

OWNERSHIP STRUCTURE, FIRM VALUE AND THE MODERATING EFFECTS OF FIRM SIZE: EMPIRICAL EVIDENCE FROM INDONESIAN CONSUMER GOODS INDUSTRY

Iman Sofian Suriawinata^{1*}, Denty Melatijati Nurmali²

^{1,2} Sekolah Tinggi Ilmu Ekonomi Indonesia

Email: ¹iman.suriawinata@stei.ac.id, ²denty15melati@gmail.com

*Corresponding author

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Abstract

Employing a panel data from a sample of Indonesia listed consumer goods companies covering the period of 2015–2019, the present study examined the effect of share ownership structure on firm value with firm size acting as a moderating variable. The estimation results showed that while the efficient-monitoring and control hypothesis of institutional ownership was supported, the alignment hypothesis of managerial ownership did not hold. However, the present study found that firm size moderated the effect of share ownership structure on firm value. As firm size increased, managerial conducts were more inclined to conform with shareholders' interest. But on the other hand, as firm size increased, institutional investors tended to side with managers in extracting more value at the expense of other shareholders. These findings corroborated anecdotal evidence in empirical corporate finance that firm size mattered, and provided insights for policy makers relating to corporate governance implications of institutional ownership in large firms.

Keywords: Ownership structure, firm value, firm size, moderating effects.

Introduction

While there are many theories attempting to explain why firms exist (Walker, 2017), the neoclassical theory of the firm states that a firm exists to make a profit. Based on the microeconomics general equilibrium analysis, such profit is positive-maximum in terms of present value and accrues to the firm (Hicks, 1975). Fama and Miller (1972) demonstrated that although a firm was owned by many shareholders with differing utility functions and managed by non-owner professionals, the main objective of the firm that satisfied its shareholders, regardless of their individual preferences, should be maximization of the firm's current market value.

However, the emergence of modern corporations where ownership and control are separated (Berle & Means, 2017), as well as the rise of managerial capitalism (Marris, 1964) where managers actually control corporate resources, have raised a new fundamental problem known as the agency problem (Jensen & Meckling, 1976). It is argued that since managers of modern corporations are generally either not owners of such corporations or have insignificant portion of equity holdings, it is likely that they will pursue other objectives that maximize their own utility, resulting in suboptimization of firm value.

Nevertheless, finance literature suggests some control mechanisms for mitigating agency problems (Dalton, Hitt, Certo, & Dalton, 2007), among others are: (i) corporate governance (Brennan & McDermott, 2004; Brennan, 2006), (ii) ownership structure, consisting of managerial, institutional as well as block holders ownerships (Benson & Davidson, 2009; Chen & Yu, 2012; Lozano, Martinez, & Pindado, 2016), (iii) product market competition (Giroud & Mueller, 2010; Tang, 2018), (iv) debt market monitoring (Jensen, 1986; Stulz, 1990), and (v) market for corporate control (Jensen, 1986, 1988; Kini, Kracaw, & Mian, 2004; Cheng & Indjejikian, 2009). Moreover, a recent study provides evidence on the role of social capital in mitigating agency problems (Hoi, Wu, & Zhang, 2019).

The present study aims to examine the effect of ownership structure on firm value within the context of agency theory, specifically relating to potential non-alignment of interests between shareholders and their appointed agents, namely managers. Additionally, the present study also explores the potential role of firm size in moderating the effects of ownership structure on firm value.

Prior studies relating to the impact of ownership structure on firm value have provided mixed as well as contradictory results. Morck, Shleifer, and Vishny (1988) were the first to provide evidence of an inverted

U-shaped or concave relationship between managerial ownership and firm value within some ranges of share ownership. This finding indicates that up to a certain level of share ownership, managerial ownership is positively correlated with firm value, but beyond that level, the relationship becomes negative. Similar findings were also found by McConnell and Servaes (1990), Benson and Davidson (2009), and Yu, Soprano, and Lee (2012). On the contrary, a recent study by Fabisik, Fahlenbrach, Stulz, and Taillard (2021) found that the empirical relationship between managerial ownership and firm value was negative. Interestingly, after conducting additional analysis, Fabisik *et al.* (2021) found a similar result to those of prior studies when they restricted their sample only on the 500 largest firms, meaning that they also found an inverted U-shaped relationship between managerial ownership and firm value. This later finding indicates that firm size plays an important role in explaining the relationship between managerial ownership and firm value. However, the effect of firm size on the relationship between ownership structure and firm value has not been sufficiently explored.

Inspired by Fabisik *et al.* (2021) findings, the present study hypothesizes that firm size has a moderating effect on the relation between ownership structure and firm value. The contribution of the present study is that while there are many prior studies that examine the relationship between ownership structure and firm value within the context of mitigating agency problems, this study might be the first that explore the moderating role of firm size on the relationship between ownership structure – encompassing both managerial and institutional ownerships – and firm value.

