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MASTER THESIS

VERSLO CIKLŲ SVYRAVIMO BEI APYVARTINIO KAPITALO VALDYMO STRATEGIJŲ ĮTAKA PELNINGUMUI: PREKYBOS IR GAMYBOS SEKTORIŲ ATVEJIS THE IMPACT OF BUSINESS CYCLE FLUCTUATIONS AND WORKING CAPITAL STRATEGIES ON PROFITABILITY: RETAIL AND MANUFACTURING SECTORS' CASE

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LIST OF ABBREVIATIONS

- WCM working capital management
- GNP gross national product
- GDP gross domestic product
- WIP work in progress
- CCC cash conversion cycle
- DIO days inventory outstanding
- DSO days sales outstanding
- DPO days payables outstanding
- COGS cost of goods sold
- RBC real business cycle
- ROA return on assets
- VIF variance inflation factor

INTRODUCTION

In the landscape of today's global economy, businesses constantly navigate through challenges and opportunities, seeking strategies that contribute to sustained growth and profitability. The interplay of economic cycles and operational decisions, particularly in the realms of working capital management, forms a critical arena for exploration. This Master thesis delves into the nuanced relationship between business cycle fluctuations, working capital strategies, and their collective impact on the profitability of firms, with a specific focus on the retail and manufacturing sectors.

Relevance of the topic. The relevance of understanding the impact of business cycle fluctuations and working capital strategies on profitability cannot be overstated. As businesses faces an everevolving economic environment marked by volatility, uncertainty, and rapid technological advancements, insights into effective operational strategies become imperative. The retail and manufacturing sectors, being pivotal contributors to economic activity and being prone to cyclical variations, serve as compelling case studies to unravel the complexities inherent in aligning business operations with the prevailing economic conditions. During economic expansions, these sectors typically experience increased demand, which necessitates efficient management of working capital to capitalize on growth opportunities. Conversely, during economic downturns, they face heightened financial constraints and reduced consumer spending, emphasizing the need for robust working capital strategies to maintain liquidity and operational stability. Thus, the research holds practical significance as it addresses contemporary economic realities and provides actionable insights that can enhance business resilience and performance in the face of economic fluctuations.

<u>The level of exploration of the topic.</u> Topic is explored extensively both on individual aspects (business cycles and working capital management) as well as looking of those factors' impact on profitability on various industries, companies and countries. Studies were performed by Enqvist et al. (2014) exploring business cycles impact on profitability in Finland; Mielcarz et al. (2018) focused on similar topic in corporate sector in Poland; Robles (2016) and Goncalves et al. (2018) focused on United Kingdom case; Baños-Caballero et al. (2010) focused on small and medium enterprises. As of business cycles and working capital management impact on manufacturing and retail companies, level of exploration is minimal. Case of Lithuania chosen for data availability purposes.

<u>Novelty of the Master thesis.</u> Thesis brings together elements from macroeconomic dynamics to microeconomic level operational decisions. Research aims to uncover sector-specific nuances that contributes to both existing researches, and adding value to business management. Thesis contributes

to the existing literature by uncovering how fluctuations in economic cycle specifically impact working capital strategies. Furthermore, study covers period from 2007 up to 2023 providing up-todate insights on various economic cycles, including recent COVID-19 effects on businesses working capital strategies.

<u>Problem of Master thesis.</u> Problem addressed in this thesis is how businesses can strategically manage working capital according to business cycle fluctuations to increase profitability. That involves inventory, accounts receivable, investments, financing decisions, and other imperative accounts management in response to varying economic conditions.

<u>The aim of the Master thesis.</u> The primary purpose of this Master thesis is to offer valuable insights to practitioners, and academics by picturing relationship between business cycles, working capital strategies, and profitability.

The objectives of the Master thesis.

- Explore theoretical concepts of business cycles and working capital management by conducting literature research on factors influencing business cycles; profitability determinants and business cycle's impact on working capital management decisions; investigate how businesses adapt their working strategies in response to different phases in business cycle;
- 2. Describe methodology to be used in empirical analysis to determine impact of business cycle variations and working capital management on firms' profitability;
- 3. Conduct empirical analysis in order to quantify relations between working capital components and profitability measures;
- 4. Evaluate relationship between macroeconomic indicators (business cycle determinants) and company's profitability;
- 5. Explore manufacturing and retail sector's specific variations in the impact of working capital decisions on the financial performance of firms.

<u>The methods deployed by the Master thesis.</u> Literature review; theoretical synthesis; comparative analysis; quantitative analysis (statistical techniques, regression analysis, financial ratios and performance indicators calculation).

<u>The description of the structure of the Master thesis.</u> First chapter of the thesis consists of literature review in which theoretical framework for business cycles and working capital management is

displayed. Second chapter pictures methodology of the research conducted. Third part constitutes of empirical analysis, conclusions and recommendations.

1. THEORETICAL FOUNDATIONS OF BUSINESS CYCLES, WORKING CAPITAL MANAGEMENT AND PROFITABILITY

1.1 Theoretical foundations of business cycles 1.1.1 Introduction to business cycles

According to Zarnowitz (1991) the popular meaning of a business cycle is that it is an empirical phenomenon that was founded upon historical experience, however in theory it is understood as equilibrium. People has come across that economic conditions differ from time to time. The growth is often understood as prosperity, and economic downturns as depression, or more commonly used term – recession. Burns and Mitchell (1946) define business cycle as type of fluctuations in the aggregate economic activity that could be separated as expansions, that occurs in many economic activities, followed by similarly general recessions, contractions, and revivals, which then merge into expansion stage creating a business cycles are relevant to economies that live of business enterprises rather than agrarian activities or centrally planned economies.

According to Filardo (1993), typical business cycle constitutes of 4 main phases: trough, expansion, peak, contraction.

Expansion follows after the trough, which is the lowest point, before its peak – highest point. Contraction is the period after the peak and before the trough. According to Sarkiniene, Kvainauskaite (2005):

- Contraction (recession, depression) decline in the overall volume, income, employment, and trade levels in an economy, typically lasting from six months to one year and affecting many sectors of the national economy, causing disruptions (Zarnowitz, 1984). During a downturn, producers face challenges in selling their products, leading to a reduction in the number of employees, decreased production output, and a lack of investments. Rising unemployment reduces overall expenses, further contributing to a decline in production and the spread of unemployment.
- Trough (breaking point) lowest level of the business cycle (low gross domestic product), high unemployment rates are frozen, economic activity is significantly low.
- Expansion economic activity begins to rise, aggregate demand and the volume of production of goods and services increase, production and employment levels, business and consumer spending increase. As economic conditions improve, entrepreneurs expand their businesses,

ramp up production, create new jobs, and employment approaches full employment. This encourages higher consumer spending and further expansion of production and consumption. The volume level of GNP is the highest.

• Peak - economic activity is at its highest. The volume of the national product is the biggest, the economy is developing rapidly, there is full employment in the market, production is working at maximum capacity, so the demand for goods and services is increasing, and prices are also rising. Thus, in the phase of economic upswing, not only the volume of production increases, but also employment, wages, prices and interest rates.

Figure 1. Phases of business cycle



Source: prepared by author, using Filardo (1993)

In Figure 1 we can see how economic activity fluctuates in time. From peak stage economy starts to contract until it reaches the trough stage. From through, economic ratios start to improve, that is where the economy transfers to expansion stage until it reaches the peak once again. What is mentioned by Burns and Mitchel (1946), who stated the main definition of business cycle, that business cycles have impact on economic activities as well as business cycles are always a continuing and recurring process thus it is important to designate what influences the turning points.

To summarize, fundamental framework of economic fluctuations was provided. Exposition navigated through expansion, peak, contraction, and trough stages, providing foundational understanding of the cyclical patterns inherent in economic activities. This subsection serves as a crucial primer for comprehending the subsequent discussions on the intricate dynamics, causes, and impacts of business cycles on various aspects of economy.

1.1.2 Main factors influencing business cycles

In this chapter, main factors that impacts the dynamics of business cycles will be addressed. The Business Cycle Dating Committee of the National Bureau of Economic Research in the U.S. mentions that economic cycles are seen in GDP changes, real income, industrial production and employment. However, these factors are the result of a changed business cycle, which we can observe in which phase the economy is currently. All these factors are interrelated, which means that changes in the business cycle are observed when analyzing these indicators, but also changes in these indicators affect business cycles (Kose et al., 2007). Indicators are consumer behavior (Hampson (2023)), investment or capital spending, and government spending initiatives. The following analyzes precisely these factors and how they change with changes in business cycles, as well as how they influence the further course of the economy.

1. Consumer spending behavior

Consumer spending is significantly important in shaping the business cycle. It is influenced by various factors, such as income levels and consumer confidence. Consumers are showing different behavioral patterns during ups and downs of the economy. According to Hampson (2023), there are extensive research applied on the field of how consumers respond to gloomy economic times. Engel's law portrays that as income increases (decreases), households tend to allocate smaller (larger) share of their consumption budget to essential items in comparison to other (Dutt, Padmanbhan, 2011). Studies have observed a cyclical asymmetry, which depicts that customers tend to reduce spending more quickly during economic contractions than increase the spending during following expansion period (Hampson, 2023). Consumer tend to reallocate spending towards more affordable brand types, or discounted items (Hampson, 2023). Scholdra (2021) noticed that microeconomic shifts prompt households to primarily modify their purchasing activity; that is, when facing a reduction of income, households tend to purchase fewer products, resulting in lower total expenditure. Conversely, macroeconomic changes induce significant structural adjustments in households' shopping preferences and expenditure patterns. Substitution effect is prevailing, named lipstick effect in MacDonald and Dildar (2020) studies, which shows that there during downs in economy there is increase in spending among women in cosmetics, moving from more expensive purchases (i.e. clothing) towards cheaper (i.e. lipsticks).

Socio-economic environment was researched by Lopes (2011). When people have optimistic expectations, they tend to actively engage in productive levels and profitable ventures, such as entrepreneurial activities and increased spending. As positive expectations reach their maximum

point, there comes the point where outcomes no longer align with expectations, which prompts a shift towards more pessimistic expectations, with lag of 6-9 months, in which we can notice changed behavior patterns (Bandi, Tamoni, 2023). There is tendency that where people positive expectations rise, prosperity levels become unsatisfactory and frustration start to take over – economic performance soon decreases, adaptation occurs in scaling down one's aspirations, reinforcing further pessimistic expectations.

Uncertainty promotes people to adapt to current situation, such as another job, establishing business. As these adaptation behaviors do not conclude in immediate changes, it occurs during depression stage of the economy, which is explained by Scholdra (2019) that in this phase people tend to feel that this is best time to try out new ideas, thus this result in increased activity both by the consumers and producers. Eventually, those proactive actions lead to increase in optimism leading to recovery phase. Public experience motivation to try new approaches, bringing economic prosperity, thus the cycle moves again to recovery phase.

2. Capital spending

Capital spending or investment refers to expenditure on items that may be used to produce other goods/services, such as property, plant, equipment and other infrastructure. Capital spending is significant driver of economic growth. Capital spending decision making is similar to above mentioned consumer behavior tendencies, researched by Lopes (2011). High investment is often seen during booming time. Strong optimism and positive expectations encourage companies to invest and undertake long-term projects, whereas during recession, followed by negative expectations, uncertainty, companies tend to cut back on investment. Similar to ordinary consumer behavior, in downturns, companies that are motivated by optimistic incentives, play crucial role in economic recovery. By regaining confidence and forming positive expectations, investment is resumed, thus economic activity increases (Scholdra, 2019). According to Ghosh, Gregoriou (2008), current spending is more growth-enhancing than capital spending, however, earlier study, such as Easterly and Rebelo (1993) pictures that public investment on infrastructure, communications had a direct impact on growth.

