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## Article

# Agency conflicts, firm value, and monitoring mechanisms: An empirical evidence from Indonesia

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## FINANCIAL ECONOMICS | RESEARCH ARTICLE

# Agency conflicts, firm value, and monitoring mechanisms: An empirical evidence from Indonesia

Faisal Faisal<sup>1\*</sup>, M. Shabri Abd Majid<sup>1</sup> and A. Sakir<sup>1</sup>

**Abstract:** Using a linear model, previous studies on the ownership concentration–firm performance nexus have produced inconsistent empirical findings and found no consensus concerning the measure of agency conflict control mechanism. Using a non-monotonic model and a combination of agency conflict control mechanisms, this study contributes to the existing literature by examining the moderating roles of additional blockholders, dividends, foreign ownership types in determining the effect of ownership concentration on performance of 580 Indonesia's firms during the 2009–2018 period. Employing panel piecewise and moderated regression models, the study documented that the ownership concentration–firm performance relationship had followed a non-monotonic pattern, proving both monitoring and expropriation hypotheses exist for non-financial firms in Indonesia. These findings highlighted the important role of additional blockholders, dividends, foreign ownership types as moderating

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## PUBLIC INTEREST STATEMENT

Inconsistent empirical results regarding the effect of ownership concentration on firm value and disagreement concerning the measure of agency conflict control mechanism have motivated this study. More specifically, this study examines the agency conflicts and their control mechanisms to the relation between the ownership concentration of largest shareholders and firm value from the perspective of Indonesia's emerging market. The results revealed that both monitoring and expropriation hypotheses exist for non-financial firms in Indonesia. The findings of the study highlighted the importance of the role of additional blockholders, dividends, and types of foreign ownership as moderating variables, and debt as a predictor variable to influence firm performance, functioning as the control mechanisms for the agency conflict. Finally, the study's findings may benefit regulators, policymakers, and investors interested in the Indonesian capital market to design a proper investment policy.

variables, and debt as a predictor to influence firm performance, functioning as the control mechanisms for the agency conflicts in Indonesia.

**Subjects:** Corporate Finance; Investment and Securities; Risk Management; Corporate Governance

**Keywords:** agency conflicts; ownership concentration; monitoring mechanisms; firm value; Indonesia

**Jel classification:** C58; G32; G35

## 1. Introduction

The role of ownership structure, especially the concentrated ownership structure of large shareholders, has been an important topic in corporate governance. Theoretically, the large shareholders could play essential roles in reducing agency problem Type 1, namely agency conflict between shareholders and management. The large shareholders have a huge incentive and capability to control the management of the firms. The large shareholders could reduce the free-rider problem in performing supervision so that this classical conflict could be minimized and provide a positive effect on the firm value.

On the other hand, empirical researches also indicate that there is inconsistent behaviour of the concentration of large shareholders in the company. The concentration of large shareholders could also invite agency problem Type 2, namely agency conflict between majority and minority shareholders (Dharwadkar et al., 2000; Hu & Izumida, 2008a; Iturriaga & Crisostomo, 2010; Shleifer & Vishny, 1997; Thomsen, 2005; Thomsen & Pedersen, 2000). In the beginning, large shareholders play a role in monitoring the company's increase in corporate value. However, when the ownership concentration gets higher, agency conflict between the majority and minority shareholders increases. The majority of shareholders tend to increase their own welfare by doing expropriation or entrenchment and enjoy private benefits from the control they have and inflict the minority shareholders. Such agency conflict is received negatively by the market and decreases the corporate value. By using a different dependent variable, Gonzalez et al. (2017) also prove the expropriation hypothesis done by the largest shareholder. The study found a negative relationship between ownership concentration of the largest shareholders and dividends when the largest shareholders are an individual investor, the finding consistent with wealth expropriation of minority shareholders. Similarly, Shleifer and Vishny (1986), Fama and Jensen (1983b), and Morck et al. (1988) also find that concentrated ownership above a certain level may lead to the entrenchment of owner-managers that expropriate the wealth of non controlling shareholders and thus negatively affect firm value.

The studies about agency conflict, specifically the impact of ownership concentration toward firm performance, have been intensively emphasized on the developed stock markets. For example, in the stock market of the US, Demsetz and Lehn (1985) find that ownership concentration that was measured by the fifth, the twentieth largest shareholders, and a Herfindahl index do not affect firm performance. In the stock market of the Czech Republic, Claessens and Djankov (1999) show that a ten percent increase in concentration leads to a three percent increase in short-term profitability and a two percent increase in short-term labour productivity. In the Continental European stock market, Thomsen and Pedersen (2000) find a negative relationship between ownership concentration of blockholder and firm value. Meanwhile, in the stock market of Hungary Earle et al. (2005) find that the ownership concentration of multiple blockholders, specifically the largest blockholders and the second-largest shareholders, has a positive effect on firm profitability. Hu and Izumida (2008a) find that ownership concentration owned by the ten largest shareholders, and the five largest shareholders have U-shaped relation to performance in the Japanese stock market. Finally, Arosa et al. (2010) finds that a greater ownership concentration in the first generation (family firms) may bring monitoring and expropriation hypothesis into play in the stock market of Spain. The larger shareholder employs its controlling position to monitor the manager and extract benefits at the cost of small shareholders. All of these empirical evidences show a trade-off between the monitoring and entrenchment/expropriation effects.

Similar studies have also conducted on the emerging markets such as in China by Xu and Wang (1999) who find that ownership concentration has a positive effect on firm performance. For the case of the Jordanian stock market, Mohammed (2018) finds that ownership concentration affects firm performance negatively, while the impact of blockholder varies between positive and negative toward the firm performance. For the case of the stock market of Vietnam, Tran and Le (2020) find a non-linear relation between ownership concentration and firm value, but no association between ownership concentration and firm profitability. In addition, ownership concentration also increases the riskiness of accounting performance.

Meanwhile, similar studies on the Indonesian stock market have been limited comparing to the vast growing of the market in the region. Studies about the agency conflict on the Indonesian stock markets, especially the impact of ownership concentration toward firm performance, have been conducted by Hanafi et al. (2013), focusing on 117 Indonesian banks and 28 public banks for ownership concentration and commissioner analysis, respectively. They find that ownership concentration and governance by a larger number of commissioners may improve bank profitability and handling of risk. Focusing on 45 blue-chip firms listed in Indonesian stock exchange and employ logistic regression model, Basyith et al. (2015) find that ownership concentration by blockholders has a positive impact on firm performance, while managerial ownership has negative impact toward firm performance. Yosi and Yuningsih (2016) use 412 companies listed in Indonesia stock exchange and employ multiple linear regression, find that ownership concentration by institutional ownership and managerial ownership does not affect firm value. By using a fixed panel regression model and utilizing 240 observations of the property and real estate companies in Indonesia stock exchange, Saleh et al. (2017) find that ownership concentration by the institutional investor has a positive effect on firm performance.

Meanwhile, managerial ownership has a partially negative significant effect on firm performance. Nuzula and Lokuwaduge (2017) find contrary results. Using 425 samples of listed firms in Indonesia stock exchange and employing multivariate model analysis with control variables find that ownership concentrations of institutional investor and managerial ownership have a negative effect on firm performance. These inconsistent empirical evidence regarding the effect of ownership concentration toward firm performance motivate the present study to provide new evidence from the perspective of the Indonesian stock exchange. All of these evidence show the existence of a trade-off between the efficient monitoring hypothesis and entrenchment/expropriation hypothesis.

Thus, this study is aimed at examining the effect of the ownership concentration of the largest shareholders or major shareholders on firm value and exploring the monitoring mechanisms for such agency conflict in the emerging stock market of Indonesia. Unlike the previous studies that only investigated the linear effect and employed on a shorter data period, the present study examines a more comprehensive impact of ownership concentration on firm value in the Indonesian stock market by using a more extended period of study from 2009 to 2018.

