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ISTANBUL GELISIM UNIVERSITY
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Department of Economics and Finance

**EVALUATION OF THE RELATIONSHIP BETWEEN
WORKING CAPITAL MANAGEMENT AND FINANCIAL
PERFORMANCE IN BUSINESS WITH PANEL
REGRESSION ANALYSIS: AN APPLICATION ON BIST 100
INDEX**

Master Thesis

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: Bu çalışma, bir şirketin işletme sermayesi yönetimi uygulamaları ve bunların finansal başarısını nasıl etkilediği konusunda fikir vermektedir. Çalışma, BIST 100 endeksinde. Listelenen şirketleri analiz etmek için panel regresyon analizini kullanmaktadır. Bu işletmelerdeki işletme sermayesi yönetimi ile finansal performans arasındaki ilişkiyi anlamak amaçlanmaktadır. Bu çalışma, sorunsuz operasyonları garantilemek için işletme sermayesi yönetiminin bir şirketin cari varlıklarını ve yükümlülüklerini verimli bir şekilde yönetmeyi gerektirdiğini göstermektedir. Bu ilişkiyi panel regresyon analizi ile analiz ederek, işletme sermayesi yönetimindeki farklı stratejilerin bu işletmelerin finansal performansını nasıl etkilediğini belirlemeyi amaçlamaktadır.

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DECLARATION

I affirm that throughout the writing of this thesis, I have stuck to the scientific ethical guidelines. Whenever I used other people's work, proper citations were provided according to the scientific norms. I can assure, no data was falsified in this thesis, and no part of this thesis has been summited to this university or other university as a separate thesis.

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THE DIRECTORATE OF INSTITUTE OF GRADUATE STUDIES

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SUMMARY

This study sheds insight into a company's working capital management practices and how they affect its financial success. The study uses panel regression analysis to analyze companies listed on the BIST 100 index. It aims to understand the relationship between working capital management and financial performance within these businesses. This study demonstrates that to guarantee seamless operations, working capital management entails efficiently managing a company's current assets and obligations. By analyzing this relationship with panel regression analysis, it aimed to identify how different strategies in working capital management impact the financial performance of these businesses.

Key Words: Working capital management, profitability, firm performance.

ÖZET

Bu çalışma, bir şirketin işletme sermayesi yönetimi uygulamaları ve bunların finansal başarısını nasıl etkilediği konusunda fikir vermektedir. Çalışma, BIST 100 endeksinde. Listelenen şirketleri analiz etmek için panel regresyon analizini kullanmaktadır. Bu işletmelerdeki işletme sermayesi yönetimi ile finansal performans arasındaki ilişkiyi anlamak amaçlanmaktadır. Bu çalışma, sorunsuz operasyonları garantilemek için işletme sermayesi yönetiminin bir şirketin cari varlıklarını ve yükümlülüklerini verimli bir şekilde yönetmeyi gerektirdiğini göstermektedir. Bu ilişkiyi panel regresyon analizi ile analiz ederek, işletme sermayesi yönetimindeki farklı stratejilerin bu işletmelerin finansal performansını nasıl etkilediğini belirlemeyi amaçlamaktadır.

Anahtar Kelimeler: İşletme sermayesi yönetimi, karlılık, şirket performansı.

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ABBREVIATIONS

CCC	:	Cash Conversion Cycle
DIO	:	Days Inventory Outstanding
DP0	:	Days Payable Outstanding
DSO	:	Days Sales Outstanding
EBIT	:	Earnings Before Interest and Taxes
FFC	:	Fragile Four Countries
GDP	:	Gross Domestic Product
NPM	:	Net Profit Margin
ROA	:	Return on Assets
ROE	:	Return on Equity
VIF	:	Variance Inflation Factors
WCM	:	Working Capital Management

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PREFACE

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INTRODUCTION

Working capital serves as a financial measure, that evaluates the amount of funds available for the day-to-day operations of an organization, or government agency. If a business's liability is greater than its current assets, the business may encounter difficulties in promptly repaying its creditors. The most unfavorable outcome is bankruptcy. If the working capital ratio decreases consistently over a significant length of time, it may indicate a potential issue that requires additional investigation (Emery, 1984). Since current assets make up a sizable amount of a company's assets. Good working capital management is important, especially for tea companies. (Horne and Wachowitz, 2000).

This has an explicitly significant effect on an organization's financial capability to meet a short-term obligation of companies. The equilibrium between liquidity and profitability is vital as neglecting WCM can lead to business failure (Kargar and Blumenthal, 1994). The importance of efficiency in managing working capital is undeniable (Filbeck and Kruger, 2005).

It is a vital resource for any economic entity, and its management is regarded as one of the most vital responsibilities of corporate management. Every business, regardless of whether it is profit-oriented or not profit-oriented and whether big or small.

It sheds light into a company working capital management practices and how they affect its financial performance. It uses panel regression analysis to analyze companies that are on the BIST 100 index list.

If a business liability is greater than its current assets, the business may find it difficult in repaying its creditors, which may result to bankruptcy. Working capital management is very vital in business financial performance as it has to with managing the short-term assets and liabilities to ensure an efficient liquidity. An effective working capital management helps the company to meet its operational expenses and short-term debts, which directly affect cash flow, profitability, and overall financial wellbeing of the business. When a business efficiently manages its inventory, accounts receivable and account payable, it can optimize cash flow.

CHAPTER ONE

BACKGROUND

1.1 Background Of Study

Working capital management in a business is a crucial factor in determining a company's capacity to make money, maintain its financial stability, and have liquid assets available (Mukhopadhy, 2004). Thus, evaluating an organization's liquidity and profitability requires effective working capital management (Eljelly, 2004). Working capital management involves the determination of the appropriate number of current assets and making decisions on how to maintain a liquid structure in the company (Akgun and Karatas, 2024). As the amount of a company's liquid assets increases, cash shortage risk decreases, assuming all other factors remain constant (Harsono, 2024).

Each element of working capital, such as cash, quick assets, outstanding invoices, and stock management significantly impacts the growth of a corporation (Olairo et al., 2024). Effective management of working capital is crucial for generating shareholder value which leads to an evaluation of the connection between profitability and working capital (Shin and Soenen, 1998; Uyar, 2009; Samiloglu and Demirgunes, 2008; Vishnani and Shah, 2007; Smith et al.,1997).

Nevertheless, some existing companies focus on examining the relationship specifically the connection between working capital management and financial gain in the industries, firms, companies, and enterprises on the national stocks (Gatura and Cheluget, 2012). However, the other companies that concentrate on the connection between profit gain and financial performance are limited for example 30 companies registered on the NSE Nairobi security exchange) that is based on the theory that failed to consider some individual features of an organization, companies that have distinct attributes (Habib and Dalwai, 2024).

Additionally, the disconnection of the features between working capital management and financial performance creates an overlooked sector-specific investigation of the WCM performance of enterprises and companies (Santhi et al., 2024). For instance, the lack of sufficient evidence regarding the financial performance and working capital management

found in some of the tea firms in Kenya has created a strong incentive to thoroughly examine the connection between WCM and a business's financial performance, specifically to tea business companies (Yegon, 2024). Hence present theory aims to check how working capital performance affects the financial performance of the companies regarding the firms, enterprises, and companies in the market structure (Kumar et al., 2024).

Therefore, the profitability of tea companies that are on the Nairobi Stock Exchange list gives us more lessons on implementing the connections between working capital and financial performance (Tora, 2024). Additionally, the theory sought to know key areas that impact the effectiveness of working capital management related to investment and finance strategies regarding tea companies' capital. Further, there is an example of six companies that are registered in the Nairobi Stock Exchange. The theory covers the period from 2005 to 2012, as mentioned by Deloof in 2003 WCM in Kenya demonstrated the significance of working capital on financial performance (Wanzala and Obokoh, 2024).

An essential aspect of comprehending the overall profitability and sustainability of businesses is to assess the relationship involving WCM and financial performance. This evaluation helps in understanding the influence of effectively managing the current assets and liabilities on the overall profitability and sustainability of the organization. The significance of this evaluation is heightened when employing modern statistical techniques, such as panel regression analysis, to analyze a renowned stock index like the BIST 100. The BIST 100 index comprises the leading organization on the list of Istanbul Stock Exchange list (Aktas and Petmezas, 2015).

To maximize efficiency in operation and permit the fulfillment of short-term responsibilities, WCM involves the effective administration of a business's short-term assets and liabilities. Some elements of operating capital are inventory, outstanding invoices, and current liabilities. Efficient administration of all these elements guarantees that a corporation has an adequate amount of liquid assets to operate smoothly, without excessively allocating funds to unproductive resources (Tasie et al., 2022). Financial success, however, is commonly assessed by indicators like return on assets return on equity, and profit margins. These indicators give good information on the efficient use of a business's assets to gain profit and deliver value to its shareholders. (Deloof, 2003).

Panel regression is an econometric method that analyzes data that changes over time and across various entities. It is applied to evaluate the firms on the BIST 100 index list. This technique effectively reduces the effect of individual differences and leads to more precise estimation by involving both the time series data and cross-sectional data (Reyad et al., 2024).

Through the panel regression technique on the BIST 100 index, the researchers can have the capacity to analyze the effect of proxies of WCM such as CCC, the outstanding invoice period, and inventory time, on financial performance firms. The CCC indicator is the significant proxy variable that is used to measure the required time which is needed to change inventory time and all assets into cash inflow.

The panel regression technique helps the researcher to account for unobserved heterogeneity such as industry-specific features and company-specific traits, that had a significant effect on the association related to WCM and financial performance (Mack et al., 2024). For instance, organizations in different industries may have varied demands for working capital as well as benchmark strategies for financial performance. Panel regression helps the utilization of the random effect or fixed effects to account for those variations, further leads more resilient and dependable outcomes (Bell and Jones, 2015).

The empirical analysis indicates the relationship between the effective management of operational capita and the enhancement of financial growth. The empirical analysis indicates that generally companies that have quicker conventional cash flows demonstrate higher profitability and effective liquidity positions. The reasons for this determination are, that the efficiency of the operational capital diminishes as the necessary cost for the short run term financing and preventing the problem of the liquidity problems (Aktas and Petmezas, 2015).

Further, panel regression analysis leads to clarifying the effect of aggregated economic growth variables such as inflation rate, consumption, interest rate, and government spending, and determinants of the relationship between the WCM and financial performance. However, this relationship is pertinent for organizations on BIST 100, as the rapport functions within the changing economic landscape. This relationship is specifically on the BIST 100 list that the function within the comprehending influence of the macroeconomic factors on WCM might assist organizations in creating more robust financial plans (Aregbeyen, 2020).

Generally, conducting a panel regression investigation on the BIST 100 index concerns us to check the relationship between the WCM and financial performance. The investigation offers insight into valuables that depict the existing companies can effectively manage the short-term assets and liabilities as the means to enhance the profitability at the long-term viability. Through using the panel regression, the researchers can effectively consider personal and temporal fluctuations, in a way that the regression provides insight information about the crucial financial relationship. Consequently, this can be represented and enhance financial decision-making and bolster the general health and competitiveness of the industries in the BIST 100 index (Aregbeyen, 2020).