3. Government spending

Government spending is a crucial component of aggregate demand – it includes spending on goods, services, infrastructure and other programs. Moudud (1999) explains neoclassical theory usage. It assumes that increase in government spending lowers rate of national savings and therefore the growth rate of investment in output, thus increased government consumption currently is financed

on decreased future consumption. In other words, government spending is financed by borrowing, which leads to increase of interest rates, consequently lower private investments and lower output. However, in the short run, according to the IS-LM theory, unemployment exists in short run, therefore increase in government spending creates so called multiplier effect, that stimulates both employment and output. Consequently, spending effect in time increases inflation. From policy point, both long run and short run neoclassical approaches implies that higher investment, production, employment, and lower interest rates as well as prices can be achieved by lowering budget deficit. In early Friedman studies (1978), it is pointed that in Keynesian model, short-run and long-run effects are resulting in crowding-in and crowding-out, respectively - same as in neoclassical model. Crowding-in occurs when government increases spending and consequently stimulates private sector activities, as a result increase in output occurs. On the opposite, crowding-out is the phenomena, when government spending increases, however it results to reduction of economic activity. Scenario occurs, as private and public sector competes for capital and labor, thus private investment decreases, since interest rates rises due to increased demand for loans. In classical growth cycles model, short-term results are the same. However, in long-run, if private saving rate is fixed, the long-run crowding-out occurs, but if private saving rate can rise fast enough, then long-run crowding-in effect occurs (Friedman, 1978).

Thus, governments might reduce spending during economic booms to prevent inflationary pressures. On the contrary, during recession, fiscal policy might include increase in government spending to boost the demand (Riascos, Vegh, 2003).

This subsection provides insight on pivotal factors steering business cycles, focusing on consumer behavior, capital spending, and government spending. Insights into how these factor's interplay contribute to a nuanced understanding of economic landscape.

In conclusion, this chapter provided the theoretical foundations of business cycles, unraveling the dynamics that shape the fluctuations in economic activity. Insights of the driving forces behind expansions, contractions, and the recurring patterns that characterize business cycles, were provided. The understanding of these theoretical frameworks equips us with valuable perspectives to analyze and interpret the complex interplay of factors influencing the cyclical nature of economies.

1.2 Theoretical foundations of working capital management 1.2.1 Introduction to working capital management

In finance management, the efficient utilization of resources holds paramount significance for the sustained success of any business entity. Among these resources, working capital stands out as a

pivotal component, representing the financial engine that drives everyday operations (Li et al., 2014). In this chapter, there will be highlighted definition of working capital and its components.

Working capital is customarily divided into two categories: gross working capital and net working capital. Gross working capital is the sum total of all current assets, while net working capital is the difference between current assets and current liabilities. Working capital management, which may be named as management 's dealing with current assets and current liabilities, is one of the key elements of determining the liquidity and profitability of the firm (Mathuva, 2010). Management decisions determine both size and effectiveness of the working capital (Singh, Kumar, 2013). The purpose of managing the WC, named by Ricci and Vito (2000), is to achieve wanted proportion between company 's profitability and risk. According to Anton, Nucu (2022), WC management is of key importance in cultivation of Company's value, therefore firms needs to balance and obtain optimal levels (Habib, Dalwai, 2023). Table 1 pictures structure of working capital components: current assets and current liabilities.

Table 1. Structure of current assets and liabilities

Current assets	Current liabilities
include	include
Stock or inventory	Accounts payable
Accounts receivable	Bank overdrafts
Cash in-hand	Short-term borrowings
Short-term securities	Other payables

Source: compiled by author, using Kaur (2010), Wild (2017)

On the current assets side, inventories may include raw materials; work-in-progress or finished goods awaiting sale and delivery. Trade receivables include unpaid bills for which the profit has already been realized in the accounts. Also, under current assets cash in-hand and other short-term securities are classified.

Regarding current liabilities, trade creditors include payments for suppliers mainly for raw materials and other supplies. Also bank overdrafts and other short-term loans. Other payables include outstanding tax, dividend and interest obligations.

Further, working capital components will be analyzed in more details.

a) Inventory

Inventory control is the process that manages the availability of goods for customers. It aligns the purchasing, manufacturing, and distribution processes to fulfill requirements. This responsibility encompasses providing current sales items, introducing new products, supplying consumables, spare parts, obsolete items (Wild, 2018). Inventory could be categorized by raw materials, work-in-progress (further - WIP), and finished goods. Raw materials are used in production for work-in-progress or completed goods. Objects are deemed as WIP when raw materials are in the process of transformation into partial products, subassemblies, and the final product. It is advisable to minimize WIP. WIP arises due to factors such as delays in work, extended transit times between operations, and bottlenecks in queues. Finished goods are prepared for immediate sales to existing customers and can serve as a buffer for manufacturing operations, addressing both anticipated and unforeseen market demands. Essentially, manufacturing company can create a stockpile of goods throughout the year, in order to meet the demand needs for holiday season (Muller, 2019).

b) Accounts receivable

When corporation engages in the provision of goods or services on credit, it records such transactions as receivables within its ledgers and on the balance sheet. The subsequent inflow of cash transpires within a stipulated credit period accorded to the customer. The management of receivables is conducted through timely communication of credit periods to buyers. Companies typically conduct credit analysis to discern the punctuality of payments from clientele. Receiving cash promptly can enhance company's working capital, vital for its financial health. It is noteworthy, however, that an excessively precipitate collection of funds without offering favorable credit terms, may adversely impact long-term business sales, as customers may opt for competitors with more lenient payment terms (Mian, Smith, 1992).

c) Cash and short-term securities

Cash allocated within the current assets section as is crucial for acquisition of inventory, payment of salaries, investing in fixed assets, etc. Maintaining substantial cash reserves is a prudent strategy to fulfill varied needs of organizations. This obviates the necessity to resort to overdrafts, seek additional capital from shareholders, or incur debts. However, it is imperative to recognize that holding excessive amounts of unutilized cash, not earmarked for stock acquisitions, business expansion, or dividend disbursement, represents a missed opportunity for earning returns. Such idle cash can be judiciously invested in interest-bearing instruments like savings accounts, fixed deposits, or government bonds. Prior to making such financial decisions, companies should diligently prepare cash-flow forecasts to ascertain their liquidity requirements. Failure to do so may result in unforeseen obligations, such as the urgent need to purchase stock or settle outstanding liabilities, incurring associated costs and potential penalties. Notably, some larger entities opt to invest surplus cash in overnight money market deposit accounts at the conclusion of each day, thereby earning interest. Additionally, alternative short-term securities, including government treasury bills, commercial papers, bonds, mutual funds, corporate notes, and mortgage-backed securities, present viable investment options for companies seeking to deploy liquid funds (Thuvarakan, 2013).

d) Accounts payable

Trade payables represent a liability arising from credit sales. Particularly in retail and manufacturing sectors, many companies opt for credit-based procurement of goods, categorizing it as a liability awaiting settlement. The extension of a credit policy is often contingent on established relationships with supplier. The payment for goods acquired on credit typically occurs at a future date, determined by the seller's specified credit period (Garcia-Teruel, 2009). The acquisition of trade credit is commonplace in business practices, offering advantages such as the avoidance of short-term debt for financing debtors. With an extended creditor period, available cash can be directed toward inventory for sales. Prudent management of forecasted cash flows is essential, ensuring timely payments to creditors when the amounts fall due. Punctual settlements not only enhance a company's reputation in the market but also foster the likelihood of obtaining extended credit terms from suppliers (Thuvarakan, 2013).

e) Short-term borrowings

Short-term borrowings include bank overdrafts, credit lines, commercial papers, bills of exchange, loans from financing companies. This mode of financing is relatively costly due to high interest rates, making it less economical than goods purchased on credit. Prudent management of working capital is essential to prevent potential insolvency or short-term financial challenges. Failing to meet obligations for short-term borrowings, when they become due, can have severe consequences, possibly leading to business closure or liquidation. The company's creditworthiness and reputation may be called into question, dissuading stakeholders, particularly creditors and lenders, from engaging in transactions (Thuvarakan, 2013)

The subsection provides introductory exploration of working capital management, outlining the core components of working capital, emphasizing the interplay between current assets and current

liabilities. By introducing key concepts of accounts receivable, inventory, cash and short-term securities, also, accounts payable and short-term borrowings, subchapter lays the groundwork for more comprehensive understanding of effective working capital management strategies.

1.2.2 Working capital ratios and metrics

Previous studies have shown, that in order to measure working capital management, cash conversion cycle (CCC) can be used (Baños-Caballero, S. et al. (2010), Deloof, (2003)).

Cash Conversion Cycle (CCC) = DIO + DSO - DPO (1), where:

Days Inventory Outstanding (DIO) = (Average Inventory/Cost of Goods Sold) * 365

Days Sales Outstanding (DSO) = (Accounts Receivable/Net Credit Sales) * 365

Days Payables Outstanding (DPO) = (Accounts Payable/Cost of Goods Sold) * 365

CCC shows the time for a company to convert an investment made in purchasing inventory (raw materials or other resources) to cash flow from sales. Therefore, the lengthier the cycle is the more investment in working capital management is needed, thus shorter cycles in most cases leads to better profitability (Hong et al., 2023). According to Lazaridis and Tryfonidis (2006) there is strong relation between cash conversion cycle and profitability, thus in order to maximize the value, proper balance between accounts receivable and payable and inventories should be maintained. Optimal level of inventories has direct impact on company's profitability by freeing up working capital resources that can be reinvested in the business cycle or utilized to meet increased product demand by expanding inventory levels (Korent, Orsag, 2023). Likewise, both supplier credit policies and duration of credit granted to customers will also affect profitability (Lazaridis, Tryfonidis, 2006). Study of Deloof (2003) has shown that negative relation between accounts payable, inventory and profitability exists, meaning that less profitable firms tend to repay debts in longer terms; likewise, higher inventory may indicate difficulties to sell production and flaws to inventory management, which leads to lower profits.

Another measure used is inventory turnover ratio. It can be measured in two different ways, depending on the end user. Ratio measured by supply chain managers is calculated using cost of goods sold (COGS) as numerator and cost of inventory as denominator. Whereas financial analysts usually use sales divided by cost of inventory as metrics. Higher ratio generally indicates that company managing inventory efficiently; as it suggests that the company is selling/restocking quite frequently. Vice-versa, low ratio could indicate slow moving inventory and overstocking, potentially leading to obsolescence and increased carrying costs.

Inventory turnover = COGS/Inventory Cost (2) Inventory turnover = Sales/Inventory Cost (3)

Most popular ratio used to measure working capital management is working capital ratio.

Working Capital Ratio = Current Assets/Current Liabilities (4)

Higher ratio indicates better ability to cover short-term obligations with current assets. High ratio suggests liquidity, however overly high ratio could indicate underutilized resources. On the other hand, low ratio could signal difficulties for the company to cover its liabilities.

Thuvarakan (2013) suggests that it is not recommended to utilize working capital excessively on inventory during economic recession, because obtaining credit for financing of current assets can become challenging. Strict monetary policies may discourage banks to loan in a recessionary period, thus decrease in demand of firm's products can be seen.

