



Vaasan yliopisto
UNIVERSITY OF VAASA

Alex Lindevall

**Macroeconomic influences on price fluctuations of
basic goods in Finland from 2016 to 2023**

School of Management
Master's thesis in Strategic
Business Development

Vaasa 2024

UNIVERSITY OF VAASA**School of Management**

Author:	Alex Lindevall		
Title of the thesis:	Macroeconomic influences on price fluctuations of basic goods in Finland from 2016 to 2023		
Degree:	Master's degree in strategic business development		
Programme:	Department of Management		
Supervisor:	Anni Rajala		
Year:	2024	Pages:	52

ABSTRACT :

Food prices in the Finnish market are strongly represented due to global challenges. Inflation is rising, which is reflected in higher prices of consumer goods. Due to inflation, consumers' purchasing power has decreased, and the increased prices of everyday food products are reflected in the price of the shopping cart. The study is based on price developments in 2016-2023, and over the years, there have been two more significant factors whose impact has been evident in the global market.

This study examines how macroeconomic changes have affected the price of the consumer's food basket. The data used for the study are Statistics Finland's Consumer Price Index, the general level of inflation, and the annual price basket comparison of Helsingin Sanomat. The study also examines how the pricing of the three largest operators in the Finnish grocery trade has developed in the changing market situation.

The analysis offers a comprehensive overview of price dynamics within these product categories over the specified period, providing valuable insights into inflationary trends and consumer price behavior in Finland. This research contributes to a broader understanding of economic conditions and consumer price sensitivity.

KEYWORDS: Macroeconomic, Pricing Strategy, Retail pricing strategy

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1 Introduction

The COVID-19 pandemic changed the world in a matter of months. Governments took action to control the spread of the virus. The measures closed borders between countries which affected businesses. (Dietrich et al., 2022). As news coverage of the pandemic diminished, the war in Ukraine began in February 2022. (Legrand, 2023). These macroeconomic changes have had a significant impact on food price developments. Global food markets are volatile to changes taking place in global markets. (Legrand, 2023).

In this thesis main goal to study how macroeconomic changes has affected in food prices and to recognize the critical importance of effective pricing strategies in contemporary business environments of Finnish grocery stores in 2016–2023. Pricing significantly impacts profitability and plays a crucial role in competitive positioning and market dynamics. Despite the evident advantages of customer value-based pricing strategies, frequently highlighted in academic literature and acknowledged by industry practitioners, these approaches still need to be utilized. (Prasad, 2010a). This gap between theoretical endorsement and practical application warrants a thorough investigation to understand the underlying reasons for this discrepancy and develop actionable guidelines to facilitate the broader adoption of value-based pricing strategies.

Macroeconomic changes have previously been studied, and there is plenty of research. The effects of COVID-19 have been studied, and its effects have been discussed. Wu, in his study of the effects of the COVID-19 pandemic on macroeconomic energy price changes, shows that the pandemic has increased market volatility, especially in the energy sector, which has a strong impact on inflation and economic growth. The study predicted that economic growth is forecast to gradually recover to the post-pandemic period, but there is a risk of rising inflation. (Wu & Ma, 2021). Another major price factor affecting the investigation period is the war that began in Ukraine in February 2022. Europe suffers economically due to close economic ties and dependence on energy and

food supplies from Russia and Ukraine. One of the most significant effects of the war is the rise in global inflation. (Liadze et al., 2023).

Ongoing geopolitical events highlight the importance of adaptive and flexible pricing strategies. These events disrupt supply chains and market stability, leading to volatile commodity prices and challenging economic conditions.(Legrand, 2023). Before the coronavirus pandemic, inflation in Finland remained below two percent from 2013 to 2020. (Nieminen, 2023).

The COVID-19 pandemic and the Russia-Ukraine war have caused significant disruptions in energy and food markets, leading to price volatility and higher inflation. This has led to higher global inflation and reduced GDP growth, especially in Europe. In previous studies, the regional focus has mainly been on large economies such as China and Europe, while there has been less research on smaller economies such as Finland. Sectoral studies have been incomplete, and detailed sectoral analyses such as food, housing, and healthcare are lacking.

1.1 Research problem

The thesis aims to examine how changes in the macro-economy are reflected in the price of the food basket in a smaller economy such as Finland. The study is essential because we can examine Helsingin Sanomat's price basket data and Statistics Finland's data to study more detailed sector-specific developments.

The thesis research question is:

How have macroeconomic factors influenced the price changes of essential goods in Finland from 2016 to 2023?

The research problem in this Thesis is:

How have the prices of products extracted from the price basket developed in relation to the general level of inflation?

How have prices developed in the food basket comparison, and how have the prices of different operators risen relative to each other?

1.2 Structure of thesis

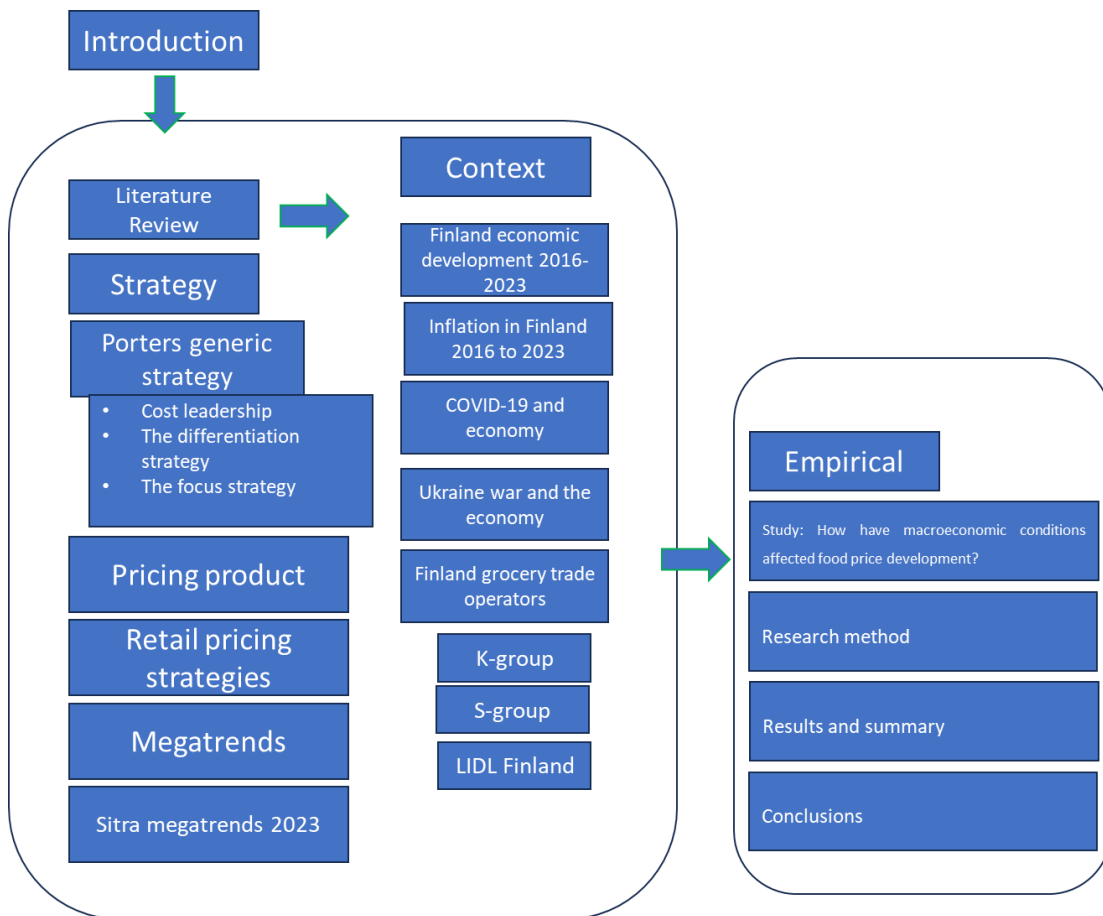


Figure 1. Structure of the thesis

The figure shows how the thesis is constructed in visual form. The introduction is followed by a literature review exploring the most relevant research theories. The strategy section goes through the principle of strategy into Porter's generic strategies

relevant to research and the field. Pricing and grocery pricing models are moving towards megatrends, constantly shaping the market.

Context focuses on the development of the Finnish economy between 2016 and 2023. The most relevant factors explaining price developments during the investigation are COVID-19 and the war in Ukraine. Context also reviews the most prominent players in the grocery trade sector and their differences based on strategic differences in operating models.