The present study employs a panel data from a sample of a number of Indonesia listed companies operating within the consumer goods industry covering the period of 2015–2019. The consumer goods industry is chosen because the growth of the industry is generally positively correlated with the domestic economic growth, but remain relatively resilient during an economic downturn – especially relating to products or goods that are used by consumers to satisfy their basic or primary needs, such as food, beverages, clothing, and other essential consumptions. The above special characteristics of the consumer goods industry have made investments in the stocks of consumer goods companies attractive to certain capital market investors.

It must be noted that due to developments in the information technology and changes in the consumer life style, the definition of consumer goods industry has also evolved. It is no longer production-oriented, and

currently the definition of consumer goods includes leisure and entertainment (Shen, Sun, & Ali, 2021). Additionally, since the 2nd Quarter of 2021, the Indonesia Stock Exchange (IDX) has redefined and divided the consumer goods industry into consumer cyclicals and consumer non-cyclicals. However, due to the period of investigation, the present study still uses the old classification of the consumer goods industry.

Table 1 shows both the annual and the average growth rates of several sub-sectors within the consumer goods industry, as well as the annual and the average growth rates of the GDP (gross domestic products).

Table 1
Annual & Average Growth Rates

Year	Food & Beverages	Tobacco	Pharmaceutical	GDP
2011	10.98%	-0.23%	8.66%	6.17%
2012	10.33%	8.82%	12.78%	6.03%
2013	4.07%	-0.27%	5.10%	5.56%
2014	9.49%	8.33%	4.04%	5.01%
2015	7.54%	6.24%	7.61%	4.88%
2016	8.33%	1.58%	5.84%	5.03%
2017	9.23%	-0.64%	4.53%	5.07%
2018	7.91%	3.52%	-1.42%	5.17%
2019	7.78%	3.36%	8.48%	5.02%
Average	8.41%	3.41%	6.18%	5.33%

Source: www.bps.go.id

During the period of 2011–2019, two sub-sectors, i.e., food & beverages and pharmaceutical, have average growth rates exceeding that of the GDP. On the other hand, the average growth rate of the tobacco sub-sector is below the growth rate of GDP, reflecting the nation-wide negative impact of tobacco control laws stipulated by the regional as well as the central governments.

Value Maximization as the Principal Objective of the Firm

Currently there are two strands of thoughts on what should be the principal objective of the firm. The first strand is based on the neoclassical theory of the firm which claims that under the assumptions of perfect competitive product and input markets, the main objective of the firm is profit maximization. Since the firm is owned by its shareholders, a profit-maximizing firm will maximize the wealth of its shareholders. With the proper functioning of capital markets, the shareholders' wealth will be reflected in the price per share issued by the firm, which in turn is the discounted distributed profits (i.e. dividends) per share expected to be paid by the firm over its life cycle to the

shareholders. Therefore, according to this strand of thought, the principal objective of the firm is the maximization of shareholders' wealth.

The second strand of thought challenges the shareholders' wealth maximization principle, and claims that the stakeholders' benefit maximization is a more appropriate objective of the firm. Proponents of the stakeholder perspective (Freeman, 1994, 2010; Phillips, 2003; Freeman, Wicks, & Parmar, 2004; Freeman, Phillips, & Sisodia, 2020; Freudenreich, Lüdeke-Freund, & Schaltegger, 2020) claim that the shareholder party is only one of the many parties that have stakes in the firm. Firm's actions that aimed solely at maximizing shareholders' value might be detrimental to one or more other stakeholders' interests. Therefore, the firm's actions and its value creation processes should be taking into consideration both direct and indirect interests of all stakeholders, encompassing among others: shareholders, creditors, managers/directors, employees, customers, suppliers, government agencies, local communities, and the general public.

However, rather than contradict the shareholder and stakeholder theories, several other scholars have attempted to converge the two seemingly opposing perspectives on what should be the principal objective of the firm. While retaining the shareholder wealth maximization as the principal objective function of the firm, Jensen (2002) proposes what he calls *enlightened value maximization*, where in the long run the firm prioritizes certain objectives and makes necessary trade-offs among its stakeholders in order for the firm to sustain. Based on the Jensen's enlightened value maximization concept, Wallace (2003) and Queen (2015) found evidences that firms with higher levels of value creation tended to have stronger reputation in fulfilling non-investor stakeholders' interests. On the other hand, firms that create less or little value disappoint both shareholders and other stakeholders. In short, their findings suggest that creating value is a prerequisite to enhancing stakeholders' benefits.

Last but not least, in an attempt to converge the shareholder and stakeholder theories, Kucukyalcin (2018) proposed a stakeholder value maximizing model that considered the costs and benefits of the economic, social, and environmental externalities. In fact, if all the three types externalities are included in the calculation of free cash flow to the firm or to equity holders, then the value maximization principle sufficiently applies to both the shareholder and stakeholder theories. However, a challenge remains on determining which externalities to be included, and how to calculate them in deriving the free cash flow to the firm.