Subsection introduced key ratios and metrics used to determine working capital management, such as cash conversion cycle and inventory turnover ratio. Significance of these metrics in evaluating the efficiency of working capital management. By elucidating the cash conversion cycle, which measures the time it takes to convert resources into cash, and inventory turnover, which gauges the frequency of inventory replenishment, the chapter sets the stage for a deeper exploration into the quantitative aspects of working capital performance. Understanding these ratios is pivotal for businesses seeking to optimize their working capital for improved financial health and operational effectiveness.

Overall, this chapter delves into the theoretical underpinnings of working capital management, building on the earlier discussions about working capital components and the key ratios and metrics used to evaluate efficiency.

1.3 Exploring business cycle theories 1.3.1 Neoclassical and Austrian Schools

Neoclassical theory implies general equilibrium concept, also known as "invisible hand" and "free market". The market self-adjusts in a way to give economic stability, and governments are meant only to ensure the free operations market and balanced budgets (Hudea, 2015). Full employment is considered a characteristic feature of any freely operating economy. Even when faced with disequilibrium and some extend of unemployment, equilibrium is restored naturally of reducing wages, boosting labor demand and thereby reinstating initial equilibrium. Equilibrium is also achieved in situations where there are disparities between savings and investments. Reduction in the share of

investments reduces the demand for money, indirectly leading to decline in interest rates (Hudea, 2015). Neoclassical economists rely on Say's law, which states that everything that is produced will be sold, since supply creates its own demand (Hagemann, 2019). Even if a portion of income is allocated to purposes other than purchasing goods and services, leading to decrease in demand compared to supply level and resulting in supply adjustments and subsequent underemployment, the economy will eventually channel itself either towards consumption or investment. These activities, being integral components of the GDP, contribute to market's efforts in restoring its equilibrium (Hudea, 2015). All in all, neoclassical economists do not deny existence of business cycles, however they treat it as temporary disequilibrium.

The Austrian School, including such figures as F. von Hayek and L. von Mises had ideas similar to neoclassical approach, however focused more on money and government factors. According to Austrian School (Dobrescu, 2012), recession might start in few ways:

- a) *Deflation*. Frequently, following an expansion of the money supply, monetary authorities become aware of risks that are associated with low interest rates and opt to tighten the money supply. Instances of such a policy can be observed during economic downturns such as Great Depression.
- b) *Steady inflation*. Central banks persist in augmenting the money supply at a rate similar to that during the expansion phase. This occurs when monetary institutions are unaware of the consequences of excessive credit, with many post-war recessions initiating in this manner.
- c) *Accelerating inflation.* Monetary authorities may anticipate an impending recession or recognize an increased demand for credit, endeavoring to forestall a collapse by accelerating the money supply. The onset of the recession is delayed as long as credit expansion can accommodate the heightened demand for both consumption and investment goods.

Subchapter explores two influential economic schools of thought: Neoclassical and Austrian schools. The Neoclassical school, grounded in classical economic principles, emphasizes market equilibrium, rational decision-making, and the efficient allocation of resources. On the other hand, the Austrian school, with roots in the works of economists like Ludwig von Mises and Friedrich Hayek, places a strong emphasis on individual actions, entrepreneurship, and the role of subjective knowledge in economic processes.

1.3.2 Keynesian and Monetarist Schools

Economist J. M. Keynes had different views than that of neoclassics and Austrian school. Keynes affirmed that free market will not self-balance to full employment situation unless governments interfere with public policies in order to achieve price stability and complete employment. According to economists, the total production of goods and services in an economy results from the combination of four elements: consumption, investment, government expenditures, and net exports. Any surge in demand must originate from one of these components. However, during a recession, robust factors frequently suppress demand due to a decline in spending. Keynesians argue that governmental intervention is essential to mitigate the fluctuations in economic activity, commonly referred to as the business cycle, ensuring a more stabilized and balanced economic environment (International Monetary Fund. *Back to...*). Main principles includes following:

- a) Various economic decisions, both public and private, exert influence on aggregate demand. Private sector choices can sometimes lead to unfavorable macroeconomic outcomes, such as a decline in consumer spending during a recession. In response to such market failures, active government policies, such as fiscal stimulus packages, are advocated by Keynesian economics. Hence, Keynesian principles endorse a mixed economy primarily driven by the private sector but with partial government involvement.
- b) Prices, particularly wages, exhibit sluggish responses to shifts in supply and demand, leading to periodic imbalances, particularly in the labor market.
- c) Alterations in aggregate demand have a more pronounced short-term impact on real output and employment than on prices. Keynesians assert that due to the rigidity of prices, fluctuations in any spending component—be it consumption, investment, or government expenditures—result in changes in output. For instance, if government spending increases while other components remain constant, output will also increase. Keynesian models incorporate the multiplier effect, indicating that output changes by a certain multiple of the increase or decrease in spending that prompted the change. If the fiscal multiplier exceeds one, a one-dollar increase in government spending would yield an output increase greater than one dollar (International Monetary Fund. *Back to...)*.

Hyman Minsky, another Keynesian economist (1992), proposed alternative explanation for business cycles, focusing more on fluctuations in credit, interest rates, and financial vulnerability. According to Minsky, during expansionary phase, low interest rates facilitate easy borrowing for firms, thus investment and output increases. In this case, banks are willing to lend as the growing economy enables businesses to generate cash flows, ensuring smooth loan repayments. This environment encourages firms to accumulate excessive debt, thus discourage from further investments. This large indebtedness creates economic downturn characterized by low investment and reduced production (Binbin, 2009).

On the other hand, representative of monetarist school Milton Friedman, advocate rather different approach than that of Keynes. Monetarists argue that Keynesian model does not recognize the importance of the money supply. Friedman stated that inflation is a monetary phenomenon, therefore it is controlled by central banks. He mentioned that other shocks in the economy, such as oil price shocks or changes in fiscal policy have only temporary effect on increase in prices, however actions of central banks may have effects that are permanent (Roberts, 1993). According to Bianchi et al. (2024), expansionary monetary policy shock boosts the demand for goods, including both consumption and investment. According to the monetarists, fluctuations in economic activity arises from external shocks and government interventions, since excessive interference may exacerbate economic instability. Theory emphasizes of maintaining moderate and consistent growth in the money supply. Decline can result in severe downturns, excessive growth result in inflation (Zarnowitz, 1984).

To conclude, Keynesian school, associated with the ideas of J. M. Keynes, highlights the role of government intervention, especially through fiscal policy, to manage economic fluctuations. In contrast, the Monetarist school, championed by economists like M. Friedman, emphasizes the significance of controlling the money supply and relying on monetary policy for economic stability. The discussion provides a foundational overview of these contrasting theories, setting the stage for a deeper exploration of their implications on business cycles and economic management.

1.3.3 Real Business Cycle theory

Real business cycle theory, rooted in works of Kydland and Prescott, (further – RBC) assumes that there are significant fluctuations in the rate of technological progress and overall, economic fluctuations are driven by real factors, rather than monetary or financial ones (Gazda, 2010). In the context of considering technological shocks as the drivers of business cycles, the precise measurement of technological development becomes a critical aspect of analysis. Solow's (1957) methodology defines technological progress as alterations in demand adjusted by the weighted contributions of capital and labor. Consequently, it represents a component of aggregate demand that cannot be explained by changes in capital and labor alone (Binbin, 2009). According to Gazda (2010), underlying principles of RBC theory are:

- 1. Monetary factors play minor role in business cycles, with monetary shocks having limited explanatory power for fluctuations in overall output
- Business cycles are outcomes of rational economic agents strategically responding to real shocks, primarily driven by fluctuations in productivity growth (technological progress). Additionally, these cycles can be influenced by variations in government spending, import prices, preferences, and other real factors.

This subsection focuses on the Real Business Cycle (RBC) theory, a prominent economic framework. RBC theory posits that fluctuations in economic activity are primarily driven by real shocks, such as technological advancements or changes in productivity. Unlike other theories that emphasize monetary factors, the RBC theory contends that business cycles are inherent responses to real, exogenous shocks. Summarized information provided in Table 2 below.

	Neoclassical	Austrian School	Keynesian	Monetarist	RBC
	 Emphasis on market efficiency and individual rationality 	 Emphasis on individual entrepreneurship and subjective value 	 Emphasis on aggregate demand and role of government intervention 	1. Emphasis on the role of the money supply in influencing economic outcomes	 Emphasis on real shocks, particularly technological changes, as drivers of business cycles
Main features	2. Self-regulating free markets	 Role of capital structure and importance of credit cycles 	 Active fiscal and monetary policy to manage economic fluctuations 	 Advocacy for a stable, rule- based monetary policy 	 Focus on the impact of productivity and efficiency on economic fluctuations
	3. Equilibrium in supply and demand determining resource allocation	3. Decentralized market economy	3. Potential market failures	 Skepticism toward discretionary fiscal policy 	 Skepticism toward the effectiveness of discretionary government policies
	4. Minimal government intervention	4. Minimal government intervention	 Importance of short-term economic management 	4. Importance of controlling inflation through monetary measures	 Reliance on market mechanisms to adjust to shock
Factors influencing recession	External shocks/disturbances in markets	Deflation; steady inflation and accelerating inflation	Insufficient aggregate derrand	-	Real shocks (technological
Factors influencing growth	Resource accumulation	Individual entrepreneurship/capital structure	Government intervention through fiscal and monetary policy	Money supply	progress and shifts in productivity)
Government intervention	Limited	Limited	Active	Limited	Limited
Employment	Full employment	Full employment	Unemployment from insufficient aggregate demand	Unemployment from insufficient aggregate demand	Influenced by real factors
Importance of money	Neutral	Neutral	Important	Important	Limited

Table 2. Summary of business cycle theories

Source: made by author, summarizing sources provided in this chapter

In this chapter, we explored key economic theories that shape understanding of business cycles. Chapter aimed to provide distinction between different theories and underlying assumptions. As seen in summary Table 2, Neoclassical perspective, we see how market forces and equilibrium play pivotal role in driving economic fluctuations. As it is seen in Austrian School chapter, significance of individual choices and role of entrepreneurship is highlighted. Keynesian framework took center stage as it was explored the role of aggregate demand and the role of government intervention in stabilizing economies. From monetarist point of view, impact of money supply on economic fluctuations and role of central banks are emphasized. RBC theory depicted how real shocks, such as technological advancements, drive cyclical fluctuations.

1.4 Theoretical perspectives on profitability and sector specifics 1.4.1 Profitability factors and determinants

Determinants, that influence profitability varies between industries, however they could be separated to internal and external determinants. Internal determinants classified to financial statement variables and non-financial statement variables. External determinants could include regulation environment, competitors, market share and concentration, macroeconomic conditions, such as inflation and interest rate (Rasiah, 2010). Financial statement variables directly affect company's balance sheet (assets and liabilities management) and profit & loss accounts (income and expense management), on the contrary, non-financial statement variables do not directly impact the financial statements, such as size of the company, number of products and services it provides, etc. Table 3 summarized internal and external determinants.

Determinants influencing profitability				
In	ternal	External		
Financial statement variables	Non-financial statement variables	Other variables		
Assets	Company size	Regulatory, tax environment		
Liabilities	Nature of business	Competitors field		
Income	Growth/expansion policy	Market share		
Expenses		Market concentration		
		Macroeconomic conditions		

Table 3. Determinants affecting profitability

Source: made by author, using Rasiah, 2010

Financial statement-related determinants will be discussed separately, however non-financial statement and external variables, listed in the Table 3, particularly for manufacturing and retail sectors, are following:

Internal non-financial statement factors:

- Company size. Newly established companies generally face challenges in financing their working capital, creditors are uncertain of their creditworthiness. Consequently, small firms often maintain lower levels of WC. On the contrary, large corporations aim to capitalize on growth, thus capital requirements are substantial (Thuvarakan, 2013).
- 2. Nature of the business. Manufacturing and retail companies tend to maintain higher inventories and accrue a lot of trade debtors, often financing those through trade payables and short-term debt. As a result, working capital requirement is substantial. Also, some retailers and manufacturers are prone to seasonality, which could also impact the trends of WC requirements (Rasiah, 2010).
- 3. Growth/expansion policy. Whether business is expanding or growing in natural pace, additional funding may be required.

