Parabolic Effect Between Managerial Ownership And Firm Value To Control Agency Conflict

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Abstract: This research attempts to place the ownership structure, which includes managerial ownership, institutional ownership, foreign ownership, and concentration ownership as determinants to predict value of the firm. Managerial ownership will be identified and analyzed on its possibility to form the inverse U-shape relationship pattern, therefore the test on parabolic effect between managerial ownership using Tobin's Q can be conducted. Meanwhile, such test cannot be conducted to the other three independent variables. This test was applied to non-financial firms whose shares were listed on Indonesia Stock Exchange (IDX) during 2000-2017. The result of panel data regression test concludes that managerial ownership can predict value of the firm, while it is not for institutional ownership and foreign ownership.

Keywords: managerial ownership, institutional ownership, foreign ownership, concentration ownership.

INTRODUCTION

Separation between the functions of ownership and governance in modern firms can stimulate the differences of interest between managers and shareholders. Such differences create the agency conflict (Gitman and Zutter, 2012). Such conflict exists because the function of governance is handed over to managers who are working as agents of the firm, whereas the function of ownership lies in the shareholders or principals. As an agent, managers are able to make decisions that tend to advantage a certain party, which is called opportunistic behavior. Conflict of interest occurs between managers and principals (shareholders) as the source of conflict, therefore a mechanism to control the conflict through corporate ownership structure is considered neccessary. The determinants involve managerial ownership, institutional ownership, foreign ownership, and concentration ownership. Therefore, applying those determinants can direct the managers' behavior to maximize the prosperity of shareholders as well as value of the firm.

A study conducted by Lee and Chuang cited by (Khan *et al.,* 2013), identified that there is significant effect of ownership structure on firm's performance. As proven by (Martins and Winkler, 2013) the involvement of foreign investors as the predictor of firms' performance. Such mechanism involves managers in motivating and monitoring their performance to increase value of the firm. Related to separation process in creating value of

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the firm, a system to monitor the managers' performance is necessary. Such monitoring is done because the three decisions in financial management are related one another, thus may decrease the value of the firm. For public firm, the value is assessed based on the performance of stock market, therefore the next effect may affect market capitalization, market-value added, price-to-book value, and *Tobin Q*.

Based on previous analysis, this research model focusses on four variables of corporate ownership structure, which are managerial ownership, institutional ownership, foreign ownership, and majority ownership concentration level (concentration ownership). Although many research have proven the effectivity of shares for managers as firm's policy, the implementation of managerial ownership in firms in Indonesia is very limited. The result of several studies have revealed various effects of managerial ownership on value among the firms. According to Jensen and Meckling cited by (Gitman and Zutter, 2012), managerial ownership did increase value of the firms, and in the opposite, (Sulong *et al.,* 2013) has proven the negative effect of ownership on compay's performance. (Khan *et al.,* 2013), has proven the non-linear pattern between managerial ownership and firm's performance. Based on (Demsetz and Villalonga, 2011), it is found that the behavior of managerial ownership forms the pattern of "inverse U-shape relationship". It means that in certain condition, whenever there is an increase in managerial ownership, may increase value of the firm, but beyond the optimum point, the increase in managerial ownership may decrease value of the firm. In such condition, the opportunity of conflict of interest is getting bigger and increase the cost for monitoring manager's performance, thus increasing the agency cost. Based in such condition, in context to control the agency conflict, the test of parabolic effect bewteen managerial ownership and value of the firms in Indonesia will be conducted.

Foreign investors are considered effective as a mechanism to reduce the cash flow volatility, therefore can control the risk of the firms. Foreign investors tend to increase their foreign direct investment compared to increase the debts, thus the debt-to-equity ratio can be maintained at safe level. (Mishra, 2014) has proven that foreign investors have positive correlation with financial performance, compared to domestic capital investment. Such condition is expected to happen in firms in Indonesia hence it can increase the value of the firms.

Each share ownership will form the poportion of ownership, describing the level of share concentration ownership. The concentration level is considerably based on the percentage of the biggest institutional ownership. (Kartika, 2012) used Herfindahl Index to determine the level of ownership monopolized by certain groups or tended to be dispersed to many shareholders. This index can determine how high the level of shareholders dispersion, thus can provide positive effect to value of the firm.

(Khan *et al.,* 2013), the research problem is focussed on the parabolic effect of managerial ownership on value of the firm, as well as the effect of ownership structural element on value of the firm that applicable globally. Based on the agency theory, identifications of the problems are as follow: (1) Does the increase of managerial ownership tend to increase value of the firm? (2) To some extent, does the increase of managerial ownership tend to decrease value of the firm? (3) Does institutional ownership affect value of the firm? (4) Does foreign ownership affect value of the firm? (5) Does concentration

ownership affect value of the firm? (6) Do managerial ownership, managerial ownership2, institutional ownership, foreign ownership, and concentration ownership simultaneously affect value of the firm? At which point does managerial ownership would negatively impacting the value of the firm?

