Linking Ownership Concentration to Firm Value: Mediation Role of Environmental Performance

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Abstract:
Research was aimed to examine the indirect effect of ownership concentration on firm value through environmental performance. Firms with businesses at mining, manufacture, and agriculture sectors, and that listing at Indonesia Stock Exchange and participating with Environmental Performance Assessment Program (PROPER), were the sample of research. Research has given some results. Ownership concentration has positive impact non-linearly on environmental performance. Ownership concentration can increase firm value through strategy of improving environmental performance. These results supported stakeholder theory and legitimacy theory. Corporate action that adopts environmentally friendly issue was selected as strategy to create firm value.

Keywords: environmentally friendly; Indonesia; ownership concentration; strategy.

JEL Classification: G32; Q50.

Introduction
Agency theory has explained that the separation of firm’s ownership function from its controlling function is potentially causing agency conflict between shareholders and manager, and accordingly, ownership concentration is then used as monitoring mechanism to reduce the occurrence of agency conflict (Berle and Means 1932; Jensen and Meckling 1976). Ownership concentration manifests as the controlling-shareholders, where the fewer the number of shareholder, the more concentrated is the ownership, which means that it would be easier for these shareholders to control manager to maximize firm value (Shleifer and Vishny 1997; Thomsen
Ownership concentration helps management to achieve shareholder goals through voting power or through their representation in managerial position (Porta, Lopez-De-Silanes and Shleifer 1999).

The effect of ownership concentration on firm value has been examined in many researches but each does not have consistent relationship. There was a gap among previous researches, and some of them indicated that ownership concentration can reduce agency conflict and improve firm value (Caixe and Krauter 2013; Faroquete, Zijl, Dunstan and Karim 2010; Jaafar and El-Shawa 2009; Nguyen, Locke and Reddy 2015; Vintila and Gherghinaa 2014). Other researches showed that ownership concentration does not have an impact on firm value (Ahmed, Sehrish, Saleem and Yasi 2012; Al-Saadi and Al-Shammari 2015; Wahla, Shah and Hussain 2014). Other researches showed that ownership concentration does not have consistent relationship. There was a gap among previous researches, and some of them indicated that ownership concentration can reduce agency conflict and improve firm value (Caixe and Krauter 2013; Faroquete, Zijl, Dunstan and Karim 2010; Jaafar and El-Shawa 2009; Nguyen, Locke and Reddy 2015; Vintila and Gherghinaa 2014). Other researches showed that ownership concentration does not have an impact on firm value (Ahmed, Sehrish, Saleem and Yasi 2012; Al-Saadi and Al-Shammari 2015; Wahla, Shah and Hussain 2014).

The presence of these laws has compelled Indonesian firms to take responsibility for their actions on the environment. Environment-based economic practice that Indonesian industrialists must attend has been laid upon a platform consisting some elements, such as: Environmental Management System, Energy Efficiency, Emission Reduction, 4R (Reuse, Reduce, Recycle, Recovery) of Non-B3 Solid Wastes, Biological Diversity Protection, and Community Development. This platform is used to assess the appropriateness of industrial operation on life environment and community. This platform has been set into a program called as Environmental Performance Assessment Program (PROPER = Program Penilaian Kinerja Lingkungan) designed by the Ministry of Life Environment for Indonesia Republic to make firms focusing more on the issue of environmental conservation (Djajadiningrat, Hendriani and Famiola 2014). Number of research that examines the relationship between ownership concentration, environmental performance, and firm value within Indonesia context is still very few. The current research attempts to prove that firms with good environmental performance will create economic value to themselves, and mediate the relationship between ownership concentration and firm value. Previous researches are mostly yet to examine these topics. The current research takes place at several firms listed with Indonesia Stock Exchange and focuses...
on mining, manufacture and agriculture sectors because these sectors are considered as vulnerable to environmental issues (Post, Rahman and McQuillen 2015; Zou, Lin and Xie 2015). Result of research indicates that ownership concentration has positive effect on environmental performance with non-linear pattern. Environmental performance improves firm value and mediates the effect of ownership concentration on firm value. The outline of this paper includes five sections. Next section is literature review and hypothesis development. Third section explains research methodology. Fourth section presents empirical results. Final section is conclusion and the limit of current research for improvement of next research.

