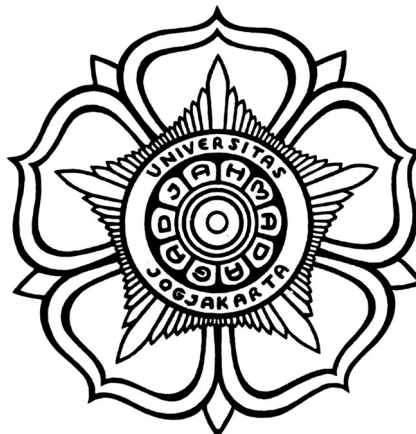


**THE IMPACT OF CAPITAL STRUCTURE TOWARD FIRM
PERFORMANCE: THE MODERATING ROLE OF AGENCY COST IN
THE TECHNOLOGY SECTOR**

THESIS

To fulfill some of the requirements to obtain a Bachelor's degree
Study Program of Management



Presented by

NATANAEL KEVIN ADIYATMA WIBAWA

20/457645/EK/22906

BACHELOR OF MANAGEMENT STUDY PROGRAM

UNIVERSITAS GADJAH MADA

YOGYAKARTA

2025

LEMBAR PENGESAHAN



UNIVERSITAS GADJAH MADA
FAKULTAS EKONOMIKA DAN BISNIS

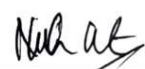

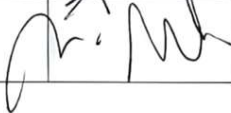
Dengan ini saya menyatakan bahwa tugas akhir dengan judul:

The Impact of Capital Structure Toward Firm Performance: The Moderating Role of Agency Cost in The Technology Sector

Disusun oleh
Natanael Kevin Adiyatma Wibawa
20/457645/EK/22906


Telah saya baca dengan seksama dan telah dinyatakan memenuhi standar ilmiah, baik jangkauan maupun kualitasnya, sebagai skripsi jenjang Pendidikan Sarjana (S1).

Telah diujikan pada 14 Januari 2025

Tim Penguji	Nama Lengkap	Tanda Tangan
Pembimbing	I Wayan Nuka Lantara, M.Si., Ph.D.	
Penguji 1	Bowo Setiyono, S.E., M.Com., Ph.D.	
Penguji 2	Dr. Ina Melati, S.E., M.M.	

Mengetahui,
Wakil Dekan Bidang Akademik dan Kemahasiswaan




Bayu Sulikno, S.E., M.S.M., Ph.D.
NIP 197805202005011002

PERNYATAAN BEBAS PLAGIASI

Saya yang bertanda tangan di bawah ini:

Nama : Natanael Kevin Adiyatma Wibawa

NIM : 20/457645/EK/22906

Tahun terdaftar : 2020

Program studi : Manajemen

Fakultas/Sekolah : Fakultas Bisnis dan Ekonomi

Menyatakan bahwa dalam dokumen ilmiah Tugas Akhir/Skripsi/Tesis/Disertasi* ini tidak terdapat bagian dari karya ilmiah lain yang telah diajukan untuk memperoleh gelar akademik di suatu Lembaga Pendidikan Tinggi, dan juga tidak terdapat karya atau pendapat yang pernah ditulis atau diterbitkan oleh orang/Lembaga lain, kecuali yang secara tertulis disitasi dalam dokumen ini dan disebutkan sumbernya secara lengkap dalam daftar Pustaka.

Dengan demikian saya menyatakan bahwa dokumen ilmiah ini bebas dari unsur - unsur plagiasi dan apabila dokumen ilmiah Tugas Akhir/Skripsi/Tesis/Disertasi* ini di kemudian hari terbukti merupakab plagiasi dari hasil karya penulis lain dan/atau dengan sengaja mengajukan karya atau pendapat yang merupakan hasil karya penulis lain, maka penulis bersedia menerima sanksi akademik dan/atau sanksi hukum yang berlaku.

Yogyakarta, 21 Januari 2025



Natanael Kevin Adiyatma Wibawa

20/457645/EK/22906



FOREWORD

Praise be to the presence of God Almighty, for His blessings and mercy, the author was able to complete the thesis titled "The Relationship between Capital Structure and Firm Performance: The Moderating Role of Agency Cost in the Technology Sector". This thesis was prepared as one of the requirements for completing studies in the Undergraduate Program (S1) in Management, Faculty of Economics and Business, Gadjah Mada University.

