



# **Ownership Structures, Control Mechanism and Related Party Transaction: An Empirical Study of the Indonesian Public Listed Companies**

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## **ABSTRACT**

Research on GCG points out that the owners of business group are often accused of implementing expropriation. This study empirically sets up to identify the association of ownership structures with the related party transaction, as one of the forms of expropriation conducted by the majority on the minority shareholders. Also, to analyses the role of control mechanism as the intervening variable in explaining the variation resulted by ownership structures on the related party transaction. By utilizing a dataset of 276 public listed companies in the Indonesian stock exchange from 2005 to 2012, it is reported that ownership structure is associated with the related party transaction. The results further provide empirical evidence that control mechanism at a certain point is primarily important in anticipating the severe degree of tunneling as the surrogate indicator of related party transaction. However, this output still indicates quite mixed and inconclusive results for the different types of ownership structures. The implication of the finding is that the role of internal controlling governance mechanism is effective in truncating the level of expropriation on the wealth of minority shareholders.

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## INTRODUCTION

The classical model of agency theory draws the relationship among various parties and their interests on the firm, where in this case, firms are mostly ascribed being fraught with numerous types of conflict of interests (Osma & Guillamón-Saorín, 2011; Jensen & Meckling, 1976). The model of classical agency theory is commonly found in many settings and countries. However, the agency conflict in the US or European companies is different from the agency conflict in the East Asian companies, where each party has its own specific characteristics concerning their interest to the firms. The agency problem in most of the East Asian companies corresponds to the relationship between the majority and minority shareholders (Claessens, Djankov, & Lang, 2000). This happens due to the concentrated ownership that is very common as the characteristic of capital market in East Asian countries. The concentrated ownership that relates to the family business group could conceivably give rise to agency conflict in which potentially harmful as seriously as those known to afflict widely held companies (Morck & Yeung, 2003).

In the East Asia and other countries in Asia, the puzzle of ownership structures and pyramidal ownership is somehow enthralling and even deeper studied. Economists and researchers have proposed a number of exposition on the model of ownership structures in Asian setting (see, e.g., Claessens, Djankov, Fan, & Lang, Larry H, 1999; Claessens et al., 2000; Leuz & Oberholzer-Gee, 2006). The ultimate control is often dominated by the wealthy family, and this model of ownership refers to pyramidal ownership. In this case, the controlling ownership is able to use indirect ownership to exert control over the firms belonging to the pyramidal chain (Mindzak & Zeng, 2018; Riyanto & Toolsema, 2008). It denotes that those who are classified as the controlling shareholders have the opportunity to maintain control of the lower-level firms. In this regards, Riyanto & Toolsema (2008) point out that even without a majority of cash-flow rights, it inclines to generate a separation between control rights and cash-flow rights. The separation eventually results in the privilege of controlling shareholders to engage in self-dealing transaction at the expense of minority shareholders. Therefore, those who related to the self-dealing transaction would see this circumstance as a profitable transaction to transfer the resources from the lower-level to the higher-level firms or *vice versa*.

In the U.S and other countries with strong legal protection of outside shareholders', minority shareholders' right, and transparency, the procedure and mechanism of Good Corporate Governance (GCG) are considered better and well-implemented compared with most of the East Asian countries. Take, for instance, a survey on the implementation of GCG in Indonesian public companies conducted by the Indonesian Institute for Corporate Governance (IICG) and SWA Magazine in 2012 has uncovered a low response. Of the total of 332 firms, only 31 firms actively participated with response rate less than 10 percent. As a comparison, a similar survey conducted in the developed countries is followed by more than 70 percent of firms. This phenomenon reflects that there is low awareness about implementing the GCG in Indonesia (IICG, 2012). As reported in the prior studies, Juliarto et al. (2013) investigate the extent to which determinant factors of tunneling activity in five Southeast Asian countries are able to explain the current variation of the related party transaction. By employing specific related party transaction (RPT) in the form of loans to related party as the surrogate indicator of tunneling, they find that 200 firms from Indonesia, Malaysia, Philippines, Singapore, and Thailand have exemplified a positive association between managerial ownership and the extent of tunneling activity in those countries. The study of Utama (2015) also documents that GCG practice has no significant effect on the relative share of RPT assets and liabilities to book value of equity (AL), and relative share of RPT sales and expenses to book value of equity (SE), whilst ownership structures show significant effects. Further, the study of Nurazi, Santi, & Usman, (2015a) confirms that tunneling activity (related party transaction that allows firms to channel the transaction from the lower-level to the higher-level of company) is considered as a manifestation of expropriation conducted by the controlling shareholders.

In line with the current works of literature, the low response of firms' participation in the survey of corporate governance is due to the problematic governance (Leuz, Lins, & Warnock, 2010; Leuz, Nanda, & Wsocki, 2003). One of the many problems is caused by ineffective and inefficiency of management, in which the firm activity is monitored with low controlled of governance (Fich, 2005). Also, in the situation where the agent is incapable of managing the principal assets, firms are reluctant to appoint directors with the same skill, and is more likely to duplicate the skill other board members already have. This problem is further confirmed by Nurazi et al., (2015a) who point out that this circumstance eventually leads to the higher risk incurred by the shareholders and results in the lack investment activity. In a more severe way, investors' and creditors'

confidence are dramatically decreasing due to the failure of implementing good corporate governance. The financial crisis in Southeast Asian countries is the real example of bad implementation of corporate governance. As studied by Wiwattanakantang, (2001) the collapse of many firms is not due to the controlling shareholders' efforts in expropriating the company's asset. However, the presence of concentrated shareholders (controlling shareholders) is presumably associated with firm performance. In this case, Thailand companies are reported not implementing separation voting rights with the right to cash flows.

Moreover, the case of financial crisis in Indonesia in 1998 is triggered by the reckless mounting of bad loans (Kamaludin, Darmansyah, & Usman, 2015; Nurazi & Usman, 2016; Kamaludin, Susena, & Usman, 2015; Kamaludin & Usman, 2017). Particularly, Claessens et al., (2000) study the model of corporate governance in nine Asian countries. Their study reveals that more than 40 percent of public listed companies in the observed sample is dominated by the concentrated ownership. In line with the study of Johnson et al. (2000), the controlling shareholders who are noted as the large shareholders incline to practice expropriation through various channels. Here, the majority shareholders are extracting or extorting the company's cash by deciding to sell the asset, goods, and services to the related parties (management, board members, insiders, executives, affiliates or family member of these groups) that benefit themselves. This phenomenon has been highlighted by a vast body of literature. Bertrand et al. (2002); Claessens et al. (2002); Hanafi, Santi, & Muazaroh, (2013); La Porta, Lopez-de-Silanes et al. (2000); Nurazi et al., (2015a); Shleifer & Vishny, (1997); Utama, (2015) demonstrate the effort of measuring the indirect expropriation conducted by majority shareholders on the minority shareholders. However, virtually all the prior studies remain and offer mixed empirical evidence on the relation of ownership structures and related party transaction.

Despite being one of the most highly researched areas in GCG, the GCG-Related Party Transaction relationship in terms of companies' ownership structures and related party transaction in East Asian countries has seen somewhat limited empirical investigation. The novelty of approach used in this study is two-fold. First, this study is set up to test the ownership structures as the determinants of related party transaction in one of the Southeast Asian countries setting, Indonesia. Second, the implementation of GCG in respect of controlling mechanism is implemented by employing intervening variable on the relationship between ownership structure and related party transaction. Here, the number of board size and outsiders is utilized to capture the extent to which the ownership structures contribute to the variation of tunneling activity as the proxy of related party transaction. This study eventually sheds light on the phenomenon of related party transaction which is based on the transfer of welfare from the small firm to the larger firm, regarding financial supports in the different type of ownership structures.

