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Do Control Rights and Family Ownership Affect Capital Structure?

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ABSTRACT

This study investigates the existence of a dynamic capital structure, the speed of adjustment towards the optimal capital structure, and the influence of control rights and family ownership on the capital structure of Indonesian listed manufacturing firms. Utilizing the difference Generalized Method of Moments (GMM) estimator and the partial adjustment model on a sample of 60 Indonesian firms from 2014 to 2022, this research provides new insights specific to the Indonesian market. The results confirm the existence of dynamic capital structure and indicate that it takes approximately 1.92 years for manufacturing firms in Indonesia to achieve their target leverage. The results of this study are also consistent with the pecking order theory and the market timing theory. Notably, Controlling Shareholder's Interest is found to have a positive relationship with leverage. The presence of Family Ownership, however, weakens the relationship between Controlling Shareholders' Interest and Leverage.

SARI PATI

Penelitian ini menyelidiki keberadaan struktur modal dinamis, kecepatan penyesuaian menuju struktur modal optimal, serta pengaruh hak kendali dan kepemilikan keluarga terhadap struktur modal perusahaan manufaktur yang terdaftar di Indonesia. Dengan menggunakan estimator Generalized Method of Moments (GMM) perbedaan dan model penyesuaian parsial pada sampel 60 perusahaan Indonesia dari tahun 2014 hingga 2022, penelitian ini memberikan wawasan baru yang spesifik untuk pasar Indonesia. Hasilnya mengkonfirmasi keberadaan struktur modal dinamis dan menunjukkan bahwa dibutuhkan sekitar 1,92 tahun bagi perusahaan manufaktur di Indonesia untuk mencapai leverage target mereka. Hasil penelitian ini juga konsisten dengan teori urutan pendanaan dan teori penentuan waktu pasar. Secara khusus, minat Pemegang Saham Pengendali ditemukan memiliki hubungan positif dengan leverage. Namun, keberadaan Kepemilikan Keluarga melemahkan hubungan antara minat Pemegang Saham Pengendali dan Leverage.

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INTRODUCTION

Capital structure is one of the most important financial decisions for a company. This decision determines the combination of debt and equity used to finance the company's operational activities and investments (Baker and Martin, 2011). Companies can finance through debt in various ways, including loans and bonds (Ross et al., 2021). One significant advantage of debt financing is the tax reduction benefit from interest payments. However, excessive debt increases financial pressure and the risk of bankruptcy. In contrast, equity financing involves raising funds through stocks and retained earnings. This type of financing doesn't require interest or monthly payments but often comes with higher costs. Investors typically perceive stocks as riskier than bonds and thus demand higher returns (Ross et al., 2021). Maintaining a balance between debt and equity is essential for achieving an optimal capital structure. An optimal structure maximizes the company's value and minimizes its cost of capital (Abdullah et al., 2023).

Since Modigliani and Miller's irrelevance proposition in 1958, researchers have been exploring and coming up with theories on how firms choose to finance their operations (Flannery and Rangan, 2006). These theories, however, seem to contradict one another. For instance, the trade-off theory states that there is an optimal debt that maximizes the value of a firm, while the market timing theory suggests firms issue equity when share prices are high (Memon et al., 2020). Other theories, such as pecking order theory and the first proposition of M&M, negate the existence of an optimal capital structure altogether (Memon et al., 2020). Furthermore, there is also the inertia theory of Welch (2004) that argues that once a company establishes a certain mix of debt and equity in its capital structure, it tends to maintain that mix overtime, even in the face of external shocks or changes.

Despite these contradictions, one capital structure theory that seems to gain popularity in the recent literature of corporate finance is the trade-off theory (Memon et al., 2020). There are two versions of this theory, static and dynamic. The static version of the trade-off theory states that companies have a target capital structure, where the benefits of debt equal its costs (Fama and French, 2002). If the amount of debt exceeds this target, then the costs of debt will begin to exceed its benefits, thereby reducing the company's value. The company will continuously adjust the mix between debt and equity to maintain this target. However, in the real world, to adjust debt and equity, companies face costs related to issuing and repurchasing of bonds and stocks. Rationally, adjustments cannot be made if these costs exceed the benefits. This is where the dynamic trade-off theory comes in. The dynamic version suggests that companies have a range, as opposed to a specific number, for their target leverage (Fama and French, 2002).

Over the years, several studies have provided strong evidence in favor of the dynamic trade-off theory. Jalilvand and Harris (1984) present findings indicating that firms tend to progress towards their long-term financial goals. Similarly, Ozkan (2001) affirms the concept of a target capital structure and observes partial movement towards it among UK firms, attributed to adjustment costs. Flannery and Rangan (2006) in their study on US firms also affirm the existence of a target debt level, noting deviations from this target with partial adjustments over time. The speed at which firms make these adjustments is called, simply, the speed of adjustment. Flannery and Rangan (2006) also demonstrate that the speed of adjustment of the firms in their sample is approximately 0.3, which means those firms annually make a 30% partial adjustment towards their desired capital structure.

The studies above have effectively supported the evidence of the dynamic nature of capital structure and the speed of adjustment within developed countries. This raises an inquiry into its applicability within developing countries. Little is still known about the dynamics of the financing behaviors

of firms in the developing countries because the studies regarding it are still scarce. It also may not be wise to take the findings supporting the dynamic nature of capital structure in developed countries and extend them to developing countries, as there are differences in economic development levels, financial markets, legal systems, and other factors (Delcoure, 2007). This is the gap this study aims to fill by analyzing the dynamic nature of capital structure and the speed of adjustment in a developing country, particularly in Indonesia.

Indonesia has seen remarkable growth of its manufacturing sector in recent years. Based on World Bank data spanning from 2014 to 2022, Indonesia's manufacturing sector has shown an annual growth rate of 3.44%, outpacing both the global average of 2.35% and the OECD average of 2.08%. In 2021, Indonesia's Manufacturing Value Added (MVA) reached US$228 billion, positioning it ahead of countries such as Canada, Turkey, Ireland, Brazil, Spain, Switzerland, Thailand, and Poland. This contributed 1.46% to the global MVA total. Additionally, the manufacturing industry accounted for 19.9% of Indonesia's total GDP during this period, surpassing the global average of 16.26% and the OECD average of 13.6%. Given the importance of manufacturing to Indonesia's economy, this study will concentrate on manufacturing companies listed on the Indonesian stock exchange.