THEORETICAL REVIEW

Value of the Firm. According to (Sulong *et al.,* 2013), value of the firm is measured by using the share's market price performance or Tobin's Q. Such proxy reflects the opportunity of investment in the future, because it indicates that the market price of the share increases compared to its book value of asset. Value of the firm is a condition in which a firm has achieved its objective, shown by the increase of trust from the communitytoward itafter conducting the process of activities for years, since it was established until present day. By increasing value of the firm, then the owners' welfare will increase as well. (Thomas *et al.,* 2013) shown the formula Tobin Q :

Q = {Market value equity + Book value of total liability} / Replacement value of asse
Market value of equity   = { Closing price market x Total share outstanding) }
Replacement value of asset   = Book value of total asset

Some indicators affecting value of the firm are:
a. PER (Price-Earning Ratio), which is a ratio measuring betweenmarket price of the firm and profit earned by shareholders (Juwita, 2012)

$$PER = \frac{Market\_Price\_of\_share}{Earning\_per\_share}$$

Some factors affecting PER are: the growth of earning, Dividend Pay-out Ratio (DPR), andthe rate of return required by shareholders. PER is a function of capability to earn profit in the future. The higher PER means the higher the probability of the firm to grow,so that it can increase its value.

b. PBV (Price-Book Value), which is a ratio measuringthe value given by financial market tomanagement and organization as a continously growing firm (Ehrhardt and Brigham, 2014)

$$PBV = \frac{Market\_price\_per\_share}{Book\_value\_per\_share}$$

Managerial Ownership. According to (Sujono and Soebiantoro, 2016), managerial ownership is the ownership of shares by firm's management measured by the percentage ofshares owned by the management. According to (Derbali *et all.,* 2017), managerial ownership is the proportion of common shares owned by the management. According to (Alessandri and Seth, 2014), the strcuture of managerial ownership can be explained from two perspectives, which are the agency approach and the asymmetric information

approach.The structure of managerial ownershipcan be used as a way to reduce the agency conflict among several claimholders to the firm. The asymmetric information approachviews the managerial ownership structure mechanism as a way to reduce asymetric information between the insider and the outsider through information expose in capital market.

(Gunarsih *et all.,* 2014) stated that firm ownership is one of several mechanisms that can be used so that the activity management can conform to the firm's owner. According to (Khan *et al.,* 2014), the increase of managerial ownership can be used as a way to reduce the agency problem. Managers will be motivated toenhance their performance, which is also the will of shareholders. (Novoa *et all.,* 2018) mentioned that the higher the share ownership percentage in the firm, the harder the management will work for the interest of the shareholders, of which they are also included in it. Managerial share ownership will help the unification of the interest among managers and shareholders, thus managers will also acquire direct advantages from the decisions taken and also experience the loss as a consequence of wrong decision making.

Refering to (Khan *et all.,* 2013) , the term of insider ownership is the sum of shares owned by directors, managers, and supervisors. The role of managerial ownership as a function of motivation to executives' is important in order to maintain the performance of the firm. Refering to (Chang *et all.,* 2013), the consequence of managerial ownership is make the managers aware and prudent in making decisions regarding the investments and loans in order to provide positive effect to value of the firm.

(Khan *et all.,* 2013) used the term of insider ownership, which is the sum of share ownership by managers, directors, and supervisors. The involvement of managerial ownership as a function of motivation for executive board's performance is applied in order to maintain the firm's performance. (Chang *et all.,* 2013) analyze that the effect of managerial ownership aims the managers to be careful when making decisions related to investment debt, therefore contributing positive effects on value of the firm. Managerial Ownership analyzed in non-linear way can be symbolized in two variables, which are: MOWN and $MOWN^2$ along with the formula as follow : (Dewi and Ardiana, 2014)

MOWN = {Σ Share of manager, director, supervisor / Σ Share outstanding} x 100%

Institutional Ownership. As stated by (Khan *et al.,* 2013), institutional ownership is the sum of government institutional ownership, financial institutional ownership, securities investment trust funds ownership, incorporated firms ownership, and other institutional ownership. The involvement of government as shareholder occurs in government-owned enterprises, meanwhile in banking institution, it occurs to firms using big amount of debts. In order to control and monitor managers' performance in using debts, creditors get involve in firm's share ownership. Institutional ownership increases the monitoring and control of managers in their opportunistic behavior, thus it can increase value of the firm.

According to (Cao *et al.,* 2014), institutional ownership is the shares owned by the government, financial institutions, legal institution, foreign institution, trusted fund, as well as other institutions at the end of the year. According to (Chang *et al.,* 2013), institutional ownership becomes one among the factors that can affect the firm's performance. The

ownership by institutional investor will encourage the supervision more optimally on management performance, because share ownership represents a source of power that can be used to support, or vice versa, to management performance.

(How *et al.,* 2014) mentioned that the strict control conducted by institutional investor heavily depends on the amount of invesment. (Birkmose and Strand, 2013) also revealed that institutional ownership replaces managerial ownership in controlling the agency cost. The greater the ownership by financial institutions can make the institutions stronger in votes and motivation to supervise the management and as the consequence, there will be higher motivation to optimize value of the firm, thus will increase the firm's performance.

The existence of institutional investor can show a strong corporate governance mechanism, which can be used to monitor the firm's management. According to (Cao *et al.,* 2014) the influence of institutional investor on firm's management can be imperative and can be used to synchronize the interests between management and shareholders. If the managerial ownership is high, it will have negative effect to the firm, because managers will have strong position to control the firm, and on the other side, the external shareholders will find difficult to control the managers' activities. Managers have high voting power in this case (Gunarsih *et al.,* 2014). Due to optimum supervision to managers' performance, managers will be prudent in making decisions.