The study uses Helsingin Sanomat's price basket comparison and a price basket made using Statistics data. The comparison is made with stores in the Helsinki, Espoo, and Vantaa areas. In addition to the products in the price basket comparison, Statistics Finland's consumer index data were used to create graphs of changes in the general price level compared to inflation. There are 40 products included in the comparison, but in this study, four products were selected: Minced beef 400g, Skimmed milk 1l, Coffee 500g, and Macaroni 400g or Spaghetti 1kg.

The products were selected for this study because they can be found in every grocery trade operator. The product's price in the price basket comparison is the shelf edge price at the time of collection. The shopping cart only compares the price level of Finland's stores at the time of collection. However, from the point of view of research, we get essential information about the current price, which we can reflect on macroeconomic changes and the strategic priorities of operators in terms of pricing.

2 Theoretical background

The theoretical background of this study is based on two main elements. The first module deals with price trends and how they have developed over the years covered by the survey. The second part of the theory deals more with the pricing strategy of operators operating in the Finnish grocery trade and how it is reflected in price development.

2.1 Strategy

The strategy has many different concepts depending on the academia. In most cases, strategy refers to the positioning of a company in its industry. Positioning in the industry produces a competitive advantage, which can be perceived as a position where the company can be more profitable than the industry average (Prasad, 2010b). In an article published by Michael Porter in 1996, the main objective was to distinguish between Strategy and operational efficiency. The Strategy includes choices and trade-offs between alternatives, and operational efficiency is best focused on ideas of practices and cost minimization.(Stonehouse & Snowdon, 2007).

Johnson and Scholes (2005) definition is that “strategy determines the direction and scope of an organization over the long term, and they say that it should determine how resources should be configured to meet the needs of markets and stakeholders.” Strategy is creating a unique and valuable position accompanied by various activities. The essence of strategic positioning is to select activities that differ from competitors. (Porter, 2023).

The strategy has been studied for years by business leaders and researchers. The strategy has yet to be defined as what it is because there are many differences in views on it. Some people think of strategy as first having to analyse the present and evaluate market changes in the industry and based on them, planning to succeed. At the same time,

others think that predicting the future is too complicated and prefer an adaptive strategy when situations change. (Bukhari & Ali, 2019).

Harvard Business School defines strategy as an "integrated set of choices" that positions a company in its industry to generate superior financial returns in the long run. Strategy is decision-making: decisions on how to position the company with a view to the future and what goals to pursue. Companies need to create a new future for their business to be sustainable. (Nonaka & Takeuchi, 2021).

Watkins writes about strategy that is consistent guiding principles disseminated in an organizational hierarchy to facilitate a predetermined decision-making pattern. It defines the optimal resource allocation and decision-making protocol to achieve the objectives. According to Watkins, a well-developed strategy provides stakeholders with a clear roadmap that clarifies actions and priorities to help achieve the objectives. (Watkins, 2017).

2.2 Porters' generic strategy

Defining a competitive strategy is integral to achieving the company's objectives. With globalization, it has become more complicated to understand how to form a competition strategy and what is not relevant. According to the literature's definitions, they can be outlined into four different groups. (Kharub et al., 2019).

Michael Porter received considerable attention for his 1980 book *Competitive strategy* from the Strategic Management Literature. Porter argues that a competitive strategy is the search for a competitive position and positioning oneself in the industry operating. He created a conceptual classification strategy that have become classics among academia. (Eldring, 2009).

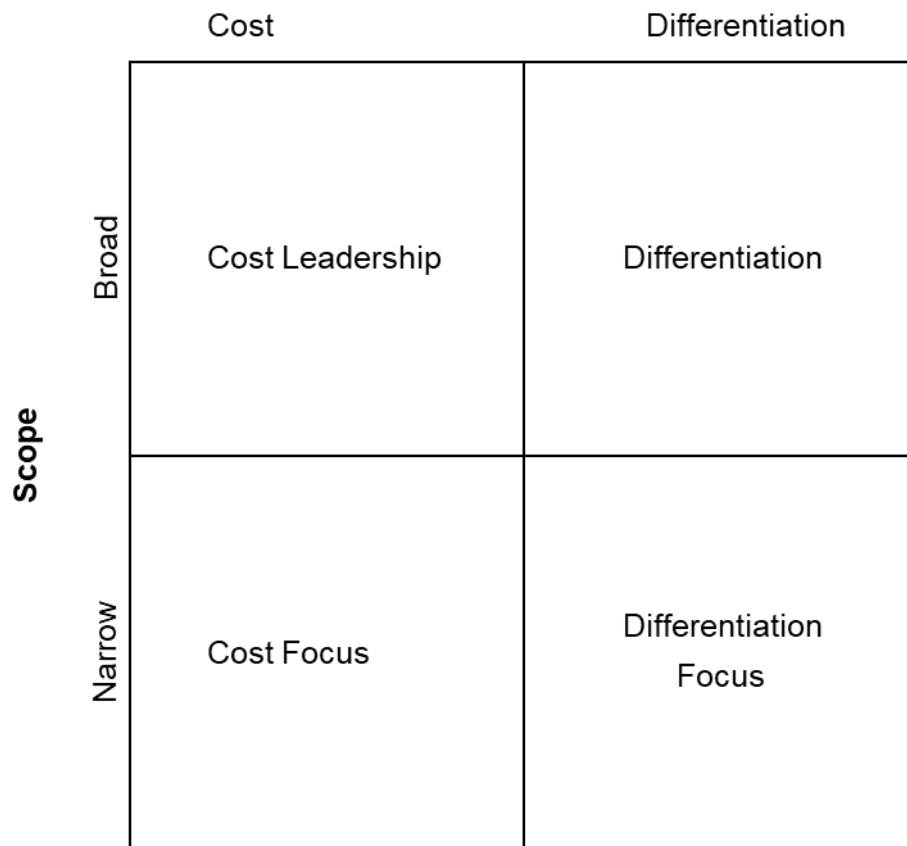


Figure 2. Competitive advantage (Based on Porter, 1980).

2.2.1 Cost leadership strategy

Companies that operate with a cost leadership strategy strive to be the lowest price providers in the industry. The implementation of the price advantage depends on the industry in which the company operates. It can be from mass production to the lowest overhead in human-resource-intensive industries. In most cases, at low prices, the operator sells standardized products on a large scale to maximize cost benefits. (Porter, 1980).

According to Porter's definition, a cost leadership strategy takes sales away from competitors and to succeed.

- By reducing costs and profitability while developing market prices

- Developing market share by lowering prices by generating reasonable profitability from each sale through cost reduction.(Bukhari & Ali, 2019).

Hambrick argues that cost leadership's leading dimension is that companies manage to run their business in a way where costs per unit are low. At the same time, the company is capable of low operating costs and achieving commercially viable business. The customers of companies implementing a cost leadership strategy buy their products because they are priced at the level of competitors' similar products. (Banker et al., 2014).

2.2.2 The differentiation strategy

Boehe and Cruz (2010) say “A Differentiation strategy requires a firm to create unique value for consumers that allows it to achieve a high premium for its products or services” The differentiation strategy is based on making products and services different and more attractive than competitors. Depending on the industry, diversity factors can be, for example, improvements based on durability, features, or user experience that improve the end-user experience. (Bukhari & Ali, 2019).

According to Porter's definition to succeed in differentiation strategy company needs.

- Good product development, research, and innovation
- A framework for producing higher-quality products or services.
- Effective marketing and sales so that the consumer understands the added value of the product or service.(Bukhari & Ali, 2019).

Porter emphasizes that a company that chooses to implement a differentiation strategy should not ignore product prices entirely, as it is still a crucial aspect of the overall strategy. However, the primary goal of the company is not solely focused on price, but rather on creating value for the customer through brand image, quality of customer service, or other means. A differentiation strategy is a defensive position in a market that can compete against other strategies. By offering rare or premium products, it creates customer loyalty and raises the threshold for customers to switch to another operator.

This creates price elasticity, ultimately allowing the operator to increase prices relative to competitors.(Ren et al., 2024).

2.2.3 The focus strategy

According to Porter, the focus strategy is based on a narrow competitive area within the industry. Optimization aims to achieve a competitive advantage in the target segment. (Porter, 1985, p. 15). The Focus strategy aims to understand the customer's needs to serve as comprehensively as possible. Unique, low-priced, or well-specific products that increase loyalty among the operator's customers. (Bukhari & Ali, 2019). In focus strategy, firms seek high customer loyalty and company-specific products, which affect and discourage competition. (Wanyonyi et al., 2021).

