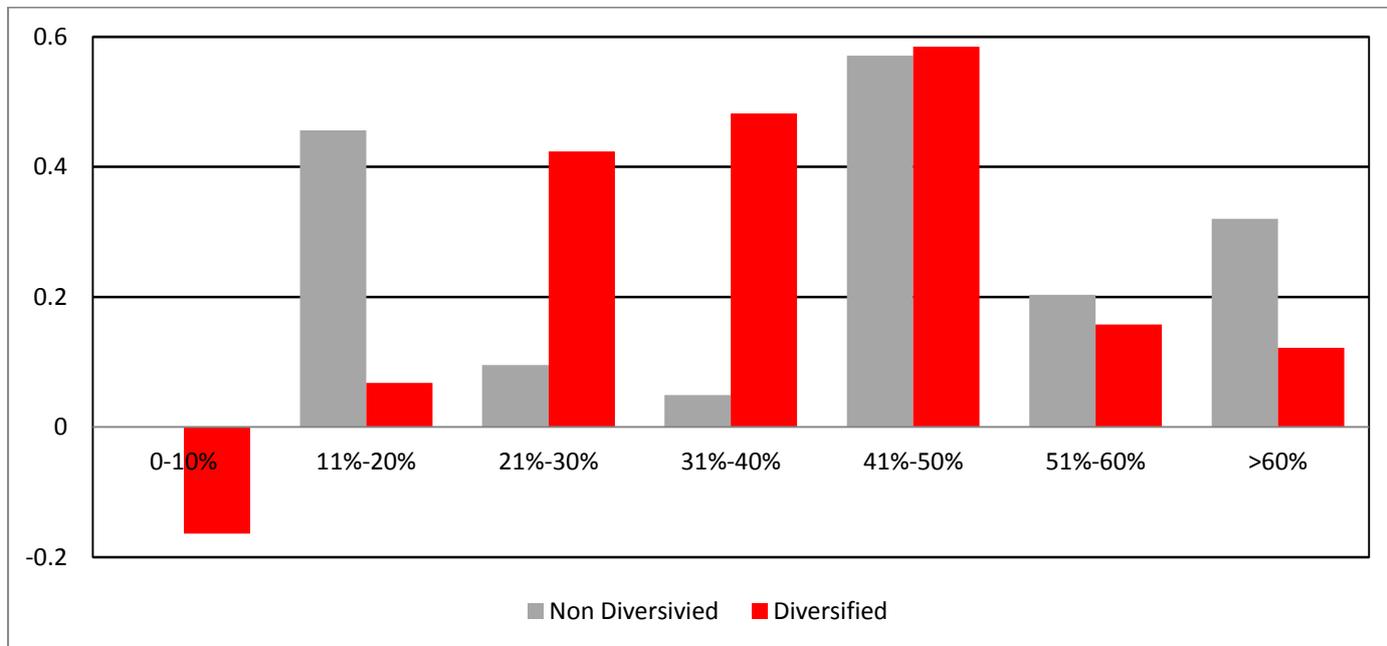
4.1 Graphical Evidence

To investigate the hypotheses, we first present figures showing the association between excess value and ownership concentration of diversified and non-diversified firms, as well as the figures showing the diversification strategy and excess value according to firm identity. This graphical evidence is in support of our regression analysis.

We start by plotting the association between excess value and ownership concentration (Figure 2). Excess value, as measured by the difference of market to sales ratio of actual value and imputed value, generally increases with the ownership in the hands of the largest owner (ultimate ownership). This pattern is consistent with the positive incentive effect of larger ownership on firm value. However, the relationship is non-monotonic. There is a quadratic relationship as the ownership by the largest shareholders 51-60%, for example, is associated with lower excess value than ownership of 41-50% for diversified firms, and the difference is significant. For the undiversified firms, there appears to be a cubical relationship in which the relationship between ownership and excess value is very high at the ownership of 11-20% but then drops significantly for ownership of

21-30%. The relationship rises again exponentially for ownership 41-50%, and subsequently falls for ownership of 51-60%.

Figure 2 5-Year Average of Excess Value of firm



The associations between value of diversification and the separation of firm identity, and between value of diversification and ownership rights are shown in Figure 3, Figure 4, Figure 5, and Figure 6. Figure 3 portrays an interesting dossier in which the excess value of foreign firms is higher than family firms, with government firms having the lowest. The figure also shows that family firms have the highest industrial diversification value, and government firms show an inconsistent trend. This result implies that industrial diversification as a value driver has a different impact for the different identities of firm. For instance, family firms have increasing diversification value, but result in a parabolic curve for excess value. Foreign firms have steady diversification value, but result in a strong varied-slope line. Lastly, government firms have a trigon shape for the value of diversification, but gain a steady and slow growth of excess value. In connecting these two charts (excess value and industrial diversification), it shows that, relatively, industrial diversification helps firms to have excess value.

Figure 3 Excess Values and Industrial Diversification Value

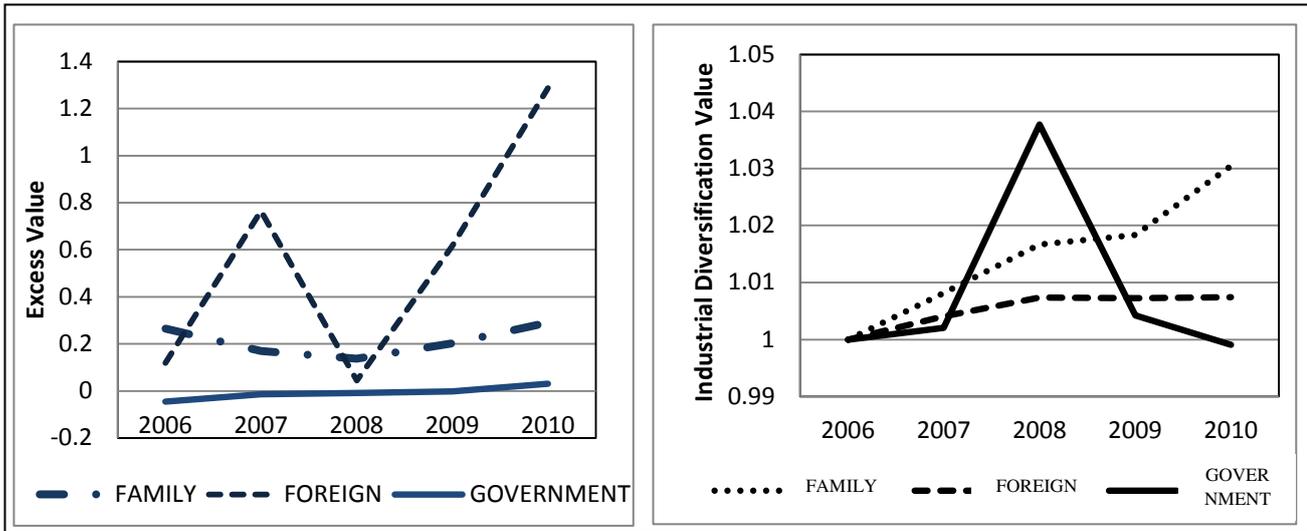


Figure 4 Excess Value of internationally and not-internationally diversified firms