The problems on corporate governance are the ones that appear due to some parties involved in the firm that have different interests. Such differences are caused by the ownership characteristics in the firm, such as: (1) Diverse Ownership. It was found that a firm, of which the ownership is diverse, provided greater reward to the management compared to those with more concentration ownership. (2) Concentration ownership. In this type of ownership, there are two kinds of shareholders, which are controlling interest shareholders and minority interest shareholders. (3) Ownership in State-Owned Enterprises.

Ownership in State-Owned Enterprises has a special condition, in which the owners cannot control the firm directly. Owners are only represented by the appointed officers. Agreement occurs between the representative of owners and the management as well as the creditors.

(Khan *et al.,* 2013) institutional ownership is the sum of government institutional ownership, financial institutional ownership, securities investment trust funds ownership, incorporated companies ownership, and other institutional ownership. With the goals to control and monitor the performance of managers in managing debts, creditors also involve in the firm management.

Formula: INST = {Σ Share of institutional ownership / Σ Share outstanding} x 100% (Trąpczyński and Gorynia, 2017)

Foreign Ownership. Foreign ownership is the percentage of common stock owned by individuals, legal institutions, government, and others from foreign countries. (Lee and Chung, 2018) found a result that foreign ownership positively affects firm's performance in India. The more foreign investors investing their funds in a firm's common stock, then its performance will be greater. This phenomenon could happen because foreign investors have good management system, technology and innovation, skills and marketing that can bring

positive influence to the firm. Inline with the agency theory, the problem causing the decrease of firm's performance is unharmonized relationship between shareholders and managers.

On contrast, when the relationship between shareholders and managers can be controlled, then the firm's performance can be better. According to (Martins and Winkler, 2013), the higher the foreign ownership level then the foreigners as majority shareholders will appoint a foreigner to hold the position as Board of Commissioner or Director. Therefore, the objective to maximize firm's performance can be achieved, because there is a similarity in principles between shareholders and management, which is also filled by them as part of the firm. Foreign ownership refers to the complete or majority ownership or control in a business or resources in a country by individuals but not citizens of the country, or by a company in which the headquarter is not located in the country.

Generally, foreign ownership occurs when a multinational company, which is a company conducting economic activities in more than one country, conducts long-term investment abroad, which is commonly in form of Foreign Direct Investment (FDI) or acquisition. (Jackson, 2014) if a multinational company acquires a half or more than a half of another company, the multinational company becomes parent company, and the acquired company becomes a subsidiary. Besides, foreign ownership can occur when the domestic assets are acquired by foreign company.

Foreign investors' involvement as shareholders (foreign ownership) dan foreign direct investment (FDI) are expected to increase value of the firm. According to (Gitman and Zutter, 2012), foreign ownership is part of foreign investment owned by foreign partners and such ownership affect the foreigner's decision and firm's profitbility. According to (Morano and Tajani, 2013), foreign investors involevement also create participation in management, joint ventures, technology/expert transfer in order to increase value of the firm. (Formula 7)

Formula:Foreign=$\{\Sigma$Share of foreign ownership $/\Sigma$Total share outstanding $\}$x100%..........(7) (Trąpczyński and Gorynia, 2017)

Concentration Ownership. The proportion of ownership especially institutional ownership as a whole forms a concentration level to measure the level of share ownership in a firm (Kartika, 2012). Herfindahl Index is used to determine the level of ownership monopolized by certain groups or tend to be dispersed to many groups of shareholders. The index is determined by the level of dispersion or percentage of share ownership by each institution hence affects the financial decision. (Formula 8)

Formula:HI=$\{\Sigma$(Institutional ownership1stgroup^2+institutional ownership2ndgroup^2+...$\}$...(8)

- HI < 0.10 $\rightarrow$ ownership is dispersed to many shareholders
- HI > 0.18 $\rightarrow$ ownership is concentrated or monopolized by certain groups
 (Ma and Tian, 2014)

The Effect of Managerial Ownership on Value of the Firm. According to (Augusto and Pinto, 2014), managerial ownership can become a mechanism used by firm to motivate

managers in order to achieve performance. Therefore, the effect such performance will increase the share's market price which finally will increase value of the firm or Tobin Q. If managers' compensation is only given in form of incentives, then the firm still has to cover managers' activity monitoring expenses in large amount. Without monitoring, managers' attitudes may shift to moral hazard. Thus the monitoring on managers' performance is neccessary to be done.

Additional expenses paid by the firm to monitor managers' performance is known as the agency cost, thus cutting the agency cost can be done through managerial ownership (Gitman and Zutter, 2012). (Dewi and Adriana, 2014) stated that the greater the managerial ownership tends to increase value of the firm (Tobin Q), but to some certain extent, the greater the managerial ownership tends to decrease Tobin Q. The relationship between managerial ownership and value of the firm forms a non-linear or parabolic pattern.

(Dewi and Adriana, 2014) mentioned that there are two types of hypothesis explaining non-monotonic relationship between managerial ownership and value of the firm. First, refering to convergence of interest hypothesis: The more shares owned by managers, then the agency cost tends to decrease. Such condition occurs because the interests of managers and owners (principal) are converged, thus value of the firm is also increased.

This study shows that there is positive relationship between managerial ownership andagency cost with significant effect in form of parabolic or quadratic. Second, refering to the entrenchment hypothesis: If managers acquire more shares, then value of the firm tends to decrease. This condition may occur because managers feel as the firm's owner, so that they tend to conduct the opportunistic behaviour, which can increase the agency cost and decrease value of the firm. Institutional ownership increase the monitoring and controlling of managers on their opportunistic behavior, thus can increase value of the firm.