2.3 Pricing product

Price management is one of the most essential elements of managing a successful brand. Profitability can vary significantly even with tiny pricing adjustments. Therefore, the importance of pricing is accurate and scientific is necessary. Studies suggest that pricing, moreover, sends meaningful signs to the market, buyers, customers, and competitors of a marketing measures which can trigger changes in other measures taken by different actors, such as advertising and promotions. (Estelani & Mazwell, 2005).

Assortment width pertains to the range of product categories a retailer offers, while assortment depth refers to the variety within those categories, encompassing different brands or product variations. A broader assortment width typically results in lower prices due to the joint search effect, whereby consumers are encouraged to visit the store and explore various categories. Deeper assortment within a specific category can enhance a retailer's pricing power, as consumers are more likely to find a product that precisely meets their needs, justifying higher prices. This dual impact emphasizes retailers' strategic complexities in managing their product assortments to optimize pricing and customer satisfaction. Such strategic management requires balancing the breadth and

depth of product offerings to achieve a competitive advantage in the retail market. (Kim & Yeo, 2023).

Pricing strategies differ depending on industries, countries, and customers. Researchers generally agree that pricing strategies can be divided into three groups which are;

1. cost based pricing
2. competition-based pricing
3. customer value-based pricing

(Hinterhuber, 2008).

2.4 Retail pricing strategies

Daily supplies are always in high demand; food retail is the most competitive market niche, even during economic crises. The consequences of the economic crisis have affected this sector's development. The weaker players are most affected in these situations, while stronger players can improve their market position. The current tendency is for traditional forms of commerce, such as markets and kiosks, to be replaced by large outlet-type chains. At the same time, competition between large players is intensifying. When consumers' purchasing power declines, the most difficult times fall on local small operators. (Tulyakova et al., 2020).

The changes in the food sector are mainly due to changes in consumer behaviour. As real incomes fall, consumers must adapt to the changed situation. Consumers have become more critical, buying less, and focusing more on product quality. Financial literacy has also improved, and people have learned to buy more cost-effectively. (Tulyakova et al., 2020).

In many retail sectors, pricing strategies can be characterized as offering relatively stable prices between product categories called "everyday low pricing" or discount recurring campaigns called "promo pricing." (Ellickson & Misra, 2008).

In their study, Ellickson & Misra divide supermarket pricing strategies into three distinct groups, defined in 1998 by Trade Dimension. These three different pricing strategies have a commonly used definition, which are:

- Everyday Low Price (EDLP): Prices are stable and consistently low for the entire range of foods
- Promotional (Hi-Lo) Pricing: Utilization of lots with substantial bids, often in cooperation with industry by using lots
- Hybrid EDLP (Hi-Lo): Combining the above strategies

Marketing efforts used by supermarkets is a complex phenomenon. Companies compete for their customers with retail locations, attractive products, competitive prices, and other services. (Ellickson & Misra, 2008).

2.5 Megatrends

Megatrends are movements on a global scale that may significantly impact the global economy, communities, and ecology. They consist of several interdependent trends that correlate with each other. Trends are difficult to predict, and megatrends are difficult to identify. Evolution is easier to detect at the trend level because it is more dynamic and has immediate effects. (Bash et al., 2023).

Klaus and Tynan have researched megatrends in luxury industry and outlines future of customer behaviour.

Trend 1 - Seamless customer experience; the new focus Improving customer experience. From buying luxury to an excellent customer experience. Since the pandemic, consumers

have shifted to different digital channels and online purchases. This requires integration that leads to a seamless customer experience, which means the accessibility of a service or product at anytime and anywhere. (Klaus & Tynan, 2022).

Trend 2- Anywhere, anytime, any channel, customers expect a smooth experience on a customer-by-customer and channel-by-channel basis. The features enabled by the channels create customer loyalty. Consumers of the younger generation are progressively looking for entertainment and shopping experiences found through different channels, such as TikTok. (Klaus & Tynan, 2022).

Trend 3 - From thought to cash machines on the internet, sales will move more strongly to the online side. When online sales will override other channels is a matter of time. This trend is not new, but with the pandemic, it has increased considerably. (Klaus & Tynan, 2022).

These are the latest findings on the change in luxury industry that is growing in popularity. In light of this information, it is possible to create added value for the consumer and interest in their own brand, which correlates with financial success. (Klaus & Tynan, 2022).

2.5.1 Sitra megatrends 2023

The guiding goal in anticipating megatrends is to strengthen people's and organizations' future thinking. At this time, it is essential to emphasize perspectives and use future information to support everyday activities and change-making. Through five themes, Sitra's Megatrends 2023 describes the overall picture of changes: nature, people, power, economy, and technology. (Sitra, 2023).

Nature's carrying capacity is put to the test. We are living in an ecological sustainability crisis. The climate is warming, natural resources are consumed excessively, and biodiversity is declining. The amount of waste is increasing, and people's way of working

exceeds the carrying capacity limits, endangering our entire economy and well-being. The ecological crisis worsens the slower society, and people change their ways of working. Democracy put to the test as crises accumulate, societies are put to the test. Crises have weakened and strengthened democracies. After the global pandemic concentrated power and limited values essential to democracy, Russia's invasion of Ukraine created a crisis of democracy for civil societies. In many established democracies, democratic principles, ideals, and authoritarian policies are being questioned in Europe and the United States. As information influence grows, trust erodes. (Sitra, 2023).

The geopolitical power struggle has returned and is also reflected in the struggle between social systems. The rules-based world order created by the institutions is undermined. Competition for digital security is intensifying, and technology is increasingly present in people's everyday lives. Technology is developing rapidly and being introduced in new areas of life. Digitalization is the most significant development trend in recent times, and its effects have been visible in every industry. Data is increasingly utilized and collected, and as a result, a more individual and tailored service has become available to organizations and individuals. Technology companies pose challenges, domination, and adequacy of critical resources. The economic rationale is cracking. The sustainability crisis creates a need to reform the economy. The reserve is concentrated in an ever-smaller part. Many global actors have woken up to the fact that the current economic system is not sustainable for people and nature. Responsibility is further emphasized.(Sitra, 2023).

2.6 Literature Review Summary

This literature review establishes a comprehensive theoretical framework centred on business strategy and macroeconomic trends, essential for analysing consumer food price developments from 2016 to 2023.

The concept of strategy is foundational for organizations to achieve long-term objectives amid uncertainty. Michael Porter's generic strategies provide a framework for

competitive positioning, cost leadership, differentiation, and focus strategies. The cost leadership strategy focuses on becoming the industry's lowest-cost producer through efficiency and cost-saving innovations. The differentiation strategy aims to create unique products or services that offer distinct value, allowing companies to charge premium prices and foster brand loyalty. The focus strategy targets specific market segments more effectively than broader approaches, divided into cost focus and differentiation focus.

Pricing strategies are critical in implementing these broader strategic goals. Effective product pricing considers production costs, market conditions, competitors' pricing, and perceived consumer value. Each strategy has unique advantages, tailored to different market conditions and consumer segments.

This literature review underscores the importance of strategic planning and pricing in navigating macroeconomic impacts on consumer food prices. The theoretical insights from Porter's strategies, pricing methodologies, and megatrend analyses provide a robust framework for understanding and addressing the dynamic challenges in the consumer food market. This foundation will guide the empirical analysis, offering valuable insights into the interplay between macroeconomic events and consumer pricing dynamics.

3 Methodology

This section goes through how the research was carried out and the research process. The thesis was carried out as a case study and focused on analysing through data how strategic decisions and macroeconomic changes affected the price development of different retail operators. This event study compared the development of consumer prices in 2016-2023 with inflation. The study examines how prices have developed in relation to inflation. This study aims to answer the research question: How have macroeconomic changes affected food price developments?

The study also examines the differences between the retailers involved in the grocery trade, using Porter's generic strategies and pricing strategy principles. The study aims to understand how megatrends have changed the market and how their impact is reflected in consumer behaviour.

3.1 Case selection

The topic was selected for the study based on its topicality. Changes in the global economy have significantly impacted food price developments. According to Meri Obstbaum Head of Forecasting at the Bank of Finland "The bottom of the recession has been reached, and growth is expected to start during this year as households' purchasing power strengthens and general confidence in the economy begins to recover,".

3.2 Data Description

The study uses consumer price data collected by Statistics Finland. The products selected for the study belong to the general shopping cart and can also be found in Helsingin Sanomat's price basket comparison. The price basket created from Statistics Finland's data is compared with inflation in Finland. The products collected from Statistics Finland's data are bread, breakfast cereals, beef, potatoes, convenience food, and coffee. The products on the list are also products whose prices have been featured in the media

and have changed significantly during the period under review. This dual-source approach ensures that the data is detailed and contextually rich, facilitating a thorough analysis of the economic factors affecting food prices.