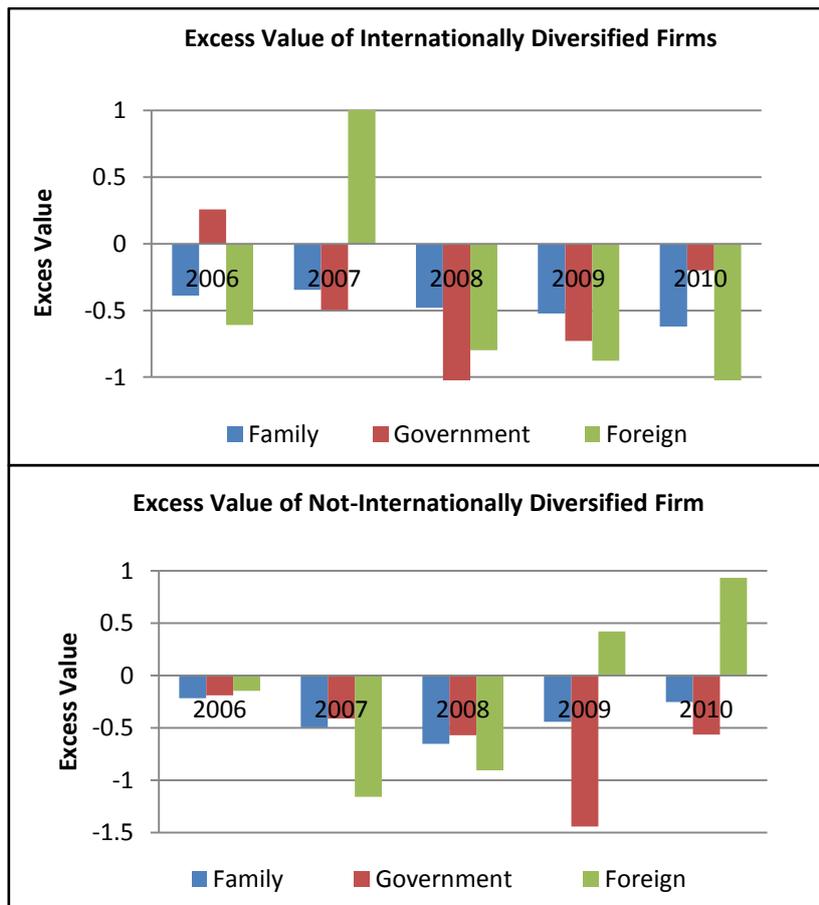


Figure 4 shows the excess value of internationally and not-internationally diversified firms based on their identity. The figure suggests that internationally diversified firms perform better before 2008 than non-internationally diversified firms, but less efficient afterwards. The foreign firms with international diversification strategy seem to be the worst among the others, where the value keeps decreasing year by year. This implies that internationally diversified foreign firms are worse-off compared to their peers (family and government). Taking 2008 as the pinpoint, our figures show the effect of the global crisis 2008 on international diversification strategy. Starting from 2008, firms with international diversification had cost their excess value, while firms that did not go internationally started to gain value.

Additionally, we plot the relationship between ownership and excess value of industrially diversified and internationally diversified firms based on firm identity. Figure 5 suggests a quadratic relationship between ownership and excess value for family firms and foreign firms. It firstly shows that the higher the relationship, the higher the excess value. However, when it arrives at ownership of 41-50% the relationship is declining. Interestingly, Figure 5 shows no trend for the relationship between ownership and excess value for government firms.

The association between ownership and excess value of internationally diversified firms is shown in Figure 6. The figure suggests that the larger the wedge is between international diversification and ownership rights, the higher the excess value. This is only apparent for family firms and foreign firms, and not for government firms. Family firms start the trend with a positive excess value, while foreign firms start with a negative excess value. The plot also indicates that family firms are better in international diversification strategy relative to foreign firms. Meanwhile, the government firms outperform family firms and foreign firms if the ownership concentration is 31-40% or higher than 60%.