In addition to its manufacturing industry, the economy of Indonesia is also known for its many family-owned firms. In 2014, PwC Indonesia estimated that family businesses make up to more than 95% of all businesses in Indonesia, where majority ownership rests with the founders or their family members, with at least one family member involved in management or administration. These family businesses, comprising more than 40,000 wealthy individuals in Indonesia, control a total wealth of IDR 134 trillion, equivalent to about 25% of Indonesia's GDP. Given the prevalence of family-owned firms in Indonesia, it would indeed be fascinating to consider them in this study. Comparing them to non-family firms could shed light on potential differences in their capital structure decisions, providing valuable insights into the unique dynamics of family-owned businesses within the Indonesian economy.

Another factor that influences capital structure but has received limited attention in research is controlling shareholders' interest. Controlling shareholders play a crucial role in shaping the financial strategies of firms (Amin and Liu, 2020). Their interests not only impact corporate governance practices but also exert a notable influence on leverage decisions, affecting the overall financial structure of the firm. This dynamic relationship between controlling shareholders' interests and leverage financing warrants in-depth investigation to comprehend how these interests navigate the trade-offs between obtaining leverage financing and maintaining control over strategic decision-making. Therefore, this study aims to delve into the intricacies of how controlling shareholders' interests shape capital structure decisions, contributing to a deeper understanding of corporate finance dynamics.

Literature Review

Theories of Capital Structure

As explained previously, there are several theories of capital structure, such as Modigliani and Miller, pecking order, and trade-off theory. These theories are created in hope of helping businesses understand how the combination of debt and equity affects risk, returns, and most importantly, company value (Ross et al., 2021). Modigliani and Miller, for instance, states that the cost of capital and the value of a company are not tied to its capital structure (Ross et al., 2021). The weakness of this theory is the fact that it was built upon unrealistic assumptions, one of which being the absence of taxes (Ross et al., 2021).

Recognizing this weakness, in 1963, Modigliani and Miller revised their theory to better align with real-world conditions. The new model, which now

recognizes taxes, states that levered firms generate higher value compared to unlevered ones. In other words, according to this theory, to maximize the value of the company and minimize its cost of capital, the capital structure of the company should consist entirely of debt. However, this theory does not account for the risks that come along with debt (Ross et al., 2021).

Another theory of capital structure is the pecking order theory, which states that when a company needs funding, retained earnings will be its primary choice, followed by debt as the second choice, and equity as the last resort (Memon et al., 2020). This theory, proposed by Myers and Majluf (1984), is based on the concept of asymmetric information, where some individuals have more or better information than others. Managers of a company typically have more thorough information regarding the performance, prospects, and risks of the company as opposed to external parties such as creditors and investors (Ross et al., 2021). For this reason, external funding demands a higher return. Managers prefer debt financing over equity because the cost of debt is lower than the cost of equity.

Lastly, the trade-off theory states that a company should have a target capital structure, which can balance the benefits and costs of debt. There are two version of this theory: static and dynamic (Fama and French, 2002). According to the static version of this theory, companies continuously adjust their capital structure towards the target leverage (Ross et al., 2021). However, in the real world, to adjust debt and equity, companies face costs associated with issuing and repurchasing bonds and stocks (Ross et al., 2021). Therefore, even though the dynamic version of this theory suggests the existence of a target capital structure, the optimal capital structure point may not necessarily equal the target. For example, at one point in time, a company's capital structure may have a debt-to-equity ratio below the target. To reach the target, the company would have to issue bonds, which come with issuance costs. Thus, the company would not make adjustments unless the benefits outweigh the adjustment costs. This is why the dynamic version of the trade-off theory suggests that companies should have a range rather than a specific number for their target leverage (Ross et al., 2021). As long as the deviation from the target is within this range, the company does not need to adjust its capital structure because the costs of doing so would outweigh the benefits.

In this particular study, the main theoretical foundation used is the trade-off theory, specifically its dynamic version. The dynamic trade-off theory is expected to better explain the partial adjustment behavior of companies and the speed of their adjustment towards the target capital structure.

Speed of Adjustment

Available literature, including those of Flannery and Rangan (2006), Ozkan (2001), Mukherjee and Mahakud (2010), and others confirm the existence of optimal debt ratios across countries. What is different among these studies is the speed with which the firms adjust towards it. Different countries have different speeds of adjustment. For instance, Flannery and Rangan (2006) find the adjustment speed for US firms to be 30%. Mukherjee and Mahakud (2010) report that firms in India have an adjustment speed of 43%. These percentages represent the partial adjustment of capital structure an average firm makes in a given year. For example, a speed of adjustment of 100% means that, on average, it takes one year for a company to reach its optimal capital structure. Therefore, according to Flannery and Rangan (2006) and Mukherjee and Mahakud (2010), firms in the US and India take 3.33 years and 2.33 years, respectively, to adjust to their optimal capital structure.

METHODS

This study aims to determine the existence of a dynamic capital structure in manufacturing firms in Indonesia. Using previous studies as references, especially those of Abdullah et al. (2023) and Amin and Liu (2020), this study has eight independent variables which are expected to influence Leverage,

which is the only dependent variable. Out of the eight independent variables, the main focus is Controlling Shareholders' Ownership. This study also examines whether Family Ownership strengthens or weakens the relationship between Controlling Shareholders' Ownership and Leverage, and therefore uses Family Ownership as moderating variable between them.

Hypothesis Development

According to Thomsen et al. (2006), a blockholder is an individual or entity that owns a significant percentage of a company's shares, typically enough to influence or control decisions made by the company. While there is no strict threshold, blockholders often own at least 5% a company's outstanding shares. The presence of blockholders can impact corporate governance, as they may have the power to sway key votes on issues such as the election of board members, mergers and acquisitions, and other major corporate actions. Blockholders can include institutional investors, hedge funds, mutual funds, private equity firms, and large individual investors. Following La Porta et al. (1999), Claessens et al. (2000), and Amin and Liu (2020), this study calculates control rights in the hands of the ten largest blockholders.