The dataset utilizes consumer price index data from Statistics Finland from 2016 to 2023. The data is indexed with the base year 2016 set to 100. The table presents monthly percentage changes across consumer basket categories, including beef, bread, breakfast cereals, coffee, potatoes, and ready-made meals. These categories are derived from typical consumer shopping baskets, and the weights are estimated based on dietary assessments. This dataset provides a comprehensive overview of price fluctuations for different products over time.

3.3 Finland's economic development in years 2016-2023

The consumer price Index is an essential measure of price change and the cost of living. This review examines the development of the Finnish Consumer Price Index from 2016 to 2023 and discusses the index's development and the factors influencing it.

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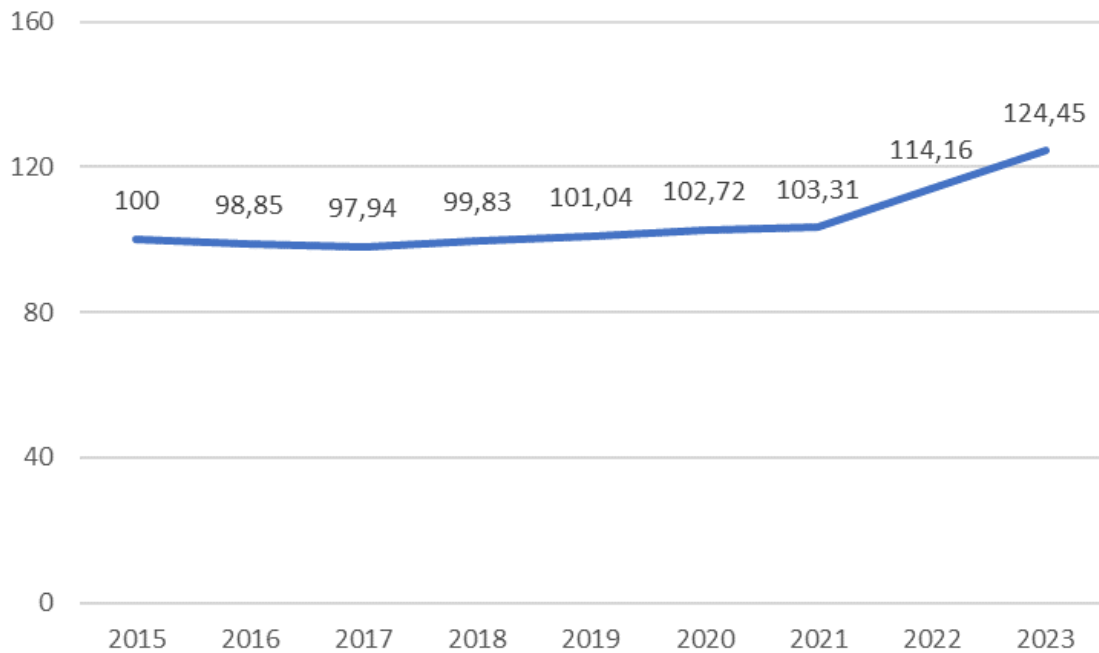


Figure 3. Year-on-year change in consumer price index annual change, %, (Statistic Finland, 2023).

Figure 3 shows how the consumer price index of food has changed due to global changes. The variation remained stable from 2016 to 2019, after which the growth became more noticeable in 2021.

3.4 Inflation in Finland 2016 to 2023

The European Central Bank's task is to maintain price stability and keep inflation in the euro area low, stable, and predictable. In a market economy, the prices of services and goods are constantly changing. When the prices of goods and services rise horizontally, and consumers get less for the euro than before, i.e., the euro's value is falling, it is inflation. (European Central Bank, 2024). The concern about higher inflation is that it distorts the allocative role of the price system. As a result of inflation, relative prices may no longer give a true picture of the relative cost of production, which may jeopardise production efficiency. (Nakamura et al., 2018).

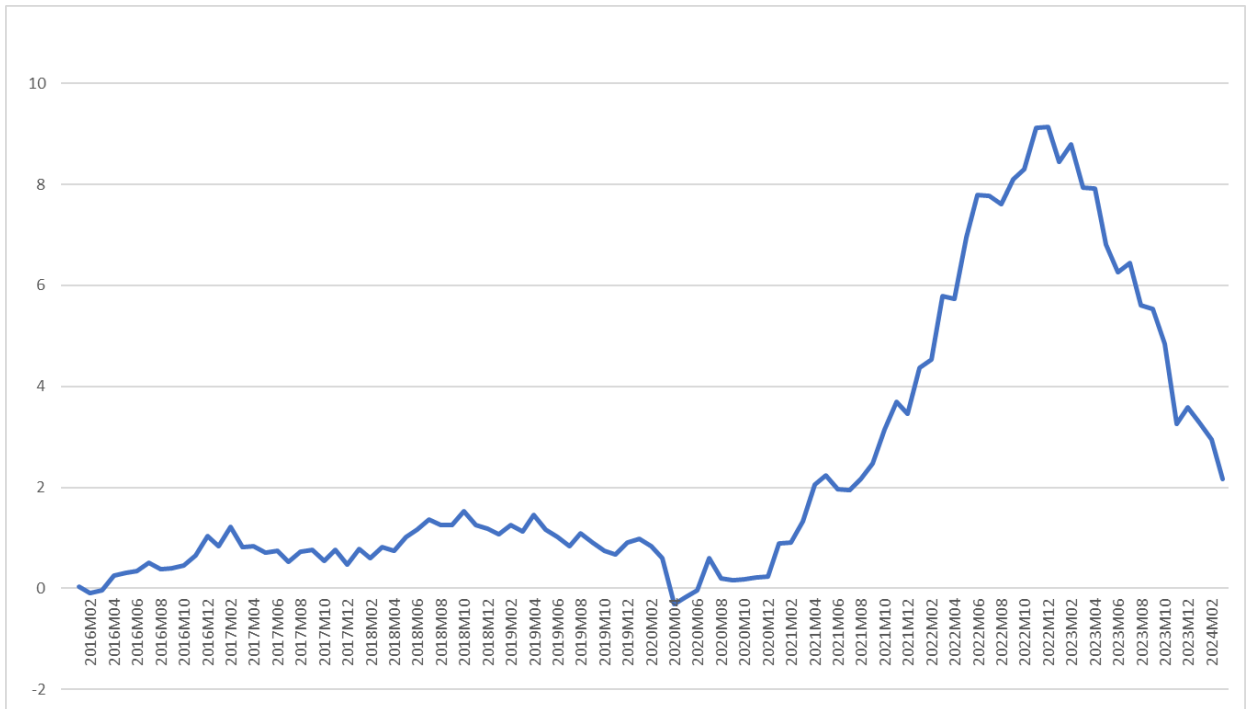


Figure 4. Consumer Price Index in Finland, Annual Change %, (Statistics Finland, 2024).

As Figure 4 shows, the Consumer Price Index from the beginning of 2016 to the end of 2019 has remained relatively moderate. After seeing price declines in early 2020, prices have been trending from the upswing until December 2022, when the index peaked at 9.14%.

From 2016 to 2019, Finland's economy grew moderately, although growth was relatively slow. Due to the coronavirus pandemic, 2020 saw a significant drop that significantly impacted the economy. The coronavirus pandemic in 2020 was very challenging for the economy. Restrictions on movement, travel bans, and closures of services and businesses strongly impacted the economy. In late 2020, the Finnish government introduced various support measures to stimulate the economy. The support measures included various forms of business and individual subsidies and tax reductions. (Bank of Finland, 2019).

In 2021, the economy started to recover from the effects of the pandemic, which increased consumer confidence and investment. At the beginning of 2022, the war in

Ukraine affected the global economy and Finland. The effects of the war were evident in the energy markets. In 2022, inflation rose partly due to problems caused by the war due to rising commodity and energy prices. (Bank of Finland, 2022).

3.5 COVID-19 and the economy

COVID-19 started in 2019 and had a significant impact on people's lives. Economists had to make changes in the economy to adapt to the situation. With the outbreak of the pandemic, there were clear signs of recession in the global economy. The International Monetary Fund predicted that global domestic product (GDP) would fall by 3% in 2020, while the World Trade Organization estimated that global trade would drop by 32%. (He et al., 2020).