Figure 5 Ownership and Excess Value of Industrially Diversified Firms

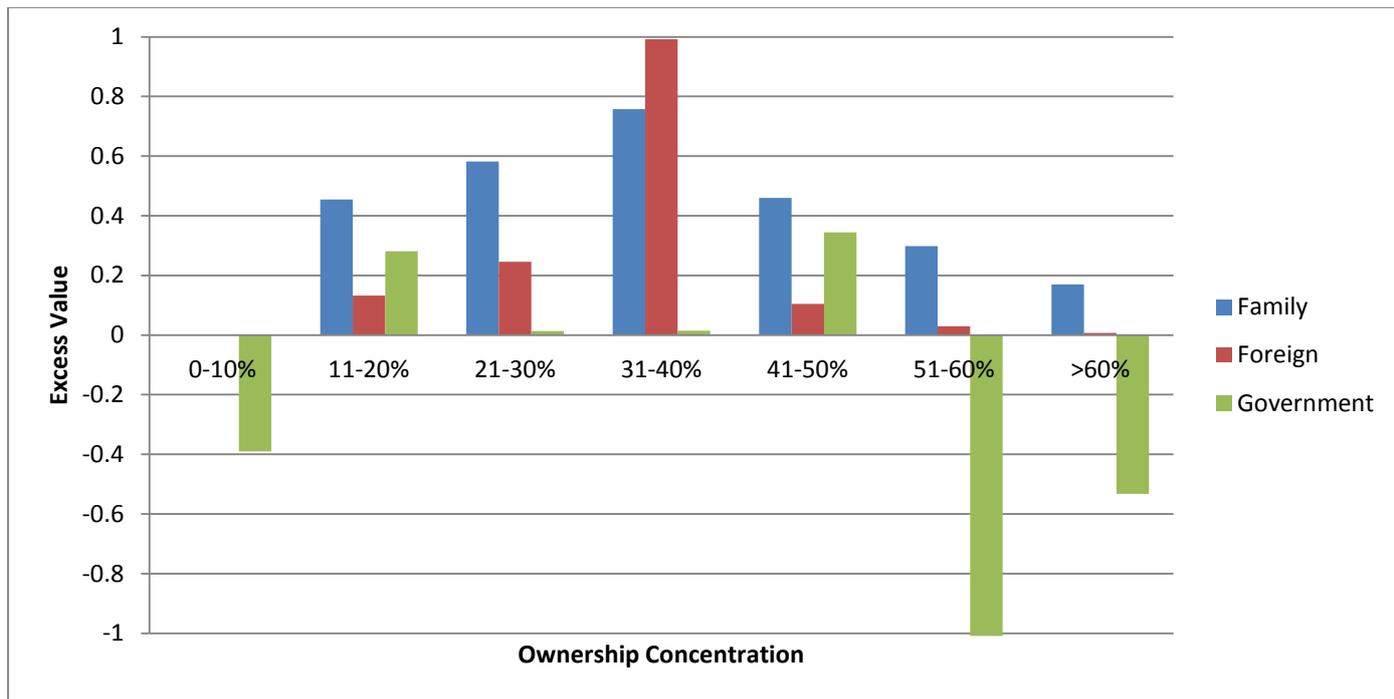
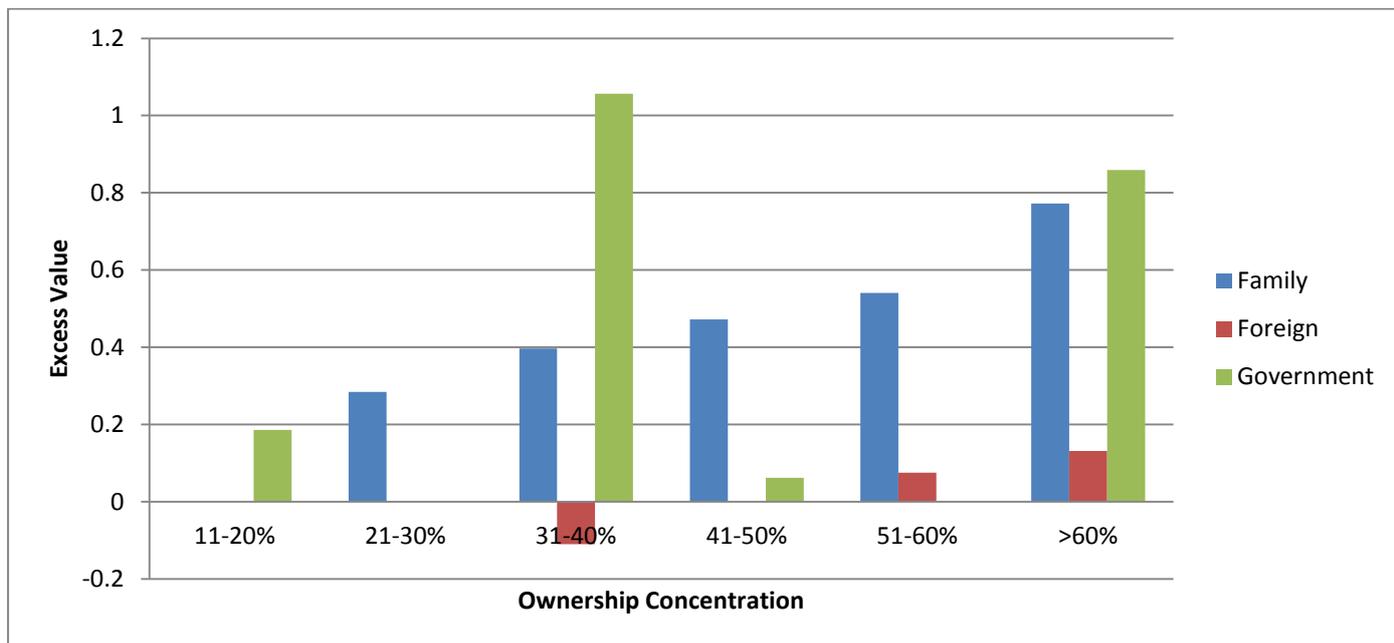


Figure 6 Ownership and Excess Value of Internationally Diversified Firms



4.2 Summary of descriptive statistics

Table 3 describes the summary of statistics for our sample of 319 firms across the five-year period (2006-2010) according to the four categories: single industry-domestic, single industry-international, multi-industry-domestic, and multi-industry-international. The mean values were calculated for each variable to facilitate comparison between the four categories. These mean values

are provided including the standard deviation values, which are depicted in parenthesis. We also provide the statistical test of difference in the mean value for each variable across the four categories.

As expected, firms with multi-industry-domestic combination have the largest average size among all four categories. This is followed by the single industry-domestic combination. This reveals that firms that apply a domestic strategy are conservative and have larger assets. Single industry firms tend to leverage their ability to achieve a better operation. This explains why the profitability (operating income to sales ratio) of a single industry is much higher than for multi-industry. Moreover, the profitability of multi-industry is reported to suffer a loss. This implies that single industry has a better profitability rate compared to multi-industry. Generally, single industry-international firms have the highest growth (capital expenditure-sales ratio), and the other categories have a similar mean of growth (around 12%). However, the market to sales ratio of the combination of multi-industry-domestic has the highest value of average mean. The second highest is single industry-domestic categories. We find that single industry-international has a negative value. This indicates that domestic firms have better performance (value of firm) than internationally diversified firms. The ownership concentration is also interesting. The multi-industry firms have an average of 57% of ownership. Meanwhile, the single industry has 53% and 61% for domestic and international, respectively.

4.3 The moderating role of Ultimate Ownership on the relationship between excess value and diversification

The estimates of Model (2) in Table 4 are retrieved by using five different inferential statistical methods. With short panel data (number of firms significantly larger than number of years), we report the probability values based on White robust standard errors that control for heteroscedasticity errors, as well as firm clustering, year clustering, period effect, and industry effect, which induce a within firm serial correlation error structure. The five panel regression estimations with different formations of robustness for panel regression provide estimations of the R² values, which range from 10% to 19%. Basically, the coefficient estimated for all the control variables is consistent in sign, significance and magnitude across the various specifications. We find that the

estimated coefficient of ROIS (relative operating income to sales ratio), RCES (relative capital expenditure to sales ratio), and RLEV (relative leverage ratio) is positive and significant in association with excess value. This means that a firm with a higher profitability, higher growth opportunities, and higher leverage is most likely to have higher excess value; this finding is similar to previous diversification research. Note that we find firm size has a negative and not significant effect on the excess value. Even though it is consistent with prior research (i.e., Fauver et al., 2004; Lee, 2012), it is interesting to see the negative coefficient of size variable indicating that the larger the firm, the smaller the excess value.