With the increasingly stringent and prudent regulations relating to the financial market, social and environmental issues, it is safe to assume that most major – if not all – costs of externalities are already accounted for as business expenses by firms. As an example, companies in the mining sector industry are required by law to have community development as well as mining areas reclamation programs. Other firms might also voluntarily engage in social and environmental activities in order to enhance their corporate reputation. If this is generally so, then the remaining free cash flows to the firm after deducting expenses relating to the social and environmental activities belongs to the capital providers, namely the creditors and the shareholders. Taking the present value of the expected future free cash flows to firm, the firm value is obtained; and it is consisted of the value of debt and the value of equity.

The present study utilizes a modified version of the approximate Tobin's Q originally introduced by Chung and Pruitt (1994) as a measure of firm value, with the following specification:

$$Q = (MVE + DEBT)/TA \quad (1)$$

where Q is the Tobin's Q, while MVE is the market value of equity calculated as the product of a firm's share market price and the amount of common shares outstanding. $DEBT$ is the book value of the total debts, and TA is the book of the total assets. Tobin's Q is expected to be greater than 1.0, which indicates that the market value of the firm is greater than the book value of the firm as represented by its total assets. Therefore, a higher Tobin's Q means a relatively higher firm value, and vice versa.

The Role of Ownership Structure as a Mitigant for Agency Problem

Modern firms or corporations are owned by various types of shareholders. Boyd and Solarino (2016) classifies six non-individual ownership types, i.e: (i) institutional investor, (ii) managerial or insider, (iii) blockholder, (iv) founder/family, (v) business group, and (vi) state-owned enterprise. However, regardless of the preferences of each type of owners, based on the Fisher's separation theorem, the firm should orchestrate its efforts and deploy its resources that will result in the highest profits possible, that in turn will increase its share price as well as the firm value.

In the literature, there are two hypotheses concerning the role of ownership structure in mitigating

the negative impact of the agency relationship between shareholders and managers on firm performance and value (Dalton, Daily, Certo, & Roengpitiya, 2003). The first is the alignment or convergence of interest hypothesis, which refers to the effects of managerial ownership. While the second is the efficient-monitoring and control hypothesis, which refers to the effects of outsider ownership, such as institutional investors, blockholders, and business groups.

Managerial Ownership

Since managers are also individual, Fama and Miller (1972) recognized the potential self-serving behavior on the part of managers, that they would maximize their own individual utility functions instead of maximizing the firm value which was the corporate criterion function of the managers. Fama and Miller (1972) argued that there must be sufficient additional mechanisms to mitigate the potential conflicts between the individual and the corporate criterion functions of managers. An example of such mechanisms is using stock options as an incentive scheme that will align the managers' interests with those of the shareholders. As the price per share increases – for instance – as a result of higher-than-expected firm performance, the managers will see that the value of their stock options or stocks if the options are exercised, will also increase. Additionally, Jensen and Meckling (1976) demonstrated a linear positive relationship between managerial ownership and firm value. Larger managerial ownership, reduces agency costs, and hence increases firm value. This is called the *alignment or convergent of interest hypothesis*, which predicts a positive relationship between managerial ownership and firm value.

Alternatively, Morck *et al.* (1988) argued that as the proportion of managerial ownership increases, managers will have more voting power or influence, and become more entrenched. Higher level of managerial entrenchment with less outside control, would enable managers to consume more firm resources for personal gains that reduces firm value. This is called the *entrenchment hypothesis*, which predicts a negative relationship between managerial ownership and firm value.

Previous studies on the relationship between managerial ownership and firm value have provided mixed results. For example, Morck *et al.* (1988) found a curvilinear relationship between managerial ownership and firm value, as measured by Tobin's Q. To be more specific, they found that managerial ownership with zero to 5% and greater than 25% equity holdings has a positive relationship with firm value. On the other

hand, for managerial ownership between 5% to 25%, the relationship with firm value is negative. However, using a panel data approach to test the curvilinear characteristic of the relationship found in Morck *et al.* (1988), a later study by Himmelberg, Hubbard, and Palia (1999) found no evidence that managerial ownership affects firm value.

Contrary to the results of Morck *et al.* (1988), Benson and Davidson (2009) found a positive and concave relationship between managerial ownership and firm value. While Morck *et al.* (1988) findings to some extent supported the alignment hypothesis that a larger managerial ownership (i.e. above 25%) linked managers interests with those of the shareholders of the firm. Benson and Davidson (2009) findings implied that a much larger managerial ownership provided managers with more power to divert the use of firm resources for their own personal gains.

Other studies by Chen, Guo, and Mande (2003), Adams and Santos (2006), McConnell, Servaes, and Lins (2008), Fahlenbrach and Stulz (2009), Yu *et al.* (2012), Chen (2013), Sofiamira and Haryono (2017), and Octariawan and Ruslanti (2019) found a positive relationship between managerial ownership and firm value, while García-Meca and Sánchez-Ballesta (2011), and Marceline and Harsono (2017) found no evidence of such relationship.