Ownership concentration is prevalent across emerging and developed market and literature emphasize the role of leverage financing in mitigating the agency conflicts (Arslan and Karan, 2006). Ampenberger et al. (2013) examine a sample of German firms and argue that controlling shareholders prefer leverage financing to maintain their controlling stake. Lundstrum (2009) points out that in the case of high concentration of controlling rights the blockholders prefer a higher level of leverage which is supportive in monitoring firms' strategic affairs. To measure this variable, this study will sum the controlling stake of the ten largest blockholders. The following hypothesis is also used.

H1: Controlling shareholders' Interest has a positive relationship with leverage.

Family firms often prioritize long-term goals alongside financial objectives (Perlines et al., 2023). This is indicated by the concept of socioemotional wealth (SEW), which refers to the non-economic rewards that family firm owners seek from their businesses (Perlines et al., 2023). These non-financial rewards are considered integral to family firms' objectives, influencing their decision-making processes and strategies beyond purely economic considerations. SEW might lead family firms to be more conservative in their capital structure. In his study, Setia-Atmaja (2010) analyzed a sample of 316 Australian firms and found that family-controlled firms prefer higher leverage to influence minority shareholders in key decisions. The findings of Perlines et al. (2023) also suggest that the desire of maintaining family control might make them more accepting of higher leverage. Moreover, Margaritis & Psillaki (2010) suggest that family-controlled firms favor using leverage financing as a disciplinary measure to address agency issues between shareholders and managers, indicating a positive relationship between family ownership and financial leverage.

However, there are also opposing findings regarding the relationship between family ownership and leverage. Hiebl (2012), for instance, states that risk aversion is the most dominant characteristic of family-owned firms. Bianco, Bontempi, Golinelli, and Parigi (2013) emphasize that shareholders in family firms are more likely to focus on their personal incentives, preferring lower returns with known risks over higher returns with uncertain risks. Family-controlled firms often avoid external monitoring, particularly from creditors, and rely less on leverage financing. Gama and Galvão (2012) report that family shareholders favor a higher level of equity over leverage financing to prevent financial distress. Schmid et al. (2013) note that in countries where creditor rights are relatively strong, family-controlled firms tend to prefer lower leverage financing compared to non-family firms to avoid bankruptcy and financial distress.

Table 1. Variable Description

No.	Variable	Measurement	Sources
1	Ownership of controlling shareholders	Controlling Ownership of the ten largest blockholders	La Porta et al. (1999), Claessens et al. (2000), and Amin and Liu (2020).
2	Family ownership (dummy)	1 if it is a family-owned company, 0 if it is not. A family firm has a family member as a CEO or chairman and holds at least 5% equity.	Block et al. (2023) and Amin and Liu (2020).
3	Leverage	$\frac{Long - term\ debt}{Total\ assets}$	Titman and Wessels (1988), Delcoure (2007), Memon et al. (2020), and Haron et al. (2013).
4	Profitability	$\frac{EBIT}{Total\ assets}$	Titman and Wessels (1988), Booth et al. (2001), Pandey (2001), Alipour et al. (2015), and Memon et al. (2020).
5	Tangibility	$\frac{Fixed\ assets}{Total\ assets}$	Booth et al. (2001), Pandey (2001), Khemiri and Noubbigh (2018), and Memon et al. (2020).
6	Size	Natural logarithm of total assets	Titman and Wessels (1988), Booth et al. (2001), Pandey (2001), and Memon et al. (2020).
7	Non-debt tax shield	$\frac{Depreciation}{Total\ assets}$	Titman and Wessels (1988), Deesomsak et al. (2004), and Memon et al. (2020).
8	Liquidity	$\frac{Current\ assets}{Total\ assets}$	Ozkan (2001), Alipour et al. (2015), Khemiri and Noubbigh (2018), and Memon et al. (2020).
9	Share price performance	First difference of the logs of annual share prices	Memon et al. (2020).

Amin and Liu (2020), in its study of Singaporean firms, conjecture that family-controlled ownership negatively moderates the association between controlling shareholders' interest and leverage. The reason being family-ownership among Singaporean firms is highly concentrated. Given that family-ownership among Indonesian firms is also highly concentrated, this also hypothesize a negative moderating relationship. Also referring to Amin and Liu (2020), this study classifies a family firm as one that has a family member as a CEO or chairman and holds at least 5% equity. Other studies have employed different definitions of what constitutes a family firm. For instance, Block et al. (2023) considers a firm as family-owned if a family founded that firm and still holds direct equity stake of at least 25%. Hasso and Duncan (2013) also has another definition. However, this study uses the criteria used by Amin and Liu (2020). The following is the last hypothesis of this study.

H2: Family ownership negatively moderates the association between controlling shareholders' interest and leverage.

Model Specification

As discussed earlier, companies are not always at their optimal debt levels because of adjustment costs and other market frictions. However, they tend to adjust towards the optimal levels overtime. This suggests that firms make partial movement to fill the gap between actual debt (AD) and the target debt (TD). This financing behavior can be expressed using the partial adjustment model (De Miguel and Pindado, 2001). The partial adjustment model of target debt assumes that any change in actual debt in the current period from the previous period (ADit – ADit-1) will be equal to a proportion (δit) of target change (TDit – ADit-1). This can be represented by the following formalization (Haron, 2013; Memon et al., 2020).

$ADit = (1- \delta it)\ ADit\text{-}1 + \delta it\ TDit$

In this study, we aim to analyze the influence of Controlling Shareholders' Interest and Family Ownership on target debt. Other determinants include the moderating effect of Family Ownership and other variables, such as Profitability, Tangibility, Firm Size, Non-Debt Tax Shield, Liquidity, Share Price Performance, Therefore, the variable TD in the equation above can be expanded to be the following.