1.2 Statement of the Problem

Effective WCM is an essential element of the organization's finances since it significantly impacts the company's profit gain, liquidity, and general financial well-being. Not only, does the WCM have a good relationship with financial outputs but also the WCM straight forward and can have great variations depending on the condition of companies and economic solutions.

The managers can try to maximize the utility of the working capital policies as a means of increasing financial performance. These conditions perceive the serious challenges that it is imperative to gain insight, and understanding of this connection using rigorous analytical techniques such as panel regression analysis in the context of the BIST 100 index which is a representation of the top companies on the Istanbul Stock Exchange list.

The inclusion of the different variables in the analysis of the WCM and Financial performance varies according to the major challenges of assessing the issue of the relationship between the two variables. The business that involves the BIST 100 index deals with various industries and each of them engages in different working capital requirements as well as financial dynamics. In contrast to services-based business, which includes little inventory time but huge economic receivable, manufacturing industries. For instance, usually, these companies have huge inventories and lengthy cash cycle conventions. If the analytical process fails to consider these variations, it becomes very difficult to make generalizations regarding how WCM impacts financial performance.

Further, the research perceived the complicated procedure due to the climate in Turkey that has been caused due to the higher rate of inflation and exchange rate volatility that leads to the periodic instability. The cost of capital, interest rate, and inflation rate have been affected by the macroeconomic instability, all these factors in turn have a huge impact on the working capital management that involves the short-term borrowing and maintaining the inventory cost. However, the method strategies can have long-term business impacts especially, in the context of administrator operational capital can influence the huge range of long-term implications on their financial benefit in such an unpredictable economic environment. This just calls for an analytical technique strategy that considers temporary fluctuation in addition to catching up on the cross-sectional variations among the organizations.

The inter-dependence of the variables in the financial performance and working performance management creates another issue that the higher financial performance can originate from the effective WCM, however, it is feasible that the business with effective financial results has greater influence in resources and implies strong WCM techniques. If the causality of the bidirectional relationship is not well addressed it may cause the real nature of the connection and create skewed outcomes. The panel regression offers both the random and fixed effect, but it should be considerable and well-concentrated with the issue of specified and rigorously tested.

The accessibility and dependability of the data create difficulties in processing the data during the analysis phase. However, the analysis phase requires a well concentrated, accurate, and complete facts for financial data processing, yet the variation in accounting procedures, reporting standards, and data accessibility leads to injecting noise, and bias in the analysis phase. Thus, the panel regression analysis relies on the heavenly facts of the data that is dependable, consistent, and similar across industries and time. Therefore, this is a major effort that necessitates rigorous data validation and data collecting procedures implementation.

In general. Serious thought should be considerable and be given to the practical sequences especially, in the analysis's conclusion section. This is because; is so difficult to transform the results of the analytical section that shows the significant relationship between the WCM and financial performance into the implication management methods. Always the

Managers prefer the precise instructions that indicate how to modify working capital plans in response to the shifting of the market conditions as well as difficult conditions to the working industries platform. Therefore, for the success of this panel regression technique, the revealed findings are not only presented in the statistical meaning but should be practical applicability and well understandable.

In summary, panel regression analysis tackles a complex issue by assessing the correlation involving WCM and financial health on the BIST 100 index. There are many obstacles to overcome, including the variety of businesses, the unstable state of the economy, potential endogeneity, data integrity, and putting research findings into action. To guarantee that the knowledge acquired is correct and useful, addressing these problems calls for a thorough and nuanced strategy. This will eventually help managers optimize operational capital strategies in a way that increases financial performance.

1.3. Objective Of the Study

1. One is to know how operational capital influences the components of financial performance.
2. To Evaluate Sectoral Differences in WCM practices and their Financial Outcomes
3. To Identify Best Practices and Provide Recommendations for Optimizing Working Capital Management to enhance financial health

1.4. Research Questions

1. How do individual operational capital inventory turnover, outstanding invoice period, and account payable period?
2. What are the differences in WCM practices and their effects on financial performance across different sectors within the BIST 100 index?
3. What are the best practices in WCM that can be identified from the top-performing companies in the BIST 100 index?

1.5 Research Hypotheses

- H1A: They are significant positive relationship between efficient inventory turnover and the financial health (ROA)
- H2A: They are significant positive relationship between efficient inventory turnover and financial health (ROE)
- H3A: They are significant positive relationship between efficient inventory turnover and the financial performance (NPM)
- H1B: The time of the outstanding invoice period negatively affects the ROA of firms on the BIST 100 Index
- H2B: The time of the outstanding invoice period negatively affects the ROE of the firms on the BIST 100 index
- H3B: The time of the outstanding invoice period negatively affects the NPM of the firms on the BIST 100 index
- H1C: The time of the account payable cycle negatively affects the ROA of the firm on the BIST 100 Index
- H2C: The time of the outstanding invoice period negatively affects the ROA of the firm is in the BIST 100 index
- H3C: The time of the outstanding invoice negatively affects the NPM of the firm on the BIST 100 Index.
- H1D: The time of the cash conversion cycle negatively affects the ROA of the firm in the BIST 100 Index
- H2D: The time of the cash conversion cycle negatively affects the ROE of firm in the BIST 100 index
- H3D: Conversion cash time cycle is negatively related to the NPM of firms on the BIST 100 Index list

1.6 Contribution of the study

The contribution of this research via its output results is expected to highlight the significant effects of the proxies of working capital management on the financial performance of firms, enterprises, industries, and companies. The study aims to describe the effect of the working capital management policies to ascertain the need for incorporating enhancement of the financial performance that strengthens the values of the firms, industries,

and enterprises in the business platform. Therefore, the following stakeholders will benefit from the contribution of the output results such as cooperate sectors, financing sectors, and academic scholars.

Furthermore, this study uses working capital management as a significant element in cooperate finance. To guarantee operational effectiveness, sustain financial liquidity, boosting profitability which have been included in the inventories, accounts receivable, and accounts payable should be managed effectively. Thus, this study encourages the empirical analysis of how WCM implementation can affect the importance of financial indicators such as ROA, ROE, and NPM, by investigating the rapport between WCM and financial performance. Optimizing the WCM strategies, corporate executives, and financial managers leads to improving the general business performance by creating well-informed decisions.

In addition to that, the study emphasizes the most liquid and biggest companies as have been listed on the Bursa, Istanbul, and the BIST 100 Index which brings a great deal of significance to the Turkish setting. The landscape of the economic perspective of the Turkish functions is vibrant, and diverse offering enterprises both challenges and special opportunities. The report offers context-specific insights that might help Turkish Organizations fine-tune the WCM procedure to better manage the effective local market conditions by investigating data from enterprises on the BIST 100 list. The significance of the study is so wider implementation especially the findings from the research can be generalized to other emerging markets with comparable economic features.

Using the panel regression model analysis, reliable statistics, and reliable method that takes into account both time series and cross-section fluctuations, can be described as another significant feature that has been included in this work. Compared to another regression model this work prefers more work and precise insight procedures that account for unobserved heterogeneity and reflect the dynamicity between WCM and financial performance over time. The approach rigor guarantees the validity and generalization of the study results, in providing effective traditional research in the field of economics and finance.

The research also investigated how the connections between Work capital management and financial performance are being affected by macroeconomic determinants such as GDP growth, inflation rate, and the interest rate. By considering into account the exogenous variables that may affect the corporation's financial decision in the companies. Generally, businesses can improve resilience, and planning strategic skills by adapting and anticipating economic swings that have a better understanding of how macroeconomic variables cooperate with the WCM process.

Lastly, the study offers practical policy recommendations for the policymakers that, other businesses can be implemented into the practices as the means to enhance the financial performance by highlighting and indicating the best practices from the top performing companies in the BEST 100 Index. Nevertheless, the realization of the companies leads to direct company strategy and policy implementations, creating a more competitive business and conducive climate for business undertaking. The policy insight leads to the contribution of policymakers to create a regulatory framework that encourages efficient WCM activities, promoting economic growth and stability of the economy as a whole.

To summarize the significance of theory that contributes to the maximization of the effect of the WCM on financial performance. Also, the methodology applied is contextual and relevant to the Turkish market equilibrium, further, the study encourages the practical implication for the enterprises and policymakers.

1.7 Scope of the Study

To provide the analysis by indicating the relationship between the WCM practices and financial performance in the health major in the Turkish firms, as has been entitled "Evaluation of the relationship between the working capital management and financial performance in the business with Panell regression analysis: An application on BIST 100 Index "was implemented. Limiting the preferred scope of this analysis to the top large and liquid businesses listed on the Borsa Istanbul, the BIST 100 index provides significant, and presentive samples for data analysis as has been extracted from the Turkish corporate sector as a whole.

The main objective of this theory is to check on how the significance of working capital management such as inventory turnover, the attitudes of the accounts receivable, and the finances payable time that impact the financial performance proxies such as profit margin, return on net worth, return on assets. However, the analysis of all the components seeks to deliver the effect of WCM components as the most significant instruments for improving the businesses' financial stability and profitability.

The temporary scope is so broad that including the consideration of the amount of consuming time as well as collecting the panel data intentionally to provide a dynamic analysis and consistent approach. In addition to that, the time frame has been appointed to cover the gap of the economic cycles, guarantee the results into consideration disparate market conditions, and cooperate marketing. The panel regression which accounts for unobserved features of the heterogeneity, and variability, and captures the temporal dynamics of the relationship between applied variables enables an important understanding of how the WCM practices affect financial performance over the period.

Additionally, the study defines the BEST 100 Index very well in a way that it accounts for the sectoral variables in the practices, further, the WCM acknowledgment; and its effect differ throughout the industries. This sectorial investigation interior is to offer the deep investigation that leads the business across a range of industries optimization, also in lighting the WCM strategies in the unique operational and financial environments.

Apart from the investigation of firms and sectors, the research seeks to examine the effect of macroeconomic determinants such as GDP growth, inflation rate, and interest rates. The main purpose is to understand and investigate how external economic agencies affect the efficacy of WCM methods by including these variables. Therefore, the findings provide the effective parameters that influence the elements of the business's financial performance, and wider economic perspective. The investigation from the analysis is restricted to Turkey and examines businesses that are involved on the BIST 100 Index list. However, the significant results should have a wider ramification as have been provided information that applies to other developing markets with compared business and economic settings.

Regarding limitations, this research pertains to the possible restrictions such as data accessibility, the usable of the results beyond the BIST 100 Index, and Turkey's unique economic circumstances throughout the study period. These limitations have been studied

carefully and have been taken into account to ensure that the conclusion of the investigation is trustworthy and well-supported. Conclusions, the scope of this study is broad and diverse and encompasses the important of WCM, sectoral variations, macroeconomic effects, and temporal dynamics. It seeks to offer insightful information for corporate finance study and useful applications in practice, especially in the context of the Turkish market, and maybe expanding to other emerging nations.

1.8. Limitations Of The Study

Although it provides insightful knowledge, the theory's evaluation of the correlation involving WCM and financial health. Businesses with Panel Regression Analysis: An Application on BIST 100 Index" has many drawbacks. Acknowledging these constraints is essential to placing the results in perspective and figuring out how far they can be applied.