Specifically, this study has several advantages compared to the earlier studies on this issue in the Indonesian stock market. Firstly, this study employs a non-linear effect (non-monotonic) model to test the effect of ownership concentration toward firm value. By using the piecewise regression model, this study examines whether there is an optimal level of ownership concentration of the major shareholders. At this point, the threshold effect and asymmetrical relationship between their ownership concentration and corporate value could be determined. Secondly, this study utilized a longer study period from 2009 to 2018 (10 years), comprising 580 firm-year observations. Third, this research combines agency theory of free cash flow, the theory of partial benefit of corporate control, and rent extraction hypotheses to investigate the effect of ownership concentration of the largest shareholders on the corporate value. It also attempts to examine the monitoring mechanisms of such agency conflict by using the hierarchical regression analysis. Fourth, to the best of our knowledge, this study is among the first studies to re-examine the effect of ownership concentration of the largest shareholders on firm value by adopting a longer study

period and using a non-linear model and offering some control mechanisms through debt policy, a coalition of additional blockholders, dividend policy, and foreign ownership type (owner identity). By utilizing an unbalanced panel data and applying the parametric statistics of piecewise regression and hierarchical regression analyses, the findings of this study are hoped to shed some light for investors in designing their investment strategies to gain an optimal return based on such conflict.

## 2. Literature review and hypothesis development

### 2.1. Effect of ownership concentration of the largest shareholders on corporate value

Agency theory (Jensen & Meckling, 1976) discusses the relationship between employer and employee to do the work. This theory has the basic assumption that there is nexus of contract regulating the relationship between the employer (principal) and agent. The principal (shareholders) will give the agent (management) the right to engage his right. Both parties are bound to contract to state their rights and obligation. The principal provides facilities and funds to run the company. Meanwhile, the management is obliged to manage what is trusted by the shareholders. For this interest, the principal will gain results in the form of profit-sharing, while the agent receives a salary, bonus, and various kinds of compensation.

According to Douma et al. (2006) and Dharwadkar et al. (2000), companies in developing countries are characterized by unique agency problems emerging from principal-principal goal incongruence or known as agency problem Type 2. This problem is in addition to traditional agency problems based on principal-agent goal incongruence, as observed in many Anglo-Saxon countries. The difference of goal between principal and principal comes from the appropriation of the majority shareholders to the rights of minority shareholders, when they have massive control over the company and such condition is supported by poor corporate governance in developing countries (Claessens et al., 2000; Douma et al., 2006).

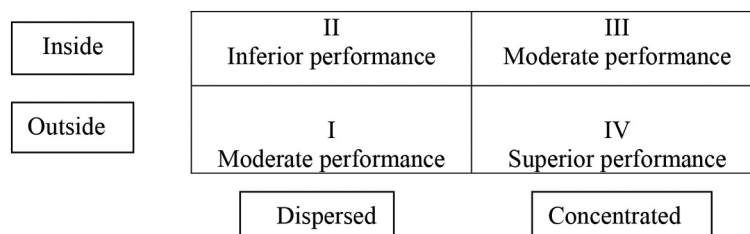
The effect of different ownership categories on the corporate value by considering those agency problems is shown in Figure 1. In their study, Dharwadkar et al. (2000) propose twin dimension of ownership, namely ownership concentration and scale of ownership concentration. Then, Douma et al. (2006) divide into four quadrants to determine the scale of the effect of each dimension on the firm value. Quadrant I represents the combination between dispersed shareholders and outside shareholders whose impact on firm performance is moderate because their ability to effectively monitor is restricted by high coordination cost and asymmetric information problem (Douma et al., 2006). Quadrant II represents the combination of dispersed shareholders and inside shareholders, which causes the worst combination of both. Being inside and dispersed shareholders destroy their incentive structure and their ability to carry out effective supervision in the firm (Claessens et al., 2000; Douma et al., 2006; Khanna & Palepu, 2000; Sarkar & Sarkar, 2008). Consequently, their effect on firm performance is inferior.

Quadrants III and IV are the focus of this research because they are the most appropriate one with the characteristics of ownership structure in Indonesia, which has a concentrated ownership structure. Quadrant III represents concentrated and inside ownership. Highly concentrated ownership causes the incentive to manage the company more efficiently. However, such a condition also gives a chance to do expropriation towards the minority shareholders (Claessens et al., 2000; Douma et al., 2006; Wiwattanakantang, 2001). Therefore, its effect on firm performance is moderate. In this research, such a condition is represented by inside investors. Quadrant IV describes concentrated-outside shareholders who are estimated to have the strongest effect because they can reduce expropriation towards the minority shareholders and at the same time maximize the benefit of investment risk, incentive alignment and monitoring (Douma et al., 2006; Dharwadkar et al., 2000; Shleifer & Vishny, 1986).

In contrast to previous researches, this research divides the quadrant III and IV by analyzing the effect of the ownership concentration level of the largest shareholders in controlling the company



**Figure 1. The relation between ownership structure and performance perceived from agency theory.**



on corporate value. This effect could be positive and followed by a negative pattern. Meanwhile, Douma et al. (2006) argue that ownership structure concentrated by investors from outside of the firm has the strongest effect on the firm value. This research refers to the empirical findings of Arosa et al. (2010), Hu and Izumida (2008a), Iturriaga and Crisostomo (2010), Lima and Hossain (2018), Lin and Chang (2008), Thomsen (2005), and Thomsen and Pedersen (2000). They have a different argument that concentrated ownership structure affects the corporate value differently, depending on their level of ownership concentration.

The corporate value perceives that agency cost appears as a consequence of different ownership structures (Bozec & Laurin, 2008; Morck et al., 1988). In the concentrated ownership structure, the corporate value perceives that agency cost emerges as the result of agency conflict between the majority and minority shareholders. According to Zhuang et al. (2001), the scale of ownership concentration of the shareholders will determine the scale of conflict which occurs between the majority and minority shareholders. The ownership structure will determine the distribution of power among all departments in the company. In the concentrated ownership structure, the majority shareholders have colossal power to affect managers in making the decision, which is often useful for their own interest and inflict the minority shareholders, so that agency conflict occurs between the majority and minority shareholders (Cuervo, 2002; Gugler & Yurtoglu, 2003; Shleifer & Vishny, 1997; Zhuang et al., 2001).

Referring to the existing theories and empirical evidence, the effect of ownership concentration on the firm value could be positive or negative. The positive effect is in harmony with the efficient monitoring hypothesis or convergence of interest hypothesis (Blair, 1996; Chen, 2001; Dodd & Warner, 1983; Earle et al., 2005; Fama & Jensen, 1983b; Gürsoy & Aydoğan, 2002; Jensen & Meckling, 1976; Jusoh, 2016; Sulong & Nor, 2010; Imam & Malik, 2007; Pound, 1988; Shleifer & Vishny, 1986). Meanwhile, the negative effect is in line with expropriation hypothesis or entrenchment hypothesis (Cuervo, 2002; Fama & Jensen, 1983a; Hu & Izumida, 2008a; Iturriaga & Crisostomo, 2010; Lima & Hossain, 2018; La Porta & Lopez-de-Silanes, 1999; Shleifer & Vishny, 1997; Stulz, 1988). The interaction between both effects causes non-linear effect from the ownership concentration on the corporate value (Chen et al., 2004; Cuervo, 2002; Dharwadkar et al., 2000; Lin & Chang, 2008; Hu & Izumida, 2008a, 2008b; Iturriaga & Crisostomo, 2010; Thomsen, 2005; Thomsen & Pedersen, 2000). The non-linear effect is found to have strong evidence that the conflict occurs between the majority and minority shareholders (Iturriaga & Crisostomo, 2010). Cuervo (2002), Iturriaga and Crisostomo (2010), Lin and Chang (2008), and Thomsen and Pedersen (2000) argue that when large shareholders have high ownership of shares, they tend to do entrenchment and exploit private benefit for their own interest on the cost borne by the minority shareholders. Such condition causes a non-linear effect in bell-shaped form, which is the combination of positive effect because of monitoring conducted by the majority shareholders to the management and negative effect as a consequence of entrenchment or expropriation towards the minority shareholders. The argument is that when the majority of shareholders do not have high ownership, they cannot expropriate (extract private benefit) and require other shareholders. However, as their ownership increases in the firm and when the ownership reaches a certain maximum limit, they have huge power to increase their moral hazard to do entrenchment or expropriation towards the minority shareholders. Thus, higher agency conflict between the majority and minority shareholders occurs on high-concentrated ownership structure

will, in turn, cause a decrease in the firm value. The relationship between the largest shareholders and corporate value will follow a non-monotonic (positive and negative) pattern. Hence, the study proposes the following first hypothesis.