External factors:

- 1. Regulatory/tax environment. Companies that are subject to sector-specific regulatory requirements have to address specific decision making in order not only to meet the requirements, but also not compromise profitability and discourage the investors. The higher the exposure to regulatory requirements, the higher the implications are for investor's strategy. Investors, recognizing the elevated risk associated with sector, will seek a greater return on investment (Reynaud, Thomas, 2012). Also, tax environment in the country highly adds to company's profitability from two perspectives: one, some countries are prone to double taxation, meaning that requirement is to pay corporate income tax as well as personal income tax from dividends. Second, complex tax environment could be potential factor that deters foreign investors.
- Macroeconomic factors. During economic upturns, there usually a surge in demand for products and services, which leads to increased sales (Scholdra, 2021). Consequently, firms tend to invest more in inventories, also in may also prompt additional investments in productive fixed assets. On the contrary, during recessions, companies tend to reduce their investment (Thuvarakan, 2013).

This subsection examines the determinants of profitability, considering both internal and external factors. Internal factors, focusing on non-financial statement ones, including company size, the nature of the business, and expansion policies, are explored for their impact on a company's financial

performance. Additionally, external factors, such as the tax environment and broader macroeconomic conditions, are scrutinized to understand their influence on profitability. By dissecting these elements, the discussion provides valuable insights into the multifaceted forces shaping a company's ability to generate profits, setting the stage for a more comprehensive exploration of profitability dynamics.

1.4.2 Working capital management specifics

Working capital policies

Investment to current assets and financing decisions could be made using three different approaches, depending on type of company and its needs: aggressive, conservative and moderate. For instance, high volumes of sales require more financing than that of low sales, thus both retail and manufacturing sectors lean towards more aggressive or moderate strategies. In aggressive strategy, businesses may opt for short-term debt to fund current assets, benefiting from lower interest rates however increasing the risk due to potential fluctuations in short-term funds. This approach, which keeps current assets low compared to current liabilities, can lead to increased profits, however also poses high risk of default (Mandipa, Sibindi, 2022). As indicated by Kwenda (2017), aggressive WC investment approach promotes firm profitability, indicates high liquidity. Strategy leads to short CCC, signaling that company receives payments quickly and delays payments to suppliers. The extent to which an aggressive WCM strategy enhances a firm's profitability depends on the amount of cost savings achieved by reducing inventory holding costs, such as insurance or warehouse. Additionally, it hinges on how much capital is relocated from slow-moving inventories and delayed accounts receivable to more profitable investments. However, this strategy may negatively impact profitability if maintaining lower levels of both inventory and accounts receivable leads to reduced volumes of sales. Therefore, with aggressive strategy, there is expected negative correlation between profitability and investments into accounts receivable and inventories, while positive correlation expected between accounts payable and profitability (Vlismas, 2023). Conservative approach involves funding noncurrent assets, perpetual current assets, and certain temporary assets with long-term debt, while shortterm debt is used for the remaining short-term assets. Strategy emphasizes maintaining a substantial cash reserve, minimal customer receivables, and low supplier debts. As stated by Zimon and Tarighi (2021), as it imposes lower risk and high liquidity, it can also lead to lower profitability. A conservative WCM strategy focuses on increasing investments in working capital. Higher accounts receivable and inventory levels are anticipated to boost sales revenue and operating income. Increased inventory helps mitigate production slowdowns, stockouts, and price volatility risks. Furthermore,

raising accounts receivable extends credit to customers, aiding their cash management, strengthening long-term relationships, ensuring product quality, and reducing information asymmetry between buyers and sellers (Habib, Dalwai, 2023). However, increased investment in working capital also raises inventory holding costs, such as warehouse rent, insurance, and security expenses, along with the opportunity cost of maintaining high working capital levels. This approach could potentially lead to bankruptcy, and suppliers might cut back on providing regularly purchased goods. Thus, a conservative WCM strategy is expected to show a positive relationship between profitability and investments in inventories and accounts receivable, and a negative relationship between profitability and accounts payable (Vlismas, 2023).

Business cycles impact on working capital management

Korajczyk and Levy (2003) propose that companies tend to strategically time the issuance of debt based on prevailing economic conditions, therefore it is rational to presume, that fluctuations in the broader economy play significant role in shaping demand for a company's products and influencing financing decisions. Business cycles can impact the financing sources of all businesses by impacting economic growth and sales (Jaworski et al. 2024). To illustrate, a decline in company sales results in reduced earnings, therefore affecting crucial part of working capital. During 2008 financial crisis, sharp decrease in revenue were noted, consequently affecting the profitability ratios and influencing working capital needs. (Enqvist et al., 2014). Studies held by Braun and Larrain in 2005 have shown the relationship of external financing in order for the company to grow and business cycles. It is stated, that if aggregate cyclical behavior is significantly influenced by financial conditions, one anticipates that the response to negative shocks will be contingent on the extent to which agents rely on financial markets. In particular, when internal funds predominantly finance investments, worsening economic conditions are expected to have less impact compared to situations where external funds constitute majority of financing. Also, the impact of economic downturns on industries are higher, if industry relies less on hard assets (Braun, Larrain, 2005). Enqvist et al. (2014) highlights the importance of working capital management not only in the downturns, but in day-to-day activities, pointing the significance of forecasting and inventory management. Lower demand in economic slowdowns exhausts the working capital of firms, thus governments impact comes to force. Implementing economic policies with the goal of enhancing cash flows, by tax eases, reductions, postponement, etc., has the potential to enhance businesses capacity to internally finance working capital. Pakdel, Ashrafi (2019) mentions that changes in macroeconomic conditions also impact investments and financial capital allocation. Economic downturns and crises elevate the importance of liquidity and emphasize the need to focus on working capital conditions. According to Korajczyk and Levy (2003), companies undergoing financial distress respond differently to macroeconomic uncertainty compared to those not in financial distress. Such periods often lead to extended cycles for collecting accounts receivable and inventory due to slowed sales, necessitating additional working capital requirements. Given the heightened challenges in unfavorable economic conditions, it is suggested that working capital management should be deemed more crucial than performance during economic recessions. Goncalves et. al (2018) study shows that companies can enhance profits by minimizing the CCC, which is even more affected by economic cycle. According to the study, during both economic peak times and downturns, return on assets (ROA) decreases significantly in case of growing CCC. Overall, results of different research shows that value of WCM on company's profitability prevails more in economic slowdowns than booms, meaning that it is of crucial importance during worsened economic conditions.

Sector's cyclicality

Petersen and Strongin (1996) in early studies researched factors that make the sector to be cyclical. From the exploration of data, it is known that durable-goods sectors are more prone to cycles than that of non-durable goods. There are several reasons identified. One, that imperfections in financial markets prompt buyers of durable goods to heavily rely on internal finance, which tends to be highly procyclical. Another, it is crucial to note that the acquisition of durable goods can be often delayed or accelerated over time. The ability to substitute demand across different time periods is likely to be much more significant for durable goods than non-durable. It is highlighted by the authors, that it is critical to not pool data from all manufacturing sector in order to have clear results of cyclical behavior (Petersen, Strongin, 1996). That also follows to retail sector, which is interconnected to manufacturing sector, as depending on what the firm is retailing cyclicality might differ. However, retail sector is highly dependent on consumer spending, thus non-durable goods are less sensitive, but durable goods are open to deferment of consumption during recessions.

The subchapter explores how strategic decisions regarding working capital, responses to economic fluctuations, and sector-specific considerations play pivotal roles in shaping a company's overall profitability.

All in all, chapter covers realm of profitability and working capital management, exploring factors that influence financial success, digging deeper into determinants of profitability, including both internal and external factors. Working capital management characteristics were explained, adding to attributes of management policies and strategies as mentioned above: moderate, conservative and aggressive. Introduction to business cycles impact on WCM was made and how it impacts WC components. The chapter concluded with an exploration of the cyclicality inherent in manufacturing and retail sectors. By assessing how industries respond to economic upswings and downturns, we gained insights into sector-specific challenges and opportunities.

2. METHODOLOGY FOR RESEARCHING THE IMPACT OF BUSINESS CYCLE FLUCTUATIONS AND WORKING CAPITAL STRATEGIES ON PROFITABILITY

2.1 Aim, variables tested and hypotheses of the research

The purpose of this empirical research is to explore and quantify the impact of business cycle fluctuations on the profitability of the retail and manufacturing sectors in the Lithuanian market, and to assess the effectiveness of various working capital management strategies employed by firms in these sectors under different economic conditions.

By examining financial data, the study aims to identify patterns and relationships that can inform better financial management practices and strategic decision-making.

The research seeks to:

1. Determine the extent of business cycle impact

Analyze how different phases of the business cycle (expansion, peak, recession, trough (Filardo (1993)) affects the profitability metrics of the companies in retail and manufacturing sectors.

2. Evaluate working capital strategies

Investigate the working capital management practices used by firms in these sectors and their effectiveness maintaining profitability during various economic conditions.

3. Compare sector-specific responses

Compare working capital strategies and their outcomes between retail and manufacturing sectors to identify sector-specific practices.

4. Provide recommendations

Offer recommendations for practitioners on optimizing working capital strategies to enhance profitability and resilience against economic fluctuations, and for academics for further research areas.

Researched variables include:

- 1. Independent variables:
 - Business cycle phases

Phases of business cycle are crucial macroeconomic indicators that affect firm's operation and profitability. By incorporating each phase to model, one can indicate not only how different phases affect firm's results, but also how it shifts company's management of working capital components. As mentioned in theoretical part of the study, phases are interrelated with businesses performance. By testing hypothesis, including phases of business cycles as independent variables, it is tested if relationship is strong and how dependent variable is affected. Phases could be identified using economic indicators, such as GDP growth rate.

• Working capital strategies: aggressive, moderate, conservative

As strategies associates of how company manages its short-term assets and liabilities, it directly relates to company's profitability. WC strategy can be determined by ratios (WC Ratio, CCC, Inventory turnover as described in previous chapter), which are calculated using accurate data from company's financial statements, ensuring reliability. Previous academics in similar research used CCC for reliable measurement of working capital (Enqvist et al., 2014, Goncalves et al., 2018), therefore CCC is selected as most appropriate indicator used in further research.

2. Dependent variable defined as profitability, which is measured by ROA. This ratio is reliable indicator that is calculated using accurate and standardized financial data, wildly used in financial analysis.

ROA = Net profit/Total average assets (5)

- 3. Control variables:
 - Company size. Larger companies often benefit from economies of scale, more substantial market presence, and better access to capital markets. Size can influence a firm's ability to withstand economic fluctuations and implement various strategies. Variable can be measured by total assets, revenue and employee count. Selected measure is revenue, which is used in other research as control variable (Deloof, 2003; Enqvist, 2014). Data is available in financial statements.
 - Leverage ratio. Indicates the degree to which a company is financing its operations through debt. High leverage can amplify returns but also increases financial risk. Variable can be calculated from balance sheet data. Ratios such as debt-to-equity and debt-to-assets provide reliable measures of leverage. Debt to equity measure is used

following same studies conducted by Deloof (2003), Enqvist (2014). Formulas for following measures are presented below.