A recent study by Fabisik *et al.* (2021) might shed light on why firms with more managerial ownership are worth less. Using a panel data of US firms with more than 50,000 firm-year observations from 1988 to 2015, Fabisik *et al.* (2021) found a systematically negative relationship between managerial ownership and firm value. They explained that small firms with illiquid stocks tended to have larger managerial ownerships and lower Tobin's Q values. As a consequence, when small firms with illiquid stocks were excluded from the sample, they found similar results with that of Benson and Davidson (2009).

Based on the above analysis and previous empirical findings on the relationship between managerial ownership and firm value, the present study hypothesizes the following:

H₁: Managerial ownership has a significant effect on firm value.

Institutional Ownership

Pound (1988) proposed three hypotheses concerning the relationship between institutional ownership and firm value, i.e.: (i) efficient-monitoring and control hypothesis, (ii) conflict-of-interest hypothesis, and (iii) strategic-alignment hypothesis. The first

hypothesis refers to the institutional investors' superior ability to process information efficiently, thus making them informed investors in monitoring and controlling management performance. Furthermore, since institutional investors usually own large portions of firms' equity, they are able to monitor and control managerial conducts. This suits well with the notion that institutional ownership mitigates managerial agency problem. Therefore, based on the efficient-monitoring and control hypothesis, it is predicted that institutional ownership is positively related with firm value.

The conflict-of-interest hypothesis asserts that because of fear of losing other profitable business opportunities with the firm, institutional investors are forced to side with managers. Similarly, the strategic-alignment hypothesis suggests that institutional investors and managers find it mutually beneficial to cooperate to extract value from the firm for their own benefits at the expense of the shareholders. Additionally, Bebchuk, Cohen, and Hirst (2017) provided an analysis that showed that institutional investors had less incentive to invest optimally in monitoring activities, and tended to side with corporate managers. Both the conflict-of-interest hypothesis and the strategic-alignment hypothesis predict a negative relationship between institutional ownership and firm value.

Previous studies on the relationship between institutional ownership and firm value have also provided mixed results. Mollah, Farooque, and Karim (2012) and Sofiamira and Haryono (2017) found no evidence of significant relationship between institutional ownership and firm value. However, a study by Karpavičius and Yu (2017) found that greater institutional monitoring, as measured by larger institutional ownership, had a positive effect on firm value through the reduction of agency cost of free cash flow. Other studies by Ferreira and Matos (2008), Bhattacharya and Graham (2009), Thanatawee (2014), Sienetra, Sumiati, and Andarwati (2015), Muniandy, Tanewski, and Johl (2016), and Lin and Fu (2017) had also found evidences supporting the efficient-monitoring and control hypothesis of institutional ownership which predicts a positive relationship between institutional ownership and firm value.

On the other hand, Navissi and Naiker (2006) found a non-linear relationship between institutional ownership and firm value. Specifically, they found that institutional ownerships of up to 30% had positive impact on firm value, but ownerships above 30% reduce firm value. This finding suggests a support to the strategic-alignment hypothesis for the case of large institutional ownership, which predicts a negative

relationship between institutional ownership and firm value. It seems that there are convergence-of-interests between managerial interests and institutional investor interests when institutional ownerships are appropriately large enough. Furthermore, Jennings (2005) found a negative relationship between institutional ownership and firm value, while Chen, Blenman, and Chen (2008) found a negative relationship between top institutional ownership and firm value. Both claimed that institution might be able to establish a business relationship with the management of the firm that negatively impact firm value.

Based on the above analysis and previous empirical findings on the relationship between institutional ownership and firm value, the present study hypothesizes the following:

H₂: Institutional ownership has a significant effect on firm value.

The Moderating Effects of Firm Size

As cited by Dang, Li, and Yang (2018) and Hashmi, Gulzar, Ghafoor, and Naz (2020), firm size plays an important role in empirical corporate finance. Although firm size has several alternative measurements, previous studies have provided numerous empirical evidences that firm size affects practically many important corporate finance decisions, such as: (i) investment decision (Kadapakkam, Kumar, & Riddick, 1998; Bakke & Whited, 2010; George, Kabir, & Qian, 2011), (ii) financing decision (Frank & Goyal, 2003; González & González, 2012; Kurshev & Strebulaev, 2015), (iii) dividend decision (Redding, 1997; Li & Zhao, 2008; Adjaoud & Ben-Amar, 2010; Moortgat, Annaert, & Deloof, 2017), and (iv) working capital decision (He, Mukherjee, & Baker, 2017; Jalal & Khaksari, 2020).

In the literature, firm size is generally predicted to have a positive relationship with firm value, where it is argued that larger firms: (i) have lower costs due to economies of scale and economies of size (Rasmussen, 2013); (ii) have lower bankruptcy costs (Ang, Chua, & McConnel, 1982); (iii) are less risky because they are more diversified (Titman & Wessels, 1988), and therefore have lower cost of capital; (iv) have easier access to the capital markets, and borrow at more favorable interest rates (Ferri & Jones, 1979), and hence larger firms face less financial constraints in pursuing new projects with positive NPVs; and last but not least, (v) usually have larger fixed assets and debts, and therefore able to gain more tax savings from depreciation and interest expenses. In short, larger firms have higher value than their smaller counterparts due to their higher cashflows from interest and non-interest tax shields,

lower expected costs of bankruptcy, lower costs of capital, and lesser financial constraints in pursuing new projects with positive NPVs.