The author realizes that the process of preparing this thesis is not free from various challenges. Fortunately, with support and guidance from various parties, these challenges were able to be overcome. Thus, the author would like to express his deepest thanks to:

1. God Almighty for all His grace and blessings in the process of preparing this thesis.
2. Both parents, Mr. Agustinus Agung Wibowo and Ms. Xaveria Lisa Kristianti, who always provide moral and material support, as well as continuous prayers.
3. Mr. I Wayan Nuka Lantara as the Supervisor who has provided very valuable guidance, direction and input during the process of preparing this thesis.
4. All family, friends and colleagues who always provide support and encouragement, as well as share experiences and knowledge.

The author hopes that this thesis can make a positive contribution to the development of science, especially in the field of financial management, and can be useful for parties in need. The author is also open to constructive criticism and suggestions for future improvements.

Yogyakarta, 23 Desember 2024

Natanael Kevin Adiyatma Wibawa

TABLE OF CONTENTS

COVER PAGE.....	i
LEMBAR PENGESAHAN	ii
PERNYATAAN BEBAS PLAGIASI	iii
FOREWORD	iv
TABLE OF CONTENTS.....	v
LIST OF TABLES	ix
LIST OF FIGURES	x
APPENDICES LIST	xi
ABSTRACT.....	xii
<i>ABSTRAK</i>	xiii
CHAPTER I INTRODUCTION	1
I.1. Background.....	1
I.2. Problem Formulation	4
I.3. Research Questions.....	5
I.4. Research Objective	6
I.5. Research Benefits	6
I.5.1. Theoretical Benefits.....	6
I.5.2. Practical Benefits	7
I.6. Scope and Limitations	7
CHAPTER II THEORETICAL BASIS	8
II.1. Basic Theoretical Content	8
II.1.1. Capital Structure.....	8
II.1.2. Agency Cost	9
II.1.3 Firm Performance.....	10
II.2. Hypothesis	11
Chapter III Research Methodology	14
III.1. Research Design.....	14
III.2. Population	14
III.3. Research Data.....	15
III.4. Data Collection Techniques	16
III.5. Operational Definition	16

III.5.1. Independent Variables.....	16
III.5.2. Dependent Variables	16
III.5.3. Control Variable.....	17
III.5.4. Moderating Variable	18
III.6. Hypothesis Testing Model	18
III.7. Data Analysis Techniques.....	20
III.7.1. Normality Test	20
III.7.2. Heteroscedasticity Test	20
III.7.3. Multicollinearity Test.....	21
III.7.4. Autocorrelation Test.....	21
III.7.5. Panel Data Regression Model	21
III.7.6. Model Selection Tests	22
III.7.7. Perform a Panel Unit Root Test	23
III.7.8. Robust Standard Error.....	24
Chapter IV RESULT AND DISCUSSION.....	25
IV.1. Descriptive Statistic	25
IV.2. Selection of Research Model	27
IV.2.1. Chow Test	28
IV.2.2. Breusch-Pagan Lagrange-Multiplier Test.....	29
IV.2.2. Hausman Test.....	30
IV.3. Classical Assumption Test.....	32
IV.3.1. Normality Test	32
IV.3.2. Heteroscedasticity Test	33
IV.3.3. Multicollinearity Test.....	34
IV.3.4. Autocorrelation Test	36
IV.4. Panel Unit Root Test.....	37
IV.5. Regression Results	38
IV.5.1. Hypothesis 1a (ROA without moderation)	39
IV.5.2. Hypothesis 1b (ROA without moderation).....	40
IV.5.3. Hypothesis 2a (Tobin's Q without moderation)	40
IV.5.4. Hypothesis 2b (Tobin's Q without moderation).....	41
IV.5.5. Hypothesis 3a (EPS without moderation).....	41