$ADit = (1- \delta it)\ ADit\text{-}1 + \delta it\ \beta 1\ CSIit + \delta it\ \beta 2\ FAMit + \delta it\ \beta 3\ CSI*FAMit + \delta it\ \beta 4\ PROit + \delta it\ \beta 5\ TANGit + \delta it\ \beta 6\ SIZEit + \delta it\ \beta 7\ NDTSit + \delta it\ \beta 8\ LIQUIDit + \delta t\ \beta 9\ SPPit + uit$

Variable uit represents the residual or error term. Finally, assuming $\lambda 0 = (1\text{-}\delta it)$ and $\delta it\ \beta = \lambda$, the equation above can be simplified as the following.

$ADit = \lambda 0\ ADit\text{-}1 + \lambda 1\ CSIit + \lambda 2\ FAMit + \lambda 3\ CSI*FAMit + \lambda 4\ PROit + \lambda 5\ TANGit + \lambda 6\ SIZEit + \lambda 7\ NDTSit + \lambda 8\ LIQUIDit + \lambda 9\ SPPit + uit$

This last equation is the one subject to estimation for this study.

Model Estimation

In the above equation, the error term, denoted by uit, represents the difference between the observed values and the values predicted by the regression model. The error term, in other words, accounts for the variability in the dependent variable that cannot be explained by the independent variables. Now, if at least one of those independent variables is correlated with the error term, it means endogeneity has occurred (Memon et al., 2020).

Endogeneity can also occur when the dependent variable and at least one of the independent variables are determined simultaneously within a system (Memon et al., 2020). This means that the two variables influence each other at the same time. In other words, there is a two-way causality or feedback loop between them. Furthermore, endogeneity arises when there is a measurement error in at least one of the independent variables.

The model that has been established raises endogeneity concerns because of several reasons. Firstly, a firm's leverage is almost certainly influenced by some important omitted factors, such as managerial risk aversion (Im et al., 2020). Secondly, the model also uses the lagged value of the dependent variable as an independent variable, which raises reverse causality concerns. Furthermore, other variables are also expected to have reverse causality with the dependent variable.

Endogeneity leads to biased and inconsistent estimates, making it difficult to draw valid conclusions from the model. To address endogeneity issues, an instrumental variable (IV) approach can be used. An instrumental variable is a variable that is correlated with the endogenous explanatory variable but uncorrelated with the error term. An instrumental variable helps to determine the variation in the explanatory variables that is not related to the error term. Typically, this involves identifying external instruments, which can be difficult. However, the generalized method of moments (GMM) simplifies this approach by using lagged values of the explanatory variables as instruments.

The equation that has been established above is a dynamic model because it includes the lag of the dependent variable as the independent variable. Roodman (2009) recommends using the Generalized Method of Moments (GMM) in such situations. The Difference GMM method by Arellano and Bond (1991) uses lagged variables within the model as instruments. Arellano and Bond (1991) demonstrated that GMM provides consistent parameter estimates by using instruments derived from orthogonality conditions between lagged variable values and disturbances. Flannery and Hankins (2013) indicate that among the established estimation techniques for dynamic panel models, GMM tends to perform better.

Therefore, this study employs Arellano and Bond (1991) difference GMM to estimate the model. The Sargan-Hansen test is used to verify the validity of the instruments. A higher p-value (insignificant) is preferable for this test since the null hypothesis indicates that the instruments are exogenous. Additionally, the study applies the Arellano-Bond second order Autocorrelation (AR2) test to ensure that the error term of the differenced equation is not serially correlated at the second order (AR2). A higher p-value is also required for this test.

Data and Sample

The study's empirical research is based on the financial information of the listed manufacturing firms in Indonesia. Several criteria were used to select firms as samples from the population. Firstly, the firms must fall within the manufacturing sector, which includes Basic Industry and Chemicals, Consumer Goods, or Various Industries. Secondly, they must be listed on the Indonesian stock exchange. Thirdly, their financial statements must be available for the period from 2014 to 2022. After omitting firms with missing data, the final sample consists of 60 firms with 8 years of data, resulting in a total of 480 observations. Data collection primarily relied on Refinitiv Eikon and supplemented by information from the firms' annual reports, ensuring comprehensive and reliable data for analysis

RESULTS AND DISCUSSION

Descriptive Analytics

Before conducting the statistical analysis, a basic Descriptive Analytics is carried out to evaluate the data distribution. This Descriptive Analytics is conducted using Microsoft Excel, employing measures such as mean, median, maximum value, minimum value, and standard deviation. The descriptive statistics for each variable are summarized in Table 2, provided below. As explained in the previous chapter, the data consists of 60 firms over 8 years, resulting in a total of 480 observations. The data is based on annual the financial information for the years ended 2015 until 2022.

Based on the data above, we can see that the mean of Controlling Shareholders' Interest is 0.7072, indicating that, on average, controlling shareholders own 70.72% of manufacturing firms in Indonesia. This number is higher than that reported for non-financial firms in Singapore by Amin and Liu (2020). The median and maximum values are also higher than those of the non-financial Singaporean firms, indicating that the ownership among manufacturing firms in Indonesia are more concentrated compared to non-financial Singaporean firms. However, manufacturing firms in Indonesia have lower minimum value and standard deviation. The lower minimum value suggests that while some manufacturing firms in Indonesia have very concentrated ownership, there are also those with relatively dispersed ownership. The lower standard deviation indicates that the degree of ownership concentration is more consistent across manufacturing firms in Indonesia.

Table 2. Descriptive Statistics

Variables	Criteria				
	Mean	Median	Max	Min	StDev
Controlling Shareholders' Interest	0.7072	0.7117	0.9964	0.1620	0.1727
Family Ownership	0.5396	1.0000	1.0000	0.0000	0.4990
Leverage	0.1628	0.1319	0.9518	0.0001	0.1526
Profitability	0.0674	0.0616	0.5110	(0.3317)	0.0843
Tangibility	0.4549	0.4055	1.9670	0.0271	0.2394
Firm Size	29.3074	29.1543	32.8264	25.7957	1.6017
Non-Debt Tax Shield	0.0000023	0.0000021	0.0000119	0.0000004	0.0000013
Liquidity	0.4448	0.4411	0.8659	0.0160	0.1867
Share Price Performance	0.0145	(0.0025)	3.3271	(2.4755)	0.5033

The Family Ownership variable is binary, with a value of 1 indicating the presence of family ownership within a firm and 0 indicating its absence. This binary nature simplifies the categorization of firms into family-owned and non-family-owned categories, providing a clear distinction based on ownership structure. The mean family ownership is 0.5396, indicating that, on average, about 53.96% of the firms in the sample are family-owned.