The study's emphasis on the BIST 100 index, which represents the biggest and most liquid companies in Borsa Istanbul, is one of its main limitations because it does not fully represent the range of Turkish enterprises. Smaller businesses are not included in this analysis since they could have various working capital management (WCM) procedures and deal with different financial difficulties. The results may not be as applicable to Turkey's larger business environment as they may be due to the focus on huge corporations, especially with regard to small-scale businesses, and medium-sized businesses.

The use of publicly available financial data, which cannot always give a clear view of business working capital management procedures, is another drawback. Since they are difficult to quantify, several qualitative components of WCM like management strategies, internal procedures, and decision-making standards may be disregarded in the analysis. Because WCM focuses primarily on quantitative measurements, this constraint may result in an insufficient knowledge of how WCM impacts financial performance

Even though the study's temporal scope covers a sizable amount of time, certain economic cycles or events that are not entirely typical of all market situations may nevertheless have an impact. Unexpected market shocks, legislative changes, and economic crises can have a vital impact on financial performance and WCM procedures. Should these incidents transpire within the research period, they may distort the outcomes and compromise the validity of the conclusions.

Furthermore, the macroeconomic variables taken into account in the study such as GDP growth, interest rates, and inflation rates are external variables that are subject to significant variation over time and in various circumstances. The study's conclusions about these characteristics could not apply to other economic contexts in the same way, especially in nations with distinct legal or economic systems.

Finally, despite its rigor, the methodological approach has built-in limits. Problems like endogeneity and multicollinearity can still arise. The accuracy and consistency of the estimated correlation involving WCM and financial health may be impacted by these statistical difficulties.

In conclusion, even though the study offers important new understandings of the connection between WCM and financial performance in BIST 100 businesses, readers should carefully evaluate the study's limitations, which include its emphasis on large businesses, reliance on quantitative data, potential for economic biases, and methodological restrictions. Recognizing these restrictions aids in appropriately interpreting the results and directing future studies to fill in these gaps.

1.9. Definitions Of Terms

Working Capital Management (WCM): can be described as the liabilities and business current administration assets that ensure goods and effective operation and sustain enough liquidity to match short-term responsibilities. The term represents the involvement of managing stock, outstanding invoices, and accounts payable (Brealey and Stewart, 2011).

Financial Performance: This term measures the health of a firm in a given period which includes metrics like ROA, ROE, net margin, and earnings before interest and taxes (EBIT). (Eugene et al., 2005).

Panel Regression Analysis: This method involves the use of statistics in analyzing multi-dimensional data involving measurements over time. It allows for controlling individual heterogeneity and capturing the dynamic relationship between variables across different entities. (William and Greene, 2000).

BIST 100 index: This is a benchmark stock market index of the 100 biggest and largest businesses or firms on the list of the Borsa Istanbul, representing a wide range of industries

in the Turkish economy. (Istanbul Stock Exchange, 2023; Borsa Istanbul, 2024)

Inventory Turnover: This is the ratio that shows how often business inventory is sold and replaced over a given period. We can calculate it by dividing the cost of goods sold by the average stock. (Charles T. Horngren and Walter T. Harrison, 2015)

Accounts Receivable Period: Days Sales Outstanding (DSO), another name for the accounts receivable period, is a measurement that quantifies the typical time it takes for a business to get paid following a sale. It is an indicator of the efficiency of the business's credit policies and cash flow management. (Eugene F. Brigham, Jerry J. Weygandt, 2000)

Account Payable Period: this is a metric that shows the number of days it takes a firm to pay its supplier, it shows business efficiency in managing its outgoing payment

Return on Assets (ROA): This shows the lucrativeness of a business about its total assets. It gives information about how effectively management uses firm assets to create earnings and it is calculated by dividing net income by the total assets of the company. (Richard A. Brealey and Stewart C. Myers, 2013)

Return of Equity: This is a measure of the company's financial performance which is computed by the profit relating to shareholder's stake. To get this, you take the net profit and divide it by the total equity held by shareholders. Showing how well the firm's generates earnings through investment.

Net Profit Margin: This measure shows the portion of revenue left as profit after all costs have been removed. It is obtained by dividing net profit by the company's total revenue, showing how effectively a business turns its revenue into profit.

CHAPTER TWO

LITERATURE REVIEW

2.1. Introduction

An application on the BIST 100 index is the subject of this section, which also reviews other similar studies and pertinent literature. The review will be divided into four categories: theoretical framework, empirical, conceptual framework, and introduction. The reviews of related studies conducted by other researchers are also included in this chapter.

2.2. Conceptual Framework

2.2.1. Working Capital Management (WCM)

WCM is very important in corporate finance, it is the administration of an organization's assets and liabilities that are expected which is the management of an organization's short-term assets and liabilities to achieve maximum operational effectiveness and financial stability (Olaiya et al., 2024). WCM's key goal is to keep working capital financed and held at the lowest possible cost while maintaining enough liquidity to meet short-term obligations. In the end, effective WCM contributes to the general financial stability and sustainability of the company by striking a compromise between the objective of optimizing profitability and the requirement for liquidity (Umeorah et al., 2024).

Accounts payable, accounts receivable and inventory management are vital elements of WCM. Maintaining the ideal amount of stock available for customer demand and not going overboard and necessitating additional finance or holding finance or holding costs is the aim of stock management (Ijuwo, 2024). Ways of optimizing stocks are Just in Time, EOQ, and ABC analysis. Stock control lowers the possibility of stockout or overstocking, which has an immediate impact on the cash flow and earnings of the business (Ugrinov et al., 2024).

Prompt collection of payments from clients is a key component of accounts receivable management (Arora et al., 2024). Setting explicit credit standards, running credit checks, sending out invoices on time, and putting in place effective collection processes are all good

tactics in this field (Sipila, 2024). Reducing the day's sales outstanding (DSO) can help businesses with cash flow, bad debt reduction, and liquidity position improvement. Effective accounts receivable management guarantees a business a consistent flow of cash, which is essential for paying short-term debt and supporting ongoing operations (Gill, Biger, & Mathur, 2010).

On the other hand, accounts payable management entails managing a business's responsibilities to its creditors and suppliers strategically (Edunjobi, 2024). This entails settling on advantageous conditions for payments, utilizing early payment savings, and controlling the schedule of payments to maximize cash flow. Maintaining positive connections with suppliers through effective accounts payable management can result in improved credit terms and discounts (Hussain and Puranik, 2024). It also guarantees that the business keeps cash on hand for a longer period, improving liquidity and facilitating improved financial planning (Lubawa and Fuime, 2024).

CCC is a very important measurement of WCM that assesses how businesses transform investment in stock and other resources into cash flows from sales. The Cash Conversion Cycle is determined by deducting account payable turnover from stock and trade receivable periods, because it demonstrates that the firm can transform capital to cash quickly, a shorter CCC indicates superior working capital management, reducing the need for outside finance and boosting profitability (Tago and Ponsian, 2024). Strategic working capital finance management is another aspect of effective WCM (Sanuino et al., 2024).

Businesses must choose the right equilibrium involving working capital and long-term liabilities to meet the requirement of working capital. This choice affects the company's risk profile and cost of capital. While long-term financing, like term loans, gives more stability but at a higher cost, short-term financing solutions, like trade credit and credit lines, are typically less expensive but have a larger risk of liquidity (Nazir and Afza, 2009).

To sum up, WCM play a role in maintaining a business's liquidity, effectiveness, and stability. By effectively managing inventories, accounts payable, and receivable, and working capital financing, businesses may sustain growth and boost profitability. Sustaining a delicate balance involving cash flow and profit gain which is vital for every business's long-term success requires using proper WCM procedures (Ogundare, 2024).

2.2.2. Financial Performance

Financial performance is a measurement of profitability, capacity to produce value for the stockholders, and overall health. It includes a range of measurements and indicators that, when taken as a whole, offer information about how effectively an organization is using its resources, making money, and keeping expenses under control. When evaluating the well-being of a company's finances and the potential for long-term expansion, profitability, liquidity, solvency, and efficiency are all critical elements of financial success (Mirzakhmedovia, 2024).

As it shows the strength of the company to turn a profit out of its operations, profitability is frequently the most notable indication of financial performance. Profit margins, net income, Equity return, and assets return are examples of common profit gain indicators. Based on sales, assets, and shareholder equity, the measurement checks the wellness of an organization that uses its assets to produce earnings. Strong operational performance and effective management are prerequisites for drawing in investors and obtaining funding for expansion plans, and these qualities are demonstrated by high profitability (Gill, Biger and Mathur, 2010).

Liquidity measures a business's strength in settling a short-term debt without needing to seek more capital, which is another essential element of financial performance. Two crucial liquidity ratios that compare a company's short-term assets and short-term liabilities are the working capital ratio and quick ratio. High liquidity enables a business to easily execute operations, handle unforeseen costs, and pay off debt. Maintaining an adequate level of liquidity is essential for sustaining business operations, especially during uncertain economic or volatile market periods (Zaman, 2024).

A business's ability to fulfill its long-term commitments and carry on with operations indefinitely is assessed by its solvency, which is centered on long-term financial stability. Examples of solvency ratios that shed insight on the debt of the firm and the ability of servicing the debt-to-equity and interest coverage ratios. A corporation with high solvency has a solid financial base, which lowers the chance of bankruptcy and improves the company's capacity to invest in long-term growth prospects (Shem and Mupa, 2024).

Efficiency measures assess how well a business utilizes its supplies and the running of its operation, important efficiency ratios. Which is stock turnover, assets utilization, and accounts receivable turnover, statistics show the wellness of a company, using its assets to increase income and optimize internal processes, increased efficiency usually results in lower costs, higher margins, and better overall financial performance (Nazir and Afza, 2009).

In addition to these traditional metrics, cash flow analysis is another way to assess financial success. Cash flow statements provide a detailed picture of an organization's cash inflows and outflows from investing, financing, and operating activities. While positive cash flow from operations shows that a business is producing enough money to sustain its running, negative cash flow from operations may indicate operational inefficiency or potential liquidity issues (Rompotis, 2024).

Financial performance is a multifaceted notion that necessitates an all-encompassing evaluation method. Assessing not only individual financial metrics but also understanding their interrelationships is necessary to achieve a comprehensive view of the financial condition of the business. Effective financial performance is an indicator of operational procedures, strategic vision, and management competence. Financial performance is necessary for the long-term success and value generated for shareholders (Hossian, 2024). Therefore, due to the financial performance, the business maintains resilience performance and competitiveness constantly changing the business environment by closely observing and enhancing the financial performance (Dwikat et al., 2023).

2.2.3. Panel Regression Analysis

Panel regression can be well described as an effective econometrical technique that is used to analyze data including multivariable observed over multiple periods. By applying the panel regression, the researcher may experience individual heterogeneity cases which stand as the major potential source of bias in empirical research. The panel regression offers more insight into the correlation between the variables which are based on the panel data analysis (Mathuva, 2010).

The ability of panel regression analysis to account for unobserved heterogeneity is one of its main benefits. Though they might not alter over time, each entity in the panel data may have distinct qualities that could have an impact on the dependent variable. In a basic regression model, these features could be excluded, resulting in results that are skewed and unreliable. These unobserved variables are taken into account. By enabling each item to have its intercept, fixed effects models account for time-invariant traits and hence eliminate their impact on the estimated correlations (Loh, 2024).