Debt to equity = Total debt/Total shareholders equity (7)

$$Debt to assets = Total debt/Total assets (8)$$

Following hypotheses raised and aimed to be tested in scientific research.

H1: Business cycle fluctuations have a significant impact on the profitability of companies in the retail and manufacturing sectors

H2: Application of different working capital strategies have significant impact on profitability

H3: Impact of working capital strategies on profitability varies across different phases of the business cycle

H4: The effectiveness of working capital strategies in enhancing profitability differs between retail and manufacturing sectors

All in all, in this subchapter, aim of the empirical research was described as well as detailed description of variables tested provided and sources of variables explained. Finally, hypotheses to be tested raised.

2.2 Sample size, period researched, and data collection methods and sources

Data includes period from year 2007 to 2023. The period from 2007 to 2023 was selected for data collection due to its encompassing nature of multiple business cycles, including the global financial crisis of 2007-2008, subsequent recovery phases, periods of expansion, the economic impact of the COVID-19 pandemic, and the recovery post-pandemic. This time frame provides a comprehensive view of how business cycle fluctuations affect the profitability of firms in different economic conditions.

Sample consists of manufacturing and retail companies, listed on Nasdaq Baltic market. This selection was made to represent the diverse impacts of working capital strategies and business cycle fluctuations on two distinct but significant sectors. Manufacturing and retail are chosen due to their differing working capital requirements and responses to economic cycles, providing a comparative perspective. The limited sample size enables a detailed analysis of each company's strategies and

performance. The respondents, being publicly listed companies, ensure the availability and reliability of financial data, which is crucial for accurate analysis.

Primary data collected from the companies' financial statements, included balance sheets, income statements, and cash flow statements, also other information disclosed in financial statements, which are listed in Nasdaq official website. Secondary data, such as market reports and economic indicators, sourced from official local government database and EU official database.

Data analysis will be conducted using following methods.

• Quantitative analysis

Regression analysis is a suitable method for analyzing the relationship between WCM and profitability for several reasons. Firstly, regression analysis is designed to quantify the relationship between dependent and independent variables (Sarstedt, Mooi, 2019). In the context of WCM and profitability, it facilitates in determining how components of WCM affect profitability metrics. Previous research examined the link between profitability and WCM using regression analysis (Goncalves et al., 2018; Deloof, 2003; Enqvist et al., 2014). Secondly, regression analysis sets and indication of trends and patterns (Sen, Srivastava, 2010).

Furthermore, regression analysis provides a framework for hypothesis testing, using statistical tests, such as Pearson Correlation Coefficient, t-test (Neideen, Brasel, 2007). Linear regression equation provided below in formula (9).

$$y_{i} = \beta_{0} + \beta_{1}x_{i1} + \beta_{2}x_{i2} + \dots + \beta_{k}x_{ik} + \epsilon_{i}, where \ i = 1, \dots, n \ (9)$$
$$\beta_{0} - intercept; \ \beta_{i} - parameters; \ \epsilon_{i} - errors$$

Regression analysis conducted using Microsoft Excel. To ensure correctness of regression analysis, assumptions testing is being performed. To test multicollinearity, correlation between independent variables analysis performed, also variance inflation factor (VIF) test run.

$$VIF = \frac{1}{1 - R^2} \ (10)$$

• Comparative analysis

Comparative analysis allows researcher to understand how profitability is affected by different conditions (i.e. economic, industry-based) by comparing these contexts, and helps to identify

specific factors that either enhance or diminish the effectiveness of WCM. Other important factor is achieved by comparative analysis is benchmarking. This aims to result in identification of successful WCM strategies and provide valuable insights. Finally, conducting such analysis can help identify unexpected patterns that would follow to further research, which is one of the aims of the research.

Comparative analysis is conducted by employing both qualitative and quantitative approaches to evaluate WCM strategies used by selected companies on manufacturing and retail sectors. Data used for analysis were gathered from financial statements which are publicly available, since firms used for analysis are listed. Data used for analysis provides understanding of each company's approach to managing components such as inventory, accounts receivable, accounts payable, profitability metrics and ratios. Key metrics, including cash conversion cycle and its' components is being analyzed. Analysis will compare similarities and differences arising from the inherent operational and industryspecific demands.

This study contributes to the literature in a few significant ways. First, it addresses the limited research on the relationship between WCM and profitability in listed firms in Baltic countries, as most existing studies do not focus on the Baltic market, rather focus is made towards Belgian (Deloof, 2003), UK (Goncalves et al., 2018), and Finland (Enqvist et al., 2014). Second, it generally adds to the sparse literature on how economic cycles impact the relationship between WCM and profitability. Furthermore, previously mentioned studies do not include effects of the period of COVID-19 pandemic and further post-pandemic period.

Limitations to methodology also must be highlighted. As selected geographical area includes Baltic countries and listed companies, limited sample size is available, thus findings may lead to reduced generalizability. Limited dataset may not accurately represent broader population of manufacturing and retail companies in Baltic countries that include not listed companies. Although limited data sample size when conducting analysis is considered while interpreting results, with fewer data points influence of outliers may be higher. Also, both sectors face varying economic sensitivities, with retail being more sensitive to demand shocks, and manufacturing sector companies are more likely to be dependent on supply chain and raw materials costs.

To conclude, this chapter has outlined the methodological approach to examine the relationship between WCM and profitability. Research purpose, aim, researched variables were presented and hypotheses, that will be tested were raised. This chapter also defined sample size, period and data collection sources and methods used. Regression analysis was identified as most suitable for its ability to quantify relationships and its usage in previous academics related to similar research. Additionally, comparative analysis offers contextual insights, ensuring weighted results. Together, these methods provide a comprehensive framework for understanding how WCM influences profitability across different contexts and economic conditions.

3. RESULTS OF RESEARCH ON THE IMPACT OF BUSINESS CYCLE FLUCTUATIONS AND WORKING CAPITAL STRATEGIES ON PROFITABILITY 2.1 Data consistence and veriables description

3.1 Data environment and variables description

This paper utilizes firm-level data comprising income statement and balance sheet information for all manufacturing and retail companies listed on the Nasdaq Baltics stock exchange from 2007 to 2023. The dataset includes a total of 102 observations firm-year observations for retail sector, and 255 observations for manufacturing sector. This reflects the entirety of data available for firms listed on the Nasdaq Baltic for selected sectors. The limited sample size and varying number of observations are inherent to the scope of this regional exchange and the availability of financial data for the included sectors during the study period. These constraints are acknowledged and considered in the analysis to ensure the robustness of the findings within the given context.

Further, description of selected variables is provided.

As described in methodology part, independent variables include GDP growth and cash conversion cycle. Use of cash conversion cycle is beneficial as it accounts for the lifecycle of working capital components and acknowledges that production, distribution, and collections are not instantaneous or synchronized. Additionally, CCC is more accurate predictor of future cash flows compared to static liquidity ratios. As a result, numerous studies have adopted the CCC framework (Deloof, 2003; Lazaridis, Tryfonidis, 2006). Analysis also considers business cycles, defined as irregular fluctuations in economic activity based on GDP growth. For this study, dummy variables were introduced to represent these economic conditions, allowing for comparisons of the significance of working capital components across different economic environment. For instance, economic declines are identified during periods of negative GDP growth, while economic inclines are defined when growth exceeds 2.5%. GDP growth includes dynamics of GDP according to the country the company holds its main operations in. As listed retail and manufacturing companies operating in Baltic states were chosen as research objective, GDP growth dynamics in Lithuania, Latvia and Estonia were included in analysis. Dynamics are depicted in Figure 2 below.

Return on assets (ROA) used as a proxy for company profitability and represents dependent variable in this study, calculated as the ratio of net income to average total assets. ROA focuses on assessing overall profitability and remains unaffected by special items or the firm's capital structure, thus is most suitable.

Also, several control variables, known to influence firm profitability, are included in the model. These include company size, which is measured by natural logarithm of sales, also debt-to-assets ratio (Deloof, 2003; Enqvist et. al, 2014). The inclusion of company size as a control variable is justified as larger firms often benefits from economies of scale, market power, which can significantly impact profitability. The natural logarithm of sales is a commonly used proxy to reduce skewness in data and provide normalized distribution for analysis. Similarly, the debt-to-assets ratio is representative of firm's financial structure, as it reflects the extent of leverage used by the company. Higher leverage can amplify returns during favorable conditions but also increases financial risk, thereby influencing profitability. Both variables are recognized in previous studies as robust indicators of firm performance.



Figure 2. Dynamics of GDP growth (%) in Baltic states throughout the year 2007-2023

Source: prepared by author, using Eurostat data

Figure 2 data displays fluctuations in economic performance, highlighting periods of robust growth, economic crises, and recovery phases across the Baltic states. Data can be segmented into different stages:

 Pre-2008 economic boom: in 2007, all states experienced substantial economic growth, with Lithuania leading at 11.1%, followed by Latvia and Estonia, by 10.4% and 7.6%, respectively. This period reflects pre-crisis boom, which is driven by high both foreign and domestic investments, increased consumption, substantially related to recent integration to European Union.

- Global financial crisis of 2008 2009: crisis sharply impacted GDP growth, with Latvia and Estonia experiencing contraction rates of -3.4% and 5.1%, respectively, while Lithuania maintained growth of 2.6%. Following year, all three countries experienced severe recessions, with GDP contracting by double digits: -14.8% in Lithuania, -16% in Latvia and -14.6% in Estonia.
- 3. Post-crisis recovery: Recovery began unevenly in 2010, with Estonia returning to positive growth at 2.4%, while Latvia and Lithuania saw slower rebounds (0.4% and -3.7%, respectively). By 2011, all three economies regained growth, with rates ranging from 3.0% in Latvia to 7.6% in Estonia. The period from 2012 to 2019 marked sustained growth, albeit at varying rates. Lithuania maintained steady performance, with annual growth averaging around 3–4%, while Latvia and Estonia experienced more volatility. Highlights include a peak growth of 7.3% for Latvia in 2012 and a robust 5.6% growth for Estonia in 2017.
- Covid-19 pandemic in 2020 2021: global pandemic caused an economic slowdown across the countries, however Lithuania remained steady with 0% growth in 2020, while Latvia and Estonia faced moderate contractions of -3.5% and -2.9%, respectively. Following the pandemic, 2021 saw a strong recovery, with growth rates of 6.4% (LT), 6.9% (LV), and 7.2% (EE), driven by resurgent demand and the easing of restrictions.
- 5. Post-pandemic recovery and recent trends: growth moderated in subsequent years, with Lithuania and Latvia experiencing slowdowns in 2022 – 2023, while Estonia returned to contraction (-3.0%) due to regional economic pressures, including geopolitical tensions such as war in Ukraine, energetic crisis and inflation.

Below provided descriptive statistics for both manufacturing and retail sectors' data, that were used in further analysis.

Manufacturing sector	Return on assets	GDP growth	Cash conversion cycle	Debt-to- assets	Sales
Mean	8%	2%	52,97	0,59	128 474 923
Median	7%	3%	42,50	0,59	107 177 833
Standard deviation	4%	5%	43,18	0,13	56 419 291
Min	-7%	-16%	-6,82	0,26	34 150 678
Max	22%	11%	131,50	0,84	248 263 192

Table 4. Descriptive statistics for manufacturing sector

Source: prepared by author, using financial statements' data

Data in Table 4 provides descriptive statistics for key financial and economic variables for manufacturing companies. The ROA indicates a moderately high profitability level in the sector, with mean of 8%. Standard deviation of 4% suggests that moderate variability between firms exists. For analyzed data, on average it takes about 53 days for companies to convert investments in inventory and receivables in cash. High variability (43 days) suggests significant differences in WCM across companies. On average, 59% of companies' assets are financed through debt, indicating high reliance on leverage, and looking at low variability, one can see that most firms in this sector follows similar approach on capital structures. Sales section indicates that large companies are analyzed with average of EUR 128 million revenue.