The Development of Research Model. This research model focusses on ownership structure along with variables: managerial ownership, institutional ownership, foreign ownership, concentration ownership, and value of the firm. (Khan *et al.,* 2013), the ownership structure in agency conflict controlling is developed. Related to managerial ownership, a non-linear test is conducted to prove the pattern of inverse U shape on value of the firm. Such oattern becomes a model to control the agency conflict, therefore the managers' behavior and decision can positively affect the Tobin's Q. the relationship among indicators of ownership structure and value of the firm can be seen in Figure 1 as follow:

Figure 1. Framework and Hypothesis
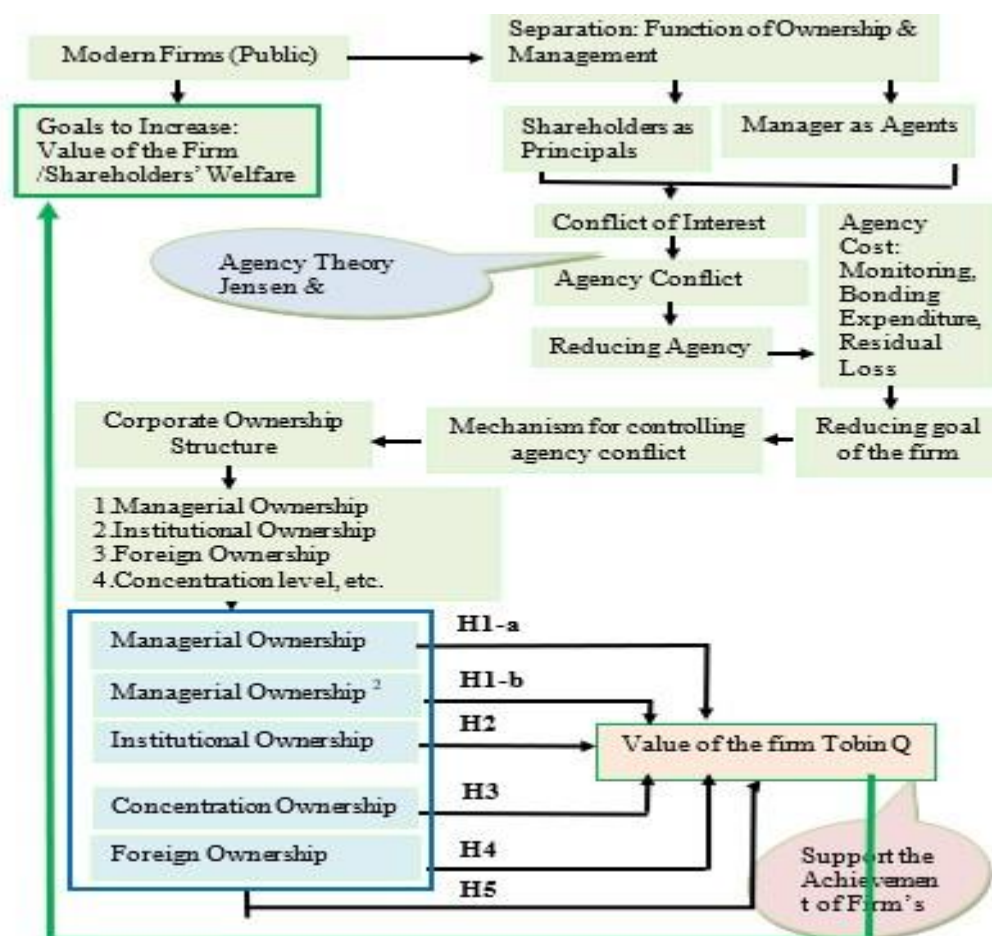
Source: (Author, 2019)

Based on the Figure one, is showing the relation between all variable and its influence to the value of the firm based on each hypothesis.

First hypothesis. The involvement of managerial ownership functions as the effect of executives board's performance motivation in maintaing value of the firm. The motivation process occurs due to the insiders are equalized with shareholders, thus the decision is made based on the orientation to shareholders' welfare. Share ownership is concentrated to managers indicating that the level of managerial ownership is relatively high, therefore can decrease value of the firm. This codition creates the anti-take over behavior by managers, as an actin to avoid the threat of take over by other firms, as well as the manager's position in the firm. In order to monitor the manager's behavior, the cost of monitoring is required, thus increases the agency cost. In contrast, according to (Khan *et al.,* 2013), the act to maximize the firm's performance occurs in a relatively low level.

Second hypothesis. The involvement of institutional investor can enhance the monitoring and control of managers' opportunistic behavior. (Thanatawee, 2014) identified the positive effect of institutional ownership on the value of Thailand's firm. (Khan *et al.,* 2013), has revealed that institutional ownership overally significantly negatively affected the Tobin's Q. After the institutional ownership has been broken down, it can be revealed that government ownership has negative effect, banking ownership & security investment ownership have positive effect on Tobin's Q. Especially for banking ownership, such involvement is recognized as the effect of manager's performance monitoring in making decision on debt financing, thus the decision focusses on increasing value of the firm. The mechanism of relationship between institutional ownership and value of the firm becomes a model to control the agency conflict.