However, it is also plausible that firm size is negatively related to firm value due to diseconomies of scale. Using organizational economics approach, Williamson (1975, 1996) asserted that as the size of the firm increases, so was the number of organizational bureaucratic layers. These additional hierarchical levels would result in more complex bureaucracy as well as additional costs of vertical and horizontal coordination among all level of managers. When firm size increases beyond its optimal level, then the firm would experience what Williamson (1975) called as “control loss phenomenon”. Williamson (1975, 1996) and Canback, Samouel, and Price (2006) found that diseconomies of scale resulting from bureaucratic failure of large firms had a negative impact on firm performance.

As to the potential role of firm size in moderating the effects of ownership structure on firm value, there are two possible views. The first view is based on information economics, where larger firms are regarded as having less information asymmetry compared to smaller ones. Early study by Bhushan (1989) found evidence of a significant and positive relationship between firm size and the number of analyst following. With a larger number of analysts following, larger firms not only have lower information asymmetry, but also face stronger monitoring from the capital market than those of smaller firms. Based on this first view, firm size is expected to strengthen the monitoring role of institutional investors and capital markets, and therefore it is predicted that firm size has a positive moderating effect on the relationship between ownership structure and firm value.

The second view is based on the entrenchment hypothesis that an increase in share ownership of larger firms would enable owners with influential power to consume resources and extract more value from the firm for their personal gains. Therefore, based on this second view, it is predicted that firm size has a negative moderating effect on the relationship between ownership structure and firm value.

To summarize, based on the preceding analysis, the present study hypothesizes the following:

H₃: Firm size has a significant moderating effect on the relationship between ownership structure and firm value.

Control Variables

To control for other variables that are empirically known to affect firm value, the present study includes profitability, leverage, and firm size as

control variables. Profitability is expected to have a positive relation with firm value, because higher profitability will result in higher expected future dividends, and therefore will have a positive effect on share price and firm value.

The impact of leverage on firm value is less straight-forward. Borrowing from the trade-off theory of capital structure developed by Kraus and Litzenberger (1973), leverage is expected to have a positive relationship with firm value as long as leverage is still below its optimal level. Once leverage reaches its optimal level, *ceteris paribus*, any additional leverage beyond the optimal level will result in lower firm value. Beyond the optimal level, the marginal cost of financial distress resulting from additional debt will exceed the marginal benefit of interest-tax savings. Thus, lowering firm value.

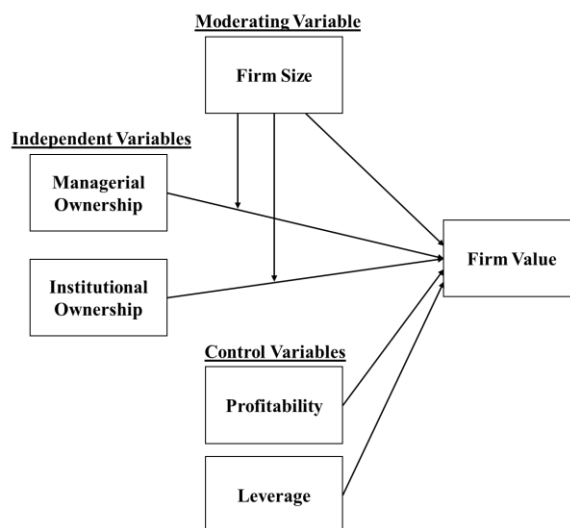


Figure 1. The conceptual research framework

Lastly, the theoretical background on the predictions of the relationship between firm size and firm value have been described above, and the empirical findings of the present study will provide evidence on which prediction is supported.

Figure 1 presents the research conceptual framework to empirically examined the hypothesized relationships described above.

Research Methods

The sample is drawn from the population of consumer goods firms listed on the Indonesian Stock Exchange (IDX) over the period of 2015–2019. After excluding companies with incomplete data, a panel data of 90 firm-year observations is obtained from a total sample of 18 firms over the 5-year observation period.

All relevant data are obtained from audited financial statements and their accompanying notes. Table 2 provides the selection process which resulted to a total sample of 18 firms.

Table 2
Sample Selection Criteria

Criteria	Total
Consumer goods companies listed on the IDX in 2019	58
Not listed for the complete period of 2015–2019	(9)
Share ownerships data not sufficiently disclosed in financial statements	(31)
Number of sample firms	18
Number of year observations per firm	5
Total firm-year observations	90

As described in the previous section, the present study uses a modified version of approximate Tobin's Q (Chung & Pruitt, 1994) as a measure of firm value. It is computed by dividing the sum of market value of equity and book value of debt with the book value of total assets. Previous studies have utilized this approach, among others are Chen *et al.* (2003), Adams and Santos (2006), Bhattacharya and Graham (2009), Chen (2013), and Lin and Fu (2017).