The estimation for Model (2) shows that excess value is positively related to industrial diversification and international diversification. Thus, only industrial diversification has a significant effect on excess value. This result shows that Indonesian firms have experienced the benefit of industrial diversification and other diversification strategies, such as international and industrial-international, and do not have any contribution on firm value. Our results are consistent with the benefit of industrial diversification by Stein (1997).

The ownership concentration (UO) is also estimated in this model through the interactive term of UO and diversification strategy. UO contributes positively and is statistically significant to excess value indicating that the higher the concentration, the higher the excess value. This is in line with Figure 1 and consistent with Claessens et al. (2002). The interactive term results show that interaction with industrial diversification (INDUO) results in a negative and significant contribution of UO with excess value. Meanwhile, the interactive terms of UO with international diversification and industrial-international diversification do not have any effect on excess value. Borrowing the postulation of the three-step Model of Baron and Kenny (1986), UO has a moderating role on the relationship between industrial diversification and excess value. When UO interacts with industrial diversification, it has a significant relationship implying that a high ownership concentration firm would cost excess value to firms with a high level of industrial diversification. This is consistent with the entrenchment hypothesis (see Claessens et al., 2002).

Fauver et al. (2003) stated that a certain level of ownership concentration might reduce the value of diversification suggesting that agency problems partly account for firms' value-reducing

diversification strategies. Further, the findings of Lins and Servaes (2002) are also in line with ours, in that they found that the diversification discount in their sample – including companies from seven Asian emerging markets – to be driven by firms with managerial ownership in the 10% to 30% range, where they expect managerial entrenchment to be highest. They also find the diversification discount to be most severe when the insiders' voting rights exceed their cash flow rights by 25% or more.

Overall, we conclude that our findings partially support our hypotheses. The results indicate that there are differences in the valuation of diversified firms. After introducing the interactive terms, the UO and excess value have an inverse relationship, but only for industrially diversified firms. It is possible that these differences are caused by the identity of firms or the level of ownership concentration. As depicted in Figure 1, the excess value of diversified firms increases, but then declines after 50% ownership concentration. Therefore, our findings suggest that further inquiries into the effect of identity and the effect of the level of ownership concentration are warranted. We perform these tests in the following section.

Table 3
Descriptive Statistics

For the mean value, figures in the parenthesis are standard deviation; SW t test refers to Satterthwaite-Welch's t test and the figures in the parenthesis under SW t test are p-values. *, **, and *** denote statistical significance at the 1%, 5%, and 10% level, respectively

	Single Industry		Multi-Industry		Satterthwaite–Welch's t test					
	Domestic (1)	International (2)	Domestic (3)	International (4)	(1)-(2)	(1)-(3)	(1)-(4)	(2)-(3)	(2)-(4)	(3)-(4)
N	38	13	219	49						
Total Assets (bil \$)	5.2248 (13.0983)	2.0407 (1.5425)	5.4462 (12.5168)	2.8854 (2.5049)	0.0804 (0.7890)	-0.5949 *** (0.0010)	-0.8740 *** (0.0000)	-0.2311 ** (0.0230)	-0.7100 * (0.0620)	-0.4176 *** (0.0061)
Leverage	0.6249 (0.4280)	1.4227 (6.9845)	0.3892 (0.9571)	0.3892 (0.9571)	0.8857 *** (0.0000)	-0.3844 ** (0.0150)	-0.2986 ** (0.0380)	0.0716 (0.5080)	-1.2261 *** (0.0000)	-1.2977 *** (0.0000)
Operating Income/Sales	0.1188 (0.1494)	0.1343 (0.1339)	-0.0259 (0.5063)	-0.0259 (0.5063)	0.0769 ** (0.0110)	0.0275 ** (0.0450)	-0.1578 *** (0.0080)	-0.1407 ** (0.0103)	-0.0693 ** (0.0135)	0.0477 ** (0.0358)
Capital Expenditure/ Sales	0.1272 (0.1687)	0.1571 (0.3214)	0.1217 (0.2418)	0.1217 (0.2418)	0.0334 ** (0.0429)	0.0590 (0.1660)	-0.0265 * (0.0686)	-0.0737 * (0.0940)	-0.0501 ** (0.0253)	0.0208 * (0.0575)
market/Sales	1.0294 (2.9599)	-0.0285 (0.4834)	2.3580 (28.3852)	0.2608 (0.8152)	1.0579 (0.0545) *	0.7686 * (0.0776)	-1.3286 * (0.0738)	-0.2894 * (0.0592)	-2.3865 (0.2380)	-2.0972 (0.2994)
Ownership Concentration	53.5123 (22.6311)	61.3708 (26.6097)	57.1852 (22.2138)	57.1281 (19.4584)	2.4254 *** (0.0030)	-4.6514 (0.4240)	-6.2868 ** (0.0160)	-0.2044 ** (0.0400)	3.1969 * (0.0520)	5.7192 *** (0.0050)

Table 4

Estimates of Diversification Strategy, Ownership Concentration, and Excess Value

The regression is performed using five different specifications. The figures stated are the coefficient values, except numbers in parentheses, which are *p*-values. The dependent variable is the excess value of firms. The control variables are relative size (RSIZE), relative profitability (ROIS), relative growth (RCES), and relative leverage (LRDE). The main independent variables are the industrial diversification (DIND), international diversification (DINT), industrial-international diversification (INTIND), ownership concentration (UO), and its interactive terms (INDUO, INTUO, and INTINDUO). The model is as follows:

$$Value = \alpha + \beta_1 RLTA_{i,t} + \beta_2 ROIS_{i,t} + \beta_3 RCES_{i,t} + \beta_4 RLEV_{i,t} + \beta_5 D_{INT,i,t} + \beta_6 D_{IND,i,t} + \beta_7 DINTIND_{i,t} + \beta_8 UO_{i,t} + \beta_{10}(INT * UO)_{i,t} + \beta_{11}(IND * UO)_{i,t} + \beta_{12}(INTIND * UO)_{i,t} + \varepsilon_{i,t}$$

