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Institutional Ownership and Firm Value: Conditional Process Model (CPM)

Perwito[1*], Rita Zulbetti[2], Rifqi Ali Muabrok[3], Ilham Setiawan[4], Rezqya Aulia Azyuranie Muniroh[5]

[1] Management, Faculty of Economic and Business, Universitas Muhammadiyah Bandung, Indonesia, perwito@umbandung.ac.id
[2] Management, Faculty of Economic and Business, Universitas Muhammadiyah Bandung, Indonesia, zulbetti@umbandung.ac.id
[3] Management, Faculty of Economic and Business, Universitas Muhammadiyah Bandung, Indonesia, rifqialimubarok@umbandung.ac.id
[4] Management, Faculty of Economic and Business, Universitas Muhammadiyah Bandung, Indonesia, ilham.setiawan@umbandung.ac.id
[5] Management, Faculty of Economic and Business, Universitas Muhammadiyah Bandung, Indonesia, rezqya.aulia@umbandung.ac.id

[*]Corresponding Author: perwito@umbandung.ac.id[1]

Abstract : The effect of institutional ownership on firm value with the conditional process model (CPM) approach: This study aims to test and analyze how and when Institutional Ownership is effective in increasing Firm Value. The research method uses a quantitative approach, the research design uses a descriptive approach, and an explanatory survey to test and analyze causal relationships. Research on public companies in Indonesia in the consumer-non-cyclical sector, as much as 488 pooled times series data with the analysis period 2016-2023, with the Conditional Process Model (CPM) approach to explain how (Mediation effect) and when / under what conditions (moderation effect) the effect occurs on the institutional ownership structure on firm value both directly and indirectly, to estimate the research model using Macro for SPSS V3.4. Research findings: institutional ownership, investment efficiency, and an independent board of commissioners affect increasing the value of the firm, The researcher produced a model formula that institutional ownership of the firm value through investment efficiency, is more visible to the company by involving an independent Board of Commissioners that leads to a high level, and investment efficiency can be used as a mitigation in making investment policies that can produce positive returns, increase the value of the company, so that it can compete sustainably.

Keywords: Institutional Ownership, Independent Board of Commissioners, Investment Efficiency, Firm Value, and Conditional Process Model (CPM).

INTRODUCTION

Research in finance to date that specifically discusses the conditional effect model is very limited, even though it is important to test when and how the institutional ownership structure variable is effective in predicting firm value. This model combines mediation and moderation analysis, commonly called conditional process modeling (CPM), to explain how and when predictor variables affect the outcome variable (Hayes, 2022). It aligns with research conducted by Yonghong Liu et al. (2020) and (Nirino et al., 2022) which combines moderation and mediation effects.

Most previous research examined the impact of ownership structures on the value of the firm directly, taking into account the indirect analysis of the "mediation effect" and the "moderation effect" that are part of the process as well as consideration of the company's internal and external conditions in increasing the firm value. Research in the financial field by (Liu et al., 2020) that specifically discusses conditional effect models, builds a model construction that combines mediation and moderation analysis or commonly called *conditional process modeling* (CPM) to explain how and when (Hayes, 2022), that institutional ownership structures affect a firm value both directly and indirectly and under what conditions or when the effect is more effective in influencing the firm value, so that this research is useful to fill the gap in sharing research that has been done before.

Research in the U.S. shows that ownership structure systematically and consistently varies in maximizing firm value. (Demsetz & Lehn, 1985) period 1976-1980; (Morck et al., 1988) period 1980; (Agrawal & Mandelker, 1990) period 1979-1985; (Hermalin & Weisbach, 1991) period 1971-1983; (Cho, 1998) period 1991; (Himmelberg et al., 1999) period 1982-1992; (Fahlenbrach & Stulz, 2009) period 1988-2005. The research results in various countries also show the same thing: Ownership structures provide benefits in increasing monitoring, ultimately increasing the company's value. (Randøy & Goel, 2003) [Spanyol], (Munisi et al., 2014; Jumanne & Keong, 2018) [Afrika], (Farrer & Ramsay, 1998) [in Australia].