H1a: The ownership concentration of the largest shareholders has a positive effect on the corporate value when the ownership concentration is not high (up to a certain level).

H1b: The ownership concentration of the largest shareholders has a negative effect on the corporate value when the ownership concentration is high (after the threshold limit).

## **2.2. Effect of debt policy on corporate value**

Debt policy can be used as a control mechanism for agency conflict (Faccio et al., 2001; Jensen & Meckling, 1976). The increase of debt can reduce FCF conflict and show to the public that the majority of shareholders do not use FCF for their own interest, but for paying debt and debt interest periodically. Debt can move management monitoring from the shareholders to the creditors (Easterbrook, 1984; Faccio et al., 2001; Jensen & Meckling, 1976; Jensen, 1986; Rozeff, 1982). Debt will push the firm to reduce unnecessary cash expenditures so that it improves company efficiency (Grossman & Hart, 1982). Debt produces external monitoring, and consequently, the majority of shareholders should show good performance, known as control hypothesis (Jensen, 1986; Sarkar & Sarkar, 2008). Thomsen (2005) suggests the effect of debt interaction on the relation of ownership concentration with the firm value. Hence, the second hypothesis of the study is proposed as follows.

H2: Debt ratio has a positive effect on corporate value.

## **2.3. The moderating effects of concentration of block shareholders on the impact of the largest ownership on corporate value**

There have been different views on the effect of the concentration of block shareholders on corporate value. The concentration of block shareholders may operate an indifferent way in the condition when the largest blockholders are very high compare to when the largest blockholders are not very high. When the largest blockholders have a central position, then other blockholders function only make a disturbance and lower liquidity. If this condition emerges, then the attendance of other blockholders will not contribute to further monitoring of management. But, if the largest blockholders have not a very high position, then the other blockholders would probably help monitor. The first condition is in line with a theory of partial benefit developed by Zwiebel (1995). According to this theory, a major shareholder may create its own space, while combinations of additional blockholders may cooperate when the biggest shareholder is not dominant. Zwiebel's (1995) view indicates that additional blockholders may create value below a certain threshold, but above it, they would lower value or have a small impact.

Contrary to what was expected by Zwiebel (1995), in Budapest Stock Exchange, The result of Earle et al. (2005) find that additional blockholders have a higher negative effect but statistically not significant when the largest blockholders have a not dominant position. These results support the argument that a combination of other blockholders interferes with each other and reduces liquidity, thus they contribute nothing to further monitoring of management. Earle et al. (2005) reveal that the liquidity effect of additional blockholders should be greater when the largest shareholders are bigger than 50 compared to when the largest shareholders are less than 50. Therefore, there is an interaction effect between ownership concentration of block shareholders and firm performance. But, Earle et al. (2005) fail to support the view that additional blockholders can form coalitions to control management and increase performance, both in the situation in which a major shareholder dominant or trivial controlling the company.



This research re-examines the interaction effect of block shareholders on the impact of the largest ownership toward corporate value by using a different methodology. Earle et al. (2005) include both the first largest shareholders and the sum of all blockholders excluding the largest shareholders and interact both of these variables with a dummy variable  $D = 1$  when the initial largest shareholders are dominant and 0 otherwise, assuming a threshold of 50 percent (majority ownership).

One major difference between our study and Earle et al. (2005) is that their threshold of 50 percent (dominant ownership) is pre-determined by using a dummy variable. This research employs a piecewise regression model and applies trial and error scenarios to determine the threshold indicating the monitoring and expropriation effect of behavioural change of ownership concentration of the largest shareholders from efficient monitoring action to expropriation behaviour towards the minority shareholders. In line with Earle et al. (2005), we argue that block shareholders, excluding the largest shareholders, can merge and create a coalition of control to the management and the majority shareholders in the company. Referring to above theory and empirical findings on the importance of monitoring roles played by block shareholders (Bena & Hanousek-Cerge-Ei, 2008; Faccio et al., 2001; Gugler & Yurtoglu, 2003) and independent party outside shareholders (Heugens et al., 2009), the study intends to estimate the coalition of all block shareholders by excluding the largest blockholders. The largest shareholders may play a function of control to management and the majority shareholders so that they might positively contribute to the corporate value—either when the position of first biggest shareholder ownership high or low in controlling company. Hence, the study proposes the third hypothesis, as follows.

H3a: The positive effect of ownership concentration of the largest shareholders on the corporate value will be strong when the ownership concentration is low when the concentration of block shareholders gets stronger.

H3b: The negative effect of ownership concentration of the largest shareholders on the corporate value will be weaker when the ownership concentration is high when the concentration of block shareholders gets stronger.

#### **2.4. The moderating effects of dividend policy on the impact of the largest ownership on corporate value**

Dividend and corporate values have been studied extensively in the last few decades. There are several different arguments on dividend policy and its relationship on firm value. First, irrelevant dividend policy that shows no optimal dividend policy exists since dividends do not affect firm value (Modigliani & Miller, 1961). Second, the relevant dividend policy, which means that dividend policy, has an impact on corporate value. Some argue that an increase in dividend payments causes an increase in corporate value. This view is supported by Bird in the Hand Theory (Lintner, 1956) and the signalling hypothesis (DeAngelo et al., 1994). Those arguments are supported by the results of Farrukh et al. (2017) in the Pakistan Stock Exchange, finding that dividend policy affects shareholders' wealth and firm performance positively. In line with the previous research, Swarnalatha and Babu (2017) also found the same result, in which dividend policy has a positive effect on share prices. In addition, Chaabouni (2017) also found a positive relationship between dividend announcements and stock returns.

Another argument claims that high dividend payments will reduce the corporate value, which is in harmony with the tax-preference hypothesis (Elton & Gruber, 1970). Myers and Majluf (1984) state that profitable firms have a lower incentive to pay dividends to get substantial internal funds to finance investment projects. For the firm to further grow, the rise in dividends can be bad news because it is suspected that the firm is decreasing the investment plan that, consequently, influence the corporate value. Therefore, the high dividend will reduce firm value.