Managerial ownership is computed as the percentage of shares held by management of the firm, and institutional ownership is computed as the percentage of shares held by institutions, consisting of financial institutions and non-individual blockholders. Firm size is measured by natural logarithm of book value of total assets.

To examine the effect of ownership structure on firm value with firm size as the moderating variable, the present study employs a panel data regression analysis. Firm value as measured by Tobin's Q is the dependent variable, while managerial ownership and institutional ownership – both individually as well as moderated by firm size – are the independent variables. As previously explained, to control for other variables that are empirically known to affect firm value, the present study includes profitability, leverage, and firm size as control variables.

The following equation (2) presents the panel regression model employed in this study.

$$\begin{aligned}
 Q_{i,t} = & \beta_0 + \beta_1 MO_{i,t} + \beta_2 MO_{i,t} * SIZE_{i,t} + \\
 & \beta_3 IO_{i,t} + \beta_4 IO_{i,t} * SIZE_{i,t} + \\
 & \beta_5 PROF_{i,t} + \beta_6 LEV_{i,t} + \\
 & \beta_7 SIZE_{i,t} + \varepsilon_{i,t}
 \end{aligned} \quad (2)$$

where: i is individual firm observation, t is the year of observation; Q = firm value as measured by Tobin's Q ; MO = percentage of managerial ownership; IO = percentage of institutional ownership; $SIZE$ = natural logarithm of book value of total assets; $PROF$ = profitability as proxied by the net profit margin; and LEV = as proxied by the total debt-to-total equity ratio.

Results and Discussion

Table 3 presents descriptive statistics for the dependent, independent, and control variables. As shown in Table 3, Q has a mean value of 1.3037, indicating that on average, observed market values of sample firms exceed their book values. MO has a mean value of 0.1077 or 10.77% share ownership. On the other hand, IO has a mean value of 0.6297 or 62.97% share ownership. This share ownership data reveals that institutional holdings dominate share ownerships of the sample firms within the consumer goods industry.

Table 3
Descriptive Statistics

Variables	Mean	Max	Min
Q	1.3037	3.0814	0.1131
MO	0.1077	0.6827	0.0002
IO	0.6297	0.9609	0.0509
$PROF$	0.0374	0.4548	-0.2398
LEV	0.8674	3.3389	0.1635
$SIZE^*$	11,046.87	96,537.79	133.83

Note: *) In Billions of IDR

Relating to the moderating and control variables, using its original value, $SIZE$ (firm size) has a mean value of IDR 11,046.87 billion; $PROF$ (profitability) has a mean value of 0.0374 or 3.74%; and finally LEV (leverage) has a mean value of 0.8673. Although the maximum value of LEV is 3.3389, it can be concluded that on average, sample firms within the consumer goods industry tend to rely more on equity financing, as indicated by the mean value of $LEV < 1$.

Table 4
Variance Inflation Factor

	Coefficient Variance	Centered VIF
MO	0.2611	2.6128
IO	0.7617	1.3800
$PROF$	0.0122	1.1666
LEV	0.0021	1.4928
$SIZE$	0.3402	2.6977

Table 4 reports the results of the multicollinearity test using the variance inflation factor (VIF) measure. Since none of the independent variable has an VIF

value exceeding 10, it can be concluded that the regression model in equation (2) does not suffer from the problem of multicollinearity.

To examine the hypothesized relationship between ownership structure and firm value with firm size as the moderating variable, the present study initially employed the ordinary least squares (OLS) method of estimation on a balanced panel data consisting of 18 firms with 5-year observations. The empirical model is estimated using E-Views 11 econometric software, and based on the results of panel estimation method tests consisting of the Chow, LM, and Hausman tests (not reported here), the appropriate panel data estimation method is the fixed-effect model (FEM). However, since the model suffers from the problems of heteroskedasticity, autocorrelation, and cross-dependence (not reported here), the panel data are regressed using the estimated generalized least squares or EGLS (Greene, 2018) using the cross-section weighted fixed-effect model with white-corrected robust standard errors.

For comparison and discussion purposes, three empirical models are developed and estimated, i.e.: (1) the base model without the moderating effects of firm size (Model 1); (2) the managerial ownership quadratic model without the moderating effects of firm size (Model 2); and (3) the testable moderated model (Model 3).

Model 1 essentially follows the approach of Morck *et al.* (1988), except that due to the limitation in the number of sample which is only 18 firms, the present study does not classify managerial ownership into ranges of managerial ownership as in Morck *et al.* (1988) which sample consisted of 371 firms, i.e. managerial ownership between 0–5%, ownership between 5–25%, and ownership above 25%. Similar to the present study, Fabisik *et al.* (2021) employed Model 1 to investigate the simple linear relationship between managerial ownership and firm value.

Model 2 is the managerial ownership quadratic model, and the model has been used by many researchers (e.g. McConnell & Servaes, 1990; Benson & Davidson, 2009; Chen & Yu, 2012; and Fabisik *et al.*, 2021) to capture the empirical concave or inverted U-shaped relationship between managerial ownership and firm value.