This study ancillary makes several contributions to the work of literature. First, the findings of this study are relevant to investors (minority shareholders) to apprehend more about the probability of being expropriated by the majority shareholders through the related party transaction. Second, an extensive literature has analyzed ownership structures with the different type of related party transaction. However, the investigation on the expropriation where the resources are channeled from the lower-level to the higher-level of companies (tunneling) in Southeast Asian countries is somehow still limited. Third, because this study investigates the specific relation of ownership structures and related party transaction that is moderated by the control mechanism, it complements the prior studies in the emerging capital market literature exploring the effectiveness of good corporate governance.

The remainder of this paper is structured as follows. First, the proposed hypotheses are developed in the section of literature review and hypotheses development. Second, the empirical analysis and findings are presented in the section results and discussion, and also discuss the alternative explanations with the outline of the robustness checks. Third, the conclusion of the study is summarized in the conclusion remarks section.

## **LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT**

### **Ownership Structures and Related Party Transaction**

The first hypothesis focuses on investigating the association of ownership structures with related party transaction. In this regard, agency conflict exists due to the different interest between principal as the owner and manager as the agent (Jensen & Meckling, 1976). However, in the development of agency conflict, this conflict has led to the different interest between the majority and minority shareholders. The conflict between these two

types of shareholders is common in the emerging capital market, where the concentrated shareholders with conglomerate business model are the characteristic of emerging capital market in Asian countries (Claessens et al., 2000; Juliarto et al., 2013; Khanna & Palepu, 2000; Kim, 2004; Tang, 2016).

A large body of literature examines the ownership structures and related party transaction in the developed capital market. However, the setting in the emerging capital market is somehow scant. Prior studies document that exploitation of minority shareholders which is conducted by majority shareholders as the controlling party has attracted the focus of many researchers in China (e.g. Aharony, Wang, & Yuan, 2010; Atanasov, 2005; Baek, Kang, & Lee, 2006; Cheung et al., 2009; Dow & McGuire, 2009; Friedman, Johnson, & Mitton, 2003; Jiang, Lee, & Yue, 2010; Li, 2010; Peng, Wei, & Yang, 2011; Ji, Ahmed, & Lu, 2015; Song, 2016; Wan & Wong, 2015; Ye, Huang, & Li, 2015). In this concern, expropriation encountered by the minority shareholders is determined as an illegal action which is carried out by the controlling shareholders. The aim is to gain benefit through legal or illegal manner (Faccio, Lang, & Young, 2001; Nurazi et al., 2015a; Shi, Zhang, Arthanari, & Liu, 2016). Shleifer & Vishny, (1997) in a survey of corporate governance uncover that the evidence on the role of large shareholders who control the firm in exercising corporate governance is beginning to accumulate. Since the large or the concentrated shareholders are governed by exercising their voting rights, their powers tend to depend on the degree of legal protection of their votes among the total shareholders. In this circumstance, the majority shareholders actively react if the voting mechanism works. This results in a high degree of dictate on the decision and policies of the companies.

In the condition where the number of minority shareholders high, Shleifer & Vishny (1997) argue that the matters are more complicated, since they have established alliances with other investors to convey the exercise control. However, this pattern is rarely found in emerging capital market, where most of the ownership structure is dominated by concentrated ownership (Claessens et al., 1999, 2000). Further, as ownership gets beyond a certain point, Shleifer & Vishny (1997) note that the concentrated owners will probably gain nearly full control and are wealthy enough to prefer to use firms in generating private benefit of control. One of the taken actions is deciding to do tunneling or propping<sup>1</sup> (Johnson et al., 2000). This benefit is not shared and distributed to the minority shareholders. Thus, this situation harms the wealth of the minority shareholders where the expropriation is clearly unfair to them. In this regard, large shareholders will also face a high cost of ownership if and only if the entrenchment emerges among the dispersed ownership model.

More specifically, several prior works of literature have corroborated the relationship of ownership structures and related party transaction in the Indonesian setting. Leuz & Oberholzer-Gee, (2006) have investigated the effect of political relationships, global financing, and corporate transparency, which utilize the evidence from Indonesian setting. With respect to their findings, political connection is supposedly related to firms' financing strategies, and at the same time influences the long-term economic performance of firms itself. In their study, Leuz & Oberholzer-Gee, (2006) posit that if the minority shareholders are better protected abroad, the procedure of issuing foreign securities would be more expensive and costly for the controlling owners who are used to exploiting domestic investors. Claessens et al., (2000) use 178 public companies in Indonesia and report that 66.9 percent of the total sample have shown a pyramidal ownership structure. Given that, their study notes that the family ownership is notably the dominant controlling shareholders. Further, Utama (2015) studies the conglomeration which inclines to discharge related party transaction. Her study reveals that ownership structures and the disclosed related party transaction have positively and significantly contributed to the degree of related party transaction on sales expense-based. On the other hand, the ownership structures and the disclosed related party transaction have shown insignificant association on the related party transaction on the asset-liabilities based.

Given the use of agency theory (Jensen & Meckling, 1976) as the base of hypothesis development, which is followed by the results of prior studies investigating the relationship between ownership structures and related party transaction (tunneling), the initial expectation is necessary. As the result of this, I realize that tunneling practice is often difficult to identify since this practice is more likely hidden within the seemingly legitimate transaction among the related party. Taking the above discussion on board, the usage of variable ownership structures which is proxied by several forms of ownership structures ( $Single_{own}$ ,  $Multi_{own}$ ,

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<sup>1</sup> Referring to the study of Riyanto & Toolsema, (2008) tunneling is associated with the attempt of expropriation of minority shareholders at the lower-level firms, whilst propping leads to the opposite direction (the controlling shareholders drain either funds or resources from the parent company to its subsidiary). For an extensive study of conceptual framework on tunneling and propping, see Riyanto & Toolsema, (2008); while the survey with a particular setting in Asian studies, see Claessens, Djankov, Fan, & Lang, Larry H, (1999).

*Institutional\_Own, State\_Own, Group\_Own*) considerably important to identify the propensity of tunneling practice among different ownership structures model. Therefore, the first hypothesis is developed as follows.

***Hypothesis 1. The ownership structure is associated with the related party transaction.***

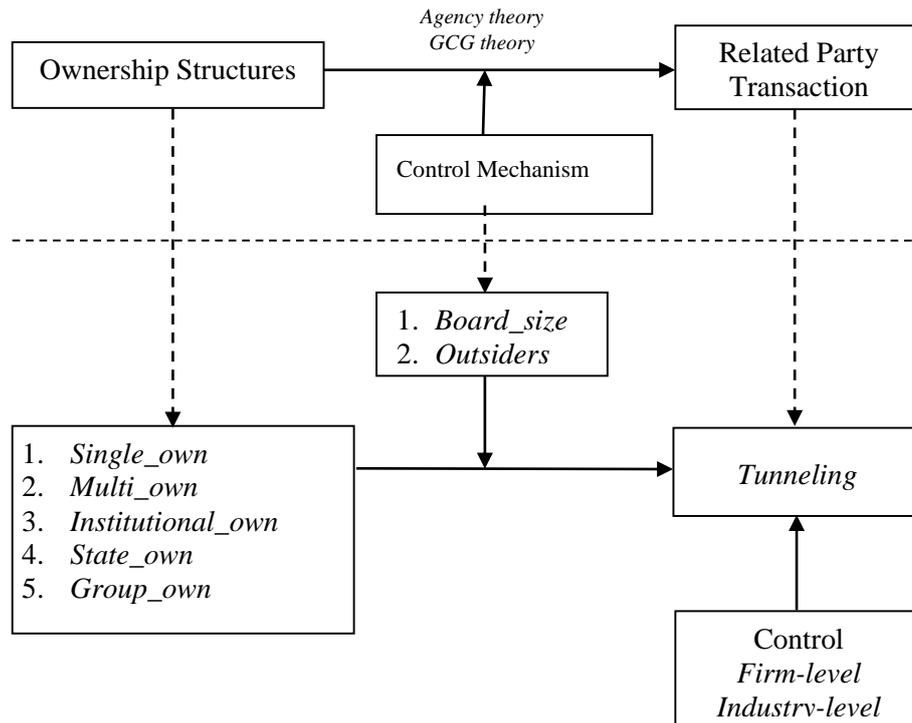
### **Ownership Structures, Control Mechanism, and Related Party Transaction**

The notion of controlling mechanism can diminish the probability of related party transaction is also in line with the agency conflict problem. As noted by Jensen & Meckling (1976), the agency problem may emerge between the principal and the agent, and or between the shareholders and creditors. In more specific circumstance, this problem also appears as the problem between the majority and minority shareholders, and between shareholders with the other stakeholders (Zhuang et al. 2000). In the Indonesian case, the ownership structure is more concentrated on several owners. As studied by Claessens et al., (2000), Nurazi et al., (2015a), Zhuang et al., (2000) the agency conflict in Indonesian setting is more likely addressed by the conflict between majority and minority shareholders. Moreover, Mutamimah (2009) in her study highlights the Indonesian capital market authorization rules number IX.H.1, which points out that the other characteristics of concentrated ownership is found if there is at least one block shareholder with minimum ownership 20 percent of the total outstanding shares.