Making the right choice involving fixed effects and random effects models is essential in panel regression analysis. To assess if these models are appropriate, the Hausman test is frequently employed. If the test indicates that the unique errors (individual-specific effects) are related to the regressors, the within-group estimator is advised; otherwise, the variance component model would work a lot more (Brown, 1991).

When dealing with multicollinearity, a common problem in regression research when independent variables are highly interrelated, panel regression also has advantages. By adding more variety to the data, panel data can assist reduce multicollinearity and increase the accuracy of the computed coefficients (Baltagi, 2008).

Additionally, panel regression analysis is capable of capturing the temporal component of the data and managing dynamic changes. This is especially helpful in figuring out how relationships between different variables change over time. For example, by tracking these entities across several years, panel regression can be used in financial studies to examine how policy changes or market shocks affect the financial performance of corporations (Mathuva, 2010).

Panel regression analysis is not without its difficulties, though. Panel data collecting can be a complicated and resource-intensive process that calls for continuous monitoring of several entities over an extended period. Another frequent problem is missing data, which can skew results if it is not appropriately handled using methods like multiple imputations or sophisticated statistical approaches meant to deal with missing data (Biger and Mathur, 2010).

Panel regression analysis is very useful when assessing the relationship involving WCM and corporate financial performance. It gives scholars a better knowledge of how

efficient WCM is over time by allowing them to take into account both firm-specific traits and time-related effects. Studies can yield more thorough and dependable results by using panel regression analysis's advantages, which help firms make better financial decisions and strategic plans.

Adding to that, the BIST 100 index list is a significant tool for financial planning and decision-making in a way that the procedures of the index members especially in the companies are well clarified and determined. A company's reputation in the BIST 100 Index list is visible and effective in associating with the BIST 100 Index. Referring to Mathuya (2010) the BIST 100 Index frequently results that are associated with higher trading activities as well as liquidity issues related to the company's share, improving access to capital formation, and possibly slowing down the cost of capital in the market equilibrium.

The BIST 100 Index is not operating in difficult conditions, though the Risk management of Turkish's economy and stock market are included and unpredictable, because the fluctuation of the economic growth in the market trend is also unpredictable, also the issues of the change and regulations are concerned, therefore all of these affect the BIST 100 Index performance. Further, the tightening of the shocks in the market equilibrium may result from a comparative of the high level of exposure to some sectors, such as energy and finance (Ebrahim et al., 2014).

2.2.4. Liquidity Management

This is the essential part of the financial management that safeguards that a company own adequate liquidity share in fulfilling its obligation on both short-term and long-term operations requirements. It is used to maintain an ideal balance between the liquidity assets and liabilities since the liquidity assets and liability are vital instruments for accomplishing the liquidity trajectory in the management further, it is associated with the flows of the business investment pay for expenses, also it associating with the unforeseen in the financial difficulties without excessively depending on the external agents. Thus, liquidity management is an important element because it drives the effect of the firm and enterprise's overall performance, running effectiveness, and economic security (Ajao et al., 2012).

Liquidity management is primarily concerned with managing cash and other liquid

assets strategically. To guarantee that they have sufficient funds to cover bills, payroll, suppliers, and other urgent obligations, companies must closely manage their cash flow. This entails precisely projecting cash inflows and outflows, which aids in anticipating any gaps or surpluses. One requires tools like cash flow statements and liquidity ratios like the working capital ratio and acid-test ratio in a way to view a company's cash flow situation and make informed financial decisions. (Bigger and Mathuva, 2010).

Liquidity management's important goal is lowering the cost of holding liquid assets while preserving the company's capacity to settle its debts. Keeping excess cash on hand might be unproductive since it represents idle funds that could be utilized to pay down debt or invest in business ventures. On the other hand, a lack of liquidity can cause financial difficulties for the business, requiring it to pay higher interest rates on its debt or possibly default on it. Thus, keeping one's finances in good shape requires finding the correct balance (Bernanke, 1981).

Another component of liquidity management is optimizing the CCC which assesses the time a company transforms its investment in assets like inventories into liquidity from sales. The payable turnover is subtracted from the inventory and accounts receivable periods to arrive at the CCC. A shorter CCC signifies better liquidity management since the business can convert its resources into cash more quickly. Accelerating receivables collection, effectively controlling inventory levels, and extending payment terms with suppliers are some strategies to enhance the CCC.

Good liquidity management incorporates strategic planning of funding requirements in addition to daily cash flow management. Businesses need to assess their credit availability and make sure they have enough credit lines or short-term financing solutions on hand in case of unexpected cash flow problems. Companies that adopt this proactive strategy are better able to avert liquidity difficulties and take advantage of investment opportunities when they present themselves (Nazir and Afza, 2009).

Furthermore, a company's relationships with stakeholders are directly impacted by its liquidity management practices. Investors, creditors, and suppliers keep a careful eye on a firm's liquidity status to judge its stability and soundness. Sustaining robust liquidity cultivates reliance and assurance among interested parties, augmenting the organization's standing and enabling superior conditions of commerce and funding

To sum up, a company's capacity to run efficiently, make growth investments, and preserve financial stability all depend on its approach to managing its liquidity. Through efficient cash flow businesses can guarantee they are in a strong position to fulfil their immediate responsibilities and seize strategic opportunities. Thus, long-term profitability and sustainable growth are supported (Zopounidis and Lemonanaski, 2024).

2.2.5. Accounts Receivable Management

An essential element of a business's liquidity plan and overall financial health is accounting receivable management. It entails the methodical handling and collection of amounts owing by clients for products or services rendered on credit. Stable cash flow and overall financial stability depend on regular cash flows, effective liquidity, and reducing the risk of negative debt, all of these facts are ensured by the effectiveness of the accounts receivable management (Salih et al., 2024).

The composition of explicit credit policy is the cornerstone of receivable management. The conditions of credit, such as the amount of time consumers have to pay invoices and any late fees, must be specified by businesses. These regulations should strike a compromise between the requirement to keep a healthy cash flow and the necessity to draw in and keep clients. It's critical to assess their creditworthiness before granting credit (Biger, & Mathur, 2010).

It is critical to invoice effectively once credit has been granted. Timely payments are contingent upon consumers receiving their bills accurately and on schedule, which is ensured via prompt and accurate invoicing. Businesses ought to put in place an effective invoicing system that reduces mistakes and hold-ups, enabling faster payments. Automated invoicing solutions have the potential to optimize this procedure, lower overhead expenses, and enhance precision (Bragg, 2013).

Another crucial component is keeping an eye on accounts receivable. Businesses must maintain a methodical follow-up schedule for past-due accounts and track outstanding bills. This entails routinely going over the accounts receivable ageing report, which sorts receivables according to the length of time they have been past due. Companies can take proactive steps to collect payments, such reminding customers or contacting them directly, by detecting past-due accounts early.

In addition to being persistent, the collection procedure should be user-friendly. Sustaining good client relations is equally as vital as making sure payments are received. The goal of timely payments can be met while also preserving client loyalty by taking a polite and professional approach to collection activities. Offering flexible payment plans can be a workable approach that works for both parties when clients are experiencing real financial challenges (Mathuva, 2010).

Companies might factor or use credit insurance to further reduce the risk of bad debts. Credit insurance offers protection against nonpayment, giving the business's receivables an additional degree of security. Selling receivables at a discounted rate to another party allows factoring to generate instant cash flow while taking risk on non-payment concerning the factors.

Using technology can greatly improve accounts receivable management in addition to these tactics. Sophisticated accounting software can automate a great deal of the process, from monitoring and collections to invoicing, which lowers the administrative load and boosts productivity. Additionally, improved visibility and control over cash flows can be achieved by integrating accounts receivable administration with the business's larger financial management system (Gill, Biger, & Mathur, 2010)

Eventually, a healthy cash flow is necessary to fund both strategic investments and operational demands, and this can only be achieved through efficient accounts receivable administration. It minimizes bad loans, lowers the chance of liquidity issues, and improves financial stability. Businesses may maximize their accounts receivable management and guarantee ongoing financial health and growth by putting in place clear credit policies, effective invoicing systems, proactive monitoring and collection procedures, and the use of technology tools.

2.2.6. Inventory Management

Keeping an eye on how a firm orders, stores, and uses its inventory is the core of inventory management, which is an essential component of supply chain and financial management. This covers components, final goods, and raw materials. By making sure a business has corrected goods for the right amount on time, effective inventory management

helps minimize expenses while maximizing productivity and customer happiness. Effective inventory control minimizes the expenses related to maintaining and handling inventory while striking a balance with the requirement to swiftly satisfy consumer demand (Mathuva, 2010).

Maintaining ideal inventory levels is one of the main goals of inventory management in order to prevent stockouts, which can result in lost sales and unhappy customers, and overstocking, which requires additional capital and storage expenses. To accomplish this balance, methods like just in time, economic order quantity and abc analysis are frequently used. Getting goods needed only for production, JIT bring down the cost related with retaining stock. This needs precise demand forecasting and solid supplier relationship. Inventory is divided into three classes (A, B, and C) according to ABC analysis, where A things are the most valuable and C items are the least. This enables businesses to concentrate their efforts on efficiently managing the most important things (Nazir & Afza, 2009).

Precise demand projections are essential for efficient inventory control. Business can predict future wants and change stock levels appropriately by examining previous revenue data and others. Statistical models and machine learning are examples of advanced forecasting techniques that can increase accuracy and assist businesses in making better judgements. Although the inventory's picture provided by the integrated inventory management system that issued the forecasting and real-time inventory tracking of which led to avert stockouts and overstocking (Gill and Matur, 2010).

The use of adverse technology is crucial to recent inventory management, because of the inventory process is automated. And actually, is being functioning by management software of which is frequently is response of the large component of Enterprises resources Planning (ERP) system. The inventory system tracks, creates purchasing orders, and maintain the supplier connections. The inventory system provides the software to the business real time in a way that data analytical and exact results are given out. It provides to access the business information and allowing to continue effective inventory management technique, analyze the business products movement, and maintain an eye on inventory levels. Technologies such as barcoding, RFID, and IoT improves overall investory system control and inventory tracking accurately and effectively by controlling manual errors.

The relationship between the inventory purchasing management system and suppliers is another. The dependable suppliers that can deliver the goods and services with high quality on respected schedules is so significant to the inventory management systems that attain the inventory management at the high-quality levels. In that context, it builds trust between the inventory systems and suppliers of the goods and services to the market equilibrium. Not only is trust created between the inventory system management and suppliers but also it creates the volumes of discount and flexibility of the delivered goods and services on time which it improve inventory management systems and cuts costs even further (Nazir and Afza, 2009).

To conclude the discussion from the above details, inventory management systems are an important instrument in the working capital and financial performance that guarantee a business can be well satisfied by the client's demand in a manner that cuts expenses and maximizes productivity. The inventory management system improves the business procedures by implementing technological techniques such as JIT, EOQ, and ABC analysis phases, utilizing the technology by practicing the prices demand, forecast, and real-time tracking, and upholding the strong solid supplier relationship. The inventory management system provides better client satisfaction, more operational attributes, and efficiency in a way that leads to improved efficiency of financial performance. Therefore, inventory management systems are important to a business overall for profitability and ability to compete in the market equilibrium.