1. Literature Review

1.1. Ownership Concentration and Environmental Performance

The effect of ownership concentration on firm value is examined by utilizing agency theory, which indicates that agency conflict is mostly understood in narrow perspective, especially based on the relationship between owner and manager of the firm (Parkinson 1994). Stakeholder theory, however, exploits wider perspective by stating that firm is not only about the relationship between management and shareholders, but also about the interests of other entities (stakeholders) who can affect and be affected by firm decision (Freeman 1984). Under perspective of legitimacy theory, firms strategically do corporate actions that adopt social and environmental values. Firms need people legitimacy because it is a strategic factor for the development of firms in the future (Epstein 1972). Both stakeholder and legitimacy theories are underlying the relationship between firm ownership and environmental performance (Henriques and Sadorsky 1996; Ullmann 1985) and also explaining the effect of environmental performance on firm value (Aerts and Cormier 2009).

In general, the existence of firm brings positive impact on economic progress and national development. However, firm’s production activity is mostly understating the presence of environment as a factor of production process, or precisely only considering environment as natural gift that can be exploited without conservation. Production activity without environmental care always has consequences on natural balance, such as global warming, climate change, natural disaster, and pollution of water, air and land. All of them are prices paid by society for firm activity. It provokes the emergence of conflict between people as stakeholders and firms. People, through times, become aware that environment is a factor of production that its importance shall be strongly attended. This position got the peak when “Environmental Impact Assessment (EIA)” was introduced in 1970s in America that requires firms to involve environmental impact calculation into their activity plan to understand whether their production activity has great or adverse impact on environment (Djadiningrat et al. 2014).

After having their mind blown by the issues concerning environmental damage due to the increase of firm’s production activity, firms then measure their performance not only from economic dimension, but also from other dimension, such as environment and society. Accordingly, Triple Bottom Line emerges as a concept measuring firm performance in holistic way involving three performance measures, such as: economic measure, in form of profit; environmental measure, in form of environmental care; and social measure, in form of social care (Elkington 1997).

Firm’s care to environment and society is explainable through stakeholder theory, which says that firms’ success in maximizing their economic performance is not only understood from the relationship between firm and shareholders, but also from the relationship between firm and stakeholders (Jensen 2001; Ullmann 1985). Firms with strong conscience to environmental and social issues would motivate shareholders to persuade management to improve firms’ environmental performance (Henriques and Sadorsky 1996; Ullmann 1985).

Shareholders who dominate firm ownership are different from other shareholders in 2 aspects. Dominant shareholders always have greater interest to know firm’s long-term survival rate and identify their reputation with the firm (Anderson, Delli and Gillan 2003). At least, there are 3 reasons why shareholders care to environment, respectively: 1). Dissatisfaction with environmental fines (pecuniary) that may reduce their earning, 2). Disappointment with slow progression of environmental performance, and 3). Difficulty to arise new capitals or attract new investors (Henriques and Sadorsky 1996). Therefore, dominant shareholders (ownership concentration) tend to make decisions to maximize firm goals on economic, society and environment.

Previous researches declared that there is strong relationship between ownership concentration and efforts to improve both firm’s environmental and social performances. Earnhart and Lizal (2006) found that firms in Czech Republic with ownership concentration structure are motivated more to improve their environmental performance. The first biggest shareholders as the proxy of ownership concentration are very persuasive on the firm to take efforts to reduce the impact of air pollutants (such as CO, SO2, and NOx) emitted from firm’s
operational activity. Environmental performance is measured from the emission level of main pollutants (CO, SO₂, and NOₓ) produced by firm activity and regulated mostly by the government of Czech Republic.

Crisostomo and Freire (2015) discovered that firms with ownership concentration in Brazil always attempt to maintain their name and reputation by making engagement with social and environmental activities (Corporate Social Responsibility). The improvement of social and environmental performances will result in the sustainability of firm’s image and reputation, which then lead to the arrival of people legitimacy to the firm. Moreover, Chang and Zhang (2015) asserted that firms with ownership concentration tend to increase their level of control and monitoring on operational costs related with environment.

Based on theoretical reviews and empirical studies previously given, then the following hypotheses are proposed:

H1: The first biggest ownership concentration has positive effect on environmental performance.
H2: The biggest ownership concentration from the first to the third has positive effect on environmental performance.