Panel Regression Estimation of Model (2)					
RSIZE	-0.0759 (0.6641)	-0.0775 (0.6616)	-0.0572 (0.7479)	-0.0468 (0.7649)	-0.0320 (0.8221)
ROIS	0.0417*** (0.0000)	0.0417*** (0.0000)	0.0409*** (0.0000)	0.0483*** (0.0001)	0.0443*** (0.0034)
RCES	0.6319 (0.1116)	0.6880* (0.0664)	0.6530* (0.0878)	0.9757* (0.0008)	0.7865*** (0.0059)
LRDE	0.2454*** (0.0100)	0.2457*** (0.0077)	0.2486*** (0.0098)	0.4780*** (0.0000)	0.4728*** (0.0000)
DIND	0.9994* (0.0729)	1.2724** (0.0197)	1.1502** (0.0369)	1.2474*** (0.0015)	0.7887** (0.0217)
DINT	0.5099 (0.3107)	0.3929 (0.4423)	0.4456 (0.3833)	0.5626 (0.3262)	0.7252 (0.1869)
INTIND	-0.0850 (0.8829)	-0.1750 (0.7612)	-0.0671 (0.9066)	-0.2687 (0.5887)	0.0826 (0.8337)
UO	1.5686* (0.0699)	1.8673** (0.0248)	1.7973** (0.0322)	2.0724*** (0.0040)	1.5988** (0.0102)
INDUO	-2.0451** (0.0188)	-2.6170*** (0.0021)	-2.3366*** (0.0067)	-2.7141*** (0.0002)	-1.6852** (0.0168)
INTUO	-0.6160 (0.3977)	-0.4545 (0.5504)	-0.5195 (0.4871)	-0.7699 (0.4288)	-1.0330 (0.2503)
INTINDUO	-0.0481 (0.9534)	0.0804 (0.9227)	-0.0266 (0.9740)	0.2204 (0.7679)	-0.2374 (0.6529)
CONSTANT	-3.2670*** (0.0000)	-2.4983*** (0.0000)	-3.2653*** (0.0000)	-3.0464*** (0.0000)	-3.6418*** (0.0000)
Firm Clustered	Yes	Yes	Yes	Yes	Yes
Year Clustered	No	No	No	Yes	Yes
Year Effect	No	Yes	Yes	No	No
Industry Effect	Yes	No	Yes	No	Yes
N	612	612	612	612	612
R2	0.1862	0.1050	0.1926	0.1002	0.1904
Adj R2	0.1753	0.1006	0.1812	0.1016	0.1918

Note: *, **, and *** denotes statistical significance at the 1%, 5%, and 10% level, respectively.

4.4 Robustness Test with different types of firm identity

So far, three important findings can be surmised from our earlier estimation. First, ownership concentration contributes positively and is statistically significant to excess value. Second, industrial diversification has a positively significant influence on excess value. Further, we also find that the interaction between UO and DIND (INDUO) shows a negative sign and is statistically significant to excess value. These findings might be correlated with the identity of the firms; hence, we further investigate and test our hypothesis 6 and hypothesis 7 that foreign firms and government firms in Indonesia outperform family firms in terms of diversification strategy. The agency cost can be addressed as an explanation for the underperformance of family firms (see Jensen, 1986; Anderson et al., 2003 for the details). To determine whether the diversification is related to firm's identity, we estimate the regression, similar to the ones reported in Table 5, but we now separate the data set according to the identity of each type of firm, namely, family, foreign, and government.

Table 5 shows a significant effect for industrial diversification on excess value for family firms, for which the coefficient value is 2.7348. The ownership concentration also contributes positively and is statistically significant with a coefficient value of 0.0298. When the ownership concentration interacts with industrial diversification, the results show a negative sign. Meanwhile, international diversification does not have any impact on family firms in Indonesia. As a result, family firms that are diversified and have high ownership concentration might suffer with value discount, which is consistent with Lins and Servaes (1999), Fauver et al. (2004), and Lee et al. (2012).

In respect of foreign firms, the ownership concentration shows a positive and significant result to excess value with a coefficient value of 5.7349. Industrial diversification does not have any impact on excess value, but the international diversification does. This implies a partial supporting result for our hypothesis 6. The international diversification affects the excess value with a high coefficient value, which is 9.4016. When we interact the ownership concentration (UO) and the international diversification (DINT), which is INTUO, the findings show a statistically significant result, but with a negative sign. This indicates that foreign firms with higher ownership concentrations and that have international diversification, might reduce the excess value of foreign firms in Indonesia. Lastly, the government firms document no significant results except for the control

variable meaning that ownership concentration, industrial diversification, international diversification or the interactive terms do not have an impact on the excess value of government firms in Indonesia.

These results also shed light on our earlier finding that diversification has a significant influence on excess value in Indonesia. Firms with different types of identity indicate different conclusions. For family firms, industrial diversification has an effect on excess value. Meanwhile, international diversification is the driver of excess value for foreign firms, and government firms do not have any impact of diversification. With further analysis, we note that internationally diversified foreign firms are relatively worse-off compared to family firms and government firms in terms of international diversification. We also note that industrially diversified family firms underperform foreign firms and government firms in terms of industrial diversification implying that family firms perform relatively much worse than foreign firms and government firms from being industrially diversified.

Table 5

Diversification Strategy, Ownership Concentration, and Excess Value based on firm identity

We firstly separate the data set based on the identity, which are family firm, foreign firm, and government firm. Then we run model (2) again. The regression is performed using panel regression based on White robust standard errors that control for heteroscedasticity errors, as well as firm clustering, year clustering, and industry effect, which induce a within firm serial correlation error structure. The figures stated are the coefficient values, except the numbers in parentheses which are p -values. The dependent variable is the excess value of firms. The control variables are relative size (RSIZE), relative profitability (ROIS), relative growth (RCES), and relative leverage (LRDE). The main independent variables are the industrial diversification (DIND), international diversification (DINT), industrial-international diversification (INTIND), ownership concentration (UO), and its interactive terms (INDUO, INTUO, and INTINDUO). The model is as follows:

$$Value = \alpha + \beta_1 RLTA_{i,t} + \beta_2 ROIS_{i,t} + \beta_3 RCES_{i,t} + \beta_4 RLEV_{i,t} + \beta_5 D_{INT,i,t} + \beta_6 D_{IND,i,t} + \beta_7 DINTIND_{i,t} + \beta_8 UO_{i,t} + \beta_{10} (INT * UO)_{i,t} + \beta_{11} (IND * UO)_{i,t} + \beta_{12} (INTIND * UO)_{i,t} + \varepsilon_{i,t}$$