Besides, there is another argument that comes from agency cost and the Free Cash Flow (FCF) hypothesis. The dividend payment will reduce free cash flow, which managers could possibly shift to their personal interest or fund less profitable projects (Jensen, 1986), which means that growth in dividend payouts may help to mitigate free cash flow agency conflict under managers' control. La Porta et al. (2000b) have documented that dividends can be used as monitoring mechanisms for protecting the rights of minority shareholders. Similarly, Sulong and Nor (2010) argue that dividend policy has a positive effect on corporate value. According to rent extraction hypothesis (Gugler & Yurtoglu, 2003), the payment of the dividend will reduce the FCF under the control of the majority shareholders through company manager and show to the public that the majority shareholders do not want to use FCF for their own interest, the FCF will be shared to all shareholders with equal proportion. The increase of the dividend payout ratio shows that they cannot do the rent extraction towards the rights of minority shareholders. Faccio et al. (2001) and Gugler and Yurtoglu (2003) find that dividend payment can reduce the expropriation of rights by the majority shareholders to the minority. According to Rozeff (1982), the dividend is generally regarded as a control instrument to help to reduce managerial freedom, and such action is a part of the optimal monitoring effort of the company or bonding package. Easterbrook (1984) and Rozeff (1982) argue that higher dividend payment will reduce agency costs by pushing the management to find external fund sources, which produces tighter control by the market to the company. The dividend payment will also force the company to enter the capital market so that monitoring the manager can be carried out at a lower cost and also allow outside shareholders to take control (Easterbrook, 1984). Thomsen (2005) finds the effect of positive interaction of dividend policy on the relation of concentrated shareholders with the firm value. Here, afraid of the expropriation of the majority shareholders, the minority shareholders prefer dividends to retained earnings so that the firm value will decrease if the company pays a low dividend. This positive effect indicates that dividend payment could prevent expropriation by the majority shareholders. Thus, the fourth hypothesis is proposed as follows.

H4a: The positive effect of ownership concentration of the largest shareholders on the corporate value will be stronger when the ownership concentration is low when the dividend payout ratio gets higher.

H4b: The negative effect of ownership concentration of the largest shareholders on the corporate value will be weaker when the ownership concentration is high when the dividend payout ratio gets higher.

### **2.5. The moderating effects of foreign ownership type on the impact of majority ownership on corporate value**

Douma et al. (2006) and Heugens et al. (2009) suggested that there is a difference in resources and capacity among the type of the majority shareholders, which cause different effects on the firm value. We estimate that the impact of ownership concentration of the largest shareholders on the firm value is sensitive to the ownership type of the largest shareholders (the identity of the concentrated owner), namely foreign vs. domestics. Compared to domestic ownership, big foreign multinational ownership (provided with the experience of good corporate governance in the country of origin) will have a significant effect on management and corporate governance practice from the branch of the local public company and its partners (Bena & Hanousek-Cerge-Ei, 2008). Having foreign shareholders, the company also inherits advanced technique, managerial skill, financial resources, and organization compared to the domestic owner (Douma et al., 2006; Heugens et al., 2009). Aydin et al. (2007), Douma et al. (2006), and Gunduz and Tatoglu (2003) find that the ownership of a foreign company has a positive effect on the company performance. However, not all foreign shareholders have good corporate governance. The foreign shareholder is a foreign shareholder from the country which has good corporate governance, referring to Djankov et al. (2008), La Porta et al. (1998), La Porta et al. (2000a), and Lindemanis et al. (2019) reveal that the origin of the acquirer important for firm performance. They find that the targets acquired by foreign owners from better-governed countries experience better performance improvement than targets acquired by foreign owners from countries with weaker governance. In the context of Asian countries, the relationship between ownership concentration and firm performance will be positively stronger when the concentrated owner is the foreigners

rather than the domestic one (Heugens et al., 2009). Hence, the study proposes the final hypothesis, as follows.

H5a: The positive effect of ownership concentration of the largest shareholders on the corporate value will be stronger when the ownership concentration is low when the largest shareholders are foreign.

H5b: The negative effect of ownership concentration of the largest shareholders on the corporate value will be weaker when the ownership concentration is high when the largest shareholders are foreign.

### **3. Research design**

#### **3.1. Sample and data collection**

This research employs secondary data obtained from the Indonesian Capital Market Directory, firms' annual financial statements, and performance summary of the listed company. The purposive sampling method with the type of judgment sampling is used to select the sample. The selection of sample members is based on several certain criteria.

First, companies are registered as non-financial companies. Financial institutions, banks, securities, and insurance companies are excluded from the sample since the nature of capital and investment in these industries is not comparable to those of non-financial companies.

Second, the companies publish a complete financial report during the study period from 2009 to 2018.

Third, the companies' financial report provides the first biggest shareholders ownership, ownership of block shareholders, dividend payment, debt, market performance of the issuer (i.e., company profit rate, stock price, number of issued stocks, and company equity), and availability of data regarding control variables.

Fourth, entry and exit firms are considered in the sample. The firm is included in the research sample as long as it meets all the sample criteria. For example, in a particular year, the company does not meet one of the sample criteria is excluded from the sample. In the next periods, if the company matches the sample criteria, it would be again included in the research sample. We expect that there is no survivorship bias in our estimate as our final sample included all firms that meet sample criteria based on theory. None of the firms is excluded from sample regardless of their size and nonexistence over the entire study period.

Finally, companies that obtain negative profits are excluded from the sample of the study to avoid anomalies in the analysis. Our final sample for estimating specific specifications is recognized as an unbalanced panel data consisting of 580 firm-year observations after removing missing values for all variables used in the research that meet the aforementioned criteria.

#### **3.2. Definition and measurement of variables**

##### **3.2.1. Dependent variable**

The corporate value is investigated as the dependent variable in this study. Agency conflict is a thing that cannot be observed, but the agency conflict would be captured by the market, as reflected in decline in its stock price. Therefore, it would negatively affect corporate value. We employ Q-ratio as a measure of corporate value, which is a market-value-based measure of performance for two reasons. First, there is no consensus concerning the measure of firm financial performance. The performance is mainly measured on two bases, either accounting return or market return measures (Daily & Dalton, 1997; Chakravarthy, 1986). Q-ratio is an alternative to profitability and holding period

rate of return measures (Stevens & Jose, 1992). Second, both accounting and market measures have inherent advantages and disadvantages. For instance, market measures can provide accurate information concerning shareholders' wealth maximization (Mikkelsen et al., 1997). Tobin's Q estimates corporate performance from a forward-looking perspective and reflects what management will accomplish (Demsetz & Villalonga, 2001). Nevertheless, the market measure also can be biased by bullish expectations, therefore fail to reflect actual firm valuation or performance. Previous studies have extensively employed this proxy (e.g. Bozec & Laurin, 2008; Chen, 2001; Douma et al., 2006; Imam & Malik, 2007; Lima & Hossain, 2018; Mohammed, 2018; Nuzula & Lokuwaduge, 2017; Sulong & Nor, 2010; Thomsen, 2005; Wiwattanakantang, 2001). Firms with high Tobin's Q ratio (or Q-ratio more than 1) indicate that the market views the firm's internal organization as exceptionally good or the expected agency costs are particularly small (Sulong & Nor, 2008).

### 3.2.2. *Independent variables*

This study explores two independent variables, namely ownership concentration, and debt policy. First, ownership concentration of the largest shareholders or major shareholders (TOP1), which is defined as the proportion of stock ownership circulated in the market owned by first biggest individual or institution with a limit of 20 percent or more (referring to the Act Number 8 of 1995 regarding Capital Markets in Indonesia). Other studies also utilize the first biggest shareholders to measure ownership concentration (Gonzalez et al., 2017; Heugens et al., 2009; Iturriaga & Crisostomo, 2010). Ghaleb et al. (2020) also use ownership concentration with a limit of 20 percent or more to test the impact of family ownership concentration on real earning management in manufacturing companies listed on Bursa Malaysia. Second, debt policy is debt ratio (TDTA), measured by the ratio of total debt to the total asset (Chaleeda et al., 2019; Lima & Hossain, 2018; Sulong & Nor, 2010).