1.2. Environmental Performance and Firm Value

Environmental management by the firm is aimed to achieve good environmental performance. This environmental management is done by using natural resources for as great as possible benefits without sacrificing environmental conservation. To obtain good environmental performance, the firm must do environmentally friendly business practice with outputs such as preventing pollution, using renewable energy, and having good environmental reputation (Walls, Berrone and Phan 2012). Environmental performance is also defined as protective steps for air, water, soil and immediate ecosystems, which by the times, these will create pattern for each economic activity (Bran, Radulescu and Ioan 2011).

As explained in stakeholder theory, maximization of firm value shall not make firms to disregard stakeholders other than dominant shareholders (Jensen 2001). People are the key stakeholder who are mostly affected by the impact of environmental damage due to firm’s operational activity. Legitimacy theory explains that there is a social contract between firm and society. Any firms must have integrity and ethic in doing their business, and shall improve their social and environmental responsibilities to be acceptable in people eye (Deegan 2002). People legitimacy is obtained by firms through their corporate actions to adopt social and environmental values (Aerts and Cormier 2009).

Corporate action that is environmentally friendly will substantiate firm’s legitimacy by which the firm finds as easier to access the desired resources, to create better employees, and to improve the synergy relationship with partners (Aldrich and Fiol 1994; DiMaggio and Powell 1983; Pfeffer and Salancik 1978; Turban and Greening 1997). Substantiating legitimacy through environmental performance is a strategy possibly used by the firm to improve environmental performance. Previous studies concerning with the relationship between environmental performance and firm value have shown that improvement of environmental performance will give positive effect on firm value (Al-Tuwaijri, Christensen and Hughes 2004; Moneva and Ortas 2010; Muhammad, Scrimgeour, Reddy and Abidin 2015; Purnomo, Karin, Widianingsih and Patricia 2012).

By taking into account theoretical reviews and empirical studies previously given, the following hypotheses are then suggested:

H3: Environmental performance positively affects firm value.
H4: Ownership concentration indirectly affects firm value through environmental performance

2. Methodology

2.1 Research Sample Data

Data type used in this research is panel data. Research sample is firms that its shares are traded publicly in Indonesia Stock Exchange in period 2010-2016 and that run businesses at mining, manufacture and agriculture sectors. These sectors are selected because these are the most vulnerable industries to environmental issues (Post et al. 2015; Zou et al. 2015). The criteria to determine the sample include: (1) The firms have businesses at mining, manufacture and agriculture sectors and must have released annual statement on period 2010-2016; (2) The firms have participated into Environmental Performance Assessment Program (PROPER) since 2010. After applying these criteria, it results in 44 firms comprising with 6 firms at mining sector, 34 firms at manufacture sector, and 4 firms at agriculture sector. Data source is secondary, which includes annual statement prepared by firms listing at Indonesia Stock Exchange on period 2010-2016 and the rating given to the firms concerning with
their performance in environmental management (in PROPER), which the rating is released by the Ministry of Life Environment.

2.2 Variable Measurement

Dependent variable in this research is Firm Value (FV). It is measured with Tobin’s Q (Lin 2011; Warrad, Almahamid, Slihat and Alnimer 2013). Tobins Q is derived from the addition of share market value with debt total value, which the result of addition is divided by asset total value.

Environmental performance (EP) is mediator variable in this research. Environmental performance can be referred as the efforts of managing natural resources to bestow a lot of benefits to humans without destroying their opportunity of conservation. Firms with good environmental performance are those doing environmentally friendly business practice with outputs such as preventing pollution, using renewable energy, and having high quality of environmental disclosure (Walls et al. 2012). Indeed, environmental performance is measured from the achievement of firm from its participation in PROPER, a program designed by the Ministry of Life Environment (KLH) to stimulate firms to restructure their management of life environment through information instrument (Angeliaa and Suryaningsih 2015; Iqbal, Assih and Rosidi 2013; Purnomo et al. 2012). PROPER’s rating system of environmental performance comprises with five colors, respectively: (1) Gold Rating: Definitely Very Good, Score=5; (2) Green Rating: Very Good, Score=4, (3) Blue Rating: Good, Score=3, (4) Red Rating: Bad, Score=2; and (5) Black Rating: Very Bad, Score= 1. PROPER elements used to measure environmental performance among Indonesian industrialists are Environmental Management System, Energy Efficiency, Emission Reduction, 4R (Reuse, Reduce, Recycle, Recovery) of Non-B3 Solid Wastes, Biological Diversity Protection, and Community Development (Djajadiningrat et al. 2014).