Institutional investors and foreign investors play an important role. The results of a study in India show that institutional ownership structures and external ownership affect the value of the firm (Mishra & Kapil, 2017), Non-financial public companies in Indonesia with majority ownership ≥ 50% show that 31.25% family ownership, 10.16% institutional ownership, 3.91% government ownership, 17.19% foreign ownership, and 37.50% public ownership, and total ownership ≥ 5% of 69.98% (Hadiprajitno, 2013). The ownership structure, either directly or through other verifiable affects the value of the firm (Bemby S. et al., 2015; Wati et al., 2019; Sahrul & Novita, 2020).

However, institutional ownership does not necessarily directly affect firm value; investment decisions are also an important part of increasing firm value (Jensen & Meckling, 1976). In line with various previous studies, it has been shown that the effect of managerial ownership on company value can be predicted/transmitted through indirect processes such as investment policy (Iturriaga & Sanz, 2001), sustainable productive investment based on *Financial Constraints* (Hidayat et al., 2020); Investment Efficiency (Vijayakumaran, 2021), Management Policy in Managing the Company's Operational Expenses (Mukaria et al., 2020)and corporate governance practices (Panda & Leepsa, 2017).

Ownership structure directly influences the corporate investment (López Iturriaga & López-Millán, 2017; Chen et al., 2017). Optimizing high investment opportunities will increase shareholder value (Iturriaga & Sanz, 2001; Rizqia et al., 2013). However, the company's investment decisions must be made with great care and a high level of supervision, so that no overinvestment leads to the interests of managers. Companies with a level of free cash flow tend to over-invest or wasteful actions (Jensen, 1986; Richardson, 2006), reduces firm cash flow sensitivity ratios, and firms' financial constraints (Attig et al., 2012; Alvarez et al., 2018).

Various previous research studies emphasize the indirect effect of ownership structure on, in addition to the indirect impact through investment efficiency, under the condition that ownership structure effectively affects firm value, the role of independent external parties can create an interaction effect between institutional ownership and firm value. Ownership structure affects the policy and disclosure of Corporate Social Responsibility (CSR) when moderated by the role of a high independent board of directors (Zaid et al., 2020). It shows that the presence of an Independent Board positively impacts the corporate governance system, which can improve corporate performance (Liu et al., 2015); (Panda & Leepsa, 2017). It appears that the independent board of commissioners has a moderating effect on the relationship, and this is also in line with the results of Rashid's research (2020) that the presence of an independent board of commissioners strengthens the relationship between institutional ownership and improving corporate performance, however, there is a difference in results that has no interaction or moderation between institutional ownership and board diversity (Akter et al., 2024).

Based on the problems that have been raised, how the mediating effect of investment efficiency in the influence of institutional ownership on the firm value moderated by the Board of Independent Commissioners, this study can contribute; First, the development of agency theory, that investment efficiency also transmits the effect of institutional ownership on fimr value. Second, the Independent Board of Commissioners affects the interaction of institutional ownership on the firm value. Third, developing a new method using a conditional process model approach (conditional process model = CPM).

HYPOTHESIS DEVELOPMENT

(Memon et al., 2018) Providing a new perspective in building a research hypothesis, there is no strong enough reason for researchers not to make new changes and breakthroughs in developing research hypotheses. This study uses a hypothesis transmittal approach, constructing and formulating a research hypothesis without the need to articulate or explore the effect of predictive variables on mediating variables, as well as mediating variables on outcome variables, so that researchers are quite a single hypothesis (Rungtusanatham et al., 2014), in line with those developed by (Hayes, 2022) mediator variables that transmit the causal effects of other variables, test the direct and indirect effects of predictor variables on outcome variables, as well as the effects of moderator variables (Mackinnon et al., 2007; Memon et al., 2018).