Third hypothesis. Foreign investors are used as a mechanism to control the cash-flow volatility, in order to reduce the risk. Foreign investors tend to increase their investment through foreign direct investment (FDI) compared to increase their debts in order to maintain the debt-ratio or debt-to-equity ratio. A study conducted by (Petrovic and Cerovic, 2010) revealed that foreign investors have positive correlation with Return On Asset (ROA) and Return On Equity (ROE) compared to domestics investors. Such condition is expected to occur in many firms in Indonesia, so that it can be used to predict value of the firm. The mechanism of relationship between foreign ownership dan value of the firm also becomes a model to control the agency conflict.

Fourth hypothesis. The proportion of ownership from each ownership structure forms a concentration level or index to measure the concentration of share ownership in a firm (Kartika, 2012). Herfindahl Index (HI) determines the level of share ownership, which tends to be monopolized by certain group, or whether share ownership tends to be dispersed by many shareholders. Finally, this index can determine the level of shareholder dispersion that can positively inflences value of the firm. The mechanism of relationship between the concentration ownership level and value of the firm becomes a model to control the agency conflict.

METHODOLOGY

The model of this study plays the role as a mechanism to control the agency conflict based on ownership structure among the firms in the Indonesia Stock Exchange (IDX). The focus of conflict controlling can be identified through the creation of firm's value. The ownership structure variable consists of : managerial ownership, institusional ownership, foreign ownership, and concentration ownership.

This study uses purposive sampling technique, which has some criteria that the company published financial report should: (1) Having foreign investors. (2) Having institutional ownership. (3) Having managerial ownership. (4) Listed in the IDX between the years 2000-2017 in order to acquire the data on market price of the shares. Data analysis uses non-linear multiple regression with Eviews 6.0 software.

Data Analysis and Hypotheses. The first step to analyze data is by doing multicollinearity test, to find out the correlation between two independent variables. Whenever there is high correlation, one of the variables has to be omitted from the regression model, because it is assumed as the same variable. In order to detect the effect of multicollinearity, the Pearson Correlation is used. If the correlation coefficient is greater than 0.80, the multicollinearity exists. So, the variable having weaker power to predict the dependant variable has to be omitted from the multiple regression equation.

Based on data, the following hypothesis can be obtained:

Hypothesis 1-a : The increase in managerial ownership tends to increase value of the firm.

Hypothesis 1-b : At certain level, the increase of managerial ownership tend to lower value of the firm.

Hypothesis 2 : There is positive effect of institutional ownership on value of the firm.

Hypothesis 3 : There is positive effect of foreign ownership on value of the firm.

Hypothesis 4 : There is positive effect of concentration ownership level on value of the firm.

Hypothesis 5 : Managerial ownership, managerial ownership^2, institutional ownership, foreign ownership,and concentration ownership level overally affect value of the firm.

Hypotheses were tested using t-test, F-test, and R^2 5% level of significance by using Eviews 6.0 software. Due to parabolic testing, then the test was developed into non-linear multiple regression or parabolic effect on managerial ownership toward Tobin Q. For parabolic effect modelling, the parameters of Mown and Mown2 were used. In the model showing relationship between Tobin Q and managerial ownership, one extreme point is expected to occur as a rebound of direction (negative) between the increase of managerial ownership and Tobin Q.

The development of equation on the function of regression is as follow:

$$YQ \ it = a_0 + ß_1 Own it + ß_2 MOwn2 \ it + e \ \dots\dots\text{Equation 1}$$

$$YQ \ it = a_0 + ß_1 Own it + ß_2 MOwn2 \ it + ß_3 Inst \ it + ß_4 Foreign it + ß_5 Hi \dots\text{Equation 2}$$

Where :

Q	= Tobin Q or Value of the firm
Mown	= Managerial ownership
MOwn2	= Square of Managerial ownership to measure the non-linear effect
Inst	= Insitutional ownership
Foreign	= Foreign ownership
H_i	= Level of concentration ownership
a_0	= Intercept value
β_0-β_5	= Coefficient of each variable
e	= Error term

Data analysis can be done quantitatively by using data in ratio-scale. The criteria of sample selection use the purposive sampling method. Based on the criteria of sample

selection, 24 firms were identified per year thus by observing the data for 18 years from the year 2000 to 2017, there were totally 432 samples of observation. Those 24 firms run in manufacturing, transportation, and construction sectors.

An approach to determine the panel regression method was done by the following testing mechanism: (1) Chow test, aims to find out whether data model is in the category of Common Constant or Fixed Effect. This test result shows that the p-value is 0.000 (less than 5%), thus it can be concluded that this model is in Fixed Effect category. (2) Hausman test, aims to find out whether to use the fixed or random effect. This result shows that p-value = 0.8966 (greater than 5%), thus the random effect model is used.

DISCUSSION

In this study, following method of chow test, fixed data is obtained, then continue with Hausman test with random data, therefore the test concerned on data stationary compared to the classical assumption test. Based on 24 observations for 18 years, there is possibly a change or instability of the whole data among five variables. Hence, such condition directs the data to abnormal condition and enables the violation of the classical assumption. In order to anticipate such condition, the data stationary test can be conducted.

Based on stationary test, it can be identified that the p-value in institutional ownership, foreign ownership, concentration ownership, and Tobin Q are less than 5%, thus those can be stated stationer at 5% significance level. Meanwhile, managerial ownership is concluded stasionary at 10% significance level.