### 3.2.3. *Moderating variables*

Three moderating variables are investigated in this study. First, block shareholders concentration, which is defined as a coalition of all block shareholders with the proportion of ownership  $\geq 5\%$  excluding the first biggest ownership (BLOCK) (Earle et al., 2005; Zwiebel, 1995), and referring to Faccio et al. (2001) and Gugler and Yurtoglu (2003) about the role of the independent second biggest block shareholders in the firm. Second, dividend policy is dividend payout ratio (DPR), namely dividend per share divided by earnings per share (Harada & Nguyen, 2011; Gugler & Yurtoglu, 2003; Imam & Malik, 2007; Kimunduu et al., 2017; Shahwan, 2019; Sondakh, 2019). Finally, the ownership type of the largest shareholders, namely foreign vs. domestic (DFORN), which is measured with the dummy variable. DFORN = 1 for the type of the largest shareholders is foreign such as foreign companies and foreign financial institutions (Heugens et al., 2009). The foreign shareholder is a foreign shareholder from the country which has good corporate governance (Djankov et al., 2008; La Porta et al., 1998, 2000a; Lindemanis et al., 2019). Foreign shareholders that have good corporate governance are measured by the corporate governance index from the country of origin of the foreign shareholders.

### 3.2.4. *Control variables*

This study employs two control variables. First, total asset turnover measured with the ratio of sales to the total asset (TATO). It demonstrates the effectiveness of the uses of all firm assets to generate sales (Lumapow & Tumiwa, 2017). Second, company size (LOGMCAP) measured with the natural logarithm of market capitalization (Kim et al., 2010; Sulong & Nor, 2008). The size of the company can be measured by total assets, log size, sales, and market capitalization. According to Dang et al. (2018), every firm size measure exhibits advantages and disadvantages, and no single measure can capture all characteristics of 'firm size'. Generally, total assets measures total firm resources, market capitalization considers firm growth opportunities and equity market condition, and total sales that measure product market competition. These measures are non-forward looking.

Besides, researchers can use the number of employees, total profits, and net assets to measure company size when the main measures are not available or irrelevant (e.g., the market cap for private firms and total sales for start-up firms). Because every measure has pros and cons, Hart

and Oulton (1996) suggest that, in practice, choosing which measure to use is very much depending on data availability. The choice of firm size measures also depends on the purpose of the specific study. According to Dang et al. (2018), the existing literature has little to say about the rationale of using a certain measure of firm size for specific corporate finance research. No single previous study provides a comprehensive assessment of the sensitivity of empirical results in corporate finance to different measures of firm size.

Dang et al. (2018) investigate the effect of different firm size, that is log asset, log sales and market capitalization by using the OLS and industry-fixed effect. They found that the coefficient of determination is higher in the regression model in which market capitalization is used as independent variable than in the regression model in which total assets or total sales is used as the independent variable. Their results remained consistency when the return on asset is used as dependent variable instead of Q-ratio. Therefore, to avoid causality issues, this research selects variables based on financial theories and previous studies, so that a good model specification is obtained. Sulong and Nor (2008) confirmed that market capitalization had a significant positive effect on Q-ratio.

### 3.3. Research model and hypotheses testing

This study employs the piecewise regression model and moderated regression model (hierarchical regression model) with the panel least squares estimation technique to test the hypotheses. We employ the Hausman specification test to choose between random effects and fixed effects models. Next, the classical assumption tests are conducted to ensure the proposed estimated model produce the best linear-unbiased estimator (BLUE). Next, the classical assumption tests are conducted to ensure the proposed estimated model produce the best linear-unbiased estimator (BLUE). First, to detect the multicollinearity, the correlation coefficient between independent variables and the Variance Inflation Factors (VIFs) are employed (Hair et al., 2014). Second, to detect the multicollinearity, the correlation coefficient between independent variables and the Variance Inflation Factors (VIFs) are employed (Hair et al., 2014). Finally, the Durbin-Watson (DW) test is employed to detect possible autocorrelation between error terms. Heteroscedasticity test is carried out to detect whether ( $\sigma^2$ ) variant dependent variable is increasing as a result of the increase in the independent variable using the Park test (Gujarati & Porter, 2015).

The piecewise regression model is presented in Equation (1) as follows (Chen et al., 2004):

$$Y_i = \alpha_i + \beta_1 x_{i1} + \dots + \beta_k X_{ik} + \theta_1 Z_{i1} + \dots + \theta_p Z_{ip} + \varepsilon_i, i = 1, \dots, n \quad (1)$$

where  $Y_i$  = dependent variable.  $Z_i$  = independent variables affecting the non-linear shape of  $Y_i$ .  $X_i$  = control variables.  $Z_{i1}, \dots, Z_{ip}$ , = piecewise variables.

To apply the piecewise regression model, the number of and positions of the turning points have to be pre-determined. The piecewise regression model assumes that the point indicating the change of ownership concentration on the firm value is previously determined, and the relation between adjacent points is linear (Chen et al., 2004). This research used trial and error scenarios to see the monitoring and expropriation effect of behavioural change of ownership concentration of the largest shareholders from efficient monitoring action to expropriation behaviour towards the minority shareholders. The change of slope from positive to negative reflects such expropriation behaviour. The behavioural change of ownership concentration of the largest shareholders can be observed from the piecewise regression model, which is defined as:

$$Z1_i = Z_i, \text{ if } Z_i < P_1, \text{ and } = P_1, \text{ if } Z_i \geq P_1. \text{ Then } Z2_i = 0, \text{ if } Z_i < P_1, \text{ and } = Z_i - P_1, \text{ if } Z_i \geq P_1$$

where  $P_1$  indicates the change of slope.

Next, the piecewise regression model can be further rewritten as:

$$QRATIO_{it} = \beta_0 + \beta_1 Z1_{it} + \beta_2 Z2_{it} + \beta_3 TATO_{it} + \beta_4 LOGMCAP_{it} + \varepsilon_{it} \quad (2)$$

The moderated regression model or hierarchical regression model is presented in Equations (3)–(5). The regression model containing the main effects derived from Equation (2) previously:

$$Q_{it} = \beta_0 + \beta_1 Z1_{it} + \beta_2 Z2_{it} + \beta_3 TATO_{it} + \beta_4 LOGMCAP_{it} + \varepsilon_{it} \quad (3)$$

The regression model containing main effects and moderating variables:

$$Q_{it} = \beta_0 + \beta_1 Z1_{it} + \beta_2 Z2_{it} + \beta_3 TDTA_{it} + \beta_4 BLOCK_{it} + \beta_5 DPR_{it} + \beta_6 DFOWN_{it} + \beta_7 TATO_{it} + \beta_8 LOGMCAP_{it} + \varepsilon_{it} \quad (4)$$

The regression model containing main effects, moderating variables, and the effects of interaction with moderating variables:

$$Q_{it} = \beta_0 + \beta_1 Z1_{it} + \beta_2 Z2_{it} + \beta_3 TDTA_{it} + \beta_4 BLOCK_{it} + \beta_5 DPR_{it} + \beta_7 DFOWN_{it} + \beta_8 Z1 * BLOCK_{it} + \beta_9 Z2 * BLOCK_{it} + \beta_{10} Z1 * DPR_{it} + \beta_{11} Z2 * DPR_{it} + \beta_{12} Z1 * DFOWN_{it} + \beta_{13} Z2 * DFOWN_{it} + \beta_{14} TATO_{it} + \beta_{15} LOGMCAP_{it} + \varepsilon_{it} \quad (5)$$

where *QRATIO* is the corporate value,  $\beta_0$  is the intercept,  $\beta_1$ – $\beta_{14}$  are the estimated coefficients of each independent variable, *Z1* is the ownership concentration of the largest shareholders on low concentration, *Z2* is the ownership concentration of the largest shareholders on high concentration, *TDTA* is the debt policy, *BLOCK* is the additional blockholders, *DPR* is the dividend payout ratio, *DFOWN* is the dummy variable for foreign ownership type, *TATO* is the total asset turnover, *LOGMCAP* is natural logarithm of market capitalization, \* is the interaction estimates (moderating effect) (e.g., *Z1*\**BLOCK* is the interaction estimates between *Z1* and *BLOCK*), and  $\varepsilon$  is error term.