The average debt used by the firms in the sample is 16.28%. In other words, manufacturing firms in Indonesia, on average, have 83.72% equity relative to their total assets. The maximum value is quite high at 95.18%, which means some companies carry significant amount of debt. The minimum value, however, is very close to zero, suggesting that some companies in the sample have negligible debt levels. This means that there is a significant variation in leverage ratios among the sample.

Correlation Matrix

Table 3 shows the correlation matrix depicting the relationships between the variables. The correlation coefficients observed among these variables are below the recommended threshold of 0.9, as advised by Asteriou and Hall (2011). This indicates that the risk of multicollinearity is unlikely to be a significant issue. Therefore, in moderation models, multicollinearity issues can be disregarded.

Incidentally, the correlation matrix shows some interesting results. Controlling Shareholders' Interest has positive correlations with Profitability, Liquidity, and Share Price Performance. This indicates that, on average, firms with more concentrated ownership tend to be more profitable, have more liquid assets, and experience better share price performance. Furthermore, Family Ownership also has a positive correlation with liquidity and therefore strengthens the impact. Another interesting correlation is that between Controlling Shareholders' Interest and Firm Size, which is negative. This suggests larger firms tend to have less concentrated ownership.

Table 3. Correlation Matrix

	Leverage	*CSI*	*FO*	*Profitability*	*Tangibility*	*Size*	*NDTS*	*Liquidity*	*SPP*
Leverage	1								
CSI	(0,0605)	1							
FO	0,0035	(0,2818)	1						
Profitability	(0,2930)	0,0340	(0,0056)	1					
Tangibility	0,3719	(0,0355)	(0,0469)	(0,3989)	1				
Size	0,2384	(0,2321)	(0,0010)	0,2141	0,0323	1			
NDTS	0,2052	0,1073	0,0425	(0,1533)	0,3592	(0,0504)	1		
Liquidity	(0,5177)	0,0242	0,0786	0,3446	(0,7560)	(0,2080)	(0,3826)	1	
SPP	(0,0167)	0,0719	0,0330	0,2021	(0,0609)	(0,0116)	0,0274	0,0183	1

Analysis

Table 4. SYS-GMM with Moderating Variable

Variable	Coefficient	St. Error	Z	P-value	Significance
Leverage Lag 1	0.4788193	0.0391655	12.23	0.000	***
Controlling Shareholders' Interest	0.2619759	0.0483862	5.41	0.000	***
Family Ownership	0.147411	0.1266117	1.16	0.244	
CSI_Family Ownership	-0.5421811	0.1141117	-4.75	0.000	***
Profitability	0.0728713	0.0327226	2.23	0.026	**
Tangibility	-0.1408232	0.0455452	-3.09	0.002	***
Firm Size	0.0267344	0.0144608	1.85	0.064	*
Non-Debt Tax Shield	-20876.58	5931.774	-3.52	0.000	***
Liquidity	-0.5429936	0.0647616	-8.38	0.000	***
Share Price Performance	-0.0140508	0.0039189	-3.59	0.000	***
_Cons	-0.4258823	0.4548915	-0.94	0.349	

Speed of Adjustment

Referring to the results of SYS-GMM on Table 4, we can observe that the lagged value of leverage is 0.4788. This implies a speed of adjustment of 0.5212 (1 - 0.4788). In other words, manufacturing firms close 47.88% of the gap between the current actual debt (ADit) and the target debt (TDit) annually. To convert this speed of adjustment into time, we can use a formula which was also used by Huang and Ritter (2009), Ameer (2010), Mukherjee and Mahakud (2010), and Abdullah et al. (2023). Using the formula (1/speed of adjustment) we observe that manufacturing firms take 1.92 years, around 1 year and 11 months, to reach the target leverage, indicating the existence of dynamic trade-off theory (Mukherjee and Mahakud, 2010; Flannery and Rangan, 2006; Abdullah et al., 2023). According to the dynamic trade-off theory, the faster the adjustment, the greater the expected benefits of closing the gap to the target capital structure (Abdullah et al., 2023).

Table 5. Speed of Adjustment

Leverage	Amount
Speed of Adjustment	0.5212
Years	1.92

For comparison, Flannery and Rangan (2006) reported a speed of adjustment of 0.3 for US firms across various sectors, Mukherjee and Mahakud (2010) reported a speed of 0.43 for hospitality firms in India, and Abdullah et al. (2023) reported a speed of 0.47 for steel firms in India. These rates correspond to 3.33 years, 2.33 years, and 2.13 years, respectively, for the firms to reach their target leverage.

It is evident that the speed of adjustment for manufacturing firms in Indonesia is higher than those found in the previous studies. This indicates that Indonesian manufacturing firms adjust more quickly to their target leverage than their counterparts in the US and India. This faster adjustment may be attributed to several factors, including differences in market conditions, regulatory environments, and the availability of financing options.

It is prudent, however, to consider potential biases in these comparisons. Firstly, the previous studies were conducted several years ago, and results might differ if replicated today. Secondly, this particular study focuses on the manufacturing sector, whereas the compared studies involve different sectors. These differences highlight the need for caution when interpreting the speed of adjustment in different contexts.

Controlling Shareholders' Interest, Family Ownership, and Leverage

One of the more interesting findings of this study is those of the main focus of this study, which are Controlling Shareholder Ownership and Family Ownership. The Controlling Shareholder Ownership variable has a significant positive relationship with a coefficient value of 0.2620. This is consistent with the findings of Ampenberger et al. (2013), Lundstrum (2009), and Amin and Liu (2020). This result makes perfect sense because controlling shareholders would prefer leverage financing to maintain their controlling stake.

Table 4. also shows that the Family Ownership variable, in itself, is insignificant. However, the moderating effect it has on the relationship between Controlling Shareholders' Interest and Leverage is significant and has a coefficient of -0.5422. The moderating effect was hypothesized to negatively moderate the association between controlling shareholder ownership and target leverage, which is consistent with the hypothesis. This proves the findings of Amin and Liu (2020), Hiebl (2012), Gama and Galvão (2012), and Schmid et al. (2013). The results suggest that Controlling Shareholder Ownership is indeed positively correlated with leverage. The presence of family ownership, however, weakens this relationship.