Institutional ownership improves corporate performance; various studies show that institutional ownership increases firm value (Hamdan, 2018; Boshnak, 2023). Investment efficiency is an investment condition that does not experience over- or underinvestment. Thus, it needs supervision by an independent party so that over-/underinvestment does not occur, namely the Independent Board of Commissioners. The existence of institutional investors is considered capable of being an effective monitoring mechanism in every decision taken by managers, this is because institutional investors are involved in strategic decision making, so they do not easily believe in earnings manipulation. Institutional Ownership has a positive effect on the efficiency of corporate investment and will ultimately increase firm value (Chen et al., 2017), it is also consistent that institutional ownership affects sustainable productive investment based on financial constraints and its impact on firm value (Hidayat et al., 2020; Naeem & Li, 2019) provides empirical evidence that, through the monitoring function to reduce agency problems in companies that experience overinvestment, financial development has positive consequences on investment efficiency.

Based on the results of various previous studies, this research is new in methodology and efforts in developing research hypotheses with a transmittal approach. The research concept diagram appears in Figure 1: "The Effect of Institutional Ownership on Firm Value Through Investment Efficiency, more effective when companies involve an Independent Board of Commissioners."

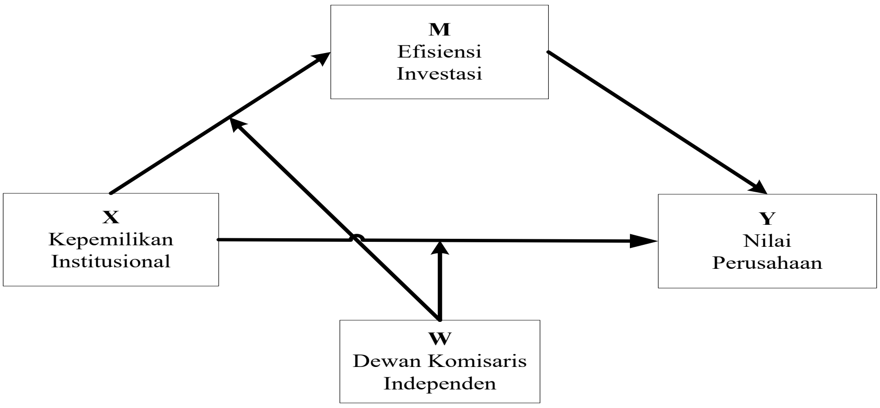

Figure 1. Research Concept Diagram

METHOD

Researchers use a financial management perspective as a foothold in conducting research analysis, and descriptive and explanatory approaches are the research methods. Answering the objectives and research problems using a descriptive and explanatory method approach. Predictor variables consisting of: 1) Institutional Ownership (**InsOwn**) is the percentage of shares owned by a certain institution or institutions (Rashid, 2020; Din et al., 2022; Boshnak, 2023), 2) Investment Efficiency (**InsEfi**) is an optimal investment activity to bring profits to the company (Biddle et al., 2009; Salehi et al., 2022), 3) Independent Board of Commissioners (**BOCind**) is a party without any relationship or affiliation with the Company, either directly or indirectly (Bhagat & Bolton, 2019; Salehi et al., 2022; Rashid, 2020), and Firm Value (FV) proxied by *Market to Book Ratio* (**TbQ**), which is the value of the company's market capitalization compared to the book value of equity (Rashid, 2020; Din et al., 2022; Boshnak, 2023).

The research population uses data on public companies in Indonesia in the basic needs sector of society (consumer-non-cyclical), which are companies that produce basic or primary goods or services needed by society, consisting of 123 public companies in Indonesia, with an analysis period of 2016-2023, Purposive sampling technique is a consideration in determining the research sample, namely; The company consistently provides audited annual and financial reports, does not experience suspension or temporary dismissal from the Indonesia Stock Exchange (IDX), based on this footing, the combined data is obtained times series and cross section with 984 observation data, incomplete data as many as 62 companies or 496 data, so that the final sample is obtained as many as 488 observation data with a total of 61 companies.