The Finnish economy recovered quickly from the recession caused by the coronavirus crisis. The effects of the pandemic overshadowed the outlook, and in 2021, the Finnish economy grew by 3.5% and in 2022 by 2.6%. High commodity prices slowed economic growth and fuelled inflation. Domestic demand contributed to the recovery of the Finnish economy. (Bank of Finland, 2024).

There was an unprecedented change in household consumption in Finland due to the pandemic. Food meals, air travel, and holiday trips stopped entirely during the coronavirus months. The reasons for the shift in consumer behaviour were containment measures, restrictions on movement, school closures, and a contraction in service provision. Consumption shifted to home-cooked meals and spending time in nature. (Bank of Finland, 2023).

3.6 Ukraine war and the economy

After the outbreak of the Russia-Ukraine war, which began in February 2022, global commodity markets continued to rise. The uncertainty caused by the war about world food production caused price volatility, which increased the risk of famine and poverty.

For the past five years, Russia and Ukraine have been Europe's largest grain-producing countries. Both countries have also been the world's largest producers of corn, accounting for 4%, or 17% of world exports. After the Russian invasion in January 2022, all prices rose 24 levels a month to the earnest. (Legrand, 2023).

The halt in exports of products produced in Ukraine will significantly impact the market. Reorganization causes price increases and scarcity. The global demand for grain, which grows every year due to population growth and prosperity, is a key factor. Problems in the main production areas cause market disturbances and price increases. The global balance sheet for the 2022 harvest season has been burdened by already low inventories and drought in the Middle East region. (Luonnonvarakeskus, 2022).

3.7 Finland's grocery trade operators

Trade is Finland's largest employing industry, employing approximately 282,000 people. Measured by GDP, it accounts for 10% of Finland's GDP. The success of commerce has a significant impact on the well-being of society. When the retail sector is doing well, it creates wealth, well-being, and success in Finland. (Kaupan liitto, 2023).

The value of grocery trade sales exceeded EUR 22.9 billion in 2023. The value includes private and cooperative grocery stores in Finland, discount price stores, and chain stores at service stations.

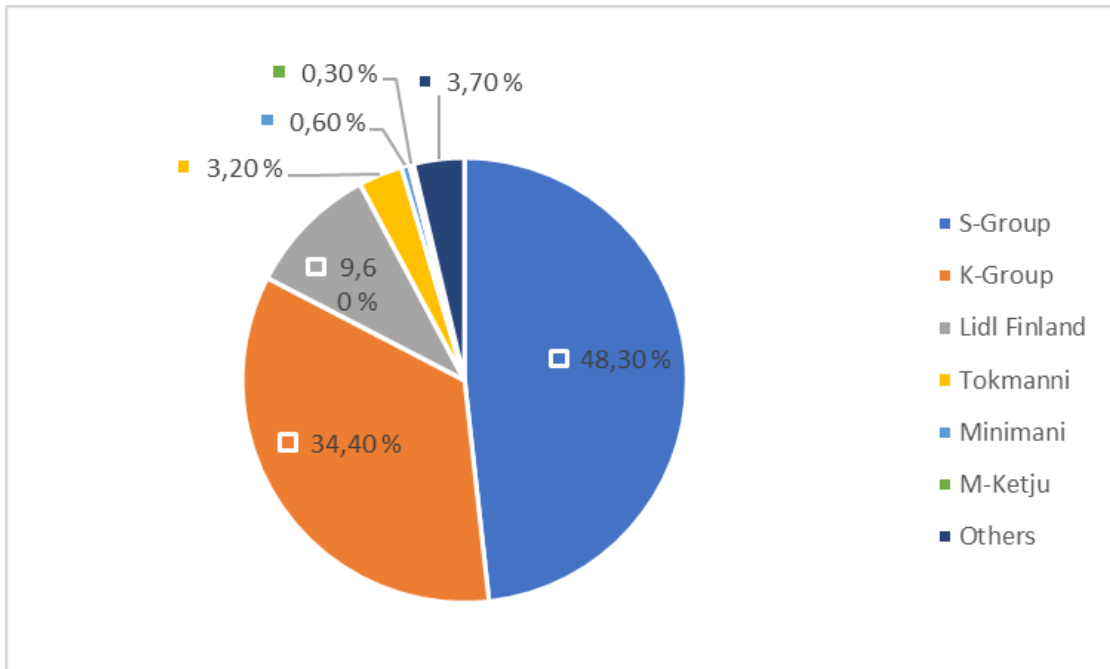


Figure 5. Retailers share of grocery market share in 2023. (Grocerytrade Ry, 2023).

As seen from Figure 5, it reflects the market situation in the grocery trade. Two strong domestic players with highest market shares. At the beginning of the 1990s, the vertical chain operating model became more common in the Finnish market. This was the case for merchant organizations and cooperatives. In the chain operating model, retail and wholesale trade merged, and chain organizations began to manage the entire value chain from producers to consumers and other customers as a single entity. With the chain organization, the grouping of stores created the conditions for profitable business and nationwide consumer services. Centralized chain operations changed the cooperation between industry and trade, bringing benefits and challenges as the bargaining position of commerce strengthened. (Mitronen, Lindblom, & Kautto, 2023).

3.7.1 Kesko-Group

In 2023, Kesko and the K-retailers collectively formed the K Group, achieving retail sales of approximately €16 billion. Retail and corporate customer sales contributed roughly 54% of the K Group's net sales. The K Group's growth strategy is enhancing customer

experience and expanding digital services. Its distinct competitive advantage lies in quality, customer experience, and a focus on digital innovation.

Operating predominantly in Finland, K Group follows a chain business model that empowers retailers to manage their stores independently. These retail entrepreneurs pay Kesko chain fees, calculated based on turnover and store site fees determined by gross margin. Through this structure, K Group fosters strong collaboration between Kesko and the K-retailers, ensuring sustainable growth and adaptability in the evolving retail landscape. (Kesko, 2024).

3.7.2 S-Group

S-Group is a cooperative established to produce reasonably priced and high-quality products and services for Finnish consumers. S Group's revenue in 2023 was approximately EUR 14 billion. The company's goal is to offer its co-op members to improve profitability and increase customer satisfaction. Responsibility and investing in innovative digital solutions to facilitate customer-oriented everyday life are also an essential part of the company's vision. (S Group, 2024).

3.7.3 Lidl-Finland

Lidl's business is based on a concept that makes it possible to combine the best quality with a low price. The company's goal is to provide its customers with the most affordable shopping cart. Lidl Finland's revenue in 2023 was approximately EUR 2 billion. Lidl Finland is part of the Schwarz Group, one of Europe's leading retailers. (Lidl Suomi, 2024).

4 Findings

This study examines the evolution of prices for a specific basket of goods in Finland from 2016-2023. The basket includes minced meat (beef), bread, breakfast cereals, potatoes, coffee, and ready-made meals, each weighted as follows: 20% minced meat, 20% bread, 15% breakfast cereals, 15% potatoes, 15% coffee, and 15% ready-made meals.