In the relation among different types of shareholders, it is highly plausible that there is an opportunity where the minority shareholders will be expropriated by the majority shareholders (Utama, 2015). Majority shareholders have more information regarding the operation of business activity than the minority shareholders. Therefore, there is an indication that the asymmetry information between these two types of shareholders will lead to the practice of expropriation on the minority shareholders (Aluchna & Kaminski, 2017; Carlo, 2014; Hope & Thomas, 2008). Take, for instance, it is plausible that related party transaction emerges as the practice of misappropriation or expropriation on the minority shareholders. One of the expropriations that is commonly found in the emerging capital market is tunneling. This form of expropriation is considered as the transaction between the company and its insiders or affiliates. In particular, this transaction can also be derived from the companies and their management, board members, affiliates, owners, or family members of these groups (FASB Statement No. 57; Chhaochharia & Grinstein, 2007).

The second hypothesis is developed to examine the effect of moderation that is resulted from controlling mechanism on the relation between ownership structures and related party transaction. Since there are some economic reasons why controlling mechanism may lead to the lower effort and likelihood of related party transaction, the baseline argument is that the increasing number of board size and outsiders provide independent opinion about the policies taken by the company. As a result of this, the board members and outsiders are also somehow incurred by the interest of minority shareholders. They must put attention on the wealth of minority shareholders in order to not being expropriated by the majority shareholders. Past study indicates that the more concentrated ownership structure in a single of block shareholder, the more indication related party transaction comes true (Shleifer & Vishny, 1986, 1997). Moreover, Hanafi et al., (2013) report that the mechanism of corporate governance and risk management in the Indonesian banking industry help banks to improve their profit and handling of risk. In this regard, they utilize 117 Indonesian banks to study the effect of ownership concentration, and use 28 public banks to investigate the effect of commissioner on the variation of banks' risk and profitability.

***Hypothesis 2. Firms whose ownership structure considering the controlling mechanism see lower likelihood of related party transaction.***



Based on the underline theory, prior studies in the area of corporate governance, and the developed assumption, the proposed research model in Figure 1 is presented to illustrate and simplify the empirical step in the hypothesis testing. As can be observed in that Figure, this study focuses on examining the effect of ownership structures on the related party transaction. Further, to get the robust result, control mechanism takes place as the moderating variable to clearly reveal the interaction between ownership structures and related party transaction.

## METHODOLOGY

### Sample, Model Specification, and Data Source

The data obtain from the Indonesian Capital Market Directory (ICMD)<sup>2</sup> report (2005-2012) which is annually published by the Indonesian Stock Exchange (IDX). Then compile the data regarding the ownership structures, control mechanism, related party transaction, and firm-level controlling variables from eight different industries. It is discernibly realized that the phenomenon of related party transaction is difficult to measure, and cannot be directly accounted through mathematical calculation by using public information. Due to this circumstance, the procedure of sampling followed the study of Johnson et al., (2000) on the tunneling transaction. In particular, the sampling procedure is conducted by following several criteria, (i) the status of public listed company (PLCs) is officially known (active or inactive), (ii) firm without financial statement in the ICMD annual report is deleted, (iii) firm with missing value of account payable and account receivable for all the years from 2005 to 2012 is deleted, (iv) firm should have been listed on the IDX in the observed period consecutively, and (v) control data is available. The final sample accounts as 276 PLCs in the IDX. These 276 PLCs are consistently measured from the year of 2005 to 2012. It is considerably important to collect the sample that is consistently incorporated in the IDX and show the indication of related party transaction. The main goal apart from the issue of survivorship sample is to investigate the time-varying magnitude of related party transaction in IDX. Also, the industry and year fixed-effect are considerably implemented in the procedure of statistical tests.

<sup>2</sup> ICMD (Indonesian Capital Market Directory) report is the summary of financial statement derived from public listed company performance in a certain period of time. It loads financial data regarding the companies' profile, financial ratios, managerial structure, underwriter, ownership structure, trading activity of public listed company, and the data of obligation of companies, securities houses and stock brokers. This data set is famously known and used by the researchers and investors in Indonesia. Previously, ICMD report is released by ECFIN, but currently the operation of Indonesian Capital Market Directory is now merged with the official annual report as published by Indonesian Stock Exchange (IDX) (<http://www.idx.co.id/>).

Table 1 Sample construction

	Number of firms	Number of yearly observations	Percentage
Firms that are listed in the Indonesian stock exchange.	472	-	-
Firms covered in the ICMD data sets.	472	-	-
Firms and observation with sufficient information to compute the related party transaction.	276	2,216	58.4

Data source: Indonesian Capital Market Directory (ICMD), for years 2005-2012.

This Table describes the procedure of sample selection of the Indonesia Capital Market Directory data sets. Each of my samples is based on the same information of yearly notion of related party transaction activities. The yearly related party transaction is drawn from an ICMD database reports and is for the period 2005-2012. The sample is considered to undergone the survivorship issue in attempt to see the cross-section indication effect of related party transaction in the Indonesian Stock Exchange (IDX).

Further, panel data regression is employed in the statistical estimation procedures. Referring to the opinion of Pedhazur, (1997) and Baltagi (2005), the within-subject information (cross-sectional data with 276 public listed companies) and across time (2005-2012) are combined in the process of panel data analysis. The result from Ordinary Least Square (OLS) model show the error variance for different cross-section units which corresponds to the presence of heteroskedasticity. Therefore, the standard error resulted from this OLS estimation are considered inconsistent. To anticipate this issue, this study employ a panel corrected standard error model which assumes that the standard errors within unit (cross-sectional) are homoskedastic. Finally, run all the statistical models (1 and 2) by employing robust variance estimates.

Since the focus of the study is on examining the association of ownership structures with related party transaction (tunneling), firstly begin to test the main relationship between the five types of ownership structures and tunneling using the following model 1.

$$Tunneling_{i,t} = \alpha + \beta_1 Single\_Own_{i,t} + \beta_2 Multi\_Own_{i,t} + \beta_3 Institutional\_Own_{i,t} + \beta_4 State\_Own_{i,t} + \beta_5 Group\_Own_{i,t} + \beta_6 \sum Control_{i,t} + \beta_7 \sum Industry + \beta_8 \sum Year + \varepsilon$$

Moreover, in order to examine the effect of GCG controlling mechanism on the association between ownership structures and tunneling, moderated multiple regression analysis was used. Therefore, to further test the interaction effect I specify the following model 2 as follow.

$$Tunneling_{i,t} = \alpha + \beta_1 Ownership\_Structure_{i,t} + \beta_2 Board\_size_{i,t} + \beta_3 Outsiders_{i,t} + \beta_4 Ownership\_structure * Board\_size_{i,t} + \beta_5 Ownership\_structure * Outsiders_{i,t} + \beta_6 \sum Control_{i,t} + \beta_7 \sum Industry + \beta_8 \sum Year + \varepsilon$$