Independent variable in this research is ownership concentration. It is defined as a condition where the dominant shareholders exist over other shareholders, and they can be individual or group of individuals, by their dominant position, they become the controlling-shareholders (Dallas 2004). There are 2 elements constituting ownership concentration, namely: (1) the percentage of the first biggest shareholders (OC1) of all firm’s circulated shares (Caixe and Krauter 2013; Gaur, Bathula and Singh 2015), and (2) the percentage of the consolidated biggest shareholders that comprise the first, the second, and the third (OC2) of all circulated shares (Desoky and Mousa 2013; Earle, Kucsera and Telegdy 2004).

Few control variables are used in this research, such as Firm Size (SIZE), Firm Leverage (LEV), and Return on Assets (ROA). These variables are those most frequently used by previous researches. It is expected that by controlling those variables, then the relationship between ownership concentration and environmental performance. Firm Size (SIZE). There is close relationship between firm size and environmental performance. Therefore, firm size is a variable that is always to be controlled in empirical studies about environmental management (Cong and Freedman 2011; Earnhart and Lizal 2006; Henriques and Sadorsky 1996; Zou et al. 2015). Firm size is known by determining natural logarithm of assets total value. Firm Leverage (LEV). Firm leverage is the ratio of debt total value to assets total value. Firm leverage is considered as influencing the firm’s efforts to improve environmental performance, and therefore, this variable is always used as control variable in the studies about environmental management (Desoky and Mousa 2013; Lahouel, Peretti and Autissier 2014; Zou et al. 2015). Return on Assets (ROA). ROA is a measure of firm performance, which is described as how strong can be organizational capability and firm resources in affecting environmental performance (Walls et al. 2012; Zou et al. 2015). ROA is derived from ratio of net earnings to assets total.

2.3 Analysis Model

Research uses variance-based SEM or partial least squares (SEM-PLS) supported with computer application of WarpPls version 6.0. There are five stages in PLS-SEM, which include model conceptualization, path diagram determination, and model evaluation. The determination of algorithm analysis method in WarpPLS program involves two arrangements that must be completed before proceeding to model analysis. These arrangements are outer model and inner model. For outer model analysis, research uses PLS Regression because it has ability to process data that have collinearity problems (Latan and Ghozali 2016). After making arrangement for outer model, the process is continued to the setting of inner model. In this research, Warp is chosen to analyze inner model because this technique is able to detect whether there is non-linear relationship or not. Afterward, the most important step that must be taken before evaluating research model through PLS-SEM analysis is to determine resampling method. Resampling is a procedure to redesign the sample because PLS model’s estimated significance value is still unknown (Latan and Ghozali 2016). In this research, bootstrap is used as
resampling method because it is more stable when the original sample is more than 100 (Latan and Ghozali 2016).

Model evaluation in PLS-SEM involves two stages, respectively measurement model evaluation and structural model evaluation. Measurement model evaluation is done to assess reliability and validity of indicators that constitute latent construct. Structural model evaluation is aimed to predict the relationship among latent variables by examining how many variances can be explained and counting the significance level of p-value (Latan and Ghozali 2016). However, this research does not undergo measurement model evaluation because research uses manifest variable. Therefore, research does not find necessary to assess reliability and validity of construct measurement.

The effect of ownership concentration variables (OC1 & OC2) and control variables (SIZE, LEV and ROA) on variables of environmental performance (EP) and firm value (FV) is tested using model equation. Either the effect of ownership concentration and control variables on environmental performance, or the effect of environmental performance on firm value, can be understood through this model equation, written as follows:

\[
EP = \alpha_1 + \beta_1 OC1 + \beta_2 OC2 + \beta_3 SIZE + \beta_4 LEV + \beta_5 ROA + \epsilon_1
\]

\[
FV = \alpha_2 + \beta_6 EP + \epsilon_2
\]