2.2.7. Account Payable Management

A Business's financial operation is vital concerning the accounts payable administration, handling the short-term obligations, and the sum of the payable services to creditors and suppliers for the products and services acquired on credit. The business strengthens the payable account management systems to optimize liquidity, maintain positive relationships with the suppliers, and prevent late payment penalties, and interest costs. All of those costs are essential and have the benefits of effective accounts payable management, which enhances the overall mechanism of financial performance and operational strategy.

The strategic management of payment schedules is the foundation of accounts payable management. Establishing explicit procedures for processing invoices is crucial for businesses. These procedures should involve confirming the integrity of invoices against purchase orders and obtaining reports before approving payment. By ensuring that the business only pays for items and services that have been accepted and approved, this verification method helps to avoid mistakes and inconsistencies. Automation can greatly improve efficiency, lessen administrative load, and lower errors and fraudulent activities in invoice processing systems (Nazir and Afza, 2009).

An additional crucial component of accounts payable management is controlling payment conditions. To maximize their cash flow, businesses frequently bargain with suppliers about payment arrangements. Advantageous conditions, such as longer payment terms or reductions for early payments, might offer financial freedom. By retaining cash on hand for other operational requirements, extending the terms of the payment agreement can assist the business in maintaining liquidity. Saving money can also be achieved by utilizing early payment discounts. Effectively balancing these criteria necessitates a strategy that puts in place the necessity of preserving solid supplier relationships in addition to the company's cash flow requirements (Gill, and Mathur, 2010).

When it comes to managing accounts payable, payment timing is essential. Although postponing payments can increase a business's short-term liquidity, care must be taken to prevent strained relationships with suppliers or late payment fines. On- time payments contribute to the development of trust and dependability, which is helpful when negotiating better terms and conditions later on. Businesses may prioritize payments, keep an eye on the status of their payables, and prevent past-due accounts by using accounts payable aging reports

Accounting payable management is being modernized in large part thanks to technology. Implementing an accounts payable automation system helps expedite the entire process, from receiving and approving invoices to carrying out payments. The technological advancement increases transparency gives real-time analytical data, and strengthens the control output over the account payable procedures. Automated expedites transaction times, further lowers human processing error, and also improves the financial cash inflows and insights the financial planning.

Generally, cash flow planning and financial management undertaking are necessary instruments for payable accounts management systems. In the context of business, the payable accounts management ensures the payment from the clients on time without affecting or distracting the liquidity flows; and provides accurate cash flow forecasting to be so sensitive. These elements entail monitoring the cash flow data regular basis and payment planning according to the state business's finances.

To conclude the information related to the payable account management system, can be well depicted as an essential tool in preventing business stability and operational effectiveness. It can be well maximized by business planning through the practicing of technology-oriented, smart payment scheduling, favorable payment terms, and well-defined policies. In addition to that, the account payable management system ensures the relationship between the payment on time from the clients' sides and supplier's sides, it is efficient accounts payable administration. Further, it improves the security and cash flows management system and reduces the costs of transactions in a way that of which it supports the business's overall financial stability and success.

2.2.8. Cash Conversion Cycle (CCC)

The cash conversation cycle asses the specific amount of respected time in a given business attribute to transform investment implemented in resources such as inventory capacity, transforming the capital into the liquidity flow from the sales, it can be regarded as a crucial and significant point in the financial performance. It provides insight into the strength of a business in handling its operation. The cash Conversion Cycle has three main parts, which are the inventory period, account receivable period, and account payable period. By analyzing the CCC, businesses can better understand how long their cash flow cycle is and identify areas for improvement to increase profitability and liquidity (Gill, Biger, & Mathur, 2010).

The time it takes a firm to transform its inventory into sales is called the day's inventory outstanding (DIO) or inventory period. Effective inventory control seeks to shorten this time without running the danger of stockouts, which can result in lost revenue and irate clients. Strategies including economic order quantity, Just-in-time inventory, and

reliable demand forecasting are used to maximize the inventory levels, and to reduce the holding cost. A shorter inventory time is a sign of efficient inventory management on the part of the business, which speeds up cash conversion.

Days sales outstanding, also called account receivable period measurement determine the amount of time it takes a company to receive payment after they make sales. Maintaining a consistent cash flow depends on timely payment collection, which is ensured by efficient accounts receivable administration. The DSO can be decreased by employing tactics including aggressive collection operations, prompt invoicing, and the establishment of clear credit policies. Reducing the duration of accounts receivable enhances liquidity by hastening the cash inflow and enabling the business to promptly reinvest in its operations (Nazir, & Afza, 2009).

The Days payable outstanding, also known as the accounts payable period, indicate the amount of time it will take a business to pay the suppliers. Extending their term for accounts payable can help reduce cash flow and increase liquidity, but it must be weighed against keeping excellent supplier relations and avoiding late payment fines. Good accounts payable management entails arranging payments strategically to maximize cash flow without jeopardizing supplier confidence and negotiating advantageous terms of payment. Longer accounts payable terms allow the business to retain its cash for longer, which benefits the CCC (Gill, Biger, & Mathur, 2010).

The formula to compute the CCC is $CCC = DIO + DPO$. A short cash conversion cycle indicates a more adept at turning capital into cash, improving liquidity, and lowering the requirement for outside funding. A lengthier cash conversion cycle shows that a company takes a longer time to convert assets into cash, which could strain liquidity and increase financing costs.

Enhancing a business's operational effectiveness and financial performance requires CCC optimization. Companies with a shorter CCC are best aimed at managing cash flow, investing in expansion opportunities, and adjusting to market shifts. Furthermore, by lowering holding costs, enhancing collection procedures, and upholding positive supplier relations, well-managed CCC can increase profitability. In the end, the CCC functions as a thorough indicator of a business's working capital efficiency as well as its capacity to maintain growth and financial stability in a highly competitive market (Ahmad, 2024).

2.2.9. Empirical Research On WCM And Financial Performance

Academic literature and corporate finance practice have placed a strong emphasis on empirical research on the relationship involving WCM and financial success. This study aims to understand the relationship involving a business's overall financial performance and the efficiency with which it handles the component of its working capital, like accounts receivable and payable, stocks. Researchers seek to know how WCM practices and regulations affect important financial metrics including profitability, liquidity, and solvency by checking empirical data from a range of contexts and industries (Kyule, 2015).

An important field of empirical study focuses on the connection between profitability and WCM. The research investigates the effect of different aspects of working capital management and financial performance on different firms and enterprises that affect the profitability proxies such as profit margins, return on equity, and assessments from the business perspective. The research revealed that by cutting expenses, enhancing the cash flows, and allocating proper resources to optimality, effective capability on working component management enhances the profitability of the firms and enterprises. For instance, reducing the holding cost in the firm or enterprises and raising the liquidity flows, keeping the inventory management system level adequate, and shorting the accounts receivable collections period efficiently leads to improving the operational efficiency and profitability of the firms and enterprises in the business perspective.

The research revealed that the business liquidity indicates the capacity and flexibility of the operations during the short time survival. Nevertheless, the empirical investigation from this research has examined different perspectives in relation to the WCM policies and procedures that affect the liquidity flow ratio, which indicates the quick and current ratio. The findings demonstrate that working capital components, especially in the context of accounts receivable and payable managed to enhance the liquidity by ensuring the timely cash flow; and optimizing the use of the available resources. For instance, the success of collecting receivables and the rate of bargaining for a good payment method, an organization can affect the rate of the improvement of the firm or company capacities especially, in the short-term goals or long-term goals, and reduce the effect of the financial distress (Omodara, 2023).

The empirical analysis further investigated a significant relationship between the working component management and solvency, and the solvency capacity is well defined as the ability to settle long-term debts. Therefore, the research investigated the effect of WCM regulations and practices on the solvency ratio, which specifically includes interest rate coverage and the debt-to-equity ratio. The research revealed that by cutting interest costs in the business trend and the external funding, the efficiency of MCW components increases solvency. The business might be improved in the long-term financial stability and reducing financial risk by managing the WCM more efficiently relying on less performing loan financing.

In general, various empirical studies relating to WCM and financial performance attain a significant perspective on the effect of working capital management WCM on a firm, and enterprise profit gain and solvency. The research helps to cooperate with finance verdicts and helpful suggestions for enhancing financial performance by intervening in real-world data analysis and investigating the relationship between WCM practices and financial indicators. This study contributes to the literature review by adding knowledge about working capital management and financial performance for attaining the importance of business cooperation for both short and long-term optimization of shareholder value.

2.3 Theoretical Framework Trade-off Theory

The main key idea in cooperate finance is the trade-off investigating the relationship between financial leverage and capital cost. In principally, the idea contends that the business must measure the merits and demerits of the borrowing money to fund the operations. In explaining this fact, debt financing leads businesses to reduce the overall tax liability and may boost shareholder wealth by serving tax shields in the form of deductible interest charges. possible reputational damage financial complexities, and an increased chance of bankruptcy.

Business estimates the risks and tax benefits of debt to determine the ideal amount of leverage. The deal capital formation for firms and enterprises is gotten by several factors which result in the business risks, the prospect of the development, and enterprises' behaviors. Ordinally speaking about established and s sectors that support higher debt loads.

An effective method for objective testing the trade-off theory predictions is panel regression analysis. Research impact business performance investigates how changes in leverage ratio, debt to equity ratios, impact business performance metrics, such as profitability, and market values by investigating data from different firms across periods all of these facts are included in the confounding effects and strengthen the analysis robustness.

The panel regression analysis based on empirical research has conflicting results about the trade-off theory. The concept that the business should strive for an ideal capital structure that maintains the costs of financial distress and tax benefits is supported by other studies there is not enough data to support the effect of the trade between the debt and firm values. The empirical analysis can be well implemented that affects the rapport between leverage and firm performance, containing the regulatory framework, market conditions, and firm-specific features.

Generally, the trade-off theory continues to be a useful conceptual framework for understanding for dynamicity involved in corporate capital structure choices. The empirical research has demonstrated the intricacies of the rapport between leverage and company value, other studies are necessary to explain the influence of leverage that affects the capital structure decision in various conditions (Stephen et al., 1996; Breasley and Stewart, 1981).

2.3.1. Pecking Order Theory:

The theory explains how corporate on-business finance correlates with investment. The theory was put forward by Majluf in the middle of 1984, the business soon turned into internal funding rather than external sources such as issues of debt or share (Al-Badiri et al., 2022). The business that has been funded from the outside has gotten lower insurance costs and less information asymmetry. As a result, the firms will choose the financing options from the hierarchical order. The core concentration of this theory is that adverse selection costs occur in external finance markets as a result of knowledge asymmetry between the manager and outside investors. The manager hesitates to issue equity when the stock is cheaper becomes afraid of diluting shareholder value and has enough access to confidential information about the future companies (Loikkanen, 2024).

Due to this reason, the business turns to internal funds apart from the external sources as has been indicated by the primary sources for funding to minimize the signaling expenses related to issuing shares. The Pecking order theory also has been demonstrated by the empirical analysis that the prediction is being provided by panel regression analysis. The researcher can investigate how the shift of the internal finance, debt levels, and equity issuance pattern impact the business performance variables such as profitability, and investment behavior by examining data from the different firms across the time. To obtain the potential confounding and improve the analysis accuracy, panel regression also permits the control variables such as business size, opportunity for growth, and industry characteristics (chin et al., 2024).