## 4. Results and discussions

### 4.1. Descriptive statistics

Table 1 presents a statistical description of all main variables to determine the potential mean differences over the sample period 2009–2018. *QRATIO*, on average, is 1.632, meaning that the market capitalization plus debt book value is approximately 1.632 times the value of the assets. *TOP1*, on average, is 47.596 percent, which indicates that firms in Indonesia have a highly concentrated ownership structure. *TDTA*, on average, is 42.991 percent, which shows that 42.991 percent of total asset is financed by total debt.

Furthermore, *BLOCK*, on average, is 26.224 percent, which means that coalition of all block shareholders with the proportion of ownership  $\geq 5$  percent, excluding the first biggest ownership in Indonesia, is relatively low. *DPR*, on average, is 46.858 percent, which means that the dividend per share is 46.858 times earnings per share. *DFOWN* is a dummy variable of the foreign investor. *TATO*, on average, is 0.995, which means that each the Indonesian Rupiah (IDR) of the asset could generate IDR0.9946 in sales. *LOGMCAP*, on average, is 6.354 percent, which means that size of the company measured by the natural logarithm of market capitalization in a given year is 6.354 percent.

### 4.2. Empirical results

This research utilizes the Hausman test to select between fixed effect model and random effect model (null hypothesis of a random effect model) (Anton, 2016). The results found in Tables 4 and 5 show that the null hypothesis is rejected. This shows that the fixed effect panel model offers a better fit of data.



Prior to discussing the estimated findings based on the fixed effect panel model, the results of classical assumption tests are earlier provided. Table 2 provides the findings of multicollinearity, Table 3 reports the findings of heteroscedasticity, and autocorrelation is reported in Tables 4 and 5. As reported in Table 2, the study found that the estimated correlation coefficients between independent variables and the variance inflation factors (VIFs) are lesser than 0.90 and 10, respectively. These findings indicate an inexistence of multicollinearity between variables (Hair et al., 2014).

Table 3 documents the results of heteroscedasticity test. The results of the Park tests that are reported in Table 3 shows no heteroscedasticity in our estimated model since the significance value is higher than the 0.05 level. Next, Tables 4 and 5 provide the results of autocorrelation using the Durbin-Watson (DW) test for each model. As observed from the tables, the DW values are between -2 to 2, indicating our estimated models are free from the autocorrelation problem.

#### 4.2.1. *Effect of ownership concentration of the largest shareholders on corporate value*

The estimated findings of Models 1 to 6 provided in Table 4 show the results of the piecewise regression model employed to test the study hypotheses (H1a and H1b). We test the impact of ownership concentration of the largest shareholders on corporate value, and the results in Model 5 of Table 4 show that hypotheses 1a and 1b are supported.

We find that ownership concentration of the largest shareholders improves corporate value to a certain level; however, after the threshold limit, the surge up in ownership concentration of the largest shareholders starts to deteriorate corporate value. The ownership concentration of the largest shareholders has a positive effect on the corporate value when the ownership concentration is less than 70 percent ( $\beta_1 = 0.015$ ,  $p < 0.10$ ), supporting efficient monitoring hypothesis or convergence of interest hypothesis.

In contrast, above these levels, the ownership concentration of the largest shareholders has a negative effect on the corporate value ( $\beta_2 = -0.271$ ,  $p < 0.05$ ), supporting the expropriation hypothesis or entrenchment hypothesis. It means that the higher the ownership concentration of the largest shareholders can increase the moral hazard of majority shareholders through management to do expropriation against minority shareholders, which in turn, deteriorates firm value. This result indicates that the agency conflict between the majority and minority shareholders will be higher on the structure of high concentrated ownership than that of not high, which supports previous studies done by Arosa et al. (2010), Hu and Izumida (2008a), Cuervo (2002), Dharwadkar et al. (2000), Fama and Jensen (1983a), Iturriaga and Crisostomo (2010), La Porta and Lopez-de-Silanes (1999), Lima and Hossain (2018), Shleifer and Vishny (1997), and Thomsen and Pedersen (2000).

Lima and Hossain (2018) examine the impact of ownership concentration on the performance of non-financial companies listed in the Dhaka Stock Exchange. Using a 5-year panel data of the two largest sectors from 2011 to 2015 and utilizing a non-linear model in a quadratic form. They found that both monitoring and expropriation hypotheses are valid for non-financial firms in Bangladesh. Similarly, Iturriaga and Crisostomo (2010) examine the effect of ownership concentration on the performance of 213 Brazilian firms over the period from 1995 to 2004 using a non-linear quadratic model. They found that ownership concentration has a non-linear effect on firm performance. Initially, ownership concentration causes the value of most firms to increase. However, after a certain threshold, in firms with growth opportunities, the risk of large shareholders to expropriate wealth at the expense of minority shareholders increases that, in turns, causes the firm performance to decline.

This finding confirms that when ownership concentration of the majority shareholders is not high, they will play active monitoring function in the firm. But, when their ownership concentration reaches a certain high point, the existence of the high FCF will likely increase their moral hazard to do expropriation against minority shareholders, which in turn, reduces the value of the company.

**Table 1. Descriptive statistics of variables**

	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>
QRATIO	580	0.173	8.590	1.632	1.112
TOP1	580	20.510	93.060	47.596	16.397
TDTA	580	0.024	99.331	42.991	18.540
BLOCK	580	5.000	69.310	26.224	14.691
DPR	580	0.070	1516.330	46.858	104.845
DFOWN	580	0.000	1.000	0.336	0.473
TATO	580	0.000	6.178	0.995	0.750
LOGMCAP	580	2.576	8.960	6.354	0.759

<sup>1</sup>N = number of observations = 580 firm-year observations. <sup>2</sup>QRATIO = corporate value, TOP1 = ownership concentration of the largest shareholder or the first biggest ownership, BLOCK = coalition of all block shareholders excluding the first biggest ownership, TDTA = debt policy, DPR = dividend policy = dividend payout ratio, DFOWN = dummy variable of the foreign shareholder, TATO = total asset turnover, LOGMCAP = firm size.

#### 4.2.2. Effect of debt policy on corporate value

The findings of estimated Models 2 and 3 reported in Table 5 shows the results of the regression employed to test the study Hypothesis 2 (H2), which predicts that the debt ratio has a positive effect on corporate value. The results show that Hypothesis 2 is supported, since the coefficient of firm leverage is positive and statistically significant ( $\beta_3 = 0.010$  and  $0.011$ ,  $p < 0.01$  in Models 2 and 3 of Table 5).

This result shows that debt plays a vital role in controlling agency conflict between the majority and minority shareholders in Indonesia. This finding is consistent with previous empirical studies that support the market monitoring/bonding package (Easterbrook, 1984; Rozeff, 1982), FCF theory and control hypothesis (Bena & Hanousek-Cerge-Ei, 2008; Jensen, 1986).

#### 4.2.3. The moderating effects of concentration of block shareholders on the impact of the ownership concentration of the largest ownership on corporate value

Based on the results of the moderated regression model reported in Table 5 used to test the study hypotheses (H3a and H3b), we find that Hypothesis 3a is not supported ( $\beta_7 = 0.0002$ ,  $p\text{-value} > 0.05$  in Model 3 of Table 5). There are some factors allegedly as the cause of such findings. First, it is due to the existence of a free-rider problem. Since the concentration of blockholders in Indonesia is relatively low (average of 26.224 percent), thus it is costly for them to do monitoring, and they get the benefit of monitoring done by the largest shareholders. Second, partially this results in line with Earle et al. (2005), which found that additional blockholders did not moderate the effect of blockholders on firm value when the largest shareholders are less than 50 percent. These empirical results support the argument that a combination of additional blockholders interfere with each other and reduce liquidity, thus no contribution to further monitoring of management.