IV.5.6. Hypothesis 3b (EPS without moderation)	42
IV.5.7. Hypothesis 4a (ROA with moderation)	42
IV.5.8. Hypothesis 4b (ROA with moderation)	43
IV.5.9. Hypothesis 5a (Tobin's Q with Moderation)	43
IV.5.10. Hypothesis 5b (Tobin's Q with Moderation)	44
IV.5.11. Hypothesis 6a (EPS with Moderation)	44
IV.5.12. Hypothesis 6b (EPS with Moderation)	45
IV.6. Research Discussion	45
Impact of Debt-to-Assets Ratio (DTA) on ROA	45
Impact of Debt-to-Market Capitalization Ratio (DTMC) on ROA	45
Moderating Role of Asset Utilization Ratio (AUR) on DTA and ROA	46
Moderating Role of Asset Utilization Ratio (AUR) on DTMC and ROA....	46
Impact of DTA on Tobin's Q	46
Impact of DTMC on Tobin's Q	47
Moderating Role of AUR on DTA and Tobin's Q	47
Moderating Role of AUR on DTMC and Tobin's Q	47
Impact of DTA on EPS	47
Impact of DTMC on EPS	48
Moderating Role of AUR on DTA and EPS	48
Moderating Role of AUR on DTMC and EPS	48
Chapter V Conclusion	49
V.1. Conclusion	49
V.2. Limitations	49
V.3. Implications and Suggestions	50
BIBLIOGRAPHY	52
APPENDICES	56
Appendix 1: List of Companies used as Samples	56
Appendix 2: Descriptive Statistics Results in Stata	57
Appendix 3: Regression Results in Stata	57
Panel Data Regression without Moderation	57
Panel Data Regression without Moderation	59
Chow Test without Moderation	61

Chow Test with Moderation	63
Breusch-Pagan Langrange-Multiplier Test Without Moderation	67
Breusch-Pagan Langrange-Multiplier Test With Moderation	68
Hausman Test without Moderation.....	70
Hausman Test With Moderation	72
Normality Test without Moderation	74
Normality Test with Moderation.....	75
Heteroscedasticity Test Without Moderation.....	76
Heteroscedasticity Test With Moderation.....	77
Multicollinearity Test without Moderation.....	78
Multicollinearity Test with Moderation	79
Autocorrelation Test without Moderation.....	80
Autocorrelation Test with Moderation.....	81
Panel Fixed-Effects Regression Results with Robust Standard Errors Without Moderation	82
Panel Fixed-Effects Regression Results with Robust Standard Errors With Moderation	85

LIST OF TABLES

Table 1 Descriptive Statistic	25
Table 2 Chow Test	28
Table 3 Breusch-Pagan LM	29
Table 4 Hausman Test.....	31
Table 5 Normality Test	32
Table 6 Heteroscedasticity Test	33
Table 7 Multicollinearity Test.....	35
Table 8 Autocorrelation Test	36
Table 9 Panel Fixed-Effects Regression Results with Robust Standard Errors....	39
Table 10 Hypothesis Results.....	48

LIST OF FIGURES

Figure 1 Proportion of Technology Companies on the IDX in 2024.....	1
Figure 2 ICT Market Size	2
Figure 3 Model Illustration	11

APPENDICES LIST

Appendix 1 List of Companies used as Samples	56
Appendix 2 Descriptive Statistics Results in STATA	57
Appendix 3 Regression Results in Stata	57

ABSTRACT

This study examines the impact of capital structure on firm performance in Indonesia's technology sector, focusing on the moderating role of agency cost. Using panel data from 28 listed technology companies (2018–2023), the analysis explores how Debt-to-Assets Ratio (DTA) and Debt-to-Market Capitalization Ratio (DTMC) affect Return on Assets (ROA), Tobin's Q, and Earnings Per Share (EPS). Results show that DTA negatively impacts ROA, while DTMC positively affects it. However, DTMC negatively influences Tobin's Q and EPS. Agency cost, measured by Asset Utilization Ratio (AUR), significantly moderates the relationship between capital structure and ROA and Tobin's Q but not EPS. The findings emphasize the importance of balancing leverage and operational efficiency to optimize firm performance.

Keywords: Capital Structure, Agency Cost, Firm Performance, Technology Sector

Supervisor : I Wayan Nuka Lantara

ABSTRAK

Studi ini menguji dampak struktur modal terhadap kinerja perusahaan di sektor teknologi Indonesia, dengan fokus pada peran moderasi biaya keagenan. Dengan menggunakan data panel dari 28 perusahaan teknologi yang terdaftar (2018–2023), analisis ini mengeksplorasi bagaimana Debt-to-Assets Ratio (DTA) dan Debt-to-Market Capitalization Ratio (DTMC) mempengaruhi Return on Assets (ROA), Tobin's Q, dan Laba Per Saham (EPS). Hasil penelitian menunjukkan bahwa DTA berdampak negatif terhadap ROA, sedangkan DTMC berpengaruh positif. Namun, DTMC berpengaruh negatif terhadap Tobin's Q dan EPS. Biaya agensi, diukur dengan Asset Utilization Ratio (AUR), secara signifikan memoderasi hubungan antara struktur modal dan ROA dan Tobin's Q tetapi tidak dengan EPS. Temuan ini menekankan pentingnya menyeimbangkan leverage dan efisiensi operasional untuk mengoptimalkan kinerja perusahaan.