The statistical model 1 is particularly important for describing the arrangement of conducting panel data regression. Related party transaction ( $Tunneling_{i,t}$ ) notably denotes as the difference between accounts payable and account receivable divided by total assets. Here, account payable and account receivable are the transactions with the related party.  $Single\_Ownership_{i,t}$  is composed of a dummy, in which it equals to 1 if shareholder controls more than 50% equity. If the ownership is ranging from 40 to 50%, and higher than the percentage of shares held by the second to the fifth, then I would still regard this as a single major shareholder and give value as 1. Herewith, single ownership is intended to classify the firm which is categorized and dominated by the structure of family ownership.  $Multi\_Ownership_{i,t}$  is also composed of a dummy. The data is determined as 1 if the largest shareholder holds at least 10 to 50%, the second largest holding at least 10%, and the percentage ownership of the owner on the second to the fifth larger than the first owner. Particularly, multi-ownership is intended to classify the firm which is categorized and dominated by non-family ownership (publicly traded).  $Institutional\_Ownership_{i,t}$  denotes the percentage of shares held by the institutional investors.  $State\_Ownership_{i,t}$  equals to 1 if the government becomes the ultimate controller of the company, and otherwise.  $Group\_Ownership_{i,t}$  equals to 1 if the samples involve as a part of a business group (conglomeration) and *vice versa*. By grouping the ownership structures yearly in the dichotomous variable, I control for the changes of ownership structures throughout the years (2005-2012).

Moreover, in statistical model 2, despite testing the effect of ownership structures on related party transaction ( $Tunneling_{i,t}$ ), I insert a moderating variable namely control mechanism which consists of two surrogate indicators. First,  $Board\_size_{i,t}$  which prevalently denotes as the number of members on the board of directors. Second,  $Outsiders_{i,t}$  is measured as the percentage of outsiders on the board of directors. These two moderating variables are important to explain the role of monitoring mechanism as one of the GCG practices. It is conjectured that the presence of control mechanism will lower the likelihood of related party transaction in the company.

### Variable Definition

This study is designed to test the effect of ownership structures on the related party transaction. Also, the effect of control mechanism in Good Corporate Governance (GCG) is considered as the intervening factor which can either strengthen or weaken the association between ownership structures and related party transaction. The specific measures of each variable are indicated as follows.

Table 2 Variable definitions

Variable	Definition and Measurement	Type of Data	Source
Panel A. Variables employed in level models			
<i>Dependent variable</i>			
$Tunneling_{i,t}$	The difference between the information of accounts payable and accounts receivable, divided by the total assets. Here, accounts payable and accounts receivable is a transaction with the related party (related party transactions) mainly the flows from companies which operate from the lower level to the higher level (Johnson et al., 2000).	Continuous	ICMD report
<i>Independent variables</i>			
<i>Ownership Structures</i>	Is defined as the distribution of equity regarding the number of capital invested, the votes right, and it is also considered by the identity of equity owners on the related stocks.	-	-
$Single\_Own_{i,t}$	A dummy variable, equals to 1 if one shareholder controls more than 50% equity. If the shareholding is between 40% and 50%, and higher than the percentage of shares held by the owner of the second to fifth, then I would still regard this as a single major shareholder and given a value as 1. Hereby, $Single\_Own$ is intended to classify the firm which is categorized and dominated by the structure of family ownerships (Gao & Kling, 2008).	Binary (0;1)	ICMD report
$Multi\_Own_{i,t}$	A dummy variable, 1 if the largest shareholder holding shares of 10% -50%, the second largest holding at least 10% and the percentage ownership of the owner on the second to fifth larger than the percentage ownership of the first owner. In particular, $Multi\_Own$ is intended to classify the firm which is categorized and dominated by non-family ownerships structure (publicly traded) (Gao & Kling, 2008).	Binary (0;1)	ICMD report
$Institutional\_Own_{i,t}$	The percentage of shares held by the institutional investors.	Continuous (0-1)	ICMD report
$State\_Own_{i,t}$	A dummy variable, equals to 1 if the government becomes the ultimate control of the company, and 0 if otherwise.	Binary (0;1)	ICMD report
$Group\_Own_{i,t}$	A dummy variable, equals to 1 if the firm is under a business group, and 0 if otherwise (Nurazi et al., 2015a).	Binary (0;1)	ICMD report
$Board\_size_{i,t}$	The number of members in the board of directors (Nurazi et al., 2015a).	Continuous	ICMD report

Table 2 cont.

Variable	Definition and Measurement	Type of Data	Source
<i>Independent variables</i>			
<i>Board_size<sub>i,t</sub></i>	The number of members in the board of directors (Nurazi et al., 2015a).	Continuous	ICMD report
<i>Outsiders<sub>i,t</sub></i>	The percentage of outsiders in the board of directors.	Continuous (0-1)	ICMD report
<i>Shares<sub>i,t</sub></i>	The percentage of shares held by senior managers (members of the board of directors and senior management).	Continuous (0-1)	ICMD report
<i>Leverage<sub>i,t</sub></i>	Long-term debt to total asset is the proxy of capital structure.	Continuous	Annual report
<i>Sales<sub>i,t</sub></i>	Logarithm natural of net sales as a proxy for the company size.	Continuous	IDX
<i>Big_four<sub>i,t</sub></i>	A dummy variable, equals to 1 if the firm audited by the big four accounting firms, and 0 if not.	Binary (0;1)	ICMD report
<b>Panel B. Variables employed in changes model (robustness test)</b>			
$\Delta Tunneling_{(t,t-1)}$	$Tunneling_t - Tunneling_{(t-1)}$		
$\Delta Single\_Own_{(t,t-1)}$	$Single\_Own_t - Single\_Own_{(t-1)}$		
$\Delta Multi\_Own_{(t,t-1)}$	$Multi\_Own_t - Multi\_Own_{(t-1)}$		
$\Delta Institutional\_Own_{(t,t-1)}$	$Institutional\_Own_t - Institutional\_Own_{(t-1)}$		
$\Delta State\_Own_{(t,t-1)}$	$State\_Own_t - State\_Own_{(t-1)}$		
$\Delta Group\_Own_{(t,t-1)}$	$Group\_Own_t - Group\_Own_{(t-1)}$		
$\Delta Board\_size_{(t,t-1)}$	$Board\_size_t - Board\_size_{(t-1)}$		
$\Delta Outsiders_{(t,t-1)}$	$Outsiders_t - Outsiders_{(t-1)}$		
$\Delta Shares_{(t,t-1)}$	$Shares_t - Shares_{(t-1)}$		
$\Delta Leverage_{(t,t-1)}$	$Leverage_t - Leverage_{(t-1)}$		
$\Delta Sales_{(t,t-1)}$	$Sales_t - Sales_{(t-1)}$		
$\Delta Big\_four_{(t,t-1)}$	$Big\_four_t - Big\_four_{(t-1)}$		

Source: Gao & Kling, (2008); Johnson et al., (2000); Nurazi et al., (2015a)

Instead of the other controlling variables, this study also employs *Big\_four* accounting firms as one of the control variables. The firms which are reported to use the service of the third-party (auditing firm) from one of the four bona fide major public accounting firms are given value 1 and *vice versa*. In Indonesia, the representation of *Big\_four* accounting firm is represented by; (1) Delloit Touche Tohmatsu is affiliated with Osman Bing Satri, (2) PwC (Price Waterhouse Cooper) is affiliated with Tanudiredja, Wibisana & Partner, (3) Ernst & Young is affiliated with Purwantono, Suherman & Surja, and (4) KPMG that is affiliated with Sidhartha & Widjaja accounting firm.

## RESULTS AND DISCUSSION

This study focus on using tunneling activity as the surrogate indicator of related party transaction because the visibility of tunneling can be detected by the difference of account payable and account receivable over the total asset of companies (Johnson et al., 2000). In general, 276 companies are determined as the final sample, where these companies are listed as public listed company in eight industries.

Table 3 Sample classification based on the industrial groups

Industry Groups	Number of Firms	Number of Observations	Percentage
Agricultural	22	176	7.97
Mining	15	120	5.43
Manufacturing	149	1192	53.63
Finance	9	72	3.26
Property	36	288	13.04
Service	11	88	3.99
Retail	18	136	6.52
Other industry	17	144	6.16
Total	276	2,216	100

Data source: Indonesian Capital Market Directory (ICMD), for years 2005-2012.