	Family	Foreign	Government
RSIZE	-0.3907 (0.2920)	-0.2374 (0.6840)	0.2999 (0.5586)
ROIS	0.0413** (0.0135)	0.0515*** (0.0045)	1.1095*** 0.0000
RCES	0.2671 (0.6243)	1.356 (0.1653)	1.8243*** (0.0057)
LRDE	0.2366 (0.3833)	0.4494 (0.1571)	0.1204 (0.5556)
DIND	2.7348** (0.0187)	3.6386 (0.1323)	1.2229 (0.2295)
DINT	4.0575 (0.2181)	9.4016** (0.0283)	-0.7869 (0.3210)
INTIND	-1.544 (0.5901)	-1.5602 (0.6950)	0.8224 (0.1638)
UO	0.0298** (0.0360)	5.7349** (0.0351)	0.0103 (0.6275)
INDUO	-0.0341** (0.0421)	-5.4778 (0.2450)	-0.0321 (0.1567)
INTUO	-0.0491 (0.2455)	-3.2693** (0.0285)	0.032 (0.1147)
INTINDUO	0.0143 (0.6736)	1.7377 (0.7254)	-0.0106 (0.5648)
CONSTANT	-3.3615*** (0.0018)	-2.1975** (0.0232)	-2.4704** (0.0201)
N	477	81	51
R2	0.2336	0.2091	0.387
Adj R2	0.2352	0.2188	0.2141

Note: the figures stated is coefficient value, except, figures in the parenthesis are p -value; *, **, and *** denotes statistical significant at the 1%, 5%, and 10% level, respectively.

4.5 Robustness Test with different levels of ultimate ownership level

The results reported in the previous section suggest that diversification is costly for family firms and foreign firms, which might be caused by the ownership concentration level. So far, we have not explicitly controlled for the agency costs associated with ownership structure robustly. As we can see from Demsetz and Lehn (1985), Morck et al. (1988), and Fauver et al. (2004), there is a possibility that the value of diversification might be different for each level of ownership concentration.

The previous estimation of model (2) has not given a clear conclusion regarding the association between ownership structure, diversification strategy, and firm value. Our concern is that the literature acknowledges that concentrated ownership is likely to reduce the conflicts that arise when there is a separation between managers and stockholders suggesting a positive relationship between ownership concentration and excess value (firm value). However, this is debatable, as the literature also shows that concentrated ownership provides large investors with opportunities to exploit minority shareholders implying a negative relationship between ownership concentration and excess value (firm value).

Following Fauver et al. (2004), our thresholds are above 30% and above 50%. The details are as follows:

$$\begin{aligned} \text{UO30} &= 0, \text{ total ownership} \leq 30\%, \\ &= \text{total ownership deducted by } 30\%, \text{ if total ownership} > 30\% \\ \text{UO50} &= 0, \text{ total ownership} \leq 50\%, \\ &= \text{total ownership deducted by } 50\%, \text{ if total ownership} > 50\% \end{aligned}$$

We proceed by re-employing model 2 with a different threshold. The results show different conclusions except for the control variables. Profitability, growth, and leverage contribute positively and are statistically significant to excess value in all models. Meanwhile, size still does not have any significant effect on excess value. In terms of diversification strategies, being internationally diversified has no significant influence on excess value.

Table 6 consists of two main columns, namely, ownership concentration (hereafter UO) higher than 30% hereafter UO30) and UO higher than 50% (hereafter UO50). For all samples (not differentiated by the identity of sample), our findings document a decreasing impact of our main variables: diversification and UO. The industrial diversification has a decreasing coefficient from 0.7878 (cluster firm with period and industry effect result in Table 4) to 0.3070. Meanwhile, the international diversification still does not have any impact, but the value is decreasing from 0.7252 of coefficient value (cluster firm with period and industry effect result in Table 4) to 0.5092. This means that the effect of the diversification strategy is diminishing when we put the threshold of ownership concentration at the 30% level. This remark is supported by the UO variable result, which we find has an increasing coefficient value. The coefficient value of UO was 1.5988 in our previous result (cluster firm with period and industry effect result in Table 4), and increased to 1.6014 in the UO30 results. This indicates a much stronger effect of UO on excess value when we increase the threshold to 30%. Furthermore, the UO30 column shows that an industrially diversified firm with a high UO may discount its excess value. However, the value discount effect is increasing in UO30. It was -1.6852 in our previous result (Table 4), and now becomes 1.7298 in UO30. In short, our result implies that a higher level of UO has a significant impact on diversification strategy, ownership concentration, and excess value. The higher the UO, the lower is the effect of diversification, and the higher is the value discount of diversification.

We then continue by lifting up the threshold to 50% for a more robust conclusion. The UO50 column documents no significant effects from the main variables that we previously found to be significant in Table 4 or the UO30 column. For UO50, the Industrial diversification still contributes positively with a much lower coefficient value, but it is not statistically significant to excess value. The UO gives the same conclusion, which is a much lower positive coefficient value and not statistically significant to excess value. In addition, the industrially diversified firms with a higher level of UO (INDUO) do not have any significant effect on excess value implying that the effect of value of industrial diversification is diminished at 50% of ownership concentration. Hence, the findings of UO30 and UO50 confirm our hypothesis 4 and hypothesis 5 – that ownership

concentration plays an important role as moderator in the relationship of diversification strategy and excess value.

We attempt to investigate further hypotheses 4 and 5 with a different identity of firm to determine whether the effect of diversification also diminishes if we increase the threshold of UO. The results are quite intriguing. For family firms, we find that industrial diversification (DIND) is not statistically significant for UO30 with a negative value of coefficient. This shows that the industrial diversification strategy contributes negatively to family firms with an ownership concentration higher than 30%. The same conclusion is also found for UO50 where DIND contributes negatively and significantly to excess value. If we look at the UO variable result, it also shows a decreasing coefficient value from UO30 (0.6096) to UO50 (0.4805). The interactive terms also indicate that the effect of diversification on excess value is diminishing. Our previous results (*refer to Table 4*) document a value discount for industrial diversification. Now, in UO30 and UO50, even though it still indicates a value discount it is not statistically significant. These results imply that with higher ownership concentration, the effect of diversification on excess value diminishes for family firms in Indonesia.