Model 3 is the testable moderated model as formulated in the Equation 2 above, where the model introduces 2 (two) interaction variables, i.e., $MO*SIZE$ and $IO*SIZE$ – with the purpose of testing the hypothesized moderating effects of firm size on the relationship between ownership structure and firm value. Rather than splitting the sample into smaller firms and larger firms as in Fabisik *et al.* (2021), the present study uses interaction variables $MO*SIZE$ and $IO*SIZE$ to

account for the firm size ($SIZE$) effects on the relationship between managerial ownership (MO) as well as institutional ownership (IO) towards firm value.

Table 5 presents the results of all the three models. Based on the p -values of Jarque-Berra statistic which all exceed 0.05, it is concluded that the residuals of all the three models are normally distributed. However, the results of Durbin-Watson tests of statistic for all the three models lie between d_L and d_U (zone of indecision), and therefore whether or not there exist autocorrelation cannot be concluded (Gujarati & Porter, 2009). As mentioned before, to account for the potential biases resulting from the problem of autocorrelation, all three models are estimated using the white-corrected robust standard errors.

The results of the regression analyses show that Model 3 has the highest adjusted R -squared with a value of 0.887. This means that after adjusting for the number of independent variables included in each of the respective regression models, Model 3 has the highest explanatory power in explaining the variance in firm value. The followings discuss the results of the testable hypotheses using Model 3, and afterwards compare the results with those of the Model 1 and Model 2 regression models.

The results of the regression analysis of the Model 3 show that managerial ownership has a negative and significant effect on firm value. This means that higher managerial ownership will result in lower firm value. This result is contrary to the convergent-of-interest hypothesis, but consistent with the managerial entrenchment hypothesis. This finding suggests that as the proportion of managerial share ownership increases, managerial power to extract value from the firm or implementing projects with negative NPVs for personal gains also increases, and thus reducing firm value. This result is similar to the recent study by Fabisik *et al.* (2021) who found a negative relationship between managerial ownership and firm value.

However, firm size could restraint managers from exercising such self-serving and value destroying activities. As evidenced by the positive and significant relationship between the interaction variable ($MO*SIZE$) and firm value, it can be concluded that the negative impact of managerial ownership on firm value decreases as firm size increases. In other words, as firm size increases, monitoring activities by shareholders and other stakeholders also increases, making it harder for managers to misuse valuable corporate resources for personal benefits. This argument is consistent with the notion that larger firms are monitored more closely by the capital markets as asserted by Bhushan (1989).

Table 5
Regression Results for Firm Value (Tobin's Q)

Independent Variables	Model 1	Model 2	Model 3
Constant			
coefficient	12.855***	16.911***	-4.505
standard error	4.020	2.680	3.931
	(0.002)	(0.000)	(0.256)
<i>p-value</i>			
MO			
coefficient	0.185	8.811***	-95.553***
standard error	0.341	0.805	11.646
error	(0.588)	(0.000)	(0.000)
<i>p-value</i>			
MO*SIZE			
Coefficient			3.522***
standard error			0.412
error <i>p-value</i>			(0.000)
MO ²			
coefficient		-11.956***	
standard error		0.733	
error <i>p-value</i>		(0.000)	
IO			
coefficient	-0.300***	-0.457***	33.281***
standard error	0.093	0.048	6.339
error	(0.002)	(0.000)	(0.000)
<i>p-value</i>			
IO*SIZE			
coefficient			-1.215***
standard error			0.229
error			(0.000)
<i>p-value</i>			
PROF			
coefficient	0.456	0.228	0.251***
standard error	0.584	0.299	0.076
error	(0.437)	(0.449)	(0.002)
<i>p-value</i>			
LEV			
coefficient	0.152***	0.035	0.084***
standard error	0.034	0.027	0.023
error	(0.000)	(0.191)	(0.000)
<i>p-value</i>			
SIZE			
coefficient	-0.407***	-0.557***	0.218
standard error	0.143	0.096	0.142
error	(0.006)	(0.000)	(0.129)
<i>p-value</i>			
<i>Adj. R-squared</i>	0.787	0.813	0.887
<i>F-statistic</i>	15.909	17.786	30.015
<i>Prob (F-statistic)</i>	0.000	0.000	0.000
<i>DW statistic</i>	1.574	1.654	1.753
<i>Jarque-Berra statistic</i>	1.629	1.173	2.566
<i>Prob (JB-statistic)</i>	0.443	0.556	0.277

***, **, and * indicate statistical significance at the 1%, 5% and 10% levels

The finding of a positive and significant relationship between institutional ownership and firm value in Model 3, supports the control-monitoring hypothesis of the role of institutional ownership in enhancing firm value. This finding indicates that as institutional ownership increases, the stake of the firm increases, so

it will be motivated to put more resources to control managers and monitor firm performance. This finding corresponds to the findings of previous studies such as Thanatawee (2014), Sienetra *et al.* (2015), Muniandy *et al.* (2016), and Lin and Fu (2017). All these studies confirm the efficient-control-monitoring hypothesis of ownership structure in mitigating the agency problem between shareholders and managers.