The cutting-edge approach that researchers use to fill the research gap uses a combination approach that combines the effects of mediation and moderation, or the so-called *conditional process model* (Hayes, 2022). *Conditional process modeling or Conditional Process Analysis* (CPM) (Hayes, 2022; Igartua & Hayes, 2021). The Mediator variable is a variable that mediates the relationship between the predictor variable and the outcome variable; the mediator variable is a process variable or a variable that bridges or transmits the relationship between the independent variable/predictor and the dependent/*outcome.* Meanwhile, the moderation variable is used to determine the moderation/interaction effect of the influence of the moderator variable on the relationship of independent variables/predictors to dependent variables/*outcomes*, so that the direction and/or strength of the relationship between these variables can be known. Developed a *conditional process model* (CPM) approach (Hayes, 2022) with Conceptual Model 8, to estimate the model is calculated using the PROCESS Macro for SPSS V3.4 analysis.

The outputs obtained from the model can be used to see the conditional effects, using the 16th, 50th, and 84th percentile approaches. Thus, the impact of conditional data outputs can be seen in several low, medium, and high categories (Hayes, 2022).

RESULTS AND DISCUSSION

Descriptive Analysis Results

Table 1. Summary of Descriptive Analysis Results

Variable	Average Score	Minimum Score	Maximum Score	Standard Deviation	Median
InsOwn	.0614	.0000	.8900	.18930	.0000
BOCind	.4169	.0000	.1000	.1340	.3750
InsEfi	.269026	-24851569	455528889	3091209.19	10924.84
TbQ	1.6552	.3900	8.4000	1.09026	1.2784

Source: Research Data Processing, 2025, n=488

Based on Table 1, it can be explained that public companies in Indonesia show constitutional ownership (InsOwn) of public companies in Indonesia with an average value of 6.14% (min 0% and max 89.00%) and independent Board of Commissioners (BOC) with an average value of 41.69 (min .000 and max .1000), above the standard set by regulations in Indonesia, which provide a requirement of 30%. Investment Efficiency (InsEfi) with an average value of 0.2691 or 26.91% (min -24851569 and max 455528889), Firm Value (TbQ) obtained an average value of 1.655 (min .39 and max 8.40), close to the results of Rashid (2020) research in Bangladesh with an average value of 1.5828.

Hypothesis Testing

Conditional Process Model (CPM) analysis to investigate the mechanisms that influence other variables through one or more mediators, depending on the values of one or more moderator variables, is used to answer the question "about when and how" (Igartua & Hayes, 2021; Hayes, 2022). The following are the results of the research hypothesis test as shown in Table 2.

Table 2. Coefficient Analysis Results for Conditional *Process Model*

		Model *M*				Model *Y*		
		Coeff.	*SE*	*p*		*Coeff.*	*SE*	*p*
Constanta	iM	10.0478	0.2088	.000	iY	2.0810	0.3945	<.000
InsOwn (X)	a_1	1.3516	2.0304	.5059	c'_1	3.1121	1.5959	<.0507*
BOCind (W)	a_2	-0.0823	0.4735	.8621	c'_2	0.8045	0.3720	<.0311
X × W	a_3	-2.8059	5.1139	.5835	c'_3	-9.6751	4.0189	<.0164
InsEfi (M)		-	-	-	b'	-0.0716	0.0357	<.0454
R			0.0457	0.7982			0.2014	<.0005

Source: Research Data Processing, 2025. Significance 5%, *10%. n= 488

Based on Table 2, it can be explained that: In the Investment Efficiency (M) model, a constant value of 10.0478 was obtained, the regression coefficient *a1* = 1.3516, p-*value* = .5059, the test results were not significant, showing that InsOwn had an insignificant effect on Investment Efficiency. BOCind had a negligible impact on InsEfi with a value of a2 = -0.0823 and p-*value* = .8621; at the same time, BOCind did not significantly moderate the influence of InsOwn on InsEfi with a value of a3 = -2.8059 and p-*value* = .5835.

The Firm value model (Y) was obtained with A constant value of 2.0810, p-*value* = .000, regression coefficient c'_1 = 3.1121, p-*value* = .507, significant test results showing that InsOwn had a substantial effect on TbQ. BOCind significantly affects the value of TbQ with a coefficient value of c'_2 = 0.8045, p-*value* = .0311. BOCind significantly moderates the influence of InsOwn on TbQ with a coefficient value of c'_3 = -9.6751, p-*value* = .0164, and InsEfi has a non-linear effect on TbQ with a coefficient *of b1* = -.0716, p-*value* .0454

Hayes (2022) argues that a formal hypothesis test for the sustainable investment efficiency model's conditional effects is unnecessary (Hayes, 2022). It is because the estuary of the research focuses on conditional indirect effects (conditional process models) that we will present in the next section and not the conditional effects that have been stated above, the test mentioned above is carried out as a means to achieve the main goal, which is to analyze the process not immediately conditional. Table 2.b presents the Conditional Indirect and Direct Effects analysis results.