For foreign firms, we find a significant effect of industrial diversification on excess value at the 10% level for UO30 firms. However, this effect diminishes when we lift the concentration to 50% (UO50). The international diversification still has an effect on excess value but a lower coefficient value. The coefficient on international diversification declines to 5.4530 for UO30, and declines further for UO50 with a coefficient of 3.6431. The UO figures support these findings, where it increases from 5.7349 to 5.9605 for UO30, and keeps increasing to 9.0391 for UO50. We further find that the value discount of internationally diversified firms increases accordingly to the increase in ownership concentration. Before we use the threshold, the coefficient value is -3.2693. However, when we use the threshold of 30% and 50%, the coefficient values are -13.3885 and -16.0212, respectively. Note that the value discount of international diversification of foreign firms is not significant even at the 10% level.

For the government firms, we do not find a significant effect of ownership effect. Making the threshold of ownership concentration 30% and 50% does not cause any significant change to

Indonesian government firms, except the industrially diversified government firms. There is a value discount for industrially diversified government firms, which it increases exponentially. Without a threshold the coefficient value of INDUO is only -0.0321. When we apply the thresholds of 30% and 50%, the coefficient increases to -8.9115 and -18.5654, respectively. This implies that the value discount effect does occur for industrially diversified government firms with an ownership concentration of more than 50%, and that the discount is a substantial amount.

In conclusion, Table 6 shows that ownership concentration affects the relationship between diversification strategy and excess value in Indonesia. We find a diminished relation from the predictors of excess value, except the ownership concentration. This means that firms with higher ownership concentration may not experience the excess value of diversification strategy. This robustness investigation supports our hypotheses 4 and 5, and is consistent with previous literature, such as Denis et al. (1997), Lins and Servaes (2002), Fauver et al. (2007), and Hoechle et al. (2012), who found that a larger ownership concentration might severe the value of diversification or even worse, diminish the effect. Our findings also support the cost of diversification rather than the support benefits of diversification indicating the existence of agency cost problems.

4.6 Results Discussion

Our study reveals that ownership concentration plays an important role concerning the value of the diversification strategy, which is consistent with previous empirical papers, such as Fauver et al. (2004), and Lee et al. (2012). Particularly, we identify five important findings. Firstly, we find the significant effect of industrial diversification, but no effect of international diversification on excess value. These findings are consistent with Lins and Servaes (1999), and Fauver et al. (2004) who considered agency problems as a strong motive for diversification associated with industrial groups. Of course, this argument does not explain which group uses extensive industrial diversification. We follow up this unjustified explanation by following the Claessen et al. (2002) and Fauver et al. (2004) by investigating further the ownership concentration and the identity of firms. We then proceed by clustering the diversification strategy-performance following their identity. The results demonstrate interesting findings in which industrially diversified family firms with a high level of ownership

concentration might reduce their excess value by undertaking industrial diversification. However, international diversification may not harm the family firm. We further find that even though international diversification and ownership concentration have positive and significant influences on foreign firms' excess value, internationally diversified foreign firms experience the value discount. This implies that foreign firms are relatively worse-off in doing international diversification compared to their peer family firms and government firms. In a further investigation, we find different results from Lee et al. (2012) in respect of the value of diversification for government firms. The results show there is no significant effect for the value of diversification on government firms, meaning that no benefits or costs occur in the diversification strategy of government firms.

These findings partially support the agency cost hypothesis of Jensen (1986) and Stulz (1990). It seems that the agency problem is more associated with family firms and foreign firms that apply a diversification strategy rather than to government firms. This suggests that these family-controlled firms are resource poor as industrially diversified compared to foreign and government-owned firms that possess stronger resources. This also applies to foreign firms undertaking international diversification. This suggests that the mechanism to permit a smooth reallocation of money among investment projects through the internal markets only works well for government firms in Indonesia. This is different from what we see in Malaysia, where family firms outperform foreign and government firms (see Lee et al., 2012). This also suggests that government firms may have the incentive to diversify and have better expertise in managing the complexity of diversification settings. Most probably, the reason behind it is the anti-corruption law No 31 year 1999, which defines corruption as the occurred losses to the country. This makes government firms more prudent in undertaking diversification strategies. Anecdotal evidence documents that several executives of government firms went to jail because of incorrect strategy and policy² leading the management of government firms to have extra understanding of diversification. This also explains why government firms relatively outperform foreign firms in certain extensions. If the decision to diversify reflects

² See the case of ECW Neloe, former director of Bank Mandiri (the largest bank in Indonesia) or Sri Mulyani, former Finance Minister and current managing director of World Bank <http://www.thejakartaglobe.com/news/bank-century-case-still-vague-2/> and <http://workersindependentnews.colo.supranet.net/node/6567>

value-destroying for family firms and foreign firms, the explanations are various and inadequately justified in corporate governance. For instance, the value discount of diversification is because of firms wrong acquisition strategy (Morck et al., 1990, Lins and Servaes, 1999), or because firms acquire unrelated industries to their business chain or nature (Schoar, 2002).

The ownership concentration also plays a role in the link between diversification and performance. First, it shows that higher ownership concentration may induce the excess value of firms indicating that the higher control of firms will lead to an increase in performance. Our results also show that a high ownership concentration may diminish the effect of diversification on excess value. Firms with concentration of ownership higher than 30% have worse results compared to the lower threshold. When we raise the threshold to 50% ownership concentration, the effect diminishes. Our results support the agency cost hypothesis, and not the efficient internal capital market, where ownership concentration might lead to a decline in the value of the firm. This is confirmed from our identity model in which family firms that have a highly concentrated ownership, might have discounted value but the effect is absent at the 30% and 50% threshold.

For foreign firms, we found that internationally diversified foreign firms have the value discount. The value discount is increasing at the threshold of 30% and much bigger at the 50% ownership concentration. However, the significant effect is diminished when the threshold is at the 50% level. Meanwhile, government firms have no effect on the value of diversification. These findings are contrary to the internal capital market hypothesis.

Note that one of the alleged benefits of corporate diversification is that it allows for the creation of an internal capital market that functions more efficiently than the external market, especially in a less-developed capital market, such as Indonesia. The diversification results in costs rather than benefits to firms. This is in line with large investor-firm performance hypothesis of Jensen and Meckling (1976), who stated that large ownership is able to collect information and oversee managers. If the agency cost of diversification strategy occurs inside the firms due to the personal motive of managers and causes the value discount of diversification, large ownership has a strong incentive to put pressure on managers as they can give full and special attention to the firms. Most

probably, the large ownership takes action to stop value-reducing of diversification when they receive information about no excess value of diversification strategy.