As can be seen in Table 3, the obtained sample is categorized into eight industries. Hereby, it can consider that there is a strong relationship concerning cross-holding company among public listed companies in the different industry (cross-industries). Also, the model of pyramidal ownership exists either in public listed or non-public listed companies. Referring to the study of La Porta et al., (2000) the model of pyramidal ownership and cross-holding company are common in the emerging countries. It is also plausible that public listed company which is categorized as firm in the financial industry has influence on several firms in the non-financial industry (*vice versa*) through the mechanism of cross-holding company and pyramidal ownership. In addition, the information with respect to the summary of descriptive data of 12 variables is available as follow.

Table 4 Descriptive statistics for sample firms

Variable	N	mean	sd	25 <sup>th</sup> perc.	median	75 <sup>th</sup> perc.	min	max
Tunneling	2216	-0.052	1.106	-0.091	-0.021	0.020	-3.832	1.017
Single_Own	2216	0.570	0.494	0.000	1.000	1.000	0.000	1.000
Multi_Own	2216	0.430	0.560	0.000	0.000	1.000	0.000	1.000
Institutional_Own	2216	0.199	0.195	0.000	0.167	0.329	0.000	0.861
State_Own	2216	0.821	0.383	1.000	1.000	1.000	0.000	1.000
Group_Own	2216	0.767	0.422	1.000	1.000	1.000	0.000	1.000
Board_size	2216	4.414	1.875	3.000	4.000	5.000	0.000	11.000
Outsiders	2216	0.176	0.289	0.000	0.000	0.333	0.000	1.000
Share	2216	0.021	0.053	0.000	0.000	0.005	0.000	0.351
Leverage	2216	0.580	0.410	0.360	0.540	0.690	0.000	4.010
Sales	2216	1.317	2.128	1.201	1.334	1.455	0.000	1.868
Big_four	2216	0.344	0.475	0.000	0.000	1.000	0.000	1.000

Data source: Indonesian Capital Market Directory (ICMD) report, for years 2005-2012.

Notes: Table 4 indicates the information concerning the descriptive statistics of the research variables and some key financial data as the control variables. Also, all the continuous variables are winsorized at the 1<sup>st</sup> and 99<sup>th</sup> percentiles.

Table 4 summarizes the information regarding the descriptive statistics of the employed variables. To anticipate the presence of bias in the statistical estimation output, the data of variable *Sales* is transformed into logarithm natural (LN). Also, all the data of continuous variables are winsorized from the lower 1<sup>th</sup> percent and the higher 99<sup>th</sup> percent. The data management is arranged into four groups, where the variables are classified as the dependent variable, independent variables, moderating variables and control variables. As can be seen in Table 4, the characteristics of descriptive data are available in mean score, standard deviation, percentile 25<sup>th</sup>, median, percentile 75<sup>th</sup> and the value of minimum and maximum. This study find that the mean (median) of *Tunneling* is -0.052 (-0.021). Mean of single ownership (*Single\_Own*) is 0.57. The mean of multi-ownership (*Multi\_Own*) is 0.43. The institutional ownership (*Institutional\_Own*) is 0.199. Whilst, the mean of state (*State\_Own*) and group ownership (*Group\_Own*) are 0.821 and 0.767 respectively. Since most of the data as shown by the proxy of *Ownership Structures* are recorded in the form of categorical data (dummies), It also note that the mean scores of each variable in the form of percentage data. Therefore, the categorical data can display more substantive meaning. Here, the number of variable *Single\_Own* is reported as 57 percent, and followed by *Multi\_Own* as 43 percent on average. The other proxies of ownership structures are *Institutional\_Own* and *State\_Own* which are reported to show average value as 19.9 percent and 82.1 percent on average. The last proxy is *Group\_Own* with mean value as 76.7 percent on average.

Table 5 Correlation matrix between variables.

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1 Tunneling	1											
2 Single_Own	-0.015	1										
3 Multi_Own	0.075*	-0.847***	1									
4 Institutional_Own	0.008	-0.467***	0.438***	1								
5 State_Own	0.046*	-0.145***	0.129***	0.024	1							
6 Group_Own	-0.043*	0.431***	-0.357***	-0.068**	-0.075***	1						
7 Board_size	-0.023	0.096***	-0.069**	-0.042*	-0.172***	0.020	1					
8 Outsiders	0.024	-0.047*	0.038	-0.011	0.169***	0.033	-0.160***	1				
9 Share	-0.042*	-0.026	0.012	-0.057**	0.131***	0.015	-0.137***	0.540***	1			
10 Leverage	0.072***	-0.021	0.017	0.092***	0.013	0.016	-0.060**	-0.044*	-0.070***	1		
11 Sales	-0.031	0.135***	-0.117***	-0.067**	-0.019	-0.036	0.470***	-0.150***	-0.140***	-0.029	1	
12 Big_four	0.024	0.161***	-0.162***	-0.007	-0.215***	0.037	0.237***	-0.079***	-0.067**	-0.089***	0.313***	1

Table 5 illustrates the correlation matrix between the variables used in investigating the likelihood of related party transaction in Indonesian stock exchange (IDX). The five proxies of ownership structures (*Single\_Own*, *Multi\_Own*, *Institutional\_Own*, *State\_Own*, and *Group\_Own*) display different signs of correlation with related party transaction (*Tunneling*). Single ownership (*Single\_Own*) that is conjectured

dominated by the structure of family firm has performed a negative correlation but insignificant. Multi-ownership (*Multi\_Own*) which represents the structure model of non-family ownership (publicly traded) reflects a positive and significant ( $p < 0.1$ ) correlation with *Tunneling*. Institutional ownership (*Institutional\_Own*) also shows a positive correlation. Further, state ownership (*State\_Own*) and group ownership (*Group\_Own*) particularly indicate different sign, where in the circumstance that government becomes the ultimate control has displayed positive and significant ( $p < 0.1$ ) correlation with *Tunneling*. Otherwise, group ownership which reflects the domination of business group has indicated a negative and significant ( $p < 0.1$ ) correlation.

### Hypothesis Testing

Direct test is conducted to obtain the association of main independent variables with the dependent variable. In spite of that, to get the clear result with respect to the stand-alone contribution of each type of ownership structure, the panel corrected standard error model is applied along with the control variables, industry fixed-effect, and year fixed-effect. In this regard, the aim of controlling industry fixed-effect and year fixed-effect corresponds to the effort of addressing the problem of omitted variable bias.

Table 6 Association between ownership structures and related party transaction in the firm-level model.

$$Tunneling_{i,t} = \alpha + \beta_1 Single\_Own_{i,t} + \beta_2 Multi\_Own_{i,t} + \beta_3 Institutional\_Own_{i,t} + \beta_4 State\_Own_{i,t} + \beta_5 Group\_Own_{i,t} + \beta_6 \sum Control_{i,t} + \beta_7 \sum Industry + \beta_8 \sum Year + \varepsilon$$

Variable	(1)	(2)	(3)	(4)	(5)	(6)
Single_Own	0.051 (0.0711)	-0.034 (0.050)				
Multi_Own	0.026* (0.013)		0.032 (0.039)			
Institutional_Own	-0.023 (0.141)			-0.019 (0.134)		
State_Own	0.176** (0.062)				0.182** (0.077)	
Group_Own	-0.128** (0.061)					-0.125*** (0.047)
Share	-0.990 (0.902)	-0.844 (0.789)	-0.842 (0.793)	-0.848 (0.808)	-1.007 (0.899)	-0.832 (0.788)
Leverage	0.197*** (0.045)	0.193*** (0.044)	0.193*** (0.044)	0.194*** (0.045)	0.193*** (0.0443)	0.196*** (0.045)
Sales	-0.029*** (0.009)	-0.024*** (0.008)	-0.024*** (0.008)	-0.024*** (0.008)	-0.027*** (0.008)	-0.026*** (0.008)
Big_four	0.135** (0.064)	0.104** (0.052)	0.104** (0.052)	0.099* (0.050)	0.132** (0.066)	0.105** (0.052)
Industry Fixed Effect	YES	YES	YES	YES	YES	YES
Year Fixed Effect	YES	YES	YES	YES	YES	YES
Constant	0.109 (0.125)	0.154* (0.087)	0.122* (0.071)	0.151* (0.091)	0.019 (0.113)	0.255** (0.115)
Observations	2,216	2,216	2,216	2,216	2,216	2,216
R <sup>2</sup>	0.015	0.010	0.010	0.009	0.013	0.012

Note: Robust standard errors in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$  respectively using a two-tail test. See Table. 2 for the definition of variables. The Table reports estimation results of model whose dependent variable is related party transaction (*Tunneling*). These statistical outputs are calculated based on the residual from firm-specific time-series model estimated up to six-years (2005-2012).