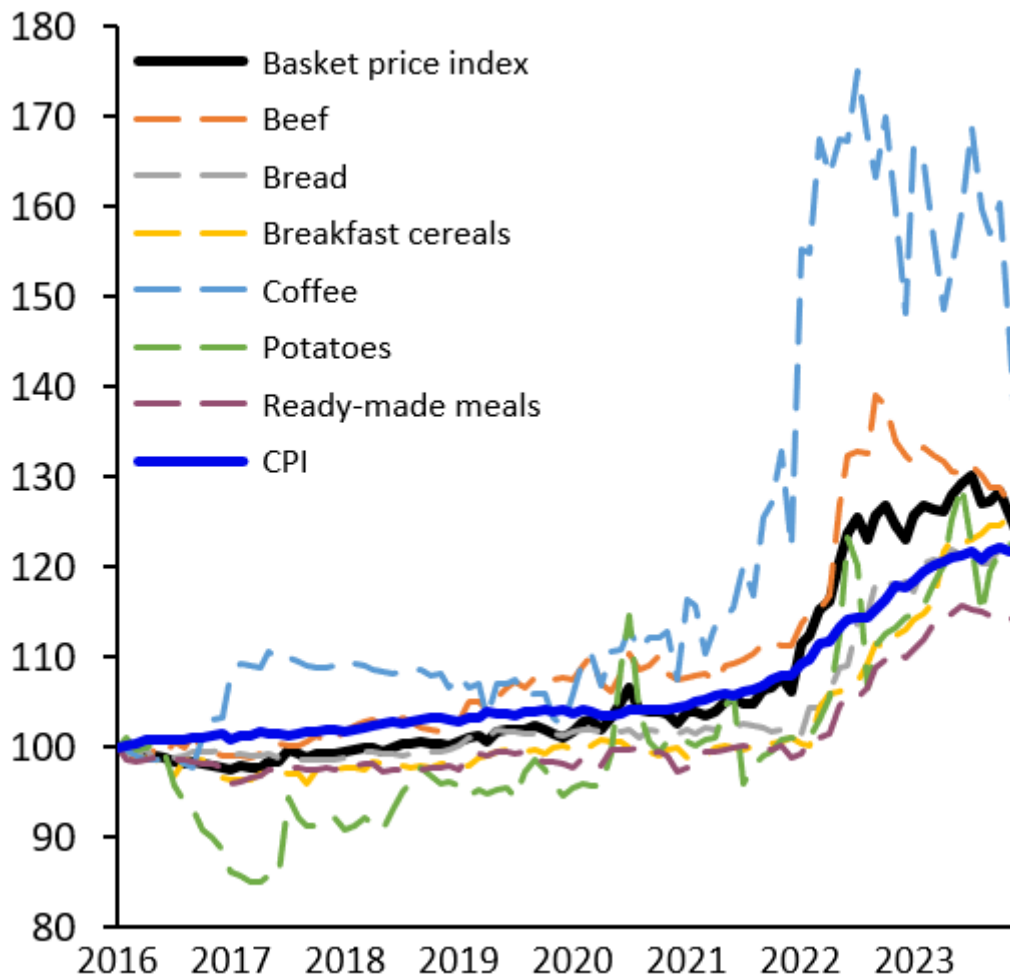


Figure 6. Article price development and cpi between 2016-2023, (Statistics Finland, 2024).

4.1 COVID-19 Pandemic March 2020 - March 2021

During the first year following the COVID-19 outbreak, the price basket and its components exhibited various trends, reflecting the unique impacts of the pandemic. The overall basket price index increased modestly by approximately 0.83%, rising from 107.708 in March 2020 to 108.598 in March 2021. This period was characterized by significant disruptions in global supply chains, labour shortages, and changes in consumer behaviour, all of which influenced the prices of the basket components differently.

The price index for minced meat (beef) decreased by 1.85%, from 108.927 to 106.904. This decline can be attributed to several factors. Initially, the closure of meat processing plants due to COVID-19 outbreaks among workers created temporary supply constraints, which might have driven prices up. However, as demand from food services and restaurants decreased due to lockdown measures, the overall impact on prices was mitigated. In contrast, bread prices remained relatively stable, with a slight decrease of 0.37%, from 107.385 to 107.008. Bread, a staple food, maintained consistent demand, and its production processes were less disrupted than in other sectors, which helped stabilize its prices.

Breakfast cereals experienced a minor decrease of 1.19%, with the price index falling from 101.968 to 100.755. The shift in consumer behaviour, particularly the reduction in the need for quick breakfast options as more people worked from home, likely contributed to this slight reduction in demand. On the other hand, the price index for coffee rose significantly by 4.97%, from 109.624 to 115.081. Coffee production and export were severely hampered by the pandemic in major coffee-producing countries. Additionally, increased home consumption as people adapted to remote working and staying at home drove up coffee prices.

Potatoes saw a price increase of 4.60%, with the index rising from 100.433 to 105.034. Potatoes' versatility and essential nature likely drove up demand as people cooked more

at home during lockdowns. The price index for ready-made meals showed minimal change, increasing by 0.21% from 100.433 to 100.642. The convenience of these products maintained their demand despite shifts in consumption patterns due to the pandemic.

The overall Consumer Price Index (CPI) increased by 1.06%, reflecting general inflation driven by shifts in demand for goods and services across the board. This moderate inflation indicates that while food prices did rise, the diversified nature of the basket helped buffer some of the volatility seen in individual categories.

4.2 First Year of the Russian War February 2022 - February 2023

The first year of the Russian war saw dramatic increases in the price indices for all categories, resulting in substantial inflation reflected in both the basket price index and the CPI. The overall basket price index surged by 11.86%, rising from 109.918 in February 2022 to 122.943 in February 2023. This period was marked by heightened geopolitical tensions, disruptions in global supply chains, and significant increases in energy prices.

The price index for minced meat (beef) rose by 14.42%, from 111.623 to 127.761. The increase in beef prices can be attributed to higher feed costs due to rising grain prices, a direct consequence of the war's impact on global grain supplies. Additionally, increased transportation costs driven by higher energy prices further contributed to the rise in beef prices. Similarly, bread prices saw a significant increase of 12.33%, with the index rising from 108.970 to 122.373. The disruptions in wheat exports from Ukraine and Russia, both major global suppliers, significantly impacted bread prices. The global wheat shortage led to higher prices as demand outstripped supply. (Legrand, 2023).

Breakfast cereals experienced an increase of 14.08%, with the price index rising from 101.823 to 116.149. Higher grain prices and logistical issues directly affected this category, like bread. Coffee prices continued to rise at a slightly slower rate compared to

other categories, increasing by 7.64% from 134.673 to 144.965. Ongoing supply chain issues and increased production costs kept coffee prices high during this period.

Potatoes increased by 13.56%, with the index rising from 100.972 to 114.665. The rising costs for fertilizers and energy, both critical for potato farming, contributed to the higher prices. The price index for ready-made meals increased by 9.90%, from 99.158 to 109.010. Higher raw material costs and increased packaging and distribution expenses influenced this category significantly.

The overall CPI increased by 7.92%, indicating substantial economic inflationary pressures. The heightened inflation during the first year of the Russian war was driven by increased costs in energy, food, and other commodities, directly influenced by the war's economic ripple effects.

4.3 Impact of Basket Weightings

The specific weightings used in the price basket—20% minced meat, 20% bread, 15% breakfast cereals, 15% potatoes, 15% coffee, and 15% ready-made meals—significantly influenced the overall price index's sensitivity to changes in individual categories. The high weighting of minced meat and bread (20% each) meant that significant price fluctuations in these categories affected the overall basket index more pronounced. For instance, during the Russian war, the substantial increases in beef (14.42%) and bread (12.33%) prices heavily influenced the basket price index due to their high weighting.

The moderate weighting of breakfast cereals, potatoes, coffee, and ready-made meals (15% each) also impacted the index, but to a slightly lesser extent. However, these categories still contributed to the overall increase, especially given the significant price rises in breakfast cereals (14.08%) and potatoes (13.56%) during the Russian war.

Adjusting these weightings or including additional categories could provide different insights. For example, increasing the weighting for highly volatile items such as coffee,

which experienced high volatility, would have resulted in a more pronounced impact on the overall basket price index. Including a category for energy, which was significantly affected during both periods, could provide a more comprehensive view of inflationary pressures. Adding health and sanitation products, which saw unusual price spikes during the pandemic, would highlight different aspects of consumer price changes.

4.4 Descriptive statistics of monthly changes

This chapter provides the outcomes of the calculations conducted, along with a discussion of the significant findings. Further discussion will be presented also in the following chapter.

<u>Basket Price Index monthly changes (%)</u>	
Observations	95
Mean	0,2 %
Median	0,1 %
Maximum	5,0 %
Minimum	-2,3 %
Standard Deviation	0,01
Skewness	0,89
Kurtosis	3,54
Count of Negative	43
Count of Positive	52

Table 1. Basket price index

The descriptive statistics of the Basket Price Index's monthly changes provide a clear picture of the dataset. The mean monthly change is 0.2%, indicating a slight overall price increase. The median, at 0.1%, shows that half of the changes are below this value, suggesting a modest positive trend.

The maximum monthly increase is 5.0%, and the minimum is -2.3%, highlighting significant variability in price changes. With a standard deviation of 0.01, most changes are close to the mean, though there are some notable outliers.

A skewness of 0.89 indicates a positive skew, meaning there are more months with increases above the mean than below. The kurtosis of 3.54 indicates heavier tails and a higher peak than a normal distribution, which points to extreme values. Of 95 observations, 43 months show negative changes, while 52 show positive changes. This slight skew towards positive changes reflects the overall trend of increasing prices despite periods of decrease.

Basket Price Index's show a slight upward trend with moderate variability and a tendency towards more frequent positive changes, punctuated by occasional extreme values.