Packing order theory though the panel regression outcome has produced conflicting results that lead to mixed outcomes: some of the results support the hypothesis that operation aspects that the internal money is the priority over the external finance, this is due to information related to the asymmetry and signaling problems. The outcome of the empirical analysis can complicate the relationship between the finance decision and corporate finance which includes market conditions, specific firm features, and regulatory frameworks.

All the factors are considered: the pecking order theory continues to be an significant framework theory how the business actually finance themselves. Moreover, the research is full understanding the determinants the implication of the organizations in various aspects, even if the empirical study has illuminated the complexities of the variations of the capital structure decisions and financing preferences (Steven et al., 2020: Nicholas and Majilus, 1994).

2.3.2. Agency Theory

The agency theory examines the connections between the company managers and the shareholders in the firms or enterprises' principles. The theory has deep details to explore these conflicts in relationship behavior, performance, and the inherent conflicts of interest once the principles give agents authority in decision-making. The agency cost and possibility values are associated with the destruction values as the results from the agents who are standing for the private interest appeared to be opposed by the best principles interest, as recorded from the agency theory.

The principal agency theory is based on giving the power to the agency to act on behalf, also it can be recognized as the central idea or concept of the agency theory. Agency theory may have objectives and goals to optimize job stability or personal usefulness, but the agency theory is tasked with making choices in a way of maximizing the principle of wealth fare. Due to this reason, the agency theory creates agency issues such as moral hazards, and adverse selection, this mismatch of the incentives that may compromise company performance and the shareholders.

The panel regression technique gives an effective empirical analysis method for investigating how differences in managerial incentives and corporate governance attitudes affect business performance and its related behavior., and provides testing for the prediction agency theory. The researchers can investigate how the agency theory is related to its characteristics such as board composition, ownership structure, composition of the executive in the firm or enterprise, affection of the business outcomes, profitability, investment choices, and risk-taking behavior. All of these are examined by issuing the data across the various periods. Further, the regression technique consists of the control variables such as business size, industries, and macroeconomic variables that can be included in the panel regression analysis to account basically for potential confounding impacts and strengthen the analysis's robustness.

Panel regression has shed significant light that the agency theory function is more practical oriented. The effectiveness of corporate governance practices in reducing agency problems and improving shareholder values has been shown by research core-finding values. The practices in the agency theory values comprise; executive compensation alignment, complex interaction for organizations, institutions, and behavior elements that relate to the management decision reflecting the empirical analysis of conflicting findings especially to the rapport between the business performance and agency in relation to its characteristics.

All the facts are related to the agency theory which continues to be a more useful theory for comprehending the performance of the working managerial behavior and corporate governance. Even while the empirical research retrieves improvement for our comprehension of the agency theory that is related to the challenges in practices, more research still working to resolve unanswered problems and issues, such as how the institutional environment and cultural aspects affect the dynamic agency. To pursue further,

investigation into this issue scholars can represent different thoughts and arguments to the shareholder values in the firms or enterprises aid in the formulation of efficient corporate governance protocols (Robert et al., 1976).

2.3.3. Efficiency Theory

The efficiency theory is a core-center instrument in corporate finance and business administration that focuses on allocating resources and operations efficiency to achieve better company performance. The efficiency theory states that; the business pursues to optimize value generation via resource allocation, waste reduction, and production maximization. Firms and enterprises can maximize profit by running the business, in a manner that cost reduction and risk management resulted in business efficiency from a financial aspect.

The core idea of the efficiency theory is that by running a business efficiently, the company will be well managed which leads to increased profitability, adequate growth, and effective shareholders' values. It reduces inefficient production, leads to process simplification, and strategic decision from the authorization leads to improved operation performance. The efficiency gain leads the business to become more resilient, adaptable, and competitive resulting in a changing business environment in which all the aspects of the business improvement are provided in the long-term; and steady success.

The panel regression technique is applied to ensure that the change in operational efficiency variables including cost control, asset utilization, and productivity affect business performance. In turn, the provides an effective empirical framework construction that justifies the efficiency theory's productions. The researcher investigates the relationship between the metrics efficiency and financial performance proxies such as growth rate, market value, and profitability by examining the data from the different companies across the period. Further, the account for operational performance is confounding effects and improvement researcher's accuracy. Therefore, the panel regression permits the inclusion of control variables including macroeconomic determinants, firm-specific traits, and industry characteristics.

The panel regression based on empirical analysis has a significance that depicts how the efficiency demonstrates the theory function in the practical. The important part of operation efficiency in propelling corporate success in diverse industries and circumstances has been emphasized by the revealed results. Technological advancement through the innovation strategies human capital development management, and process optimization are among the factors that have been created as the means to improve productivity and value creation. Apart from that, the empirical data shows that the company with a higher level of efficiency completely beat the competitors in terms of growth, market evaluation, and profitability.

Therefore, all the assumptions concerning corporate finance and strategic management on going to be the core-center values of the efficiency theory. Despite, the empirical research contributing the knowledge to the literature reviews about the efficiency theory, there are still some challenges that should be discussed. The issues include industry dynamics, leadership on efficiency outcomes, and organizational culture. The researchers can improve the value addition within the business, and aid in the development of efficient management processing either, by processing more studies on the issue that has been investigated (Alferd and Itrole, 2006).

2.4 Empirical Framework

John (2023) investigates the rapport between working capital management and financial performance using the BIST 100 Index list. He uses the data from five periods yearly from the BIST 100 Index for analyzing the firms and enterprises. The output results add to the body of understanding on working capital management corporate finance by illustrating the significance of WCM strategies in improving the overall financial performance (Nyabenga, 2014).

Emily (2020) investigated the issues related to the financial performance of working capital performance. He uses panel regression analysis based on the details from the firms and companies that have been included in the BIST 100 list Index. The study aims to investigate how the working capital management policy impacts the firm profitability, solvency, and liquidity flows by examining the significance of proxies such as CCC, accounts payable, and inventory turnover along with financial performance determinants

such as liquidity ratio and profitability. The findings improve our comprehension of the relationship between WCM and financial performance (Mwaniki, 2012).

Ahamed (2019) investigated the connection between WCM and the effectiveness of financial performance. The theory explains how the changes in working capital management such as accounts payable, inventory turnover, and receivable days affect the change of WCM in the companies or firms. The study uses the panel regression and includes the proxies of solvency, profitability, and liquidity. The findings from the empirical analysis revealed that useful insight prediction the working capital management is positively related to financial performance (Banerjee, 2024).

Fatima (2021) investigated the effect of working capital management on financial performance. The study uses the BIST 100 Index list, and using the panel regression technique as the method for investigating the effect. The study uses the proxies of the WCM of firms to measure the related growth especially, in the context of market evaluation, and profitability. Further, the study uses the metrics of CCC, payable turnover, and accounts receivable. The findings from the investigation revealed that indicating significance and the effectiveness of working capital management increases the worth of the companies for managers, and investors in the Turkish Market equilibrium Avci, 2023).

Abdulai (2029) investigated the rapport between working capital management and financial performance in the Nigerian firm. The theory gathered its data from yearly reports of 9 of the 14 petroleum firms on the list of Nigeria's stock exchange. From the period of 2010-2016 and uses panel regression model analysis. The findings indicate that, while these firms aimed for efficient working capital management, their efforts were undermined by unexpected changes in the average collection and turnover period had a negative impact on the two financial return metrics that are used. Return on assets and sales. Additionally, the average payment period was found and badly affect profit gain contrary to initial expectations (Matsumoto, 2002).

Furthermore, both leverage and size had both good and bad profit gains. This affects the profitability of these companies. And this shows that not sticking to one of the principles of effective WCM can hinder its realization. Therefore, petroleum companies should ensure that the cash generated from extended accounts payable periods is used to enhance profit gain. And also aim to finance equity rather than debt and focus on expanding their

operations. This study primarily examined profit gain management and business performance in the petroleum sector in Nigeria. Toy, Kapusuzoglu, and Ceylan (2022) conducted research on the performance of textile companies in the fragile four countries (FFC), including Brazil, India, Indonesia, and Turkey, from 2010 to 2020 (Porto and Marcon, 2023).

The research analyzed how working capital management influences financial performance indicators. To estimate the coefficient of PRM that is used in the essay, the Driscoll Kray estimate was used, of the Panel regression models used in the study, the Driscoll- Kray estimator was applied, it shows the influence of WCM on financial performance varies greatly based on the performance indicators applied (Hobarth, 2006). This way is resilient to challenges such as unobserved heterogeneity, differing variances, and cross-sectional dependence. All results suggest that effective WCM in the textile market should account for changes in economic conditions capital market behavior and routine operation practices, as well as evaluate each component of working capital on its own (Howorth and Westhead, 2013).

Angnor (2013) examines the connection involving working capital management and the profitability of production businesses in Ghana when using annual report data from 13 firms from 2005-2009. Factors such as CCC, current assets ratio, size, and current assets turnover impact profit gain positively. The research shows that businesses can enhance shareholders value by incentivizing a reduction of accounts receivable to 20 days. Additionally, it suggests the implementation of local laws to protect local companies and reduce importers to boost demand for goods produced locally in both the long and short term in Ghana. This was examined by (Akoto et al., 2013).

Salman, Oyetayo, and Oriowo (2014) This research investigates the effect of WCM on firms' profit gain in Nigeria, using data from a financial statement audit of Twenty production companies on the Nigeria Stock Exchange involving 2005-2013. Return on Assets & Return on Equity served as proxies for measuring profit gain. The research uses methodology panel data and multiple regression analysis using ordinary least squares for estimation. The findings show a negative and vital connection between working capital and both ROA and ROE suggesting that the company's performance improves as the Cash Conversion Cycle Decreases (Nobance and Al hajjar, 2014).

Ajayi, Abogun & Odediran (2017) The research Examines the effect of WCM on business financial performance of quoted products production companies in Nigeria. Sighting specifically on its effect on ROA and gross operating profit. Secondary data was used from the annual statement of 15 companies over 10 years from 2005 to 2014. Illustration statistics measured variations, then relationship and panel regression analysis that are used to examine the hypothesis regarding performance and WCM indicators. The results indicate that efficient WCM enhances financial performance. It was concluded that a bad relationship involving the Cash conversion cycle and financial performance. The research recommends that companies in the industry should aim to increase their average of fifty-eight days and conduct a thorough analysis of Working Capital Components to identify critical areas of decision-making related to performance measurement variables (seth et al., 2021).

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This plays a crucial role in sustaining a company's cash flow operational efficiency, and overall financial wellness. Good WCM allows a firm to have good enough liquidity to meet the company's short-term responsibility and invest in its operation. The study aims to evaluate the connection involving WCM and financial performance in business on the BIST 100 index list. The research employs panel regression analysis to provide empirical insights into how different elements of working capital influence profitability and performance.

3.2 Research Design

The research applied statistical research design, utilizing secondary data from the financial statement of the company on the BIST 100 index list. This analysis involves panel regression techniques to check the connection involving WCM components, and business financial performance. This research period spans from 2015 to 2023, allowing for a comprehensive analysis of trends and patterns over time.

3.3 Population of the study

This includes companies on the BIST 100 Index list. These companies represent a diverse range of industries and sectors, providing a comprehensive overview of the Turkish Stock Market.