Table 6 presents the estimation results of statistical model 1. In Table 6, find that when all the types of ownership structures are tested concurrently with the other control variables, industry and year fixed-effects, only variables *Multi\_Own*, *State\_Own* and *Group\_Own* perform significant effects on the variation of related party transaction in the Indonesian Stock Exchange. Here, it is documented that *Multi\_Own* displays a positive and significant ( $p < 0.1$ ) effect. *State\_Own* indicates positive and significant effect ( $p < 0.05$ ) as well, while *Group\_Own* shows a negative and significant ( $p < 0.05$ ) contribution to *Tunneling*. However, when the panel data analysis is conducted partially, only variables *Group\_Own* and *State\_Own* remain consistent results. *State\_Own* shows a positive and significant ( $p < 0.05$ ) effect, whilst *Group\_Own* remains negative and statistically significant at  $p < 0.01$  level). Among the four control variables (*Shares*, *Leverage*, *Sales*, and *Big\_four*), only variables *Share* which does not show the significant output. Otherwise, variables *Leverage*, *Sales* and *Big\_four* indicate significant results. Variable *Leverage* consistently documents positive and significant ( $p < 0.01$ ) results in the concurrent and partial tests. On the other hand, variable *Sales* shows the contrast sign, in which this variable consistently performs negative and significant ( $p < 0.01$ ) effect on the related

party transaction (*Tunneling*). *Big\_four* also presents a consistently positive and significant ( $p < 0.05$ ) output on its association with related party transaction. Based on this statistical output, it is noted that there are three surrogate indicators of the ownership structures which show significant outputs (*Multi\_Own*, *State\_Own*, and *Group\_Own*). Therefore, this result indicates that hypothesis one is partially supported. In this case, the a priori notion is proven where ownership structures are associated with the likelihood of related party transaction (*Tunneling*).

Table 7 Association between ownership structures and related party transaction in firm-level after being moderated by the control mechanism (*Board\_size*)

$$Tunneling_{i,t} = \alpha + \beta_1 Ownership\_Structure_{i,t} + \beta_2 Board\_size_{i,t} + \beta_3 Ownership\_structure * Board\_size_{i,t} + \beta_4 \sum Control_{i,t} + \beta_5 \sum Industry + \beta_6 \sum Year + \varepsilon$$

Variable	(1)	(2)	(3)	(4)	(5)	(6)
Single_Own	0.663** (0.310)	0.003 (0.083)				
Multi_Own	0.486** (0.199)		0.010 (0.091)			
Institutional_Own	0.379*** (0.135)			0.250* (0.135)		
State_Own	0.427 (0.262)				0.357 (0.233)	
Group_Own	-0.159 (0.132)					-0.094 (0.075)
Board_size	0.152*** (0.056)	-0.0009 (0.006)	-0.007 (0.007)	0.005 (0.007)	0.026 (0.020)	0.001 (0.006)
Outsiders	0.222* (0.118)	0.242* (0.132)	0.241* (0.132)	0.245* (0.130)	0.208* (0.114)	0.249* (0.130)
Share	-1.649 (1.154)	-1.547 (1.095)	-1.543 (1.097)	-1.569 (1.110)	-1.613 (1.127)	-1.552 (1.090)
Leverage	0.208*** (0.050)	0.195*** (0.046)	0.194*** (0.045)	0.195*** (0.046)	0.197*** (0.046)	0.197*** (0.046)
Sales	-0.025** (0.010)	-0.019** (0.008)	-0.019** (0.008)	-0.021** (0.009)	-0.022** (0.009)	-0.021** (0.009)
Big_four	0.136** (0.064)	0.110** (0.052)	0.110** (0.052)	0.105** (0.051)	0.129** (0.063)	0.111** (0.052)
Single_Own*Board_size	-0.111** (0.047)	-0.007 (0.010)				
Multi_Own*Board_size	-0.075** (0.033)		0.004 (0.012)			
Institutional_Own*Board_size	-0.097** (0.044)			-0.064** (0.030)		
State_Own*Board_size	-0.055** (0.028)				-0.039* (0.023)	
Group_Own*Board_size	0.005 (0.016)					-0.007 (0.008)
Industry Fixed Effect	YES	YES	YES	YES	YES	YES
Year Fixed Effect	YES	YES	YES	YES	YES	YES
Constant	-0.762** (0.373)	0.064 (0.112)	0.066 (0.069)	0.058 (0.083)	-0.191 (0.213)	0.165 (0.132)
Observations	2,216	2,216	2,216	2,216	2,216	2,216
R <sup>2</sup>	0.020	0.013	0.013	0.013	0.016	0.015

Note: Robust standard errors in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$  respectively using a two-tail test. See Table. 2 for the definition of variables.

Table 7 reports the evidence of moderating effect as generated by the control mechanism on the relationship between ownership structures and related party transaction. Hereby, the first controlling mechanism (*Board\_size*) concurrently interacts with each type of ownership structure on the related party transaction (*Tunneling*). Concerning to the direct effect of *Board\_size* on the *Tunneling*, it is documented that the effect is positive and statistically significant at  $p < 0.01$  level (see column 1). Also in the interaction effect, it is obviously known that variables *Multi\_Own\*Board\_size*, *Institutional\_Own\*Board\_size*, and *State\_Own\*Board\_size* show negative and significant effects (see column 1, 4 and 5) on the related party transaction (*Tunneling*). In addition to this, the partially incremental effect which derived from the moderating variable of

*Institutional\_Own\*Board\_size* is reported as -0.064 (see column 4). This output is confirmed by the similar negative sign of variable *State\_Own\*Board\_size* as -0.039 (see column 5). This result indicates that hypothesis two is also partially supported. In order to get the robust result, the effect of *Board\_size* should be compared with the second control mechanism that is surrogated by *Outsiders*. In fact, this result is confirming the study of Fich, (2005), in which virtually all of CEOs in the public listed companies indeed are rewarded with outside directorship when the firm they lead perform well in terms of profit, operational activity and so forth. In relation to the positive association of institutional ownership (*Institutional\_Own*) on related party transaction (*Tunneling*), Fich (2005) also points out that firm distinguished based on the independent boards, and either high degree of institutional ownership or the potential of growth opportunities, are more likely to appoint an outside director and individual who currently is a CEO of another firm. This condition confirms the empirical evidence where certain firms can be potentially benefited when well-known successful executives join their companies as the completion of controlling mechanism. Chhaochharia & Grinstein, (2007) further explain that imposing a common set of internal control mechanism and board independence requirements on all companies is notably have different effect across firm size.