Both the direction and significance of the Controlling Shareholders' Interest variable and the moderating

effect of Family Ownership are consistent with Amin and Liu's (2020) study in Singapore. Amin and Liu (2020) conducted tests across various models, finding that in their GMM model, Controlling Shareholders' Interest had a significant positive relationship with leverage (coefficient of 0.213 at a 99% significance level). Additionally, Family Ownership exhibited a significant negative moderating effect on the relationship between Controlling Shareholders' Interest and leverage (coefficient of -0.786, also at a 99% significance level). These significance levels are consistent with our study. However, our study shows a slightly higher coefficient for Controlling Shareholders' Interest. Conversely, the moderating effect of Family Ownership is less pronounced for Indonesian manufacturing firms compared to Singaporean ones. In summary, Controlling Shareholders' Interest has a slightly stronger influence on leverage for Indonesian manufacturing firms, while the presence of Family Ownership negatively impacts leverage more for Singaporean firms.

Cultural aspects, such as the emphasis on maintaining family control and legacy, may play a role in the financial decision-making of Indonesian firms. This is one of the areas explored in the studies of Pane and Christanti (2023) and Bąkiewicz (2020), which focus on family businesses succession in Indonesia. Those study find that succession planning in family firms are significantly influences by culture. Bąkiewicz (2020) compares the succession planning in Indonesia and Poland and finds that Indonesia's culture is more collectivistic. This means family firms in Indonesia place a higher value on group harmony, family ties, and community. Decisions are often made with consideration of the group's well-being rather than individual preferences. Family loyalty and unity are paramount, and this is reflected in business practices where family interests often take precedence over individual ambitions. Furthermore, the economic environment in Indonesia, including access to capital markets, interest rates, and economic stability, impacts leverage decisions. Indonesian firms might face different financing conditions and risks, influencing their reliance on debt versus equity.

MANAGERIAL IMPLICATIONS

The findings of this study offer practical insights for managers of Indonesian manufacturing firms, especially regarding capital structure decisions. The confirmation of a dynamic capital structure and the average adjustment time of 1.92 years highlight the need for long-term planning when aligning leverage with target levels. Managers should adopt a proactive approach, making phased adjustments while maintaining financial flexibility to respond to market conditions. For firms with strong controlling shareholders, the positive relationship between controlling shareholders' interest and leverage suggests that debt may be favored for exerting control, but managers must balance this with the risks of over-leveraging.

In family-owned firms, the weakening effect of family ownership on this relationship indicates a more conservative approach to debt usage. Managers in such firms should prioritize stability and long-term financial health over aggressive debt strategies. Additionally, consistency with the pecking order and market timing theories suggests that firms should continue prioritizing internal financing while capitalizing on favorable market conditions for equity issuance. By applying these insights, managers can optimize their capital structures in ways that balance shareholder expectations and financial sustainability.

CONCLUSION

This study answers the questions regarding dynamic nature of capital structure in the Indonesian manufacturing firms. It provides new evidence of the application of the dynamic trade-off theory in the Indonesian manufacturing firms. The study also sheds light into the impact of control right and family ownership to the capital structure of those firms. This study uses a panel data from 2015 to 2022. Partial adjustment model used in this study has

been estimated using Arrellano and Bond (1991), as well as Blundell and Bond (2023).

The result of the study reports that manufacturing firms in Indonesia take 1.92 years to achieve the target leverage, indicating the existence of dynamic capital structure (Mukherjee and Mahakud, 2010; Flannery and Rangan, 2006; Abdullah et al., 2023). Lagged value of Leverage, Firm Size, and Controlling Shareholders' Interest have a significant positive relationship with debt. Whereas Tangibility, Non-Debt Tax Shield, Liquidity, Share Price Performance, and the interaction between Controlling Shareholders' Interest and Family Ownership, have a significant negative relationship with debt. ■

REFERENCES

Abdullah, M., Gulzar, I., Chaudhary, A., Tabash, M. I., Rashid, U., Naaz, I., & Ali, A. (2023). Dynamics of speed of leverage adjustment and financial distress in the Indian steel industry. *Journal of Open Innovation: Technology, Market, and Complexity*, 9(4), 100152. https://doi.org/10.1016/j.joitmc.2023.100152

Alipour, M., Mohammadi, M. F., & Derakhshan, H. (2015). Determinants of Capital Structure: An empirical study of firms in Iran. *International Journal of Law and Management*, 57(1), 53–83. https://doi.org/10.1108/ijlma-01-2013-0004

Almeida, H., & Campello, M. (2007). Financial constraints, asset tangibility, and corporate investment. *Review of Financial Studies*, 20(5), 1429–1460. https://doi.org/10.1093/rfs/hhm019

Ameer, R. (2010). Financial liberalization and firms' capital structure adjustments evidence from Southeast Asia and South America. *Journal of Economics and Finance*, 37(1), 1–32. https://doi.org/10.1007/s12197-010-9158-3

Amin, Q. A., & Liu, J. (2020). Shareholders' control rights, family ownership and the firm's leverage decisions. *International Review of Financial Analysis*, 72, 101591. https://doi.org/10.1016/j.irfa.2020.101591

Ampenberger, M., Schmid, T., Achleitner, A.-K., & Kaserer, C. (2009). Capital structure decisions in family firms - empirical evidence from a bank-based economy. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.1364153

Arellano, M., & Bond, S. (1991). Some tests of specification for panel data: Monte Carlo Evidence and an application to employment equations. *The Review of Economic Studies*, 58(2), 277. https://doi.org/10.2307/2297968

Arslan, Ö., & Karan, M. B. (2006). Ownership and control structure as determinants of corporate debt maturity: A panel study of an emerging market. Corporate Governance: *An International Review*, 14(4), 312–324. https://doi.org/10.1111/j.1467-8683.2006.00509.x

Asteriou, D. and Hall, S. (2011). *Applied Econometrics*. 1st ed. Basingstoke: Palgrave Macmillan

Baker, H. K., & Martin, G. S. (2011). Capital Structure and corporate financing decisions. *Theoretical Economic Letters*. https://doi.org/10.1002/9781118266250

Baker, M., & Wurgler, J. (2002). Market timing and capital structure. *The Journal of Finance*, 57(1), 1–32. https://doi.org/10.1111/1540-6261.00414

Bąkiewicz, A. (2020). Cultural embeddedness of Family Businesses Succession Planning: A comparative study of Poland and Indonesia. *Problems and Perspectives in Management*, 18(3), 328–337. https://doi.org/10.21511/ppm.18(3).2020.27

Baltagi, B. H. (2013). *Econometric Analysis of Panel Data*. 5th ed. Wiley.