3. Result

3.1. Description and Correlation

Table 1 indicates description data of research variables along with Minimum, Maximum, Mean and Standard Deviation. As indicated by Table 1, the first biggest shareholders (OC1) and the consolidated biggest shareholders from the first to the third (OC2) are dominating firm ownership over 50% (0.74 and 0.70). Regarding to the size of firms observed in this research, it seems that the sample consists of big firms (28.77) and in average, capital structure of these firms is financed by debt over 30% (0.44). Result in Return on Assets (ROA) shows that the firms are profitable (8.17). Based on the result in Environmental Performance (EP), the firms in this research have PROPER score above 3 or stand within green rating (3.15). It indicates that the firms already have good environmental performance and have applied environmentally friendly management system. Concerning with Firm Value (FV), firm’s market value is higher than its assets value (2.32).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>OC1</td>
<td>0.32</td>
<td>1.00</td>
<td>0.74</td>
<td>0.15</td>
</tr>
<tr>
<td>OC2</td>
<td>0.28</td>
<td>1.00</td>
<td>0.70</td>
<td>0.17</td>
</tr>
<tr>
<td>SIZE</td>
<td>0.20</td>
<td>33.20</td>
<td>28.77</td>
<td>1.76</td>
</tr>
<tr>
<td>LEV</td>
<td>0.04</td>
<td>1.49</td>
<td>0.44</td>
<td>0.20</td>
</tr>
<tr>
<td>ROA</td>
<td>-51.60</td>
<td>43.93</td>
<td>8.17</td>
<td>11.20</td>
</tr>
<tr>
<td>EP</td>
<td>1</td>
<td>5</td>
<td>3.15</td>
<td>0.65</td>
</tr>
<tr>
<td>FV</td>
<td>0.33</td>
<td>18.92</td>
<td>2.32</td>
<td>3.07</td>
</tr>
</tbody>
</table>

Table 2 displays the result of matrix correlation of all research constructs. It shows that the first biggest shareholders (OC1) have positive correlation with the consolidated biggest shareholders from the first to the third (OC2), firm size, ROA, environmental performance, and firm value (at significance level of 0.001). Meanwhile, the consolidated biggest shareholders from the first to the third (OC2) have positive correlation with ROA and firm value (at significance levels of 0.05 and 0.001). Firm size has positive correlation with environmental performance.
performance, ROA, and firm value (at significance level of 0.001) but has negative correlation with firm leverage (at significance level of 0.05). Firm leverage has negative correlation with ROA (at significance level of 0.001). Variable of ROA has positive correlation with environmental performance and firm value (at significance level of 0.001). Environmental performance has positive correlation with firm value (at significance level of 0.05).

### 3.2. Result of Analysis with PLS-SEM

Before testing main structural model, it is preceded by evaluation on goodness-of-fit of the model. Outputs of this evaluation are presented in Table 3.

#### Table 3. Goodness-of-Fit of Structural Model

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Parameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average path coefficient (APC)</td>
<td>0.172***</td>
</tr>
<tr>
<td>Average R-squared (ARS)</td>
<td>0.112***</td>
</tr>
<tr>
<td>Average adjusted R-squared (AARS)</td>
<td>0.104**</td>
</tr>
<tr>
<td>Average block VIF (AVIF)</td>
<td>1.779</td>
</tr>
<tr>
<td>Average full collinearity VIF (AFVIF)</td>
<td>2.013</td>
</tr>
<tr>
<td>Tenenhaus GoF (GoF)</td>
<td>0.335</td>
</tr>
<tr>
<td>Sympson's paradox ratio (SPR)</td>
<td>1.000</td>
</tr>
<tr>
<td>R-squared contribution ratio (RSCR)</td>
<td>1.000</td>
</tr>
<tr>
<td>Statistical suppression ratio (SSR)</td>
<td>0.833</td>
</tr>
<tr>
<td>Nonlinear bivariate causality direction ratio (NLBCDR)</td>
<td>0.750</td>
</tr>
</tbody>
</table>

***, **, * denotes significance levels at 0.001, 0.05 and 0.1, respectively.

Based on the contents in Table 3, research model is considered as fit because P-value for APC and ARS is < 0.001 while for AAR is <0.05, precisely APC = 0.172, ARS = 0.112 and AARS = 0.104. Values for AVIF and AFVIF are < 3.3, which means that there is no multicolinearity problem among indicators and among exogenous variables. Goodness-of-fit (GoF) is valued at 0.335 > 0.25, which makes the model considered as fit and put it into medium category. The values for SPR, SSR and NLBCDR are more than 0.70 while RSCR value is 1.000 > 0.90. It means that the model is acceptable because there is no causality problem in the model (Latan and Ghozali 2016).