Table 8 Association between ownership structures and related party transaction in firm-level after being moderated by the control mechanism (*Outsiders*).

$$Tunneling_{i,t} = \alpha + \beta_1 Ownership\_Structure_{i,t} + \beta_2 Outsiders_{i,t2} + \beta_3 Ownership\_structure * Outsiders_{i,t} + \beta_4 \sum Control_{i,t} + \beta_5 \sum Industry + \beta_6 \sum Year + \varepsilon$$

Variable	(1)	(2)	(3)	(4)	(5)	(6)
Single_Own	0.137 (0.085)	-0.121** (0.052)				
Multi_Own	0.209*** (0.062)		0.117*** (0.042)			
Institutional_Own	-0.102 (0.198)			0.017 (0.160)		
State_Own	0.084 (0.089)				0.115 (0.085)	
Group_Own	-0.165*** (0.063)					-0.207*** (0.059)
Board_size	-0.0003 (0.007)	-0.006 (0.005)	-0.006 (0.005)	-0.006 (0.005)	-0.001 (0.006)	-0.005 (0.005)
Outsiders	0.493 (0.448)	0.002 (0.085)	0.497** (0.197)	0.293* (0.172)	-0.338 (0.411)	-0.119 (0.120)
Share	-1.762 (1.253)	-1.636 (1.108)	-1.632 (1.111)	-1.592 (1.136)	-1.715 (1.214)	-1.582 (1.090)
Leverage	0.200*** (0.041)	0.204*** (0.046)	0.204*** (0.0466)	0.195*** (0.046)	0.185*** (0.040)	0.202*** (0.046)
Sales	-0.022** (0.010)	-0.016* (0.008)	-0.0162* (0.008)	-0.019** (0.008)	-0.022** (0.009)	-0.020** (0.009)
Big_four	0.141** (0.063)	0.114** (0.052)	0.114** (0.052)	0.105** (0.051)	0.133** (0.065)	0.119** (0.053)
Single_Own*Outsiders	-0.790** (0.381)	0.492*** (0.147)				
Multi_Own*Outsiders	-1.293*** (0.392)		-0.496*** (0.148)			
Institutional_Own*Outsiders	0.431 (0.364)			-0.238 (0.312)		
State_Own*Outsiders	0.670 (0.587)				0.616 (0.541)	
Group_Own*Outsiders	0.120 (0.186)					0.483*** (0.115)
Industry Fixed Effect	YES	YES	YES	YES	YES	YES
Year Fixed Effect	YES	YES	YES	YES	YES	YES
Constant	-0.022 (0.134)	0.087 (0.098)	-0.030 (0.075)	0.071 (0.103)	0.001 (0.110)	0.230* (0.121)
Observations	2,216	2,216	2,216	2,216	2,216	2,216
R <sup>2</sup>	0.024	0.017	0.017	0.013	0.017	0.018

Note: Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1 respectively using a two-tail test. See Table. 2 for the definition of variables.

Table 8 contains the supporting evidence pertaining to the role of control mechanism as moderating variable. As can be observed in Table 8, the direct effects of *Outsiders* on *Tunneling* are quite mixed. To some extent, it generates positive effect, particularly in concurrent test and partial test in column 2, 3, and 4. However, this effect turns to negative sign in column 5 and 6. Further, in respect of its interaction with the association between ownership structures and related party transaction also show significant output. In fact, variables *Single\_Own\*Outsiders*, *Multi\_Own\*Outsiders* and *Group\_Own\*Outsiders* provide negative and significant effects on related party transaction (*Tunneling*). Other control variables also indicate significant influences on their relation with *Tunneling*. *Leverage* consistently describes positive and significant ( $p < 0.01$ ) effects on the variation of *Tunneling*. *Sales* is reported to note negative and significant ( $p < 0.05$ ) contribution to *Tunneling*. In addition, samples that utilized the service from the third-party (accounting firm) indicate positive and significant ( $p < 0.05$ ) effect on *Tunneling*. As depicted by the statistical output of *Outsiders* (the second intervening variable as the proxy of control mechanism), the obtained output eventually draws consistent result with the first intervening variable (*Board\_size*).

**ROBUSTNESS CHECK**

The variation and the likelihood of related party transaction (*Tunneling*) are not sufficient to be explained by the direct measure per se. However, the previous ownership structures and the previous financial metric information also play big role in the variation of current related party transaction (*Tunneling*). Therefore, to get the robust results, I arrange two types of robustness test. Hereby, I employ one-year lag of each variable. Also, the difference ( $\Delta$ ) of the current and previous data on each variable is expected to show us additional insights.

Table 9 Association between ownership structures and related party transaction in the lag model.

$$Tunneling_{i,t} = \alpha + \beta_1 Single\_Own_{i,t-1} + \beta_2 Multi\_Own_{i,t-1} + \beta_3 Institutional\_Own_{i,t-1} + \beta_4 State\_Own_{i,t-1} + \beta_5 Group\_Own_{i,t-1} + \beta_6 \sum Control_{i,t-1} + \beta_7 \sum Industry + \beta_8 \sum Year + \varepsilon$$

Variable	(1)	(2)	(3)	(4)	(5)	(6)
Single_Own <sub>i,t-1</sub>	0.062 (0.081)	-0.019 (0.056)				
Multi_Own <sub>i,t-1</sub>	0.019 (0.013)		0.020** (0.009)			
Institutional_Own <sub>i,t-1</sub>	0.047 (0.122)			0.025 (0.136)		
State_Own <sub>i,t-1</sub>	0.212 (0.157)				0.213 (0.148)	
Group_Own <sub>i,t-1</sub>	-0.101 (0.065)					-0.091** (0.044)
Share <sub>i,t-1</sub>	-0.989 (1.051)	-0.826 (0.921)	-0.825 (0.925)	-0.821 (0.944)	-1.016 (1.045)	-0.815 (0.919)
Leverage <sub>i,t-1</sub>	0.163*** (0.043)	0.162*** (0.044)	0.162*** (0.044)	0.161*** (0.044)	0.163*** (0.044)	0.164*** (0.045)
Sales <sub>i,t-1</sub>	-0.027** (0.013)	-0.022** (0.010)	-0.023** (0.010)	-0.023** (0.010)	-0.0261** (0.011)	-0.024** (0.010)
Big_four <sub>i,t-1</sub>	0.106 (0.071)	0.070 (0.053)	0.070 (0.053)	0.066 (0.053)	0.107 (0.0747)	0.071 (0.055)
Industry Fixed Effect	YES	YES	YES	YES	YES	YES
Year Fixed Effect	YES	YES	YES	YES	YES	YES
Constant	0.040 (0.100)	0.151 (0.104)	0.132 (0.116)	0.140 (0.126)	-0.001 (0.082)	0.226* (0.137)
Observations	1,938	1,938	1,938	1,938	1,938	1,938
R <sup>2</sup>	0.012	0.007	0.007	0.006	0.011	0.008

Note: Robust standard errors in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$  respectively using a two-tail test. See Table. 2 for the definition of variables. This Table replicates the results in Table 6 with lag-match model. Every variable instead of the dependent variable is turned into one-year lag time. t statistics are calculated using standard errors corrected for autocorrelation that is reflected in the parentheses.

Table 9 includes regression results of ownership structures on related party transaction by utilizing the lag model. Refers to the statistical output in Table 9, it is explicitly seen that the direct effect of ownership structures on *Tunneling<sub>i,t</sub>* is significant for variable *Multi\_Own<sub>i,t-1</sub>* and *Group\_Own<sub>i,t-1</sub>*. Hereby, by yearly grouping the ownership structures in the dichotomous variable, control for the changes of ownership structures throughout the years (2005-2012), and focus on changes in *Tunneling<sub>i,t</sub>* the year after. There is one-year lag

between the main variables (ownership structures and related party transaction). This lag is necessary since the chance of related party transaction happened is also influenced by the composition of ownership structures at the end of the given year. Given that, the different pattern of ownership structures will be indicated with different decision, which would be taken as the company policy in the subsequent year. Moreover, the other control variables also exemplify significant influence on the variation of *Tunneling*. It is obvious that *Leverage*<sub>*i,t-1*</sub> represents positive and significant contribution to *Tunneling*. *Sales*<sub>*i,t-1*</sub> also displays positive and significant effect on the variation of *Tunneling*.