Table 2. Conditional *Indirect and Direct Effects*

			Direct Effect		
			Effect	*SE*	*p-value*
BOCind	Low	0.3333	-0.1126	0.3488	.7470
	Medium	0.3750	-0.5160	0.2661	.0530
	High	**0.**5000	-1.7254	0.5049	<.0007
			Indirect Effect		
			Effect	*LLCI*	*ULCI*
BOCind Low		0.3333	-0.0298	-0.1384	0.0372
BOCind Medium		0.3750	-0.0214	-0.1015	0.0362
BOCind High		0.5000	0.0037	0.1364	0.2408
Index Mediation Moderation			0.2010	0.7241	1.9721

Source: Research Data Processing, 2025. *Significance 5%. n= 488

The indirect effect of institutional ownership on the value of the Firm through investment efficiency is the product of two (2) effects, namely the function of $\theta_{X\rightarrow M}$ = a1+ a3W = 1.3516 - 2.8059W and $\theta_{M\rightarrow Y}$ = b1 = -0.0716. The estimation of the Conditional process Indirect Effects model is; In the low BOCind group [95% CI (-0.1384,0.0372, effect= -0.0298), in the moderate BOCind group [95% CI (-0.1015,0.0362, effect= -0.0214, high BOCind group [95% CI (0.1364, 0.2408, effect= 0.0037] with a confidence level above zero that is significant.

Again, the indirect effect is the product of at least two (2) effects, namely the effect of X on M, and M on Y which is controlled by X. The results of moderation mediation testing can be done by looking at the output of the "Index of moderated mediation", the results of the analysis as in table 2.b show (index = 0.2010; 95% CI [0.7241,1.9721]), that the test results are not zero which means significant, the test results provide meaning that there is a mediating effect of investment efficiency on the impact of institutional ownership on firm value, more effective in companies that involve a high lead Independent Board of Commissioners.

The direct effect of InsOwn on TbQ with BOCind moderation, the test results show that InsOwn has a significant positive impact on TbQ, as evidenced by the coefficient value (c'1 = 3.1121, p-*value* = .0507, BOCind significantly affects TbQ with the coefficient value (c'2 = 0.8045, p-*value* = .0311, and the interaction occurs between InsOwn and BOCind with the coefficient value c'3 = -9.6751, p-*value* = .0164, with the conditional direct effect of InsOwn on TbQ in three (3) categories (16th, 50th, and 84th percentiles), table 2.b which shows the low category (effect -0.1126, p-*value* = .7470, medium category (effect -0.5160, p-value = .0530, and high category (effect -1.7254, p-*value* = .0007, conditional effect of institutional ownership

(InsOwn) on firm value (TbQ) depends on the presence of independent Board of Commissioners (BOCind) in the high group.

Discussion of Research Results

The institutional ownership structure provides a better supervisory role so that investment policies do not lead to the interests of individuals, groups, and groups, being able to provide supervision to management (Panda & Leepsa, 2017); Involving external parties in supervision will be able to create good corporate governance (Duong et al., 2024), Diversity of Duty and Courage to Take Risks (Ozdemir et al., 2021), able to play a role in building strategic decisions that are in line with the company's main goal, which is to maximize the Firm value (Bawai & Kusumadewi, 2021; Wu et al., 2022; Perwito et al., 2023)