CPI monthly changes (%)	
Observations	95
Mean	0,2 %
Median	0,2 %
Maximum	1,5 %
Minimum	-0,7 %
Standard Deviation	0,00
Skewness	0,83
Kurtosis	1,98
Count of Negative	28
Count of Positive	67

Table 2. Consumer price Index monthly changes

The descriptive statistics of the Consumer Price Index (CPI) monthly changes, based on 95 observations, offer a detailed understanding of the dataset. The mean and median monthly changes are both 0.2%, indicating a consistent, albeit modest, overall increase in prices. The maximum change recorded is 1.5%, and the minimum is -0.7%, illustrating less variability compared to the Basket Price Index. This suggests that the CPI changes are more stable with fewer extreme fluctuations.

The standard deviation was noted as 0.00, which may indicate that changes are closely clustered around the mean. This further supports the observation of stability in CPI changes. A Skewness of 0.83 suggests a slightly positive skew, meaning there are more months with changes above the mean than below it, but the skewness is not pronounced. The kurtosis value of 1.98 indicates a distribution closer to normal but still with slightly lighter tails than a normal distribution, implying fewer extreme values than the Basket Price Index dataset.

Count of negative and positive changes highlights that out of 95 observations, 28 months experienced negative changes, while 67 months had positive changes. This indicates a stronger tendency toward price increases in the CPI compared to the Basket Price Index, which had a more balanced distribution of positive and negative changes.

The CPI dataset exhibits less variability and a more pronounced positive trend compared to the basket price index. The Basket Price Index showed a higher maximum increase and a lower minimum decrease, along with a greater standard deviation and more significant skewness and kurtosis values. This implies that the Basket Price Index experienced more volatility and more extreme values, whereas the CPI changes are more stable and consistently positive. These differences highlight the distinct behaviour of the two indices, with the CPI reflecting a steadier inflationary trend.

BPI vs. CPI difference (pp.)	
Observations	95
Mean	0,0 %
Median	0,0 %
Maximum	3,7 %
Minimum	-3,0 %
Standard Deviation	0,01
Skewness	0,22
Kurtosis	2,10
Count of Negative	52
Count of Positive	43

Table 3. Basket price index compared to Consumer price index

The descriptive statistics of the dataset comparing the monthly price changes between the Basket Price Index and the Consumer Price Index reveal insights into the differences between these two indices. With 95 observations, the mean and median of the differences are 0.0%, indicating that, on average, the monthly changes in BPI and CPI are balanced, and there is no consistent trend of one index increasing or decreasing more than the other.

The maximum difference between the indices is 3.7%, while the minimum difference is -3.0%, suggesting significant deviations between the two indices in certain months. This variability is further quantified by the standard deviation of 0.01, indicating that while there are some months with notable differences, the majority of the observations are closely centred around the mean.

Skewness, at 0.22, indicates a slight positive skew in the distribution of differences, meaning there are slightly more months where BPI changes exceed CPI changes. The kurtosis value of 2.10 suggests a distribution with moderately heavier tails than a normal distribution. This implies the presence of occasional outliers, which can lead to

significant deviations from the general pattern of differences. However, these are not excessively extreme compared to the general pattern of differences.

The count of negative and positive differences is nearly balanced, with 52 months showing negative differences and 43 months showing positive differences. This balance strongly supports the notion that neither index consistently outperforms the other in terms of monthly changes over the observed period, maintaining a balanced relationship.

Comparative analysis between BPI and CPI monthly changes highlights a generally balanced relationship with occasional significant deviations. The slight positive skew and moderate kurtosis reflect a distribution mostly centred around zero, with a few months showing more significant differences. These findings suggest that while BPI and CPI generally move together, there are periods when price changes in the selected basket of goods diverge meaningfully from the broader consumer price index, reflecting the different compositions and sensitivities of these indices to economic factors.

4.5 Discussion

The study of price changes in a defined basket of goods during the COVID-19 pandemic and the first year of the Russian war provides critical insights into the impact of global events on consumer prices. (He et al., 2020). However, several limitations must be acknowledged to contextualize the findings and understand the scope and constraints of the research. Addressing these limitations in future studies could enhance the robustness and applicability of the results.

Analysis of the price development focuses on a basket containing six products: minced meat (beef), bread, breakfast cereals, potatoes, coffee, and ready-made meals. While these items represent everyday food products, they only encompass part of the full range of household goods and services. The study must include other essential items, such as fruits, vegetables, dairy products, and non-food items, to ensure the study's comprehensiveness. As a result, the findings may only partially capture the broader

inflationary pressures experienced by households. Expanding the basket to include a more diverse range of products would provide a more holistic view of consumer price changes.

Study employs fixed weightings for the basket components: 20% for minced meat and bread and 15% for breakfast cereals, potatoes, coffee, and ready-made meals. However, consumer spending habits are dynamic and can change in response to price fluctuations and economic conditions. For instance, during periods of significant price increases, consumers may adjust their purchasing behaviour by substituting more expensive items with cheaper alternatives. Static weightings do not account for these shifts, potentially leading to an inaccurate representation of the impact of price changes on the overall basket. Future research could employ dynamic weightings that adjust to reflect changes in consumer behaviour over time. This potential for future research to improve our understanding of consumer behaviour and economic trends should inspire us to continue our work in this field.

In the analysis geographical boundaries is not considered, which is a critical factor as price changes can vary significantly across different regions. Local factors like weather conditions, regional economic policies, and supply chain disruptions can influence prices. For example, a drought in a specific region can lead to higher prices for locally sourced products. By not considering geographical variability, the study may overlook significant regional disparities in price changes. Conducting a more localized analysis could reveal these disparities and provide more nuanced insights into how different regions are affected by global events.

These limited food items exclude non-food items such as clothing, housing, healthcare, and transportation, which are significant components of household expenditure. Non-food items can also experience substantial price fluctuations due to global events. For instance, energy prices, which affect transportation and housing costs, were significantly impacted during the Russian war. Including a broader range of goods and services in the

analysis would offer a more comprehensive view of overall inflation and its impact on households. A multi-sectoral approach would enhance understanding of how different global crises influence consumer expenditure.

Used data in the thesis is aggregated every month by statistic Finland. While this provides a broad overview, it might mask short-term price volatility and sudden spikes that can occur within a month. Supply chain disruptions or sudden policy changes can lead to rapid price fluctuations. Higher temporal resolution data, such as weekly or daily data, could provide deeper insights into the immediate impacts of significant events. This granularity would allow for a more detailed analysis of price dynamics and better capture the volatility experienced by consumers.

While the study highlights the impacts of the COVID-19 pandemic and the Russian war, it does not account for other external factors that could influence prices. Factors such as natural disasters, currency fluctuations, changes in trade policies, and technological advancements also shape price trends. For instance, natural disasters can disrupt local production and supply chains, leading to price increases. A multifactorial analysis incorporating these elements would provide a more comprehensive understanding of the various forces affecting price dynamics. Including these external factors could help isolate the specific impacts of the pandemic and the war from broader, long-term economic trends.

Comparing current price trends against a well-defined baseline could help isolate the specific impacts of these global events from ongoing, underlying economic trends. A comparative analysis with stable periods would enhance understanding of how extraordinary events deviate from normal price behaviour. Establishing such a baseline would provide a more precise context for interpreting the significance of the observed price changes.

In the analysis does not consider consumer substitution effects, where consumers switch to cheaper alternatives when prices rise. (Kim & Yeo, 2023). Ignoring substitution effects can overestimate the impact of price changes on consumer expenditure. For instance, if beef prices rise significantly, consumers might purchase more chicken or pork instead. Including substitution effects in the analysis could provide a more accurate assessment of the economic burden on consumers. Modelling consumer behaviour in response to price changes would offer a more realistic picture of how households manage their budgets during periods of inflation.

Inconsistencies or biases in data collection methods, reporting standards, or updates could affect the validity of the results. For instance, differences in data collection methodologies across regions or over time could introduce biases. Ensuring high-quality, standardized, and frequently updated data is crucial for robust analysis. Future research should prioritize using reliable data sources and consider potential data collection and reporting biases.

4.6 Pricing strategy empirical analysis

Michael Porter's Generic Strategies framework can be applied to understand the pricing strategies of different retailers in the provided data. Porter's framework includes three primary strategies: cost leadership, differentiation, and focus. (Porter, 1980). By examining the pricing data for minced beef, skimmed milk, potatoes, spaghetti, and coffee over several years, we can analyze how Lidl, Prisma, and K-Citymarket position themselves within these strategies.

Cost leadership strategy aims to become the lowest-cost producer in the industry. (Kharub et al., 2019). Companies using this strategy strive to offer products at lower prices than their competitors, thereby attracting price-sensitive customers. In the data, Lidl consistently offers lower prices for products like minced beef (400g), skimmed milk (1L), and spaghetti (1kg) compared to Prisma and K-Citymarket. For instance, in 2019, Lidl priced minced beef at €3.48, whereas Prisma and K-Citymarket priced it at €3.49.