Retail sector	Return on assets	GDP growth	Cash conversion cycle	Debt-to- assets	Sales
Mean	11%	2%	105,29	0,36	263 609 955
Median	9%	3%	109,31	0,30	178 482 301
Standard deviation	8%	5%	92,75	0,17	225 855 057
Min	-9%	-16%	-4,44	0,16	24 154 953
Max	33%	11%	475,00	0,78	947 260 000

Table 5. Descriptive statistics for retail sector

Source: prepared by author, using financial statements' data

Data in Table 5 shows descriptive statistics for retail sector for listed companies in Baltic countries. ROA indicates moderate to high profitability in the sector of 11%. Standard deviation suggests that high variability exists within sector, however it is mainly due to limited sample size. On average it takes 100 days for retail companies to convert inventory and receivables into cash, reflecting sector's reliance on inventory turnover and payment collection. Debt-to-assets ratio is on the lower side (0.3 on average) and with low variability, concluding similar strategies among the firms. Sales level portrays that large firms in terms of turnover are included in the sample.

Talking about similarities between sector data, both sectors display a wide range in ROA and moderate to high variability within variables. On the other hand, retail sector shows higher profitability, compared to manufacturing. Also, retail companies have significantly longer CCC compared to that of manufacturing firms, while maintaining a lower financial leverage.

Below in Table 6 and Table 7 portrayed correlation between variables.

Correlation between variables	ROA	GDP growth	CCC	Debt-to-assets
GDP growth	55,2%			
CCC	-29,0%	-28,3%		
Debt-to-assets	-28,5%	-38,7%	-19,2%	
Sales	40,1%	25,3%	-23,4%	36,7%

Table 6. Correlation between variables in retail sector

Source: prepared by author, using financial statements' data

Table 7. Correlation between variables in manufacturing sector

Correlation between variables	ROA	GDP growth	CCC	Debt-to-assets
GDP growth	65,3%			
CCC	-27,2%	-18,3%		
Debt-to-assets	-29,6%	-27,7%	-29,2%	
Sales	44,1%	29,3%	-25,4%	33,4%

Source: prepared by author, using financial statements' data

The correlation analysis for the retail and manufacturing sectors reveals several key relationships among variables. ROA exhibits a strong positive correlation with GDP growth for both sectors, indicating that profitability improves during periods of economic expansion. A moderate negative correlation between ROA and the CCC suggests that shorter working capital cycles enhance profitability. ROA also shows a negative relationship with debt-to-assets (-28.5% and -29.6%), reflecting the impact of financial leverage on firm profitability. Sales are positively correlated with ROA and GDP growth, highlighting the role of economic conditions and scale of firm in driving revenue. GDP growth shows a stronger negative relationship with debt-to-assets, indicating firms tend to reduce leverage during economic growth phases. Lastly, the moderate negative correlation between CCC and sales suggests that larger firms achieve greater operational efficiency in managing working capital.

Overall, this sub-chapter explains environment for the data period chosen, and relations between variables selected.

3.2 Model and results

Following the structures of the models, that were applied in previous studies by Deloof (2003), Enqvist (2014), we have applied regression model to measure effects of the CCC on firms' profitability:

 $\begin{aligned} Profitability &= \beta_0 + \beta_1 GDP \ growth + \beta_2 CCC + \beta_3 DEBT + \beta_4 SALES + \beta_5 D1 + \beta_6 D2 \\ &+ \beta_7 (D1 * CCC) + \beta_8 (D2 * CCC) + \epsilon_i \end{aligned}$

 $\begin{array}{l} Profitability - measured by ROA; \ \beta_0 - intercept; \ \beta_1 - GDP \ growth \ (\%); \ \beta_2 \\ - \ cash \ conversion \ cycle \ (days); \ \beta_3 - debt - to \\ - \ assets \ ratio \ (\%); \ \beta_4 - natural \ logarithm \ of \ sales; \ \beta_5 \\ - \ dummy \ variable \ for \ recession \ period; \ \beta_6 \\ - \ dummy \ variable \ for \ boom \ period; \ \epsilon_i - errors \end{array}$

A variance inflation factor (VIF) test was conducted to assess multicollinearity among the independent variables in the model. The results indicated that all VIF values are slightly above 1, which indicates that variables are not correlated (Daoud, 2017), confirming the absence of multicollinearity issues. This ensures that estimated coefficients are reliable, and variables included in the model do not exhibit problematic level of correlation.

Below reported results of the regression model researching relationship between WCM and profitability in retail sector. Table 8 pictures regression statistics and Table 9 portrays the relation of ROA with the variables.

Table 8. Regression statistics (retail)

Regression Statistics				
Multiple R	0,746			
R Square	0,556			
Adjusted R Square	0,538			
Standard Error	0,057			
Observations	102			

Source: prepared by author, using analysis data

	Coefficients	Standard Error	t Stat	P-value
Intercept	0,974	0,244	3,999	0,000
GDP growth, %	0,324	0,104	7,891	0,000
ССС	-0,035	0,000	-2,236	0,028
Debt-to-assets	-0,595	0,019	-3,145	0,002
Log sales	0,143	0,012	3,478	0,001
DD	-0,004	0,030	2,117	0,009
DB	0,009	0,023	-2,387	0,007
DD*CCC	-0,097	0,000	-2,583	0,006
DB*CCC	0,024	0,000	2,498	0,014

Table 9. The relation of ROA and independent variables in retail sector

Source: prepared by author, using analysis data

Table 8 results provide insights into the overall model's performance. The multiple R value of 0.746 indicates strong positive correlation between observed and predicted values of profitability. The R square of 0.556 shows that approximately 55.6% of the variability in profitability is explained by the independent variables included in the model. Adjusted R square of 0.538 accounts number of predictors in the model, confirming that the model remains robust and provides reliable fit even when adjusted for the degrees of freedom. Standard error of 0.057 reflects the average deviation of the observed values from the predicted values, with error being low, model is considered suitable.

Table 9 numbers show relations between dependent variable ROA and independent variables. All analyzed variables are statistically significant, with p-value below 0.05 and t-value is above 2. GDP growth variable indicates that 1 percentage point increase in GDP growth, increases ROA by 0.324. Economic expansion has a strong and favorable impact on profitability, growth in GDP typically reflects better firm's conditions.

Relation between ROA and CCC is negative, indicating that increase in CCC harms firm's profitability measures, which supports hypothesis H2 implying working capital strategies to have impact on company's profitability. Negative relation is also seen between debt-to-assets and ROA. Increase in leverage can impose firm risk and costs of debt financing, thus decrease profitability.

On the other hand, increase in sales is followed by increase in ROA, showing larger firms benefit from scale and market dominance. D1 and D2 are both significant variables, indicating influence of business cycles on companies' profitability, which together with GDP growth variable supports hypothesis H1. Interaction terms, included by multiplication of dummy variable and CCC shows following results: DD*CCC implies that during economic decline 1 percentage point increase in CCC, reduces ROA by an additional 0.097. Positive relation between DB*CCC and ROA shows that in state of economy growth, firms may be more flexible to tolerate longer CCCs without significant harm on profitability, which supports hypothesis H3.

Regression Statistics					
Multiple R	0,542				
R Square	0,294				
Adjusted R Square	0,271				
Standard Error	0,038				
Observations	255				

Table 10. Regression statistics (manufacturing)

Source: prepared by author, using analysis data

	Coefficients	Standard Error	t Stat	P-value
Intercept	-0,153	0,107	-2,893	0,045
GDP growth, %	0,430	0,047	2,192	0,029
ссс	-0,028	0,000	-3,750	0,000
Debt-to-assets	-0,193	0,023	-8,458	0,000
Log of sales	0,020	0,006	3,547	0,000
DD	-0,016	0,017	-2,903	0,037
DB	0,026	0,010	2,559	0,011
DD*CCC	-0,002	0,000	-2,876	0,038
DB*CCC	0,001	0,000	2,919	0,036

Table 11. The relation of ROA and independent variables in manufacturing sector

Source: prepared by author, using analysis data

Table 10 statistics provide insights into model's level of reliability in the analysis of profitability. Multiple R shows moderate positive correlation between observed values and the ROA, suggesting a reasonable fit. The R square value of 0.294 shows that approximately 29.4% of the variation in profitability is explained by independent variables included in the model, which is lower than retail sector, showing that more of other variables are affecting manufacturing firm's profitability. The Adjusted R square, which accounts for the number of predictors relative to the sample size, is slightly lower at 0.271, indicating the model's performance remains adequate after adjusting for complexity. Standard error of 0.038 suggests a relatively small average deviation of the observed values from the predicted ones, reflecting precise model.

The results in Table 11 demonstrates results of relationship between ROA and independent variables showing that same as with retail model, all variables are statistically significant with p-values below 0.05 and t-statistics exceeding 2, indicating their relevance in explaining profitability.

The coefficient for GDP growth shows that a 1 percentage point increase leads to a 0.430 increase in ROA, showing same direction relationship, however of lower impact than that of retail sector.

A negative relationship is observed between CCC and ROA, suggesting that increase in CCC harms profitability. Prolonged cash conversion cycles can strain a firm's resources and operational efficiency, reducing profitability metrics, helping to accept H2 hypothesis. Similarly, a negative correlation exists between debt-to-assets and ROA, where higher leverage increases ultimately may lead to reduced profitability.

Conversely, the coefficient for the sales reveals positive impact, indicating that firm's size revenue-wise helps companies to benefit from market presence and boost their profitability measures.

Same as analyzing retail sectors' results, DD and DB variables are significant and shows underlying influence of business cycles to corporate profitability, supporting H1. The interaction terms provide additional insights into the role of CCC under different economic conditions. The coefficient for DD*CCC implies that during periods of economic decline, a 1-point increase in CCC reduces ROA by an additional 0.002, emphasizing the meaningful effect of prolonged CCC in challenging economic terms. On the other hand, the positive relationship between DB*CCC and ROA suggests that during economic expansion, firms can better manage longer CCCs without significant harm to profitability, adding to previous conclusions on accepting hypothesis H3.

Testing hypothesis H4, we compare how CCC changes impact profitability, to test sensitivity of this variable. It can be seen, that in retail sector, 1 percentage point change in CCC, decrease ROA by 0.035, whereas in manufacturing sector by 0.028, meaning that impact of WCM strategies is different and H4 hypothesis is correct.





Source: prepared by author, using analysis data





Source: prepared by author, using analysis data

The Q-Q plots of residuals in Figures 3 and 4 demonstrates their adherence to a normal distribution. Data points overall align closely with 45-degree reference line, indicating that the residuals follow a normal pattern. Normal distribution of residual is important for validity and hypothesis testing, since statistical tests, such as t-test assumes that residuals are normally distributed. Also, normal residuals indicate that the model errors are random and unbiased, suggesting that the model correctly captures data, without systematic errors (Lyon, 2014).

In conclusion, this chapter explains results of regression analysis, showing that independent variables significantly impact dependent variable. Results shows that hypotheses raised in methodological part were correct.