Next, results of the estimated relationship among the constructs and the variance level are shown in Table 4.

#### Table 4. Result of Structural Model Evaluation

<table>
<thead>
<tr>
<th>Description Path</th>
<th>Path Coefficient</th>
<th>R²</th>
<th>Q²</th>
<th>Effect Size</th>
<th>Standard Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>OC1 → EP</td>
<td>0.363**</td>
<td>0.195</td>
<td>0.169</td>
<td>0.106</td>
<td>0.141</td>
</tr>
<tr>
<td>OC2 → EP</td>
<td>0.179</td>
<td>0.008</td>
<td>0.083</td>
<td>0.063</td>
<td></td>
</tr>
<tr>
<td>SIZE → EP</td>
<td>0.180**</td>
<td>0.059</td>
<td>0.068</td>
<td>0.069</td>
<td></td>
</tr>
<tr>
<td>LEV → EP</td>
<td>-0.042</td>
<td>0.020</td>
<td>0.025</td>
<td>0.069</td>
<td></td>
</tr>
<tr>
<td>ROA → EP</td>
<td>0.093*</td>
<td>0.020</td>
<td>0.025</td>
<td>0.069</td>
<td></td>
</tr>
<tr>
<td>EP → FV</td>
<td>0.173***</td>
<td>0.030</td>
<td>0.035</td>
<td>0.030</td>
<td>0.056</td>
</tr>
</tbody>
</table>

***, **, * denotes significance levels at 0.001, 0.05 and 0.1, respectively.

Path coefficient estimates are based on robust standard errors.

The estimated relationship among the constructs is depicted in Figure 1.

#### Figure 1. Result of the Estimated Relationship among the Constructs
As shown by Table 4 and Figure 1, R-squared ($R^2$) value produced by environmental performance is 0.195. This value remains in small category (<0.25) and the variance that can be explained by independent variable is 19.5%. Moreover, R-squared ($R^2$) value produced by firm value is 0.030. It belongs to small category (<0.25) and the variance explained by mediator variable is 3%. Q-squared values produced by environmental performance and firm value are $0.169 > 0$ and $0.030 > 0$, which means that model has predictive validity. Effect size value of the first biggest shareholders (OC1) on environmental performance is $0.106 > 0.02$ while that of environmental performance on ROA is $0.030 > 0$, which means that practically, this effect size plays important role.

Result of the estimated relationship among the constructs shows that the first biggest shareholders (OC1) have positive and significant effect on environmental performance with path coefficient value of 0.363. It supports Hypothesis 1. However, the effect of the consolidated biggest shareholders from the first to the third (OC2) on environmental performance is not significant. Thus, it rejects Hypothesis 2. Both results still support previous findings stating that ownership concentration facilitates the firms to make strategic decisions to maximize their behavior toward economical, social, and environmental goals (Chang 2013; Chang and Zhang 2015; Crisostomo and Freire 2015; Earnhart and Lizal 2006). It can also be said that ownership concentration of the first biggest shareholders has greater effect size than that of the consolidated biggest shareholders from the first to the third. It is consistent with Shleifer and Vishny (1997) and also proves the statement that the less the number of investors who dominate ownership, the easier will be to control firm management.

Result of estimation indicates that environmental performance has positive and significant effect on firm value with path coefficient value of 0.173. This result supports Hypothesis 3 and advocates the finding of previous researches that firms with good environmental performance will find their firm value increasing (Al-Tuwaijri et al. 2004; Moneva and Ortas 2010; Muhammad et al. 2015; Purnomo et al. 2012).

Table 5 presents the result of estimated indirect effect of independent variable on dependent variable through mediator variable. The result will be used to answer Hypothesis 4.