Classical Assumption Test. For identifying the multicollinearity effect, the Pearson test was used and the result shows that the values in the correlation matrix are less than 0.80 (Damodar and Dawn, 2012) between managerial ownership, institutional ownership, and foreign ownership, thus it can be concluded that there is no multicollinearity effect. On contrast, managerial ownership has correlation 0.725203 in its relationship with foreign ownership, thus between those two independen variables, there is multicollinearity effect. The second biggest correlation is between managerial ownership and consentration ownership, because the consentration ownership covers also managerial ownership, thus consentration ownership is also big. The negative direction shows between institutional ownership with foreign ownership, consentration ownership and managerial ownership. The correlation coefficient, which is less than 0.80, means that it has no multicollinearity effect. Complete result is displayed in the following Table One : Correlation Matrix

Table 1. Correlation Matrix

| Variable Independen	Mown	Inst	Foreign	HI
Mown	1			
Inst	-0.121069	1		
Foreign	-0.725203	-0.059880	1	
HI	0.455651	-0.070584	-0.280095	1

Source: (Author data analysis, 2019)

The above table one is showing the correlation matrix between all independent variable and type of ownership. Based on the tests, there is high correlation between managerial ownership and foreign ownership, hence one of the variables is omitted from the regression model.

The autocorrelation test used Breusch-Godfrey test showing that the p-value is 0.000, which is less than 5%, resulting that there is autocorrelation among the error-terms between observation in the first year and the following years. Because the data in this study used panel data, then the autocorrelation effect can be ignored. Therefore, the tests were focussed on stasionary test like the previous ones, of which it can be concluded that the data is already in stasionary condition.

Based on the hypotheses above, the parabolic pattern is expected to occur between managerial ownership and value of the firm. Until certain level, the increase in MOWN will increase value of the firm, and after passing the extreme point, the increase of managerial ownership can decrease value of the firm. The description can be seen in Figure Two: The Pattern of Inverse U-Shape below:

Figure 2. The Pattern of Inverse U-Shape
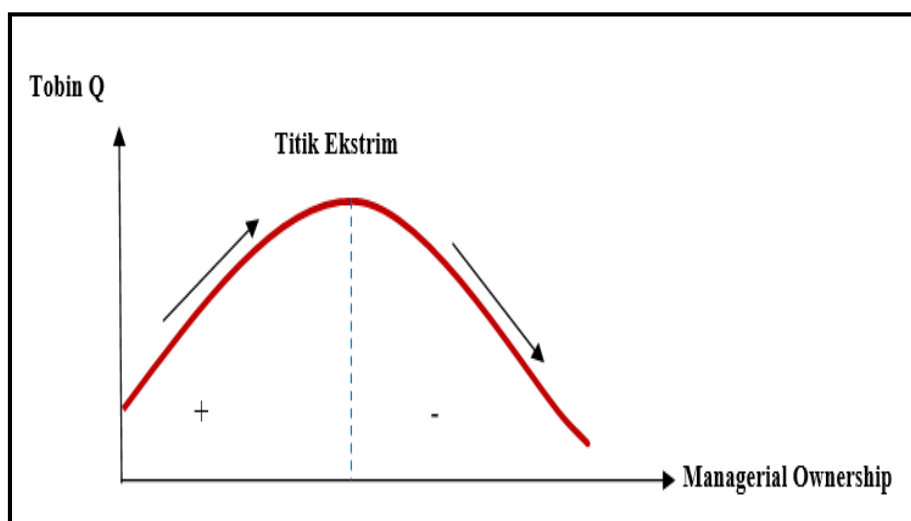
Source: (Author, 2019)

Figure two showing relationship between managerial ownership and Tobin Q, which the shape like an inverse U-shape.

Table 2. Test on Parabolic Effect

Dependent Variable: Q
Method: Panel EGLS (Cross-section random effects)
Sample: 2000 2017
Periods included: 18
Cross-sections included: 24
Total panel (balanced) observations: 432
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.962343	0.144537	6.658088	0.0000
MOWN	-2.115377	0.640638	-3.301983	0.0010
MOWN2	2.472681	0.807284	3.062964	0.0023

Effects Specification				
			S.D.	Rho
Cross-section random			0.451283	0.1750
Idiosyncratic random			0.979749	0.8250

Weighted Statistics				
R-squared	0.024854	Mean dependent var		0.570736
Adjusted R-squared	0.020308	S.D. dependent var		0.989093
S.E. of regression	0.978998	Sum squared resid		411.1697
F-statistic	5.467091	Durbin-Watson stat		1.129170
Prob(F-statistic)	0.004523			

Unweighted Statistics			
R-squared	0.014085	Mean dependent var	1.252881
Sum squared resid	492.6553	Durbin-Watson stat	0.942404

Source: (Author data analysis, 2019)

The result of regression test as seen in Table Two: Test on Parabolic Effect identifies that managerial ownership generates negative coefficient as much as -2.115377 at 1% significance level. This means that, ceteris paribus, every 1% increase in managerial ownership tends to decrease value of the firm or vice versa. Therefore, to anticipate or reduce the potentiality of agency conflict between agents and shareholders, the policy of low managerial ownership can be applied. The incentive system can be provided as contribution to managers. This explanation is under assumption that the relationship between managerial ownership and value of the firm is viewed as linear regression equation.

As the development of the first hypothesis, a non-linear test is conducted and the pattern of U-shape between managerial ownership and Tobin Q has been identified. This prediction is different from previous expectation forming the inverse U-shape pattern. This means that until certain level, the increase in MOWN tends to decrease value of the firm, and beyond the extreme point, the increase in MOWN will increase value of the firm.