3.3 Comparison of WCM strategies between retail and manufacturing sectors

In this chapter in-depth analysis will be provided of specific companies' WCM strategies and comparative analysis will be conducted.

Manufacturing sector

Chosen company for analysis is Pieno zvaigzdes AB: manufacturing company listed on Nasdaq Baltic exchange and is engaged in the production of various dairy products. Business is highly sensitive to inventory management due to quick expiration of raw materials and finished goods. Also, prone to seasonal demand, and cost pressures. Below in Table 12 main statistics are provided for following company related to its' financial and other components.

	ROA	Total assets	Revenue	Debt-to-assets	Net profit	CCC	DIO	DSO	DPO	GDP growth
2 023	18,02%	71 490 000	201 110 000	0,49	13 260 000	26	43,74	13,62	31,55	0,00
2 022	-6,99%	75 680 000	204 550 000	0,70	(5 320 000)	18	38,06	11,36	31,35	0,03
2 021	1,63%	76 620 000	176 690 000	0,63	1 220 000	17	48,35	11,98	43,40	0,06
2 020	10,49%	73 050 000	171 060 000	0,54	7 710 000	18	33,96	15,82	31,45	0,00
2 0 1 9	5,57%	74 010 000	170 600 000	0,61	4 110 000	19	33,00	20,42	34,31	0,05
2 018	2,96%	73 470 000	168 662 000	0,64	2 198 000	27	38,77	22,26	34,51	0,05
2 017	-2,27%	75 276 000	167 753 000	0,68	(1 728 000)	30	37,30	24,33	31,28	0,05
2 0 1 6	2,31%	76 987 000	150 126 000	0,59	1 800 000	35	41,42	27,00	33,10	0,03
2 015	3,17%	78 653 000	163 790 000	0,59	2 662 000	45	43,35	29,43	28,17	0,03
2 014	5,09%	89 268 629	237 573 582	0,56	4 936 683	52	40,88	34,02	23,25	0,04
2 013	2,82%	104 591 529	218 072 362	0,64	2 840 488	56	44,20	41,62	29,37	0,04
2 012	9,25%	96 976 597	220 843 934	0,56	8 916 009	45	38,34	34,18	27,43	0,04
2 011	7,82%	95 736 683	201 270 352	0,56	7 375 449	48	43,66	34,19	29,58	0,06
2 010	5,64%	92 989 232	178 106 246	0,55	5 332 376	40	36,29	35,46	31,26	0,00
2 009	3,95%	96 259 009	178 741 421	0,56	4 182 340	46	44,43	34,32	33,17	(0,15)
2 008	-1,11%	115 264 322	191 324 910	0,65	(1 243 934)	49	51,12	26,37	28,91	0,03
2 007	8,84%	108 149 031	190 489 304	0,58	9 563 532	48	53,46	20,72	26,60	0,11

Table 12. Summary of Pieno zvaigzdes AB financials and CCC components

Source: prepared by author, using financial statements' data

Looking at WCM perspective from CCC, Company is applying moderate working capital management strategy, with CCC 36 days for analyzed period, however for most recent years, shorter CCC can be seen, which is leaning more towards aggressive WCM strategy. Breaking down by components CCC, further analysis of applied strategy is provided. Days inventory outstanding (DIO), which represents efficiency of inventory management, has average of 42 days. DIO fluctuates within the years; however, it can be noticed, that overall level remains around average with no huge outlier years. Company has progressively reduced DIO, demonstrating a shift towards more optimized stock levels. Receivables management wise (DSO), also significant reduction over years is noted, from 42 days to 14 days, showing more aggressive credit collection practices that company is applying. Payables management (DPO) levels average around 31 days and remains consistent throughout the years, with 31 days being standard practice of payables term. Over the years, company has significantly reduced its CCC from peak in 2013 of 56 days to 26 days in most recent year.

Profitability-wise, company has shown significant fluctuations over the years, with its performance linked to the management of CCC and macroeconomic factors. In 2022, company experienced notable decline in profitability, posting a loss of EUR 5.32 million, even though CCC was relatively low, and GDP growth was present. This occurrence happened mainly due to other external factors, related to loss of substantial market presence in Russia and Belarus due to war in Ukraine, along with following global energy crisis. These conditions negatively impacted revenue generation, contributing to negative ROA of -6.99%. Despite the setbacks, company managed to maintain steady CCC, showcasing its ability to manage WC in challenging times. Thus, it is important

to note that when analyzing data, another external factor also has to be considered. Historically, the company has aligned its CCC with its profitability, with a shorter CCC correlating with higher profitability in more stable years.

The relationship between GDP growth and the company's profitability is complex, as it reflects how broader economic conditions interact with internal operational factors. Generally, GDP growth provides a favorable environment for business expansion, boosting consumer demand, production, and revenue, which directly supports profitability. In years of positive GDP growth, the company tends to experience higher demand for its products, which translates into better sales, improved capacity utilization, and, ultimately, stronger profit margins. For example, in 2021, with a moderate GDP growth rate of 0.06%, the company posted a profit, highlighting how slight economic improvements can help generate profitability.

However, the response of profitability to GDP growth is not always linear, and negative GDP growth does not always lead to a proportional decline in profitability. This phenomenon is partly due to the company's effective working capital management, which can buffer against external shocks. For instance, even during periods of negative GDP growth, such as in 2022, the company reduced its CCC, demonstrating its ability to optimize inventory, receivables, and payables to protect liquidity. In such cases, the company's focus on operational efficiency—such as faster receivable collections and leaner inventory management—can help mitigate the adverse effects of slower economic growth.

Conversely, when profitability grows despite negative GDP growth, it often indicates that internal factors like cost control, improved efficiency, or market shifts have compensated for the economic downturn. For example, the company's ability to manage its working capital effectively can lead to improved cash flow and profitability even when external demand is weaker. Also, government spending may also cast significant effect on cost reduction i.e. government subsidies for payroll expenses during Covid-19 pandemic. This suggests that, while GDP growth undoubtedly influences profitability, a company's operational strategies, such as working capital management, cost optimization, and market diversification, play a crucial role in mitigating the impact of negative economic conditions.

Retail sector

Company analyzed in this sub-chapter is fashion retail company Apranga APB, engaged in retail distribution of apparel. Such industry is prone to consumer demand fluctuations, supply chain disruptions.

	ROA	Total assets	Revenue	Debt-to-assets	Net profit	CCC	DIO	DSO	DPO	GDP growth
2 023	10,88%	160 025 000	269 696 000	0,60	16 773 000	90	115,34	1,38	26,71	0,00
2 022	9,96%	148 275 000	242 899 000	0,58	15 635 000	87	107,23	3,65	23,87	0,03
2 021	6,69%	165 760 000	189 750 000	0,55	10 900 000	104	121,09	5,02	22,20	0,06
2 020	3,16%	160 300 000	169 960 000	0,60	4 940 000	118	139,51	4,60	26,15	0,00
2 019	7,97%	152 790 000	205 010 000	0,62	9 240 000	110	127,13	4,50	22,10	0,05
2 018	9,53%	79 103 000	187 207 000	0,28	7 565 000	126	135,42	8,04	17,39	0,05
2 017	18,35%	79 662 000	182 265 000	0,26	13 875 000	122	133,88	7,70	19,57	0,05
2 016	15,93%	71 576 000	172 592 000	0,25	11 160 000	113	132,83	3,51	23,26	0,03
2 015	15,32%	68 539 000	158 748 000	0,28	10 399 000	116	135,72	2,36	22,15	0,03
2 014	17,84%	67 239 627	146 280 000	0,32	11 219 000	113	133,39	2,36	22,79	0,04
2 013	19,05%	58 518 019	134 005 169	0,28	10 901 077	99	120,75	5,18	26,91	0,04
2 012	20,73%	55 953 195	121 657 717	0,20	10 594 975	94	112,98	5,55	24,68	0,04
2 011	16,29%	46 278 536	97 855 276	0,20	7 125 341	100	117,09	2,04	19,01	0,06
2 010	8,39%	41 227 566	86 523 762	0,22	3 829 720	108	127,68	2,49	22,64	0,00
2 009	-8,71%	50 111 989	90 426 992	0,44	(4 854 271)	126	148,37	3,72	25,88	(0,15)
2 008	6,63%	61 291 027	120 207 322	0,55	3 958 076	105	125,12	3,33	23,74	0,03
2 007	12,31%	58 156 784	105 931 658	0,57	7 156 640	108	134,08	3,92	29,79	0,11

Table 13. Summary of Apranga APB financials and CCC components

Source: prepared by author, using financial statements' data

Company's WCM strategy appears to lean more on conservative, with average of 108 days, however positive reduction in CCC trend is seen. A closer examination of CCC's components reveals a strategic shift towards optimizing working capital. DIO has decreased slightly over the years from 139.51 days in 2020 to 115.34 days in 2023, reflecting better inventory management practices. The company has also successfully reduced DSO from 5.02 days in 2021 to 1.38 days in 2023, ensuring faster cash inflows. Such short DSO is specifically common for retail sector's firms, as huge amount of receivables is settled through cash instantly. DPO has remained relatively stable, averaging around 23-26 days, showing that the company manages its payables in line with industry standards.

Regarding company's profitability, firm demonstrates quite high margins, however it has also experienced some declines. In 2020, profitability took a significant hit due to the global Covid-19 pandemic, reflected in a low ROA of 3.16%, as company mainly generated in-store sales, which were cut due to imposed restrictions. However, the company has since rebounded, achieving an ROA of 9.96% in 2022, adapting to prevailing situation and fostering e-commerce growth, and 10.88% in 2023, with net profits rising to \notin 16.77 million in 2023. Revenue has grown steadily, reaching \notin 269.7 million in 2023, indicating successful recovery post-pandemic.

The relationship between the company's profitability and GDP growth is multifaceted, with profitability generally reflecting economic trends but not always in a straightforward manner. During

periods of positive GDP growth, such as in 2021 and 2022, the company achieved higher profitability, as even modest economic improvements fueled increased sales and revenue. For instance, in 2022, the company recorded a 9.96% ROA despite GDP growth being only 0.03%, underscoring its ability to capitalize on minor economic upturns through robust internal strategies like working capital optimization. Conversely, during periods of negative or stagnant GDP growth, such as in 2020, the decline in profitability was not directly proportional to the economic contraction. This resilience suggests that the company's operational efficiencies, particularly in managing its inventory, receivables, and payables, have been instrumental in mitigating the impact of adverse macroeconomic conditions. Also, substitution effect is common in this sector, as previously described "lipstick effect", where spending of people is moving from more luxurious goods to affordable, i.e. sales are generated more from low-price brands, which can be also seen in company's financial statements, where it is stated that revenue from discount shops and outlets were higher in 2009 compared to pre-crisis times.

Moreover, this dynamic indicates the company's agility in adapting to economic fluctuations. Efficient cost management, lean inventory practices, and streamlined credit collection processes have enabled the company to stabilize cash flows and maintain profitability, even when consumer demand may have deducted due to broader economic pressures. The divergence between GDP trends and profitability outcomes highlights the importance of internal operational strategies over purely external economic factors for this firm. Additionally, the company's ability to sustain or improve profitability during economic slowdowns signals a level of market competitiveness and the potential to capture opportunities in challenging environments.

Both companies from retail and manufacturing sectors exhibit strategic approaches to WCM, but their implementation and outcomes differ due to the nature of their operations.