Kata kunci: Struktur Modal, Biaya Agensi, Kinerja Perusahaan, Sektor Teknologi

Supervisor : I Wayan Nuka Lantara

CHAPTER I

INTRODUCTION

I.1. Background

The choice of capital structure is one of the most critical decisions that a firm must make, as it directly impacts its performance, risk profile, and overall value. In modern financial theory, understanding the how to balance the mix of debt and equity is vital for firm survival and growth. However, the relation between capital structure and firm performance is influenced by several factors, one of which is agency cost, which have been found to significantly moderate and mediate the capital structure-firm performance nexus (Ronoowah & Seetanah, 2024; Sdiq & Abdullah, 2022). Agency cost exist from the conflicts of interest between managers (agents) and shareholders (principals), often resulting in inefficiencies that can undermine firm value. Interestingly, increasing debt levels can keep agency costs suppressed and enhance firm performance (Amanj Mohamed Ahmed et al., 2023). This makes it essential to study the role of agency costs as a moderating factor when analysing the impact of capital structure on firm performance.

The technology sector and its industry, characterized by rapid growth, high levels of innovation, and varied financing needs, offers a unique context for this study. A 2023 report from the Indonesia Stock Exchange (IDX) reveals that 47 technology companies are currently listed under the industry sector classification, collectively contributing to Indonesia's digital economy growth. As shown in Figure 1 here, technology companies represent approximately 5% of all listed firms on the IDX, highlighting their niche but rapidly growing contribution to the economy.

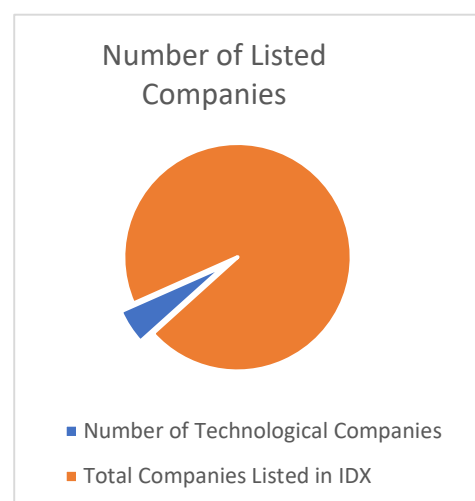


Figure 1 Proportion of Technology Companies on the IDX in 2024

Recent data highlights the rapid expansion of Indonesia's Information and Communication Technology (ICT) sector, underscoring its importance to the nation's economy. The Indonesian ICT market is projected to reach USD 45.20



Figure 2 ICT Market Size

billion in 2024 and is expected to grow at a compound annual growth rate (CAGR) of 8.20%, reaching USD 67.56 billion by 2029.

This remarkable growth reflects the increasing reliance on digital technologies and innovation across industries, further amplifying the role of technology firms in driving economic development. Such expansion reinforces the necessity of examining how capital structure decisions impact firm performance, particularly in this fast-evolving sector.

Unlike firms in traditional industries, technology companies often require substantial capital for research and development (R&D), leading them to adopt diverse capital structures at different stages of their growth. In the early stages, Tech firms tend to use equity financing more as a source of fund due to higher information asymmetry and growth opportunities (Castro et al., 2015). As firms mature, they gradually substitute equity with debt (Schultz, 2011). This is further supported with previous research that state a nonlinear relationship exists between R&D intensity and debt usage where firms with low R&D, in this case companies in the mature stage (who tend to have lower needs to do more than the necessary R&D compared to startups), use more debt while debt decreases as R&D intensity increases (Aghion et al., 2004).

Moreover, the innovation-driven nature of the technology sector amplifies agency costs. Managers in tech firms, incentivized by potential high rewards from innovation, may take on excessive risk or fail to align their decisions with shareholder interests, especially when faced with asymmetric information. Then, Canarella & Miller (2019) find a U-shaped relationship between agency costs and both firm size and R&D activity in ICT (Information and Communication