CHAPTER 1

INTRODUCTION

1.1. Introduction

A key indicator of a business's financial health is profitability, which shows how well it can produce returns for its stakeholders. A variety of internal and external factors impact profitability in the highly competitive and constantly evolving business world of today. For firms across various industries, understanding these determinants is crucial for optimizing operations, improving financial performance, and sustaining long-term growth (Goddard et al., 2005).

Profitability, commonly measured by Return on Assets (ROA), Return on Equity (ROE), and profit margins, serves as a vital indicator of a company's financial health. The study by Goddard et al. (2005) examines the drivers of profitability in the manufacturing and service sectors of Europe and emphasizes how variables like firm size, market share, and liquidity impact profitability. They discovered that while businesses with greater liquidity are typically more profitable, larger businesses typically see a decline in profitability. Furthermore, there is a positive correlation between market share and profitability, especially in the manufacturing industry. (Goddard et al., 2005).

This study explores factors influencing profitability, focusing on company age, liquidity, labor costs, market concentration, capital intensity, GDP growth, and inflation. Over the past decade (2014-2023), companies have faced significant economic shifts, including fluctuating inflation, GDP growth, and rising costs. Understanding how these factors impact profitability is crucial for developing effective strategies. To remain profitable, businesses must proactively adapt their operations and strategies to these changes (PwC Indonesia, 2022).

Although prior studies have frequently concentrated on firm-specific factors like size and age, this study adopts a broader perspective by incorporating macroeconomic variables such as GDP growth and inflation into the analysis (Majumdar, 1997). This approach provides a more comprehensive understanding of profitability by considering external factors that influence firm performance. Additionally, the inclusion of market concentration, measured using the Herfindahl–Hirschman Index, enables an assessment of how competitive pressures within various industries affect profitability (Hill et al., 2018).

To address the complexities in predicting profitability, this study will leverage advanced machine learning techniques, specifically Random Forest and XGBoost models, to examine the connections between profitability and the factors that have been identified. These models are known for their ability to handle large datasets and capture non-linear relationships, making them suitable for this research (Breiman, 2001; Chen & Guestrin, 2016). The use of machine learning will enable a more nuanced understanding of how different factors contribute to profitability, providing a robust analytical framework for decision-making in dynamic business environments.

1.2. Research Objectives

The following are the primary objectives of this study:

1. Analyze how company age affects profitability.
2. Analyze the impact of liquidity on profitability.
3. Analyze how labor costs influence profitability.

4. Analyze the effect of market concentration on profitability.
5. Analyze how capital intensity affects profitability.
6. Analyze the influence of inflation on profitability.
7. Analyze the effect of GDP growth on profitability.

1.3. Research Questions

This research seeks to identify and analyze the key determinants of profitability for the companies in Indonesia.

1. Does company age affect profitability?
2. Does liquidity affect profitability?
3. Do labor costs affect profitability?
4. Does market concentration affect profitability?
5. Does capital intensity affect profitability?
6. Does inflation affect profitability?
7. Does GDP growth affect profitability?

These questions are critical for understanding the dynamics of profitability of the company and for developing strategies that can help companies improve their financial performance.

1.4. Research Beneficiary

This research is expected to benefit the following groups:

1. **Business Leaders and Managers**: This study offers valuable insights for leaders across industries. Understanding factors like company age, liquidity, labor costs, and external elements such as market concentration and economic

conditions can help businesses optimize operations, adapt to changes, and navigate economic fluctuations effectively.

2. **Policymakers and Regulators**: Policymakers can use the study's findings as a guide in formulating regulations that foster a more competitive and efficient market environment. Understanding how market concentration and macroeconomic factors affect profitability will help in crafting policies that ensure fair competition and promote long-term economic stability.
3. **Investors and Financial Analysts**: This research provides valuable insights into how various financial and macroeconomic indicators influence company profitability. Investors and analysts can use these findings to assess the financial health of firms and make more informed investment decisions.
4. **Academics and Researchers**: The comprehensive analysis of firm-specific and macroeconomic factors affecting profitability provides a foundation for further research. Future studies can build on the findings of this research to explore industry-specific trends or expand the analysis to other regions.

1.5. Thesis Structure

The thesis is structured as follows:

1. **CHAPTER 1**: Introduction: The context for the entire thesis is established in this chapter. It begins by introducing the background of the study, highlighting the importance of understanding profitability determinants for companies. The chapter then presents the problem statement, identifying the gaps in the current literature and justifying the need for this research. It also outlines the research objectives, research questions, and the beneficiaries of

the study. The chapter concludes by providing an overview of the thesis structure.

2. **CHAPTER 2:** Literature Review – This chapter contains an in-depth review of the existing literature on the determinants of firm profitability. It discusses key profitability factors such as company age, liquidity, labor costs, market concentration, capital intensity, GDP growth, and inflation. Each determinant is carefully examined considering relevant theoretical frameworks and empirical evidence. This chapter also establishes the foundation for the theoretical framework used in the study, linking previous research findings with the research questions and hypotheses.
3. **CHAPTER 3:** Research Methodology - This chapter elaborates on the research design and methodology employed to achieve the study's objectives. It provides details about the data sources, including the scope and characteristics of the data used for analysis. The chapter focuses on the estimation approach, emphasizing the Generalized Method of Moments (GMM), with subsections discussing Difference GMM, System GMM, and One-Step and Two-Step GMM methods. Additionally, it includes descriptions of diagnostic tests such as Hansen's J-Test, Arellano-Bond Test, and Wald Test to ensure model robustness. Finally, techniques for measuring variable importance, including Random Forest and Gradient Boosting, are presented to rank the influence of each determinant on profitability.
4. **CHAPTER 4:** Result and Discussion – This chapter presents the results and discussion of the study. It begins with descriptive statistics to provide an overview of key variables. The GMM estimation results, including System

GMM and Difference GMM models, are analyzed to examine the dynamic relationships between profitability and independent variables. Diagnostic tests, including the Hansen, Arellano–Bond, and Wald tests, validate the model's robustness. Additionally, variable importance is assessed using Random Forest and XGBoost models, highlighting the most influential factors and improvements achieved through model adjustments.

5. **CHAPTER 5:** Conclusion and Suggestions: This chapter summarizes the study's findings on the determinants of profitability among Indonesian companies, specifically the effects of company age, labor costs, capital intensity, market concentration, GDP growth, and inflation on ROA and ROE. It emphasizes the practical implications for companies to manage labor costs, optimize capital investments, and adapt to macroeconomic conditions while highlighting the challenges of aging firms and the role of market dynamics. The chapter concludes with recommendations for companies to adopt strategic measures for sustained profitability and suggests future research on sector-specific drivers, the inclusion of additional variables, and the interactions among profitability determinants to enhance understanding across different industries and economic conditions.