The relationship can be explained by this equation:

Y_Q = 0.962343 - 2.115377MOWN + 2.472681MOWN^2 + error

Nilai t = (6.658088) (-3.301983) (3.062964)

Prob. = (0.0000) (0.0010) (0.0023)

The result above indicates that Hypothesis 1a and 1b are rejected, due to there is no existence of parabolic effect in the observation during 18 years of financial reports among non-financial firms listed in Indonesia Stock Exchange (IDX). This study found out different effect at 5% significance level. Although the hypotheses are rejected, there is a significant effect forming U-Shape pattern. The *U-shape* pattern can be seen in Figure three as follow:

Figure 3. The Pattern of U-Shape Effect
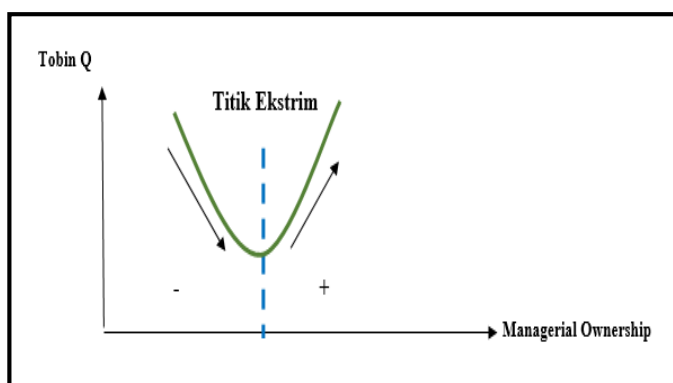
Source: (Author, 2019)

Based on the pattern, until certain level, the increase of MOWN tends to decrease value of the firm, and after beyong the extreme point, the increase in MOWN will increase value of the firm. This means that there is still an opportunity to manage managerial ownership until the level that can positively affect the value creation among the firms in Indonesia. While waiting to reach such level, the process of directing managers' behavior can be implemented under the incentive system.

Table 3. Regression Test

Dependent Variable: Q
Method: Panel EGLS (Cross-section random effects)
Sample: 2000 2017
Periods included: 18
Cross-sections included: 24
Total panel (balanced) observations: 432
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.743801	0.235660	3.156246	0.0017
MOWN	2.301535	0.696178	3.305960	0.0010
MOWN2	-3.024498	0.812858	-3.720817	0.0002
INST	0.717310	0.411047	1.745078	0.0817
FOREIGN	0.131208	0.312499	0.419866	0.6748
HI	0.488217	0.144271	3.384037	0.0008

Effects Specification

			S.D.	Rho
Cross-section random			0.475498	0.1954
Idiosyncratic random			0.964890	0.8046

Weighted Statistics

R-squared	0.058408	Mean dependent var	0.540591
Adjusted R-squared	0.047357	S.D. dependent var	0.986625
S.E. of regression	0.962980	Sum squared resid	395.0426
F-statistic	5.285083	Durbin-Watson stat	1.139350
Prob(F-statistic)	0.000101		

Unweighted Statistics

R-squared	0.037019	Mean dependent var	1.252881
Sum squared resid	481.1955	Durbin-Watson stat	0.935361

Source: (Author data analysis, 2019)

Table Three: Regression Test result shows that the hypothesis is rejected, but there are three variables having significant effect on value of the firm, which are: Managerial Ownership, Managerial Ownership^2 and consentration ownership, while Foreign Ownership and institutional Ownership do not. This test has R^2 as much as 0.037, which means that 3.70% variation in value of the firm is determined by the variation in Managerial Ownership and Foreign Ownership, while the remaining 96.30% is affected by other factors except ownership structure. The adjusted R^2 is 4.70%, which means that 95.30% variation in value of the firm is predicted by other variables, such as: financial decision, investment, and dividend policy. This result concludes that the U-Shape effect in relationship pattern between managerial ownership and value of the firm in Indonesia Stock Exchange is formed.

The involevement of managerial ownership functions as an effect of executives' performance motivation in maintaining value of the firm. The motivation process occurs due to the insiders are equalized with shareholders, so that the decision making will be oriented toward the shareholders' welfare. This condition creates the anti take-over behavior by managers as an act to avoid the take-over threat from other firms, as well as to secure the managers' position in the firm. The test result indicates that managerial ownership has two phenomena, which are: (1) In the beginning, the increase in share ownership among managers will decrease value of the firm, but after passing the extreme point such behavior will have the opposite effect. (2) Beyond the extreme point, the increase in managerial ownership will increase value of the firm. Those effects occur in non-linear pattern at 5% significance level. Such condition occurs due to the intervention by foreign investors. When managers' ownership tends to be low, it is potential to increase share ownership by foreign investors, while managers' ownership tends to be high, it can control investors' behavior to increase value of the firm.

Based on the test result, it can be identified that there are three variables having significant effect on value of the firm, which are: MOWN, MOWN^2 and HI. Especially for MOWN effect in linear pattern, (Sulong *et all.,* 2013) revealed that managerial ownership negatively affects firms' performance. The greater MOWN will decrease Tobin Q, while the smallest MOWN will increase it. At low percentage of managerial ownership, it can provide liberty for managers to diversify their personal assets in other shares. Such condition will reduce investment risk, so that they will focus on managing their firms. Contribution to the enhancement of performance or firms value can be created through compensation system, or salary as part of financial compensation. But in the opposite, when MOWN is high, the investment risk is also high making managers become less focus on value of the firm.