Bhaduri, S. N. (2002). Determinants of Capital Structure Choice: A Study of the Indian Corporate Sector. *Applied Financial Economics*, 12(9), 655–665. https://doi.org/10.1080/09603100010017705

Bianco, M., Bontempi, M. E., Golinelli, R., & Parigi, G. (2012). Family firms' investments, uncertainty and opacity. *Small Business Economics*, 40(4), 1035–1058. https://doi.org/10.1007/s11187-012-9414-3

Block, J., Fathollahi, R., & Eroglu, O. (2023). Capital structure of single family office-owned firms. *Journal of Family Business Strategy*, 100596. https://doi.org/10.1016/j.jfbs.2023.100596

Block, J., Fathollahi, R., & Eroglu, O. (2023). Capital structure of single family office-owned firms. *Journal of Family Business Strategy*, 100596. https://doi.org/10.1016/j.jfbs.2023.100596

Blundell, R., & Bond, S. (2023). Initial conditions and Blundell–Bond estimators. *Journal of Econometrics*, 234, 101–110. https://doi.org/10.1016/j.jeconom.2023.01.020

Booth, L., Aivazian, V., Demirguc-Kunt, A., & Maksimovic, V. (2001). Capital structures in developing countries. *The Journal of Finance*, 56(1), 87–130. https://doi.org/10.1111/0022-1082.00320

Cho, S.-S., El Ghoul, S., Guedhami, O., & Suh, J. (2014). Creditor rights and capital structure: Evidence from International Data. *Journal of Corporate Finance*, 25, 40–60. https://doi.org/10.1016/j.jcorpfin.2013.10.007

Claessens, S., Djankov, S., & Lang, L. H. P. (2000). The separation of ownership and control in East Asian corporations. *Journal of Financial Economics*, 58(1–2), 81–112. https://doi.org/10.1016/s0304-405x(00)00067-2

De Jong, A., Kabir, R., & Nguyen, T. T. (2008). Capital structure around the world: The roles of firm- and country-specific determinants. *Journal of Banking & Finance*, 32(9), 1954–1969. https://doi.org/10.1016/j.jbankfin.2007.12.034

De Miguel, A., & Pindado, J. (2001). Determinants of capital structure: New evidence from Spanish panel data. *Journal of Corporate Finance*, 7(1), 77–99. https://doi.org/10.1016/s0929-1199(00)00020-1

DeAngelo, H., & Masulis, R. W. (1980). Optimal capital structure under corporate and personal taxation. *Journal of Financial Economics*, 8(1), 3–29. https://doi.org/10.1016/0304-405x(80)90019-7

Deesomsak, R., Paudyal, K., & Pescetto, G. (2004). The determinants of capital structure: Evidence from the Asia Pacific region. *Journal of Multinational Financial Management*, 14(4–5), 387–405. https://doi.org/10.1016/j.mulfin.2004.03.001

Delcoure, N. (2007). The determinants of capital structure in transitional economies. *International Review of Economics & Finance*, 16(3), 400–415. https://doi.org/10.1016/j.iref.2005.03.005

DeLong, K. L., & Trejo-Pech, C. O. (2022). Factors affecting sugar-containing-product prices. *Journal of Agricultural and Applied Economics*, 54(2), 334–356. https://doi.org/10.1017/aae.2022.12

Dewi, Y. K. (2016). In Search of Legal Foundation for Indonesian family firms. *Indonesia Law Review*, 6(2), 246. https://doi.org/10.15742/ilrev.v6n2.228

Fama, E. F., & French, K. R. (2002). Testing trade-off and pecking order predictions about dividends and debt. *Review of Financial Studies*, 15(1), 1–33. https://doi.org/10.1093/rfs/15.1.1

Flannery, M. J., & Hankins, K. W. (2013). Estimating dynamic panel models in corporate finance. *Journal of Corporate Finance*, 19, 1–19. https://doi.org/10.1016/j.jcorpfin.2012.09.004

Flannery, M. J., & Rangan, K. P. (2006). Partial adjustment toward target capital structures. *Journal of Financial Economics*, 79(3), 469–506. https://doi.org/10.1016/j.jfineco.2005.03.004

Ginglinger, E., & Hamon, J. (2007). Ownership, control and market liquidity. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.1071624

Gujarati, D. N., & Porter, D. C. (2008). *Basic Econometrics*. 5th ed. McGraw-Hill Education.

Haron, R., Ibrahim, K., Nor, F. M., & Ibrahim, I. (2013). Factors affecting speed of adjustment to target leverage: Malaysia evidence. *Global Business Review*, 14(2), 243–262. https://doi.org/10.1177/0972150913477469

Hasso, T., & Duncan, K. (2013). Valuation of family firms: The limitations of accounting information. *Australian Accounting Review*, 23(2), 135–150. https://doi.org/10.1111/j.1835-2561.2013.00202.x

Hernández-Perlines, F., Araya-Castillo, L., Millán-Toledo, C., & Cisneros, M. A. (2023). Socioemotional wealth: A systematic literature review from a family business perspective. *European Research on Management and Business Economics*, 29(2), 100218. https://doi.org/10.1016/j.iedeen.2023.100218

Hiebl, M. R. W. (2012). Risk aversion in family firms: What do we really know? *The Journal of Risk Finance*, 14(1), 49–70. https://doi.org/10.1108/15265941311288103