5. Conclusion

Our study investigates the value of diversification strategies by different ownership concentrations and different firm identities in an emerging country context. Our study is mainly motivated by the lack of attention given to emerging countries, such as Indonesia, despite the unique characteristics of ownership concentration, and steady growth of diversification strategies taken by Indonesian firms. This paper might provide the foundation and benchmark for any further research on this topic concerning emerging markets with more focus on country-specific characteristic dimensions.

This paper is an extension of diversification-performance studies with different settings. We follow and modify Lins and Servaes (1999), and Fauver et al. (2004) to match with our objective of research and definition. Our results have implications for certain frameworks, and evidence in this field from developed markets may not necessarily apply to emerging markets. Our study also investigates the role of ownership concentration on the relationship of diversification-performance. Another contributing aspect of our study is that we use the panel data approach that allows for assessing changes in the diversification level over time albeit there were no significant changes in both the diversification levels over time, thus giving more reliable estimates.

The focus of our study is to examine the value of diversification strategies, industrially and internationally, by controlling the ownership concentration and identity. Based on certain common characteristics for emerging markets, particularly for East Asian countries, which are dominated by family firms, this research can be extended further. For instance, future research may investigate the value of diversification by attributing internal factors, such as manager ability or political involvement in board structure, will make another interesting extension of study in this field.

Table 6
The new estimations based on new Threshold

We change the threshold of ownership concentration to 30% and 50%, and then re-retrieve the data of ownership concentration (UO) and the identity of firms. Then we run model (2) again. First, we re-employ Model (2) for the new threshold of UO without dividing it into the identity, and call it ALL. Then, we repeat the procedure of the new threshold of 30% and 50% with different firm identities. The regression is performed using panel regression based on White robust standard errors that control for heteroscedasticity errors, as well as firm clustering, year clustering, and industry effect, which induce a within firm serial correlation error structure. The figures stated are the coefficient values, except numbers in parentheses, which are *p*-values. The dependent variable is the excess value of firms. The control variables are relative size (RSIZE), relative profitability (ROIS), relative growth (RCES), and relative leverage (LRDE). The main independent variables are the industrial diversification (DIND), international diversification (DINT), industrial-international diversification (INTIND), ownership concentration (UO), and its interactive terms (INDUO, INTUO, and INTINDUO). The model is as follows:

$$Value = \alpha + \beta_1 RLTA_{i,t} + \beta_2 ROIS_{i,t} + \beta_3 RCES_{i,t} + \beta_4 RLEV_{i,t} + \beta_5 D_{INT,i,t} + \beta_6 D_{IND,i,t} + \beta_7 DINTIND_{i,t} + \beta_8 UO_{i,t} + \beta_{10} (INT * UO)_{i,t} + \beta_{11} (IND * UO)_{i,t} + \beta_{12} (INTIND * UO)_{i,t} + \varepsilon_{i,t}$$

	UO>30%				UO>50%			
	All	Family	Foreign	Government	All	Family	Foreign	Government
RSIZE	-0.0314 (0.8251)	0.1634 (0.2860)	-0.2367 (0.6793)	0.6179* (0.0642)	-0.0354 (0.8080)	0.1684 (0.2762)	-0.3996 (0.4709)	0.497* (0.0966)
ROIS	0.0445*** (0.0022)	0.4555*** (0.0000)	0.0533*** (0.0067)	0.8555*** (0.0012)	0.0422*** (0.0010)	0.4603*** (0.0000)	0.0542*** (0.0072)	0.7777*** (0.0029)
RCES	0.7808*** (0.0053)	0.9218*** (0.0043)	1.3713 (0.1678)	2.0578*** (0.0012)	0.7679*** (0.0060)	0.9275*** (0.0052)	1.6982 (0.1078)	1.9393*** (0.0064)
LRDE	0.4728*** (0.0000)	0.4090*** (0.0000)	0.4514 (0.1595)	0.2281 (0.5407)	0.4766*** (0.0000)	0.4180*** (0.0000)	0.4500 (0.2027)	0.3097 (0.3404)
DIND	0.3070* (0.0985)	-0.4029 (0.1745)	2.1056* (0.0941)	0.6608 (0.5631)	0.0112 (0.9383)	-0.5573*** (0.0032)	1.7634 (0.1153)	0.4761 (0.6990)
DINT	0.5092 (0.1374)	0.3176 (0.4833)	5.4530** (0.0293)	0.0032 (0.9958)	0.3485 (0.1721)	0.138 (0.6391)	3.6431* (0.0759)	0.0247 (0.9716)
INTIND	-0.0379 (0.8970)	-0.2459 (0.6253)	-1.0677 (0.6747)	1.053 (0.2389)	-0.0235 (0.9017)	-0.1094 (0.6983)	-0.8231 (0.6182)	0.4659 (0.2703)
UO	1.6014** (0.0149)	0.6096 (0.4939)	5.9605** (0.0383)	2.2822 (0.4182)	1.3776 (0.1558)	0.4805 (0.6565)	9.0391 (0.1782)	3.672 (0.5418)
INDUO	-1.7298** (0.0225)	-0.6987 (0.4915)	-5.8085 (0.2422)	-8.9115*** (0.0000)	-1.2439 (0.2269)	-0.2634 (0.8302)	-9.0992 (0.3459)	-18.5654*** (0.0000)
INTUO	-1.3581 (0.1676)	-1.0019 (0.4186)	-13.3885** (0.0284)	0.3732 (0.8498)	-1.8941 (0.1171)	-0.8593 (0.5587)	-16.0212 (0.1240)	1.9821 (0.6932)
INTINDUO	-0.0571 (0.9174)	0.4139 (0.6546)	1.8161 (0.7159)	-2.3624 (0.2701)	-0.3402 (0.5449)	-0.0427 (0.9499)	1.3455 (0.7590)	-1.8274 (0.3990)
CONSTANT	-3.1810*** (0.0000)	-2.5384*** (0.0000)	-8.4417** (0.0149)	-2.3403* (0.0528)	-2.9329*** (0.0000)	-2.4273*** (0.0000)	-6.1885** (0.0229)	-2.5588*** (0.0029)
N	612	477	81	51	612	477	81	51
R2	0.19	0.2328	0.3994	0.5881	0.1868	0.2313	0.3697	0.5767
Adj R2	0.1914	0.2344	0.4068	0.5962	0.1881	0.2329	0.3775	0.585

Note: the figures stated are the coefficient values, except the figures in parenthesis, which are *p*-values; *, **, and *** denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

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