Table 10 Association between ownership structures and related party transaction in changes ( $\Delta$ ) model.

$$\Delta Tunneling_{i,t} = \alpha + \beta_1 \Delta Single\_Own_{i,t,t-1} + \beta_2 \Delta Multi\_Own_{i,t,t-1} + \beta_3 \Delta Institutional\_Own_{i,t,t-1} + \beta_4 \Delta State\_Own_{i,t,t-1} + \beta_5 \Delta Group\_Own_{i,t,t-1} + \beta_6 \sum \Delta Control_{i,t,t-1} + \beta_7 \sum Industry + \beta_8 \sum Year + \varepsilon$$

Variable	(1)	(2)	(3)	(4)	(5)	(6)
$\Delta Single\_Own$	-0.030 (0.104)	-0.031 (0.022)				
$\Delta Multi\_Own$	0.029 (0.020)		0.027* (0.014)			
$\Delta Institutional\_Own$	-0.372 (0.479)			-0.296 (0.424)		
$\Delta State\_Own$	-0.106 (0.145)				-0.115 (0.148)	
$\Delta Group\_Own$	-0.126 (0.109)					-0.263** (0.097)
$\Delta share$	-0.529 (0.430)	-0.481 (0.384)	-0.475 (0.385)	-0.533 (0.399)	-0.378 (0.423)	-0.509 (0.402)
$\Delta leverage$	0.218** (0.090)	0.217** (0.090)	0.218** (0.090)	0.218** (0.088)	0.219** (0.088)	0.219** (0.091)
$\Delta sales$	0.011 (0.024)	0.013 (0.024)	0.013 (0.024)	0.011 (0.024)	0.012 (0.024)	0.014 (0.024)
$\Delta Big\_four$	0.121 (0.114)	0.131 (0.110)	0.135 (0.111)	0.134 (0.110)	0.117 (0.114)	0.127 (0.106)
Industry Fixed Effect	YES	YES	YES	YES	YES	YES
Year Fixed Effect	YES	YES	YES	YES	YES	YES
Constant	-0.006 (0.032)	-0.006 (0.032)	-0.006 (0.032)	-0.006 (0.032)	-0.006 (0.032)	-0.007 (0.032)
Observations	1,938	1,938	1,938	1,938	1,938	1,938
R <sup>2</sup>	0.002	0.001	0.001	0.001	0.001	0.001

Note; Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1 respectively using a two-tail test. See Table. 2 for the definition of variables. This Table replicates the results in Table 6 with changes-match model. Every variable used in the statistical model is turned into change model ( $\Delta$ ), which is calculated by subtracting the current and one-year lag time data (<sub>*i,t-1*</sub>). t statistics are calculated using standard errors corrected for autocorrelation that is reflected in the parentheses.

Table 10 finally provides a complementary robustness check which corresponds to the information in Table 9. However, in this section, the investigation is more focus on the changes model ( $\Delta$ ). Changes model is tested since there are indications and conjectures that the variation of related party transaction can also be explained through the difference of information in the current and the previous year. As can be seen in Table 10, the obtained result is consistent with the result in Table 6 and Table 9. Hereby, it can be inferred that the likelihood of related party transaction is explained by the ownership structures of companies.

## DISCUSSION

Overall, the results of the analysis on the relationship between ownership structures and related party transaction show an empirical association. Recall back to the statistical results, it is noted that this association is positive. The notion that there is relation between ownership structures and related party transaction is proven by

employing several proxies of ownership structures. Hereby, multi-ownership is reported to show positive effect on Tunneling. It denotes that the more concentrated shareholder corresponds to the indication of doing expropriation. In this study, tunneling is considered as expropriation on the minority shareholders, where the benefit is perceived by the majority shareholders per se. Given that, the indication of related party transaction which is surrogated by tunneling is observed as one-side moving direction. This direction can be triggered by the channeling resources from the lower company (subsidiaries) to higher (parent companies). The other mechanism of expropriation is found on the different side moving direction. In this regard, the channeling of resources can also be detected through the circulation of resources from the parent to the subsidiaries. However, the focus of this study is concentrated on the mechanism of tunneling rather than propping.

A number of issues relating to the obtained output of the relationship between ownership structures and related party transaction warrant further analysis and discussion. Therefore, several prior studies report that the rules and or the decision-making of related party transaction that is driven by the large shareholders are more likely to benefit large firm than the small firm. Holmstrom & Kaplan, (2003) among others, study the state of U.S corporate governance. They obviously argue that the presence of high fixed cost of complying with the rules released by the authority and decision made by the large shareholders, shows a condition where the small firms are less likely undergo the benefit from the rules or decision itself. Hereby, in more specific case of tunneling as the example of related party transaction (resource channel from the lower to the higher levels firm), small firms, and also the minority shareholders are likely to incur the higher cost of complying with the firm's policy.

Furthermore Sari, Warsono, & Suryaningsum, (2010) report that tunneling activity has shown negative implication to the ability and performance of the exploited firm. Here, the agency problem emerges as the tunneled firm has more free cash flow. Manager as the agent prefers to reinvest the free cash flow while on the other hand investors are expecting either the high dividend or return on their investment. In this circumstance, tunneling finally lead us to the empirical proof, in which the propensity of being expropriated through tunneling reflects the low quality of information disclosure with the related party transaction. However, the studies of Usman & Tandelilin, (2014), Nurazi, Kananlua, & Usman, (2015b), Nurazi, Usman, & Kananlua, (2016), Nurazi & Usman, (2015c), and Nurazi & Usman, (2019) reveal that the condition of asymmetry information (e.g., about the ownership structures and the affiliated owners which lead to the potential of expropriation) could be reduced when the professional (usually better-informed) and non-professional (usually less-informed) stakeholders have the equal information. In this sense, the relevance and the availability of public information on the Internet can be utilized to help either the minority shareholder or non-professional stakeholders to explore more information about the related companies.

Although the findings in this study match the prediction of a priori notion in the hypothesis development section, the interpretation in this study is subject to several caveats, and other possible expositions need to be considered to complement the main finding of the study. First, assumes that the model of group firms is more diversified than stand-alone and ones are more diversified. This assumption relates to the study of Bertrand et al., (2002). In this circumstance, the reduced sensitivity to the industry shock in the observed period of study could reflect mismeasurement of these firms' industries. It is noted in the section that this study employed the sample from eight different industries, which are indicated to experience related party transaction (either in the form of pyramidal ownership or cross-holding companies). The industry fixed-effect is further included in the process of observation, which is expected that the differences in the context of industry mismeasurement do not drive the main findings in the firm-level model, changes model, and lag model. Second, since the characteristic of Indonesian capital market is dominated by the model of pyramidal structure (Claessens et al., 2000), there is an opportunity of coinsurance among the firms under the same group of business. Given that, insurance is plausible to be manifested through the mechanism of financial activity where the wealth subsidiaries channeling their resources to the parent company, and or *vice versa*. This essentially illustrates a formation of a group internal capital market in Indonesian stock exchange.

## CONCLUSION

This study examines the association of ownership structures with related party transaction in public listed companies of Indonesian Stock Exchange (IDX). Using a sample of 276 public listed companies, it is found that

ownership structure is associated with the variation of tunneling as the surrogate indicator of related party transaction. Hereby, the hypothesis testing shows that the hypothesis one is partially supported, which indicates a support on the relationship between ownership structures and related party transaction. Moreover, to get the more comprehensive and hold estimation output, controlling mechanism takes part as the moderating variable on the relation between ownership structures and related party transaction. After being controlled by the controlling variables, industry fixed-effect and year fixed-effect, the empirical evidence remains consistently, in which the notion of controlling mechanism is weakening the likelihood of related party transaction is supported. The proposed two hypotheses are in line and consistent with the a priori notion. This study eventually contributes to the burgeoning corporate governance literature by exploring how ownership structures in Indonesian public listed companies lead to the likelihood of Tunneling. In particular, the evidence I provide enhances our understanding of the interplay between ownership structures, control mechanism and related party transaction in the setting of emerging capital market. It is also relevant for investors and market participants attempting to minimize the *ex-ante* expropriation held by majority shareholders on the minority shareholders by highlighting the important role of corporate governance.

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