Interestingly, the results of the Model 3 regression analysis also show a negative and significant relationship between the interaction variable (*IO*SIZE*) and firm value. This finding indicates that as firm size increases, institutional investors tend to cooperate with managers of the firm to extract more value at the expense of other shareholders. Following Pound (1988), it seems that larger firms provide more business opportunities for institutional investors, where the benefits from the businesses accrue more to the institutional investors rather than the firm. Another possible interpretation of this finding is that, as cited by Bebchuk *et al.* (2017), institutional investors have their own agency problems. Following Bebchuk *et al.* (2017), it might also be possible that as firm size increases, managers of the institutional investors get more personal benefits by siding with the firm managers, rather than over-seeing the interests of the institutions they represent.

For comparison purposes, the following will discuss the results of the Model 1 and Model 2 regression analyses which are commonly used by previous studies. The results from Model 1 show that managerial ownership has no significant effect on firm value, while institutional ownership has a negative and significant effect on firm value. Model 2 also finds a negative relationship between institutional ownership and firm value, which seemingly lend support to the conflict-of-interest hypothesis and the strategic-alignment hypothesis which both predict a negative relationship between institutional ownership and firm value. These findings do not mean that they contradict the results of Model 3. Rather, it is because Model 1 and Model 2 have not taken into account the moderating effect of firm size when regressing share ownerships against firm value. Evidently, firm size plays a significant role in moderating the effect of share ownerships on firm value.

Model 2 follows the managerial share ownership quadratic specification of McConnell and Servaes (1990), and the results show that the coefficient on managerial ownership is positive and significant, while the coefficient on managerial ownership squared is negative and significant. This result is the same with those of McConnell and Servaes (1990), Benson and Davidson (2009), and Yu *et al.* (2012). Fabisik *et al.*

(2021) found a similar result when their regression model employed only the 500 largest firms' subset of their sample. All these findings indicate that while managerial ownership aligns the interests of shareholders and managers at low levels of ownership, a much larger managerial ownership would entrench managers, and would provide them with sufficient power to influence firm decisions that would maximize their utility but reduce firm value.

In relation to the control variables employed in the present study, it is found that profitability (*PROF*) is positive and significant in Model 3, but it is not significant in either Model 1 or Model 2. Leverage (*LEV*) is positive and significant in both Model 1 and Model 3, but not significant in Model 2. The positive relationship between leverage and firm value, indicate that the benefits of using debt, such as interest-tax shield, exceed the potential costs of financial distress associated with debt financing.

The results of Model 1 and Model 2 show that firm size (*SIZE*) has a negative and significant effect on firm value. This finding indicates that firm size has a diseconomies of scale effect on firm value as asserted by Williamson (1975, 1996). However, Model 3 finds a non-significant relationship between firm size and firm value. It is most possible that in the Model 3 regression, the role of firm size has been appropriately and sufficiently captured as a significant variable that moderates the effect of ownership structure on firm value. If firms' size (*SIZE*) were excluded in Model 3, the results of the tests of significance remain the same, meaning that all of the remaining regressors are statistically significant (not reported here) as reported in Table 5.

The finding of statistically insignificant relationship between firm size (*SIZE*) and firm value in Model 3, indicates that firm size (*SIZE*) is not a predictor of firm value. Rather, firm size (*SIZE*) interacts with both managerial ownership (*MO*) and institutional ownership (*IO*) to moderate the effect of ownership structure towards firm value. Therefore, based on Sharma, Durand, & Gur-Arie (1981), firm size (*SIZE*) is a *pure moderator*.

Conclusion and Implication

Within the framework of agency problems relating to the conflicts of interest between managers and shareholders, corporate finance literature suggests that managerial ownership and institutional ownership may mitigate the problems through the processes of alignment and control respectively. The results of the the present study show that while the efficient-monitoring-control hypothesis of institutional ownership is

supported, the alignment and convergent-of-interest hypothesis of managerial ownership does not hold. Instead, the present study finds a negative relationship between managerial ownership and firm value, which may indicate that higher managerial ownership corresponds to more managerial power to divert corporate resources for managerial personal benefits with detrimental effect on firm value.

However, when ownership structure is moderated by firm size, the present study finds that firm size unambiguously affects the behaviors of managers and institutions in conducting their affairs vis-a-vis the firm. As firm size increases, managerial conducts are more inclined to conform with shareholders interest. On the other hand, as firm size increases, institutional investors tend to side with managers in extracting more value at the expense of other shareholders. These findings corroborate anecdotal evidence in empirical corporate finance that firm size does matter.

It must be noted, however, that the findings of the present study are based on a limited number of sample from a single industry. Future research on the subjects is suggested to include more firms across various industry sectors, so that the results would be more generalizable. Additionally, it also possible that both ownership structure and firm value are simultaneously determined. Therefore, a system of equations reflecting the simultaneity of ownership structure and firm value is suggested to be developed and investigated. Lastly, further research on the impacts of firm size on the effectiveness of corporate governance mechanisms is recommended, with special attention on institutional ownerships in large firms.

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