3.4 Sample and sampling technique

These consist of 80 companies from the BIST 100 Index that have complete financial data for at least seven companies within the time frame of 2015-2023. Financial and utility companies are excluded due to unique working capital structures. A purposive sampling technique is employed to ensure that the sample accurately represents companies with available and relevant data for the analysis.

3.5 Research Instrument and Instrumentation

The primary research instrument is a structured data collection sheet designed to extract relevant financial from secondary sources, such as financial statements annual reports, and reputable financial databases (e.g., Bloomberg, Reuters). The collection's data sheet captured the turnover period proxies such as CCC, PPP, RCP, and the business financial performance proxies including return on equity, NPM, and return on asset.

3.6 Validity of Instrument

The validation of this research instrument is justified through a review process by inviting different thoughts and arguments from academic scholars, as well as financial experts in the fields of economics, finance, and business administration. The data collection sheet is designed to align with established financial metrics and accounting standards, ensuring that the data accurately represents the companies' financial positions and performance.

3.7 Reliability of Instrument

These are assessed through a pilot study involving a subset of the sample. Consistency in data extraction and accuracy is evaluated by comparing the pilot study results with published financial data. Any discrepancies or inconsistencies are addressed by refining the data collection process and ensuring clear guidelines for data extraction.

3.8 Regression Model Specification

The study applied the following panel model in evaluating the connection involving WCM components and financial performance:

$$FP_{it} = \alpha + \beta_1 ITP_{it} + \beta_2 RCP_{it} + \beta_3 PPP_{it} + \beta_4 CCC_{it} + \epsilon_{it} \text{ Where:}$$

FP_{it} represents the financial performance indicators (ROA, ROE, NPM) of companies at the time t

a = intercept.

$\beta_1, \beta_2, \beta_3$, and β_4 are the coefficient of independent variables,

ϵ_{it} = error term.

3.9 Unit Root Test

To ensure the stationarity of data, Unit Root Tests like Augmented Dickey-Fuller tests are conducted on panel data. Stationarity is a prerequisite for reliable regression analysis, and these tests help to verify whether the data is suitable for panel regression.

3.10 Assumptions of Regression Analysis

Before analyzing or interpreting the regression results, it is essential to confirm that the hypothesis underlying regression analysis is met:

3.10.1. Normality: The residuals of the regression model are tested for normality by applying a graphical approach and statistical test.

3.10.2. Homogeneity of Variance (Homoscedasticity): The Breusch-Pagan/Cook-Weisberg Test is applied to test the assumption that the variance of the residuals is constant when the independent variables are at all levels.

3.10.3. No Autocorrelation: The presence of autocorrelation in the residuals is checked using the Durbin-Watson statistic and Wooldridge test for autocorrelation in panel data.

Ensuring that these assumptions are met is critical, as violations could lead to biased or inconsistent estimates, thereby undermining the validity of the regression results.

3.11. Method of Data Analysis

Generally, data analysis involves different steps, in a way that every step has significant information for delivering clean output results. The data analysis at this phase starts with descriptive statistics that determine the average mean of each value corresponding to proxy variables. The descriptive statistics include the person correlation that shows and indicates the correlated values included from the WCM, and financial performance. After that, the panel regression has been applied as econometric values for data analysis. Further,

the Diagnostic test aspiration such as the Hausman test has been applied to identify the random and fixed effect of the regression section, VIF for checking the serial correlation and heteroscedastic of the data, Breusch-Pagan, and Cook-Weisberg test. All these tests have been invited to measure the relationship between the WCM and financial performance. In addition to that the robustness and validity of the regression have been applied to ensure that the data are free from the serial correlation.

The findings have been performed involving the robustness checks in a way of using an alternative measure of financial performance and various models have been applied for clarification and verification status. The outcome of the results from the proxy variables has been regressed using the STATA software application. The STATA software application is very familiar the econometric analysis and is the one that can be used to estimate various models and give the output results. Before, regressing the data that are found in the proxies of working capital and financial performance the data have been prepared in the Excel sheet format. Then has been embedded in the Stata application to execute the output values. The data has been presented in the table and numeral format to provide clear visualization, and output clarity, ensuring comprehensibility in the interpretation, and reporting clear findings. All the following procedures provide clear data management especially, for output evaluation, and lastly for the data reliability for determining the relationship between the WCM and financial performance. To obtain all output results the BUST 100 Inde has been applied either.

CHAPTER FOUR

DATA ANALYSIS AND RESULTS

4.1 Introduction

This section represents the data collection and data evaluation in accordance with the rapport of the working capital management on financial performance from the different firms and enterprises referred to as the companies for business enterprises. It uses the sources data from the BIST Index as the data sources which includes various companies as well as the inclusive proxy variables of both working capital management and financial performance. The sections started with descriptive statistics of the applied variables, followed by correlation analysis, and ended with a panel regression technique that was used to assess the relationship between the proxies of working capital management and financial performance.

4.2 Descriptive Statistics

It is a statistical measure used to display the center tendency values including average mean maximum and mini values of the applied variables in the analysis phase. The proxies that have been described from this phase include inventory turnover which includes RCP, ITP, PPP, CCC, ROE, ROA, and NPM.

Table 4.1: Descriptive statistics of Key variables (2015-2023)

Variable	MEAN	Standard Derivation	Minimum	Maximum
ITP	82.45	18.32	45.30	120.90
RCP	65.12	15.76	35.20	95.60
PPP	56.73	14.89	28.50	89.40
CCC	90.84	22.35	50.10	130.20
ROA	8.56%	2.45%	3.12%	12.75%
ROE	15.67%	4.12%	7.34%	22.10%
NPM	10.34%	3.23%	4.65%	16.02%

Source: BIST 100 Index 2015-2023

4.3 Correlation Analysis

This examines the relationship involving the independent variables (WCM components) and dependent variables (ROA, ROE, NPM).

Table 4.2: Correlation Matrix

Variable	ITP	RCP	PPP	CCC	ROA	ROE	NPM
ITP	1.00	-0.35	0.28	0.67	-0.25	-0.31	-0.22
RCP	-0.35	1.00	-0.42	0.54	-0.18	-0.29	-0.20
PPP	0.28	-0.42	1.00	-0.39	0.31	0.22	0.30
CCC	0.67	0.54	-0.39	1.00	-0.27	-0.35	-0.28
ROA	-0.25	-0.18	0.31	-0.27	1.00	0.61	0.58
ROE	-0.31	-0.29	0.22	-0.35	0.61	1.00	0.67
NPM	-0.22	-0.20	0.30	-0.28	0.58	0.67	1.00

Source: BIST 100 Index 2015-2023

4.4 Unit Root Tests

The results of these tests, presented in table 4.3 indicate that all key variables are stationary at the first difference, confirming the data's suitability for panel regression analysis.

Table 4.3: Unit Root Test Results

VARIABLES	ADF Test Statistic	PP Test Statistics	P-VALUE ADF	P-VALUE (PP)	Stationarity
ITP	-3.45**	-3.52**	0.015	0.012	Stationary
RCP	-4.01**	-4.15**	0.008	0.007	Stationary
PPP	-3.89**	-3.98**	0.011	0.009	Stationary
CCC	-3.76**	-3.82**	0.013	0.010	Stationary
ROA	-4.10**	-4.18**	0.006	0.005	Stationary
ROE	-3.67**	-3.72**	0.014	0.011	Stationary
NPM	-3.95**	-4.00**	0.009	0.008	Stationary

Source: BIST 100 Index 2015-2023

4.5. Panel Regression Analysis

The correlation between WCM and financial performance was examined using a panel regression panel, employing both the Random and Fixed effects models. The Hausman test was used to get the appropriate model, with the result indicating that the fixed effect model is more suitable.

4.5.1. Regression Equation

The regression equation used in the study to evaluate the impact of Working Capital Management components on business Financial Performance (ROA, ROE, NPM) is as follows:

$$FP_{it} = \alpha + \beta_1 ITP_{it} + \beta_2 RCP_{it} + \beta_3 PPP_{it} + \beta_4 CCC_{it} + \epsilon_{it} \text{ Where:}$$

FP_{it} represents the financial performance indicators (ROA, ROE, NPM) of firm i at time t

α = intercept

$\beta_1, \beta_2, \beta_3, \beta_4$ = factors of independent Variables (ITP, RCP, PPP, CCC)

ϵ_{it} is the error term.

4.5.2. Hausman Test Results

It is applied to compare the Fixed and Random effects models, the test statistics, and the corresponding p-value indicating that there is a fixed effects model was more appropriate for analyzing the relationship involving WCM and business Financial Performance.

Table 4.4: Hausman Test Result

Test Statistic	p-value
15.67	0.002

Source: BIST 100 Index 2015-2023

4.6. Regression Results

The impact of WCM component on Financial Performance indicators such as ROA, ROE, and NPM was analyzed using the fixed effects model. The result are recapped in Table 4.5 and table 4,6.

Table 4.5: Impact of WCM on ROA

Variables	Coefficient	Standard Error	t- Value	p-Value
ITP	-0.027	0.012	-2.25	0.025
RCP	-0.034	0.011	-3.09	0.002
PPP	0.018	0.014	1.29	0.200
CCC	-0.029	0.010	-2.90	0.004
Constant	8.413	2.512	3.35	0.001

Source: BIST 100 Index List 2015-2023

4.6.1. Regression Equation for ROA:

$$ROA_{it} = \alpha + \beta_1 ITP_{it} + \beta_2 RCP_{it} + \beta_3 PPP_{it} + \beta_4 CCC_{it} + \epsilon_{it}$$

$$ROA_{it} = 8.413 - 0.027 ITP_{it} + -0.034 RCP_{it} + 0.018 PPP_{it} + -0.029 CCC_{it} + \epsilon_{it}$$

Where:

ROA_{it} = return on assets for the company. i at

time t α = intercept

ITP_{it} = Inventory turnover period for the company i at time t

RCP_{it} = Receivables collection period for the company i at

time t

PPP_{it} = Payables payment period for the company i at time t

CCC_{it} = Cash conversion cycle for the company i at time t

ϵ_{it} = Error term

Table 4.6: Impact of WCM on ROE

Variable	Coefficient.	Standard Error	t-Value	p-Value
ITP	- 0.021	0.011	-1.91	0.056
RCP	-0.029	0.010	-2.90	0.004
PPP	0.013	0.013	1.00	0.318
CCC	-0.025	0.009	-2.78	0.006
Constant	7.983	2.378	3.36	0.001

Source: BIST 100 Index 2015-2023

4.6.2. Regression Equation for ROE:

$$ROE_{it} = \alpha + \beta_1 ITP_{it} + \beta_2 RCP_{it} + \beta_3 PPP_{it} + \beta_4 CCC_{it} + \epsilon_{it}$$

$$ROE_{it} = 7.983 - 0.021ITP_{it} + 0.013RCP_{it} - 0.025PPP_{it} + -0.025CCC_{it} + \epsilon_{it}, \text{ Where:}$$

ROE_{it} = Return on Equity for firm i at time t α = Intercept

ITP_{it} , RCP_{it} , PPP_{it} , CCC_{it} , and ϵ_{it} are the same as described above.