Similarities includes:

- 1. Focus on CCC optimization. Both firms have shown effects to reduce CCC, signaling a priority on improving operational efficiency.
- 2. Emphasis on inventory management. Both companies prioritize inventory management efficiency, by reducing said metrics throughout the years while maintaining growth in profitability.
- 3. WCM strategies are influenced by macroeconomic environment. Both sectors experienced external shocks and had to adjust their WCM strategies to minimize the loss, portraying sensitivity to macroeconomic fluctuations as well as agility to

overcome such factors. Pieno zvaigzdes AB relied heavily on receivables management, while Apranga APB focused on leaner inventory practices.

Differences between compared firms WCM:

- CCC levels and strategy applied. Manufacturing has a significantly shorter CCC (36 days average) compared to retail (108 days average). This difference stems from manufacturing's focus on production and sales cycles, while retail deals with longer inventory holding times (DIO). Apranga APB operates with a more conservative WCM strategy, while Pieno zvaigzdes AB has moved toward an aggressive strategy in recent years.
- 2. **Nature of receivables.** Apranga APB has much shorter DSO, average 1-5 days, due to nature of retail business, while Pieno zvaigzdes AB has longer DSO, however in has significantly decreased due to applied aggressive WCM strategy,
- 3. **Profitability trends and response to GDP growth.** Both businesses experienced profitability fluctuations, however Apranga APB tends to recover faster from external shocks, reflecting resilience on customer-driven demand. Also, retail firm more closely aligns with GDP growth, benefiting even from modest improvements. Pieno zvaigzdes AB firm shows more dependency on operational subtleties.

All in all, this chapter provides overview of the importance of WCM strategies and macroeconomic factors in influencing profitability in retail and manufacturing sectors. Although both sectors focus on optimizing CCC and managing inventory, their approaches diverge due to operational differences—retail experiences longer CCCs and quicker receivables turnover, while manufacturing maintains shorter CCCs and relies on aggressive strategies to manage receivables. Additionally, retail firms recover more swiftly from economic shocks and show a stronger correlation with GDP growth, whereas manufacturing firms are more influenced by operational specifics. These findings stress the need for customized and flexible WCM strategies tailored to sectoral and economic contexts to ensure profitability.

CONCLUSIONS

Through a comprehensive review of the literature, study identified key factors influencing business cycle: firstly, consumer spending behavior, when they are picturing different shopping patterns throughout growth and decline of economy, also importance of consumers' expectations is highlighted. Secondly, capital spending is also of a great importance. Investments is one of the key drivers of economic growth, together with third element, which is government spending. Not only it is a tool to foster economic growth in economic downs, different decisions and policies applied by the government can prevent high inflation growth during boom periods.

Speaking on profitability determinants, external factors play a significant role in shaping a firm's profitability, often operating beyond its direct control. The regulatory and tax environment impacts cost structures and compliance burdens, influencing net margins. Market-related variables, such as market share and concentration, determine competitive dynamics, where firms with dominant positions often enjoy higher profitability due to economies of scale and reduced competition. Additionally, macroeconomic conditions like GDP growth, inflation, and interest rates influence demand and cost structures, creating opportunities or challenges for businesses. To remain profitable, firms must adapt strategically to these external conditions, leveraging favorable opportunities while mitigating associated risks.

Business cycles significantly influence working capital management by shaping demand, financing decisions, and overall financial conditions. During economic downturns, reduced sales and earnings directly impact working capital, as seen during the 2008 financial crisis when revenue declines affected profitability ratios and working capital needs. Studies highlight that industries relying more on external financing or lacking hard assets are more vulnerable to economic shocks. Effective working capital management becomes crucial in such times, emphasizing forecasting, liquidity, and inventory control to navigate challenges. Governments can also play a role by implementing supportive policies, such as tax reliefs, to ease cash flow constraints. Research further suggests that minimizing the cash conversion cycle (CCC) enhances profitability, with its importance magnified during economic slowdowns. Overall, the strategic management of working capital is essential for sustaining profitability, particularly in unfavorable economic conditions. During economic expansions, firms typically prioritize growth, increasing inventory and receivables to capitalize on higher demand. Conversely, during recessions, firms focus on liquidity preservation, reducing inventory levels and tightening credit terms to customers. These adaptive strategies were

found to vary between the manufacturing and retail sectors due to differences in operational cycles and capital intensity.

The methodology outlined employs a combination of quantitative techniques, such as regression analysis, and comparative analysis. Researched variables include business cycle phases, working capital strategies, dependent variable profitability, also control variables, such as size of the company and leverage.

Empirical findings demonstrated significant relationship between working capital components and profitability measures. Also, business cycle indicator GDP growth also portrays relation with profitability.

Analysis highlights the critical role of WCM strategies and macroeconomic factors in shaping profitability across retail and manufacturing sectors. The model demonstrates strong performance, with robust correlations and significant predictors explaining variations in profitability. GDP growth positively influences profitability, confirming its critical role in economic expansions, while prolonged CCCs and higher leverage harm profitability. The interaction terms reveal that CCC has a more detrimental impact during economic downturns, whereas firms can better tolerate longer CCCs during growth periods. The sectoral comparison shows that CCC changes impact retail firms more significantly than manufacturing firms. Overall, the results underscore the importance of adapting WCM strategies to sector-specific and economic conditions to sustain profitability.

Both retail and manufacturing firms exhibit strategic approaches to WCM, but their methods and outcomes differ due to the nature of their operations. Both sectors prioritize CCC optimization and inventory management to enhance efficiency and profitability, adapting their strategies to macroeconomic fluctuations. However, key differences arise in CCC levels, with manufacturing maintaining a significantly shorter cycle due to its production-oriented focus, while retail faces longer cycle due to extended inventory holding periods. Receivables management also varies, with retail firms experiencing shorter collection periods compared to manufacturing firms, which have adopted aggressive WCM strategies to reduce receivables turnover. Profitability trends highlight further contrasts, with retail firms recovering more quickly from economic shocks and aligning closely with GDP growth, while manufacturing firms exhibit greater dependence on operational factors. These findings underscore the need for tailored WCM strategies that align with sector-specific dynamics and economic conditions.

RECOMMENDATIONS

Optimization of cash conversion cycle. Practitioners should prioritize reducing the CCC to enhance operational efficiency. Both theoretical and practical case analysis shows that optimal CCC leads to enhanced profitability. Retail sector's practitioners should focus on inventory management, with minimal holding periods, while manufacturing sector firms should put emphasis on efficient production cycles, timely receivables collection. Sectors might invest into advanced inventory management systems to optimize stock levels, reduce holding costs, avoid overstocking or lack of stock.

Align WCM strategies with economic conditions. Flexibility in WCM strategies is crucial to adapt to changing economic environment. During downturns, priorities should be given to liquidity and reduction of CCC. Conversely, periods of economic growth lead to firms being able to tolerate longer CCCs, if it is necessary in order to capitalize on expansion opportunities. Economic indicators should be monitored periodically to anticipate external shocks and act properly. Implementing tools relevant to note changes in demand, economic cycles, could be of great importance in order to enable proactive adjustments to WCM strategies.

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THE IMPACT OF BUSINESS CYCLE FLUCTUATIONS AND WORKING CAPITAL STRATEGIES ON PROFITABILITY: RETAIL AND MANUFACTURING SECTORS' CASE

Eglė SURVILĖ

Master Thesis

Finance and Banking Programme

Faculty of Economics and Business Administration, Vilnius University Supervisor doc. dr. A. Laurinavičius, Vilnius, 2024

SUMMARY

59 pages, 13 tables, 4 figures, 64 references.

The Master thesis undertakes exploration of the dynamics between business cycles, working capital management, and their collective impact on corporate profitability. The objective of this thesis is to provide valuable insights for practitioners, policymakers, and academics by illustrating the connection between business cycles, strategies for managing working capital, and overall profitability. The objectives of the Master thesis includes exploring concepts of business cycles and working capital management; research how businesses adapt their working strategies in response to different phases in business cycle; conduction of empirical analysis in order to quantify relations between working capital components and profitability measures; evaluation of relationship between macroeconomic indicators and company's profitability; exploration of manufacturing and retail sector's specific variations in the impact of working capital decisions on the financial performance of firms. The study introduces business cycles, picturing the diverse factors contributing to their recurrent patterns. It also depicts working capital management, emphasizing its pivotal role in sustaining day-to-day business operations, and introduces key ratios and metrics for evaluating financial health. The subsequent section delves into various business cycle theories, providing a comprehensive overview of differing viewpoints on economic fluctuations. The thesis theoretical part continues in an exploration between business cycles, working capital management, and corporate profitability, analyzing profitability factors within the context of diverse business cycle theories and considering sector-specific nuances in working capital management practices. By integrating theoretical frameworks with practical insights, the research contributes a holistic understanding of this complex interplay, offering valuable implications for both practitioners and policymakers in the realms of finance and business management.

VERSLO CIKLŲ SVYRAVIMO BEI APYVARTINIO KAPITALO VALDYMO STRATEGIJŲ ĮTAKA PELNINGUMUI: PREKYBOS IR GAMYBOS SEKTORIŲ ATVEJIS

Eglė SURVILĖ

Magistro baigiamasis darbas

Finansų ir bankininkystės programa

Ekonomikos ir verslo administravimo fakultetas, Vilniaus universitetas Darbo vadovas doc. dr. A. Laurinavičius, Vilnius, 2024

59 puslapiai, 13 lentelių, 4 figūros, 64 šaltiniai.

SANTRAUKA

Magistro baigiamajame darbe nagrinėjama verslo ciklų, apyvartinio kapitalo valdymo ir jų kolektyvinio poveikio imonės pelningumui dinamika. Šio baigiamojo darbo tikslas – pateikti vertingų įžvalgų praktikams, politikos formuotojams ir akademikams, parodant ryšį tarp verslo ciklų, apyvartinio kapitalo valdymo strategijų ir bendro pelningumo. Magistro darbo tikslai apima verslo ciklų ir apyvartinių lėšų valdymo sampratų tyrinėjima; nagrinėjima, kaip imonės pritaiko įvairias strategijas, reaguodamos į skirtingus verslo ciklo etapus; empirinės analizės atlikimas, siekiant kiekybiškai įvertinti apyvartinio kapitalo komponentų ir pelningumo rodiklių ryšius; makroekonominių rodiklių ir imonės pelningumo ryšio įvertinimas; gamybos ir mažmeninės prekybos sektoriaus specifinių pokyčių, susijusių su apyvartinio kapitalo sprendimų poveikiu įmonių finansiniams rezultatams, tyrimas. Tyrime pristatomi verslo ciklai, vaizduojami įvairūs veiksniai, prisidedantys prie jų pasikartojančių modelių. Jame taip pat vaizduojamas apyvartinio kapitalo valdymas, pabrėžiamas jo pagrindinis vaidmuo palaikant kasdienes verslo operacijas ir pateikiami pagrindiniai finansinės būklės vertinimo rodikliai ir metrika. Gilinamasi į įvairias verslo ciklo teorijas, pateikiant išsamią skirtingų požiūrių į ekonominius svyravimus apžvalgą. Baigiamojo darbo teorinėje dalyje toliau nagrinėjami verslo ciklai, apyvartinio kapitalo valdymas ir įmonių pelningumas, analizuojami pelningumo faktoriai įvairių verslo ciklo teorijų kontekste bei nagrinėjami sektoriui būdingi apyvartinio kapitalo valdymo praktikos niuansai. Integruojant teorines sistemas su praktinėmis įžvalgomis, tyrimas prisideda prie visapusiško šios sudėtingos saveikos supratimo, o tai suteikia vertingų pasekmių tiek praktikams, tiek politikos formuotojams finansų ir verslo valdymo srityse.