Huang, R., & Ritter, J. R. (2009). Testing theories of capital structure and estimating the speed of Adjustment. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.938564

Im, H. J., Kang, Y., & Shon, J. (2020). How does uncertainty influence target capital structure? *Journal of Corporate Finance*, 64, 101642. https://doi.org/10.1016/j.jcorpfin.2020.101642

Ishikawa, M., & Takahashi, H. (2011). Testing the managerial timing ability: Evidence from stock repurchases in Japan. *Finance Research Letters*, 8(1), 21–27. https://doi.org/10.1016/j.frl.2010.05.003

Jalilvand, A., & Harris, R. S. (1984). Corporate behavior in adjusting to capital structure and dividend targets: An econometric study. *The Journal of Finance*, 39(1), 127–145. https://doi.org/10.1111/j.1540-6261.1984.tb03864.x

Kappes, I., & Schmid, T. (2013). The effect of family governance on Corporate Time Horizons. *Corporate Governance: An International Review*, 21(6), 547–566. https://doi.org/10.1111/corg.12040

Khémiri, W., & Noubbigh, H. (2018). Determinants of capital structure: Evidence from sub-Saharan African firms. *The Quarterly Review of Economics and Finance*, 70, 150–159. https://doi.org/10.1016/j.qref.2018.04.010

La Porta, R., Lopez-De-Silanes, F., & Shleifer, A. (1999). Corporate ownership around the world. *The Journal of Finance*, 54(2), 471–517. https://doi.org/10.1111/0022-1082.00115

Ma, P., Li, C., & Wang, X. (2024). Why do undervalued firms repurchase shares? Evidence based on the market-timing effect in China. *Global Finance Journal*, 59, 100926. https://doi.org/10.1016/j.gfj.2023.100926

Margaritis, D., & Psillaki, M. (2010). Capital Structure, equity ownership and firm performance. *Journal of Banking & Finance*, 34(3), 621–632. https://doi.org/10.1016/j.jbankfin.2009.08.023

Matias Gama, A. P., & Manuel Mendes Galvão, J. (2012). Performance, valuation and capital structure: Survey of family firms. *Corporate Governance: The International Journal of Business in Society*, 12(2), 199–214. https://doi.org/10.1108/14720701211214089

Memon, P. A., Shah Syed, M. M., Ghumro, N. H., & Rus, R. M. (2020). Capital Structure and Adjustment Speed: Evidence From Listed Manufacturing Firms in Indonesia and Malaysia. *Indonesian Capital Market Review*, 11(2). https://doi.org/10.21002/icmr.v11i2.11607

Mukherjee, S., & Mahakud, J. (2010). Dynamic adjustment towards Target Capital Structure: Evidence from Indian companies. *Journal of Advances in Management Research*, 7(2), 250–266. https://doi.org/10.1108/09727981011085020

Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, 13(2), 187–221. https://doi.org/10.1016/0304-405x(84)90023-0

Nur, A. (2024, February 20). Indonesian manufacturing sector outperforms South Korea, Brazil: Insider. *Indonesia Business Post*. https://indonesiabusinesspost.com/insider/indonesian-manufacturing-sector-outperforms-south-korea-brazil/

Onofrei, M., Tudose, M. B., Durdureanu, C., & Anton, S. G. (2015). Determinant factors of firm leverage: An empirical analysis at Iasi County Level. *Procedia Economics and Finance*, 20, 460–466. https://doi.org/10.1016/s2212-5671(15)00097-0

Ozkan, A. (2001). Determinants of capital structure and adjustment to long run target: Evidence from UK company Panel Data. *Journal of Business Finance & Accounting*, 28(1–2), 175–198. https://doi.org/10.1111/1468-5957.00370

Pandey, I. M. M. (2002). Capital Structure and Market Power Interaction: Evidence from Malaysia. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.322700

Pane, Y. Y., & Christanti2, R. (2023). Exploring Family Businesses Succession in Indonesia: The Knowledge Management Lenses. *Jurnal Ilmiah Manajemen*. https://doi.org/https://doi.org/10.56457jimk.v11i1.315

Robiatun, B., & Witiastuti, R. S. (2021). The heterogeneity of speed of adjustment capital structure across industrial sectors. *Management Analysis Journal*, 10(1), 103–114. https://doi.org/10.15294/maj.v10i1.45317

Roodman, D. (2009). How to do xtabond2: An introduction to difference and system GMM in stata. *The Stata Journal: Promoting Communications on Statistics and Stata*, 9(1), 86–136. https://doi.org/10.1177/1536867x0900900106

Ross, S. A. (1977). The determination of financial structure: The incentive-signalling approach. *The Bell Journal of Economics*, 8(1), 23. https://doi.org/10.2307/3003485

Ross, S. A., Westerfield, R. W., Jaffe, J., & Jordan, B. D. (2021). *Corporate finance* (13th ed.). McGraw Hill.

Setia-Atmaja, L. (2008). Internal governance mechanisms, agency problems and family ownership: Evidence from Australia. *Corporate Ownership and Control*, 6(1–3), 385–397. https://doi.org/10.22495/cocv6i1c3p6

SWAOnline. (2013, February 18). Ketika Perusahaan Keluarga Berhadapan "Seven-plus-Seven." swa.co.id. https://swa.co.id/read/51615/ketika-perusahaan-keluarga-berhadapan-seven-plus-seven

T. Lemma, T., & Negash, M. (2014). Determinants of the adjustment speed of capital structure. *Journal of Applied Accounting Research*, 15(1), 64–99. https://doi.org/10.1108/jaar-03-2012-0023

Thomsen, S., Pedersen, T., & Kvist, H. K. (2006). Blockholder ownership: Effects on firm value in market and control based governance systems. *Journal of Corporate Finance*, 12(2), 246–269. https://doi.org/10.1016/j.jcorpfin.2005.03.001

Titman, S., & Wessels, R. (1988). The determinants of Capital Structure Choice. *The Journal of Finance*, 43(1), 1–19. https://doi.org/10.1111/j.1540-6261.1988.tb02585.x

Welch, I. (2004). Capital Structure and Stock Returns. *Journal of Political Economy*, 112(1), 106–132. https://doi.org/10.1086/379933