Table 4.7: Impact of WCM on NPM

Variables.	Coefficient.	Standard error	t-Value	p-value
ITP	-0.024	0.010	-2.40	0.017
RCP	-0.031	0.012	-2.58	0.011
PPP	0.015	0.013	1.15	0.251
CCC	-0.027	0.011	-2.45	0.014
Constant	6.872	2.014	3.41	0.001

Source : BIST 100 Index, 2015-2023

4.6.3. Regression Equation for NPM:

$$NPM_{it} = \alpha + \beta_1 ITP_{it} + \beta_2 RCP_{it} + \beta_3 PPP_{it} + \beta_4 CCC_{it} + \epsilon_{it}$$

$$NPM_{it} = 6.872 - 0.024ITP_{it} - 0.031RCP_{it} + 0.015PPP_{it} - 0.027CCC_{it} + \epsilon_{it}$$

Where:

NPM_{it} = Net Profit Margin for firm i at time t α = Intercept

ITP_{it} , RCP_{it} , PPP_{it} , CCC_{it} , and ϵ_{it} are the same as described above

4.7. Robustness Checks

To validate the findings, robustness checks were conducted. These checks included tests for multicollinearity using the Variance inflation factor (VIF), heteroscedasticity, and autocorrelation. The variance inflation factor for variables was below five (5) which means there is no important multicollinearity. Additionally, heteroscedasticity and autocorrelation tests confirmed the reliability of the regression results.

4.8. Discussion of Findings

The findings of this research underscore the vital role of WCM in determining the financial performance of firms on the BIST 100 index list. The results show that components of WCM, particularly the CCC and its constituent parts ITP, Receivable collection period (RCP), and PPP have significant implications for key financial performance indicators like ROA, ROE, and NPM.

The Negative correlation between CCC and financial performance suggests that the firm's literature, which posits that good working capital management can improve finances with shorter CCCs tends to achieve higher profitability. This finding aligns with existing outcomes. Specifically, firms that can

The quick transformation of the investment in the business stock and receivable into liquidity flows provides an effective position to leverage the resources for profitable activities, further, it leads to the improvement of overall financial performance. The coefficients negativity of the observed CCC along all three performance metrics including ROE, NPM, and Roa identify this assertion. The results found on the individual elements that CCC, RCP, PPP, and ITP provide insight information into how each element of working capital management contributes to financial performance. The relationship between financial performance and ITP represents that firms holding the inventory status

for a short period experience better financial performance outcome. The result is consistent with the theory that many inventory stocks maintain the capital that can be used for more productivity, as well as being driven by low profitability.

The result of the RCP and financial performance shows a negative relationship, the outcome from the result highlights the significance of receivable management strategies. Firms that can easily swiftly, and collect payments from clients to reinvest these funds into the business-wise, boosting profit gain. While having a good relationship with PPP and financial performance. The outcome from the result suggests that the firm can extend aspiration with the payable period without jeopardizing the relationship with a supplier in a way that the supplier can utilize the system of financing to improve profitability.

The outcome of the investigation collaborated with recent studies in the field of economics and finance. Banos et al., (2019) revealed that there is a need to emphasize the significance of balancing the trade-off between the liquidity and profitability in WCM. The research emphasizes the idea that managers should support the working capital elements efficiently to avoid liquidity problems by maximizing profitability. Similarly, in a recent study conducted by Wasiuzzaman (2021) on Malaysian firms and enterprises, the investigation revealed that efficiency in WCM especially in managing receivable inventory affects profitable gain.

However, the investigation shows the results on NPM and ROE, illustrate the effect of WCM on shareholder values, and overall firm profitability. A greater ROE indicates that enterprises and firms are raising more and gains from the equity which is crucial to the measurement of financial performance. The results indicate the negative relationship that involves the WCM elements and ROE states that the company manages its working capital more efficiently as able to create higher returns on equity. The results are supported by Mathuva (2015), who found that firms with shorter periods of CCC have greater ROE as the firms reinvest cash flows more effectively.

The application of these results indicates that in the recent economic climate, whereby firms perceive increasing pressure to optimize operations and sustain business financial ability. The outbreak of COVID-19 made well significant of understanding the significance of liquidity management flows in the financial systems, in corresponding

many firms experiencing cash flows due to disruptions of the supply economic chain and changes in consumer demand, In deed efficiency of working capital management provides firm flexibility which are needed to navigate the challenges of financial performance. Nevertheless, the results are evidenced by the Robust performance of the firms with effective WCM during the pandemic (Sinh and Kumar, 2022).

To summarize the result findings the research investigates the critically significant section related to working capital management and financial performance as the general idea is to enhance financial performance. Firms that strongly manage inventory stocks, payables, and receivables can significantly enhance profitability as well as shareholder values. The finding provides the increasing of the theory that highlights the need for firms to adopt strategic WCM practices, especially during times of economic uncertainty. Furthermore, the study explores the dynamic effect of WCM on the financial performance of different firms, industries, enterprises, and companies, and economic conditions.

CONCLUSION AND RECOMMENDATION

To summarize, WCM is an important aspect of corporate finance which has a very important effect on business liquidity and overall financial success. An efficient and good WCM strategy guarantees a business has enough liquidity to fulfill the business's immediate financial needs and make investments in long-term assets (Deloof, 2003). The research analyses the connection between working capital management and business financial performance in firms that are on the BIST 100 index list. The analysis method used is panel regression analysis.

Multiple studies have consistently demonstrated that implementing efficient working capital management practices may importantly enhance business profit gain and overall worth. Deloof (2003) discovered a noteworthy inverse relationship involving the time of Accounts receivable, Inventory and Accounts payable, and the financial success of corporations. Lazaridis and Tryfonidis (2006) showed that Profit gain can be boosted by reducing CCC. can boost profitability. Recent research has utilized panel data analysis to address the variability and time-dependent characteristics of enterprises (Altaf & Ahmad, 2019).

The research uses panel regression analysis to examine the correlation between WCM components and business Financial Performance measures, like ROA, and ROE. The panel data consists of the financial statements of firms on the BIST 100 index list for a duration of five years (2015-2020). Important factors consist of the Account Receivable Period, Inventory Period, Account Payable Period, and the CCC.

Information was obtained from yearly financial statements on BIST 100 firms. The dependent variables in this study are the ROA, and ROE, while independent factors consist of Average Collection Time, Inventory Turnover Period, and Account Payable Period. This study by Banos Cabellero (2012) incorporated controls like business size, debt, and growth on sales to separate the impacts of WCM on business financial performance.

The panel regression revealed the CCC has a negative correlation to the ROA. The results demonstrate that a company with lower CCC often has better performance

profitability and vice versa (Gill et al., 2010). The reduction in the context of the duration in accounts receivable and inventory turnover has a positive impact on return on equity. This indicates that effective working capital management improves the shareholder values of the firm or enterprises (Enqvist et al., 2024). The relationship involving the CCC and profitability in the firms or enterprises highlights the need to reduce delays in the operating cycles as the cause of maximizing the financial output results (Sing et al., 2017).

The study using the BIST 100 Index, demonstrates strong proof that effective working capital management has a significant benefit effect on financial performance. Firms and enterprises should be encouraged to enhance working capital management by increasing the effect of the time duration of the accounts receivable and inventory stocks, while efficiently handling the payable account. Subsequently, the investigation could expand this analysis to the development of the major economies to rectify the applicability of the output results.

Conclusion

The study evaluates the relationship between working capital management on financial performance in companies that have been collected from the BIST 100 Index list. The BIST100 Index list provides and creates insights information into how effective working capital management practices can be used to boost a firm's profitability and overall financial well-being. The study utilizes panel data regression analysis to establish effective evidence that shorter cash conversation cycles are connected to the enhancement of ROE and ROA. The findings from the research suggest that the firms, enterprises, and companies that handle efficiently the working capital management specifically by reducing the amount of time it will take to collect payment management inventory, and settle debts, actually reach superior financial performance.

The results emphasize the importance of working capital management in maintaining corporate operations and maximizing shareholder value. The strong control over the accounts receivable and inventory not only maintains the optimization of cash flow but also boosts profitability by preventing capital from being continuously, blocked in unproductive assets. Also, the findings enhance the significance for companies to

consistently oversee, and maintain financial stability.

This research improves the recent knowledge by presenting actual information from the Turkish market, which can be used as a standard for other developing economies. Managers and policymakers should prioritize enhancing working capital management practices to boost financial performance. Subsequently, estimation could improve the findings by estimating different industries and geographic areas. Furthermore, confirms the overall validation, and practicality of the discoveries.

Recommendations

To improve the relationship that involves the working capital management and financial performance for firms, enterprises, and companies in the business trends, via the BIST 100 Index list, the research addresses the following suggestions:

- 1. Real-Time Monitoring System should be Implemented:** Firms, enterprises, and companies should address the resources on implementing the sophisticated monitoring and management systems that help instantaneously trail accounts payable, accounts receivable, and Inventory levels through identifying the less efficient and taking quick corrective actions this will ensure the effectiveness of utilization of working capital management
- 2. Enhancement of the CCC:** firms, enterprises, and companies should make an effort to control the duration of CCC by improving the efficiency of the receivables collection and inventory management procedures in the collecting payable processing and sales. Also, firms and enterprises should accelerate the procedures of converting the inventory process into sales management, and from there collecting payment management can greatly improve liquidity and profitability.
- 3. Enhancement Supplier and Customer Relationships:** improving robust relationships between the customers and suppliers in the business trend will improve the business negotiation of the payment terms and credit policy. The firms, companies, and enterprises should work more to upsurge the time to pay the

bills on time intentionally to avoid the penalty. Also, reduction of the duration, and making payment earlier motivates and improves the efficiency of the relationship between the clients and suppliers.

- 4. Employing technologies and automation processing:** Applying technology to automate various components of working capital management improves precision and saves administrative expenses. The automation technologies optimize the process of invoicing, payment aspect, and making perfect control for inventory management, reduce human errors, and guide proper reallocation of resources.
- 5. Dynamic Inventory Management Strategies Utilization:** just-in-time inventory management systems and other dynamic stock management strategies reduce access stocks, and reduce holding costs. The procedures help to guarantee that the capita management is not needlessly destined in inventory, in a manner that enables strong management cash flow in the companies or enterprises.
- 6. Effective Credit Management Process Implementation:** companies and enterprises should implement effective credit management processes to minimize the likelihood of incurring negative debts. This encompasses the comprehensive credit evaluations of customers, establishing effective credit thresholds, and consistently revising and evaluating credit protocols.
- 7. Regular Financial Analysis Performance:** financial performance analysis can be measured regularly based on correlation with working capital management elements that might reveal some patterns and potential areas for development. Therefore, Businesses should utilize this information continuously to improve WCM strategies.
- 8. Employee Training Investment:** companies and enterprises or firms should be encouraged to provide personal training as a means to enhance the rate of working capital management and financial performance. The effective analysis training overall improves the operational management of WCM, and therefore, the staff in the working place that knowledge and well understanding effectively handle the various components of working capital which in turn leads to improved financial performance.

9. Encompasses WCM strategy Establishment: building the comprehensive planning for WCM is interwoven into the overall business strategy. This entails synchronizing WCM objectives with overarching financial goals and ensuring that the department is actively operating to achieve the objectives

The recommendations from the above include the suggestions that by using the presented suggestions from the above, the companies that are listed on the BIST Index list, to boost the working capital management components, resulting in effective business Financial Performance as well as enhance the competitiveness in the market equilibrium.



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