This phenomena matches the condition in Indonesia, because: (1) Firms are in form of family business, so the power of founders is still dominant in share ownership decision. (2) Based on firms' financial reports from IDX, firms averagely have low level of managerial ownership. (3) The power of decision making in the firms are in the hands of majority shareholders, so the monitoring function is done by the controlling stockholder. Thus, the MOWN is relatively limited.

The very high involvement of foreign investor in share ownership is considered less effective as a mechanism in reducing cash flow volatility, so the increase in foreign investor ownership tends to decrease value of the firm. At low level of foreign investor onership, value of the firm can be increased. This result is different from a study conducted by (Petrovic and Cerovic, 2010) proving that foreign investor positive correlation with ROA and ROE compared to domestic investor.

From the result of non-linear regression test, the pattern of U-Shape Effect between managerial ownership and value of the firm is identified. The explanation of the pattern is as follw: Till certain level, the increase in MOWN tends to lower value of the firm, and beyond the extremne point, the increase in MOWN will increase value of the firm. This result is match with the study conducted by (Lee and Chuang, 2008) proving that there is a non-linear pattern between managerial ownership and value of the firm. It can be concluded

that maximizing firm performance occurs at low level, but the effort to encourage performance can be done under the incentive mechanism. Such mechanism is expected to increase expenditures for the firm in controlling managers'performance, hence increasing the agency cost. As long as it is compensated with good performance or value of the firm, the increasing incentive cost does not disturb the firms' performance.

In order to reveal the extreme point, a simple mathematical approach can be applied as follow:

Y Tobin $_Q$ = 0.962343 - 2.115377MOWN + 2.472681MOWN^2 + error

Y Tobin $_Q$ = 2.472681 MOWN^2 - 2.115377 MOWN + 0.962343

The value of "a" is + 0.962343 (greater than zero), hence the parabolic curve is open toward the top (forming U-shape), which can be observed in Figure four below.

Figure 4. The Curve of MOWN-*Tobin Q*
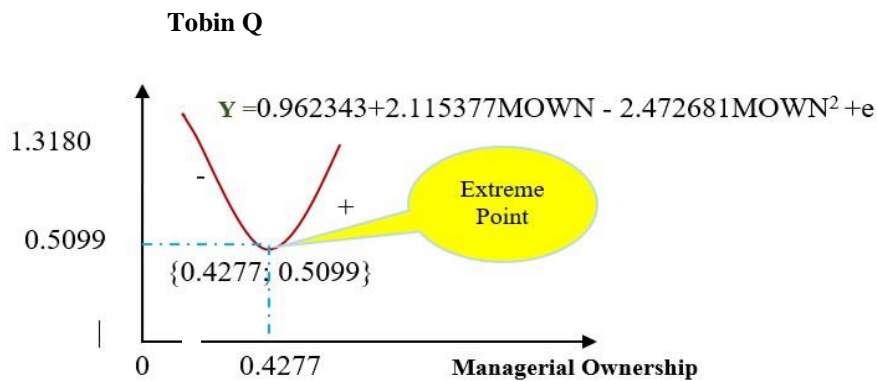
If MOWN is zero, then the value of Tobin Q is 0.9623 meaning that firm's performance is relatively good due to having Q-index is close to 1. Next, if there is an increase in MOWN, then the index value will decrease until the level of ownership 42.77%, beyond that point the Q-index will increase again.

CONCLUSION

Conclusion. Based on the multicollinearity test, high correlation in managerial ownership is found, so the variabel is not included in regression model. Overally, the result of non-linear regression test based on 432 observations on non-financial firms listed in IDX for the period 2000 - 2017 is identified as follow: (1) The parabolic effect forms U-Shape pattern between managerial ownership and Tobin Q. This effect is significant at 5% level. Until certain level, the increase in MOWN tend to lower value of the firm, and beyond extreme point, the increase in MOWN will increase value of the firm. This result is different from the previous hypothesis predicting the existence of parabolic effect among those two variables. The mechanism through managerial ownership can be applied to control the agency conflict. (2) There is a positive yet insignificant effect of foreign ownership on Tobin Q. (3) There is a positive yet significant effect of concentration ownership on Tobin Q.

From the result of non-linear regression test, the pattern of U-Shape Effect between managerial ownership and value of the firm is identified. The explanation of the pattern is as follw: Till certain level, the increase in MOWN tends to lower value of the firm, and beyond the extremne point, the increase in MOWN will increase value of the firm. This result is match with the study conducted (Khan *et al.,* 2013) proving that there is a non-linear pattern between managerial ownership and value of the firm. It can be concluded that maximizing firm performance occurs at low level, but the effort to encourage performance can be done under the incentive mechanism. Such mechanism is expected to increase expenditures for the firm in controlling managers'performance, hence increasing the ag ency cost. As long as it is compensated with good performance or value of the firm, the increasing incentive cost does not disturb the firms' performance.

Suggestions. For further development, the study on ownership structure among firms in IDX can be directed as follows: (1) The test on two extreme points for managerial ownership level on Tobin Q can be applied. (2) Considering that the value of R^2 is too low, the development of independent variables can refer to several critical decisions in finance, such as: financing decision, investment, dividend policy, as well as considering firms' fundamental condition, such as: firm-size, business risk, firm-growth, and etc.

The percentage of foreign ownership and the dispersion level of share ownership among firms in Indonesia have high variations, thus the effect becomes insignificant on value of the firm.

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