But interestingly Hypothesis 3b is supported ( $\beta_8 = 0.015$ ,  $p\text{-value} < 0.05$  in Model 3 of Table 5). The positive interaction direction between the ownership concentration of the largest shareholders on the high structure and coalition of all other blockholders (excluding the first biggest shareholders) is in accordance with the prediction of the theory, and statistically significant. It means that BLOCK plays an important role in protecting minority shareholders from expropriation done by majority shareholders on the high ownership structure. As we noted, our results are consistent with the general prediction by Earle et al. (2005) that the monitoring by the additional blockholders will be effective if there is no collusion between fellow blockholders. In addition, the results of this study also confirm that the liquidity effect of additional blockholders should be greater when the largest shareholders are bigger than 50 percent compared to when the largest shareholders are less than 50 percent.

**Table 2. The correlation coefficient between independent variables**

	TOP1	TDTA	BLOCK	DPR	DFOWN	TATO	LOGMCAP	VIF
TOP1	1							1.469
TDTA	-0.119	1						1.122
BLOCK	-0.535	0.027	1					1.429
DPR	0.70	-0.046	0.039	1				1.020
DFOWN	0.16	-0.153	-0.027	0.048	1			1.030
TATO	0.087	0.249	-0.001	-0.044	-0.002	1		1.169
LOGMCAP	0.042	-0.056	-0.084	0.041	0.027	-0.261	1	1.084

VIF is variance inflation factor.

**Table 3. Heteroscedasticity test with park test**

Independent and Moderating Variables	Heteroscedasticity test (Park test). Dependent Variable: Log(res2)		
	Direct Effect (Fixed Effect)		Moderating Effect (Fixed Effect)
	Main Effect	Main Effect and Moderating Variable	Main Effect, Moderating Variable, and Interaction Effect
	Model 1	Model 2	Model 3
Constant	−3.717 (0.203)	−4.464 (0.180)	−2.236 (0.548)
Z1	0.018 (0.570)	0.024 (0.508)	−0.009 (0.841)
Z2	0.376 (0.342)	0.364 (0.360)	0.654 (0.382)
TDTA	−	−0.0007 (0.949)	0.0001 (0.992)
BLOCK	−	0.009 (0.727)	−0.053 (0.356)
DPR	−	0.002 (0.095)	−0.001 (0.764)
DFOWN	−	0.258 (0.737)	2.804 (0.284)
Z1*BLOCK	−	−	0.001 (0.245)
Z2*BLOCK	−	−	0.001 (0.961)
Z1*DPR	−	−	0.000 (0.960)
Z2*DPR	−	−	−0.000 (0.793)
Z1*DFOWN	−	−	−0.065 (0.326)
Z2*DFOWN	−	−	−0.504 (0.557)
TATO	0.203 (0.647)	0.213 (0.641)	0.099 (0.836)
LOGMCAP	−0.270 (0.495)	−0.252 (0.526)	−0.309 (0.446)
N	580	580	580

Figures in parentheses are p-value. Res2 = Resid<sup>2</sup>.

#### 4.2.4. The moderating effects of dividend policy on the impact of the ownership concentration of the largest on corporate value

Based on the results of the moderated regression model presented in Table 5 used to test the study hypotheses (H4a and H4b), we find that Hypothesis 4a and 4b are supported ( $\beta_9 = -0.0001$ ,  $\beta_{10} = 0.0002$ ,  $p < 0.01$  in Model 3 of Table 5). It means that dividend affects corporate value in the firm both on the not-high concentrated structure and on the highly concentrated structure. However, the negative sign of the coefficient of regression ( $\beta_9$ ) on the low concentrated structure is not in accordance with the expectation. We expect this result is caused by the role played by dividend and the largest shareholders in controlling the agency conflict on the low ownership structure are interchangeable. Interestingly, the positive interaction direction between the ownership concentration of the largest shareholders on the high structure and the dividend payout ratio is in accordance with the prediction of the theory, and statistically significant. This result is interesting because dividends may play a monitoring agent to protect expropriation done by the majority shareholder on the highly concentrated structure. This empirical evidence supports rent extraction hypothesis (Gugler & Yurtoglu, 2003), market monitoring/bonding package (Easterbrook, 1984; Rozeff, 1982; Sulong & Nor, 2010) and free cash flow theory (Bena & Hanousek-Cerge-Ei, 2008; Jensen, 1986).

#### 4.2.5. The moderating effects of foreign ownership type on the impact of ownership concentration of the largest shareholders on corporate value

Based on the results of the moderated regression model documented in Table 5 used to test the study hypotheses (H5a and H5b), we find that Hypothesis 5a is not supported ( $\beta_{11} = -0.018$ , p-value  $> 0.05$  in Model 3 of Table 5). It is probably caused by a free-rider problem in which foreign investors take benefit of monitoring done by other types of the largest shareholders. But

Table 4. Piecewise regression models with panel least squares estimation technique						
Independent Variables	Dependent Variable: Corporate value (QRATIO)					
	Model 1 with Z1 = TOP1b30 Z2 = TOP1a30	Model 2 with Z1 = TOP1b40 Z2 = TOP1a40	Model 3 with Z1 = TOP1b50 Z2 = TOP1a 50	Model 4 with Z1 = TOP1b60 Z2 = TOP1a 60	Model 5 with Z1 = TOP1b70 Z2 = TOP1a70	Model 6 with Z1 = TOP1b80 Z2 = TOP1a80
Constant	-9.456*** (0.000)	-9.891*** (0.000)	-9.810*** (0.000)	-10.148*** (0.000)	-10.290*** (0.000)	-10.012*** (0.000)
TOP1b30	-0.012 (0.801)					
TOP1a30	0.010 (0.261)					
TOP1b40		0.005 (0.787)				
TOP1a40		0.010 (0.342)				
TOP1b50			0.003 (0.830)			
TOP1a50			0.016 (0.294)			
TOP1b60				0.013 (0.219)		
TOP1a60				-0.012 (0.701)		
TOP1b70					0.015* (0.080)	
TOP1a70					-0.271** (0.011)	
TOP1b80						0.009 (0.292)
TOP1a80						-0.044 (0.761)
TATO	0.871*** (0.000)	0.872*** (0.000)	0.867*** (0.000)	0.876*** (0.000)	0.930*** (0.000)	0.875*** (0.000)
LOGMCAP	1.634*** (0.000)	1.631*** (0.000)	1.632*** (0.000)	1.629*** (0.000)	1.654*** (0.000)	1.631*** (0.000)
R <sup>2</sup>	0.829	0.830	0.829	0.829	0.832	0.829
Adjusted R <sup>2</sup>	0.752	0.752	0.752	0.752	0.756	0.751

(Continued)

**Table 4. (Continued)**

Independent Variables	Dependent Variable: Corporate value (QRATIO)					
	Model 1 with Z1 = TOP1b30 Z2 = TOP1a30	Model 2 with Z1 = TOP1b40 Z2 = TOP1a40	Model 3 with Z1 = TOP1b50 Z2 = TOP1a50	Model 4 with Z1 = TOP1b60 Z2 = TOP1a60	Model 5 with Z1 = TOP1b70 Z2 = TOP1a70	Model 6 with Z1 = TOP1b80 Z2 = TOP1a80
F-statistic	10.687*** (0.000)	10.683*** (0.000)	10.692*** (0.000)	10.695*** (0.000)	10.905*** (0.000)	10.685*** (0.000)
DW Statistic	2.028	2.027	2.029	2.017	1.948	2.022
Hausman test - Random effect: Chi-Sq. Statistic	67.630*** (0.000)	67.309*** (0.000)	67.464*** (0.000)	67.413*** (0.000)	74.695*** (0.000)	67.728*** (0.000)
N	580	580	580	580	580	580