<table>
<thead>
<tr>
<th>Description Path</th>
<th>Path Coefficient</th>
<th>Standard Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>OC1 $\rightarrow$ EP $\rightarrow$ FV</td>
<td>0.063**</td>
<td>0.028</td>
</tr>
<tr>
<td>OC2 $\rightarrow$ EP $\rightarrow$ FV</td>
<td>0.031</td>
<td>0.031</td>
</tr>
<tr>
<td>SIZE $\rightarrow$ EP $\rightarrow$ FV</td>
<td>0.031**</td>
<td>0.015</td>
</tr>
<tr>
<td>LEV $\rightarrow$ EP $\rightarrow$ FV</td>
<td>-0.007</td>
<td>0.013</td>
</tr>
<tr>
<td>ROA $\rightarrow$ EP $\rightarrow$ FV</td>
<td>0.016</td>
<td>0.017</td>
</tr>
</tbody>
</table>

***, **, * denotes significance levels at 0.001, 0.05 and 0.1, respectively. Path coefficient estimates are based on robust standard errors.

Table 5 shows that ownership concentration of the first biggest shareholders (OC1) has significant indirect effect on firm value through environmental performance, and path coefficient value of this effect relationship is 0.063. This result supports Hypothesis 4. It can be said that ownership concentration can increase firm value by directing the firm to operate in manner of environmentally friendly.

3.3. Linear and Non-Linear Relationship among Variables

WarpPls version 6.0 can deliver outputs that help research ascertain whether the relationship among variables is linear or non-linear. These outputs are derived from the operation of inner model analysis algorithm on Warp selection. Figure 2 indicates non-linear relationship between the first biggest shareholders (OC1) and environmental performance.

As indicated by Figure 2, the relationship between OC1 and EP is non-linear with inverted-U curve. In the beginning, the increase of ownership concentration will improve environmental performance, but at ownership level of 77%, environmental performance starts to decline. It means that the increase of ownership concentration is not always improving environmental performance. At certain domination point (especially at 77% ownership level), ownership concentration is not anymore persuading the firm to be more environmentally friendly. This point is also the time when ownership concentration is getting stronger and majority shareholders start to concern more with personal interests (Jiang et al. 2009).
Next, Figure 3 illustrates linear relationship between variable of environmental performance and variable of firm value.

As indicated in Figure 3, the relationship between environmental performance and firm value is linear, meaning that the improvement of environmental performance to the highest PROPER rating (golden rating = 5) will then increase firm value (Tobin's Q).

Conclusion

Research is aimed to conduct empirical test over the indirect effect of ownership concentration on firm value through environmental performance as mediator variable. Four hypotheses are proposed by referring to stakeholder theory, legitimacy theory, and results of some empirical studies.

Result of research indicates that the control given by the first biggest shareholders has positive contribution to environmental performance improvement. Ownership concentration in the hand of single investor is more effective in controlling firm management to improve environmental performance when it is compared to ownership concentration with the consolidation of three biggest shareholders. This result supports the opinion of Shleifer and Vishny (1997), which stating that the lesser number of investors who hold ownership concentration, then the easier will be for shareholders to control manager. This result also upholds the position of stakeholder theory, which asserting that successful maximization of firm value is not only depending on the relationship between shareholders and firm, but also on the relationship between firm and stakeholders who have stronger concern to environmental and social issues (Jensen 2001; Ullmann 1985). Other finding shows that the relationship between ownership concentration and environmental performance is non-linear. It means that the increase of ownership concentration is still restrained to a certain level, precisely at the point where environmental performance starts to decline.

It is also found that environmental performance can be one strategic option to increase firm value. Firms with commitment to be environmentally friendly can deliver economic benefits to the firms, especially when the firms attempt to improve performance based on market value. It is consistent with the perspective of legitimacy.
theory, which explaining that firms with corporate action that adopts social and environmental issues are easier to access capital sources, which potentially helpful to them to increase firm value (Aerts and Cormier 2009).

It may be concluded that ownership concentration increases firm value indirectly through environmental performance improvement. The biggest shareholders can increase firm value by giving pressure on firm management to be environmentally friendly. Indeed, environmentally friendly management strategy is practically the determinant factor to increase firm value (Tobins Q).

Limitation

Research still faces a certain limit. R-square value remains in small category (<0.25) and thus, the variation that influences environmental performance and firm value is less powerful to explain the relationship of variables. There are still many other variables beyond research model with more significant explanatory strength. These variables shall be examined in the future, especially concerning with its capacity to improve environmental performance and firm value.

References