Researchers found that there is an effect of institutional ownership on firm value, the research findings are in line with various previous studies that have shown that institutional ownership has a positive impact on firm value (Arora & Sharma, 2016; Al-Janadi, 2021; Mukaria et al., 2020; Siddique et al., 2022; Boshnak, 2023), there is a difference in research results that institutional ownership does not have a positive effect on increasing fimr value (Li et al., 2006; Al-Matari et al., 2017; Putra, 2024), however, the results of this study provide new evidence that the moderation effect is more pronounced on the condition of the company by involving the Independent Board of Commissioners which leads to a high level, the interaction occurs in increasing the value of the company when involving the institutional ownership structure with the presence of the board of Independent Commissioners, the findings of the study provide confidence and strengthen the pattern that the company by involving the role of independent externals is more high, have competence. (Usaini & Wooi, 2023), Able to provide supervision and play a role in improving the quality of corporate governance (Panda & Leepsa, 2017); (Al Amosh & Khatib, 2022) more visible in companies with governance standards, financial disclosure that is less transparent (Rajkovic, 2020) Increasing the involvement of the independent board of commissioners can provide oversight to management, ultimately increasing the Firm’s value.

The main shareholders of institutional investors are expected to be able to drive investment activities and reduce agency concerns arising from excessive opportunistic manager behavior in making company investments (Alghorbany et al., 2024), the existence of a strong relationship between institutional investors and the corporate investment innovation, the larger the ownership, the higher the R&D investment (García-García et al., 2020), participating in building a climate and innovation investment in the firm (García-Sánchez et al., 2020), in line with the results of research that investment efficiency affects firm value, company value is obtained from the effect of investment decisions made by companies (Iturriaga & Sanz, 2001); (Siswanti & Prowanta, 2021). The corporate captures investment opportunities that can generate the Company's estimated cash. (Cahyaningdyah & Ressany, 2012), Effectively occurs through research and development innovation (López Iturriaga & López-Millán, 2017; Siddique et al., 2022), Intangible investment innovation (Perwito et al., 2021). The findings of the study provide reinforcement that Institutional Ownership affects increasing the value of the fimr through investment efficiency, more visible in companies by involving the presence of an Independent Board of Commissioners which leads to a high category, providing strong evidence that companies involving a higher independent Board of Commissioners can play a role in creating investment opportunities (Al-Gamrh et al., 2020), Investment Efficiency (Al-hiyari et al., 2022) which leads to an increase in the value of the Firm.

In addition, independent external parties play a role in the internal supervision and control of the corporate (Jiang et al., 2021; Ong et al., 2024), safeguard minority shareholders (Boshnak, 2023), have the power and motivation to drive the company's innovation strategy through R&D (Liu et al., 2020), have a good attitude and ethics as well as proficiency in finance

(Toumeh et al., 2023), will have an impact on improving the company's investment efficiency (Mirza et al., 2019); (Ullah et al., 2020), able to allocate and capture investment opportunities, and can increase *cash flow* (Al-hiyari et al., 2022)With good governance practices and the ability to manage investments efficiently, the company will produce a good level of return and create firm value, important impact on firm operational and market performance (Boshnak, 2023), and that ultimately has a good impact on the prosperity of shareholders.

CONCLUSION

The conditional process model approach can provide new enlightenment. Research findings show that institutional ownership and an independent Board of Commissioners positively increase the firm value, while investment efficiency has a non-linear effect.

The study's findings resulted in a new model formula in agency cost mitigation; the researchers found that the effect of institutional ownership on the firm value through investment efficiency was more pronounced in companies involving a high-ranking independent Board of Commissioners. Companies with the involvement of an independent Board of Commissioners who are high-leading, professional and have integrity will be effective in supervising, creating good corporate governance so that they can develop investment efficiency, research results can be used as agency cost mitigation and this is in line with the agency cost *of free cash flow* theory) The presence of independent parties can reduce the opportunistic behavior of management activities.

Limitations and research recommendations: First, research data is limited to the *consumer-non-cyclical sector* and needs to be improved in other sectors in public companies in Indonesia. Second, the ownership structure is limited to using institutional ownership; it is necessary to consider the approach of concentrated, family, and managerial ownership structures, and it is essential to consider the characteristics of the independent board of commissioners. Third, the mediation effect is limited to investment efficiency; it is necessary to try and consider parallel or serial mediation effects, such as Research and Development Innovation variables, free cash flow, dividend policy, and profitability.

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