The asterisks \*\*\*, \*\*, and \* denotes significant at 1% level, 5% level, and 10% level, respectively. Figures in parentheses are the p-value. N = number of firm-year observations, 580 firm-years. QRATIO = corporate value. Z1 = ownership concentration of largest shareholders (TOP1) at low concentrations measured at different levels of ownership that is TOP1b30 (if TOP1 < 30%, TOP1b30 = 0–30%; if TOP1 ≥ 30%, TOP1b30 = 30%), TOP1b40 (if TOP1 < 40%, TOP1b40 = 0–40%; if TOP1 ≥ 40%, TOP1b40 = 40%), TOP1b50 (if TOP1 < 50%, TOP1b50 = 0–50%; if TOP1 ≥ 50%, TOP1b50 = 50%), TOP1b60 (if TOP1 < 60%, TOP1b60 = 0–60%; if TOP1 ≥ 60%, TOP1b60 = 60%), TOP1b70 (if TOP1 < 70%, TOP1b70 = 0–70%; if TOP1 ≥ 70%, TOP1b70 = 70%), and TOP1b80 (if TOP1 < 80%, TOP1b80 = 0–80%; if TOP1 ≥ 80%, TOP1b80 = 80%). Z2 = ownership concentration of largest shareholders at high concentrations measured at different levels of concentration of ownership, namely TOP1a30 (if TOP1 < 30%, TOP1a30 = 0%; if TOP1 ≥ 30%, TOP1a30 = 30%), TOP1a40 (if TOP1 < 40%, TOP1a40 = 0%; if TOP1 ≥ 40%, TOP1a40 = 40%), TOP1a50 (if TOP1 < 50%, TOP1a50 = 0%; if TOP1 ≥ 50%, TOP1a50 = 50%), TOP1a60 (if TOP1 < 60%, TOP1a60 = 0%; if TOP1 ≥ 60%, TOP1a60 = 60%), TOP1a70 (if TOP1 < 70%, TOP1a70 = 0%; if TOP1 ≥ 70%, TOP1a70 = 70%), and TOP1a80 (if TOP1 < 80%, TOP1a80 = 0%; if TOP1 ≥ 80%, TOP1a80 = 80%). LOGMCAPO = the natural logarithm of market capitalization (firm size).



**Table 5. Moderated regression model with panel least squares estimation technique**

Independent and Moderating Variables	Dependent Variable: Corporate value (QRATIO)		
	Direct Effect (Fixed Effect)		Moderating Effect (Fixed Effect)
	Main Effect	Main Effect and Moderating Variable	Main Effect, Moderating Variable, and Interaction Effect
	Model 1	Model 2	Model 3
Constant	−10.290*** (0.000)	−11.310*** (0.000)	−11.291*** (0.000)
Z1	0.015* (0.080)	0.025** (0.010)	0.027** (0.022)
Z2	−0.271** (0.011)	−0.260** (0.015)	−0.660*** (0.000)
TDTA	−	0.010*** (0.002)	0.011*** (0.000)
BLOCK	−	0.008 (0.260)	−0.001 (0.962)
DPR	−	−0.001** (0.021)	0.004*** (0.003)
DFOWN	−	0.175 (0.391)	0.798 (0.238)
Z1*BLOCK	−	−	0.0002 (0.571)
Z2*BLOCK	−	−	0.015** (0.030)
Z1*DPR	−	−	−0.0001*** (0.000)
Z2*DPR	−	−	0.0002*** (0.004)
Z1*DFOWN	−	−	−0.018 (0.296)
Z2*DFOWN	−	−	0.458*** (0.039)
TATO	0.930*** (0.000)	0.869*** (0.000)	0.807*** (0.000)
LOGMCAP	1.654*** (0.000)	1.650*** (0.000)	1.642*** (0.000)
R <sup>2</sup>	0.832	0.840	0.848
Adjusted R <sup>2</sup>	0.756	0.763	0.773
F-Statistics	10.905*** (0.000)	11.083*** (0.000)	11.307*** (0.000)
DW Statistic	1.948	1.985	1.957
Hausman test Test cross-section random effect: Chi-Sq. Statistic	74.695*** (0.000)	93.572*** (0.000)	109.304*** (0.000)
N	580	580	580

The asterisks \*\*\*, \*\*, and \* denotes significant at 1% level, 5% level, 10% level, respectively. Figures in parentheses are p-value. Z1 = ownership concentration of the largest shareholder at low concentrations (20% to 70%). Z2 = ownership concentration of the largest shareholders at high concentrations (70% or more).

interestingly, Hypothesis 5b is supported ( $\beta_{12} = 0.458$ , p-value < 0.05 in Model 3 of Table 5). This result shows that the effect of ownership concentration of the largest shareholders on the firm value sensitive to the type of foreign ownership, meaning that type of foreign ownership might play an important role in controlling agency conflict between the majority and minority shareholders in Indonesia. The result supports the previous empirical findings that foreign investors have more advantages than domestic investors in supervising management and the majority shareholders. These findings could be partially due to their good corporate governance (Bena & Hanousek-Cerge-Ei, 2008; Lindemanis et al., 2019), leading technique, managerial skill, financial, and organizational resource (Douma et al., 2006; Heugens et al., 2009) and generic and specific knowledge (Djankov & Hoekman, 2000).

Finally, another exciting aspect of our findings is regarding the control variables from Tables 4 and 5 for both piecewise and moderated regression models. Apparently, the control variables of firm productivity (TATO) and firm size (LOGMCAP) are found to affect corporate value. TATO demonstrates the effectiveness of the uses of all firm assets to generate sales. It also shows the extent to which the firms' assets are utilized to generate sales.

## 5. Conclusion

This study examined the agency conflicts and their control mechanisms and explored the sensitivity of foreign ownership type to the relation between the ownership concentration of largest shareholders and firm value in Indonesia over the period from 2009 to 2018. Based on the piecewise and moderated regression model with panel least squares estimation technique, the study found that: First, this empirical finding supports agency problem Type 2, that there is agency conflict between the majority and minority shareholders in a public company in Indonesia. Second, overall, the results highlight the importance of the role played by the leverage as a predictor variable, and blockholders, dividend, with types of foreign ownership as moderating variables to influence firm value, functioning as the control mechanisms for the agency conflict in Indonesia. This empirical evidence is supporting free cash flow agency theory, market monitoring/bonding package, control hypothesis, and rent extraction hypothesis.

This research contributed to the government in sharing supervisory responsibilities between shareholders, regulators, and other market participants to prevent and reduce agency conflict between majority and minority shareholders in public companies in Indonesia. Therefore, the government, in particular, the Indonesia Stock Exchange, is expected to make a proper regulation to anticipate the negative behaviour of the majority shareholders, for example, by restricting the ownership of the largest shareholder in the company. In addition, these results provide policy guidance for financial practitioners regarding ownership, the prevention of moral hazard, and the mechanisms for controlling the agency conflict between majority and minority shareholders. Thus, this will provide direction for investors in making investment decisions in the Indonesia capital market.

This study focuses its analysis only on non-financial companies of Type II agency conflict and control mechanism of debt policy, blockholders, dividend policy, and owner identity of domestic and foreign ownership types. To provide more comprehensive and robust findings, future studies on this topic might extend the scope of the study by researching not only the non-financial companies but also by exploring the financial companies in Indonesia. Future studies might empirically test other types of agency problems, i.e., Type I and III agency conflicts, and consider different ownership concentrations of the largest shareholder, such as market investors and stable investors. Finally, future studies could expand their analyses by categorizing the companies into low investment opportunities and have the high free cash flow to provide the detailed sources and sizes of agency conflicts between majority and minority shareholders.

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### correction

This article has been republished with minor changes. These changes do not impact the academic content of the article.

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