Similarly, Lidl sold skimmed milk at €0.59, while Prisma and K-Citymarket sold it at €0.59 and €0.75, respectively. These consistent lower prices indicate that Lidl is likely following a cost leadership strategy, focusing on minimizing costs to offer lower prices and attract a large customer base. (Ellickson & Misra, 2008).

Differentiation strategy involves offering unique products or services valued by customers, allowing the company to charge a premium price. The data reveals that K-Citymarket tends to price products like potatoes (1kg) and coffee (500g) higher than Lidl and sometimes higher than Prisma. For example, in 2022, K-Citymarket priced coffee at €2.49, which could be offered, while Lidl and Prisma both priced it at €2.99. This higher pricing suggests that K-Citymarket may adopt a differentiation strategy, potentially offering higher quality products or additional services that justify the premium price, thus appealing to customers who perceive added value. (Kharub et al., 2019).

Focus strategy targets a specific niche market, tailoring offerings to meet the needs of that particular segment. (Porter, 1985, p. 15). When analysing the average prices of all items, it is evident that Lidl consistently maintains lower prices, indicative of a cost focus within a broad market K-Citymarket's variable pricing, which is sometimes lower and sometimes higher than the Prisma hybrid approach. Prisma's pricing strategy often positions itself between Lidl and K-Citymarket, suggesting a balanced or hybrid approach. Prisma is targeting a broad market without an extreme focus on either cost leadership or differentiation, appealing to a wide range of customers with competitive yet not the lowest prices.

Mince Beef (400g)

Year	LIDL	Prisma	K-Citymarket	Average
2017	2,62	2,62	2,64	2,63
2018	3,15	3,15	3,69	3,33
2019	3,48	3,49	3,49	3,49
2022	4,55	4,65	4,99	4,73
2023	2,99	2,99	3,29	3,09

Table 4. Mince Beef price comparison 2017-2023 prices in euros (Helsingin Sanomat, 2023).

Skimmed Milk (1L)

Year	LIDL	Prisma	K-Citymarket	Average
2017	0,64	0,59	0,59	0,61
2018	0,62	0,65	0,75	0,67
2019	0,59	0,59	0,59	0,59
2022	0,75	0,69	0,89	0,78
2023	0,97	0,79	0,85	0,87

Table 5. Skimmed Milk price comparison 2017-2023 prices in euros (Helsingin Sanomat, 2023).

Potato (1kg)

Year	LIDL	Prisma	K-Citymarket	Average
2018	0,68	0,69	0,69	0,69
2019	0,59	0,60	0,89	0,69
2023	0,59	0,80	0,75	0,71

Table 6. Potato price comparison 2018-2023 prices in euros (Helsingin Sanomat, 2023).

Spaghetti (1kg)

Year	LIDL	Prisma	K-Citymarket	Average
2017	0,50	0,50	0,50	0,50
2018	0,38	0,39	0,66	0,48
2019	0,33	0,34	0,39	0,35
2022	1,19	1,99	0,79	1,32

Table 7. Spaghetti price comparison 2017-2023 prices in euros (Helsingin Sanomat, 2023).

Coffee (500g)

Year	LIDL	Prisma	K-Citymarket	Average
2018	1,47	1,48	1,55	1,50
2019	1,38	1,39	1,19	1,32
2022	2,99	2,99	2,49	2,82
2023	5,55	5,55	5,56	5,55

Table 8. Coffee price Comparison 2018-2023 prices in euros (Helsingin Sanomat, 2023).

Based on Porter's strategies, Lidl is identified as following a cost leadership strategy, consistently offering lower prices to attract cost-conscious consumers. K-Citymarket, with its higher and variable prices, is pursuing a differentiation strategy, possibly focusing on the perceived quality, and added services. (Ren et al., 2024). On the other hand, Prisma adopts a balanced strategy, positioning itself between cost leadership and differentiation to appeal to a broad customer base. These insights into the pricing strategies of these retailers provide a clearer understanding of their competitive positioning and market approaches.

5 Conclusions

The research question was how macroeconomic factors influenced the price changes of essential goods in Finland from 2016 to 2023. The aim was to understand how food price developments have developed in response to changes in the macro-economy and examine the price development of food basket products. The study highlighted the strategic differences between Finnish grocery stores. Prasad (2010a) stated in his study that creating added value for the customer develops customer satisfaction and provides an opportunity to improve market performance and competitive advantage.

The study of the effects of the macroeconomic changes on food retail prices in Finland provided significant insights into the pricing strategies adopted by major retailers and the overall trends in food prices during this period. This study underscores the multifaceted impact of economic fluctuations on the retail food sector by analysing data from various retailers, including Lidl, Prisma, and K-Citymarket. These findings are crucial for food retail industry professionals in Finland and other countries, as they shed light on the complex relationship between macroeconomics and food retail prices.

The data indicates that macroeconomic global commodity prices played crucial roles in shaping food retail prices. According to Legrand (2023), Russia and Ukraine have been Europe's largest grain-producing countries, which can be seen in the price development of products, including grain. For instance, periods of higher inflation correlated with increased prices for essential food items such as beef, bread, and dairy products. Conversely, prices tended to stabilize or decrease during periods of economic stability or deflationary trends. This dynamic showcases the sensitivity of food prices to broader economic conditions and highlights the importance of retailers adopting flexible pricing strategies.

Research question that supported the research which was answered in the study:

How have the prices of products extracted from the price basket developed in relation to the general level of inflation?

How have prices developed in the food basket comparison, and how have the prices of different operators risen relative to each other?

According to Estelani and Maxwell (2005), managing successful brand price management is one of the most essential elements. This thesis's findings showed how different products, in relation to the general level of inflation, separated from each other. Beef prices have shown significant fluctuations, often exceeding the inflation rate due to factors like supply chain disruptions and economic pressures. In contrast, bread prices have remained more stable, closely mirroring overall inflation with occasional peaks influenced by wheat prices. Breakfast cereals have moderate volatility in line with inflation, coffee prices have seen substantial increases driven by global supply issues, and potato prices have varied significantly due to seasonal factors. Ready-made meals have shown steady price increases tracking inflation.

Between 2017 and 2023, all three supermarkets experienced substantial price increases for most products. For instance, the price of mince beef grew dramatically, with K-Citymarket's price increasing by a higher margin than LIDL and Prisma. Similarly, the price of coffee increased significantly across all supermarkets, with LIDL showing the most considerable percentage increase. These pricing-based decisions are about competitive positioning and challenging each other. (Eldring, 2009). In this thesis, we validated the distinctions among the three retailers concerning their pricing strategies. The pricing strategies were consistent with the principles outlined in Porter's generic strategies and competitive advantage framework (Porter, 1980).

Examining year-on-year changes, the periods of 2019 to 2022 and 2022 to 2023, in particular, saw sharp price hikes. These sharp hikes were at the beginning of the COVID-19 pandemic and at the time of the war in Ukraine. As a result of changes in consumer

behaviour and global distribution challenges, Macroeconomic changes began to be reflected in prices. For example, from 2019 to 2022, coffee prices rose by over 100% across all supermarkets, and this trend continued into 2023, albeit at a slightly reduced pace.

Retailers in Finland responded to these macroeconomic changes through various pricing strategies to maintain competitiveness while ensuring profitability. Lidl, for example, consistently adopted a cost-leadership strategy, offering lower prices than its competitors. (Bukhari & Ali, 2019). This approach attracted price-sensitive consumers and pressured other retailers to adjust their pricing strategies accordingly, which is Prasad's (2010a) research on winning markets and gaining a competitive advantage over competitors. Prisma and K-Citymarket, while generally positioned at slightly higher price points, leveraged loyalty programs and targeted promotions to retain the customer base and manage price perceptions.

The analysis of monthly price changes reveals that specific categories, such as beef and coffee, exhibited more volatility than bread and potatoes. This answers the supporting question of the study, how different product groups experienced different price pressures, which were reflected in store prices. These fluctuations can be attributed to supply chain disruptions, changes in consumer demand, and seasonal variations. The data indicates that ready-made meals showed significant price adjustments, reflecting the growing consumer trend towards convenience foods.

5.1 Future research opportunities

Future research should address several key areas to enhance the understanding of price dynamics during global crises, such as the COVID-19 pandemic and the Russian war. From a Finnish perspective, broadening the scope of the price basket is essential. The current study's focus on a limited selection of goods can be expanded to include a broader range of products and services consumed by Finnish households. Incorporating items such as dairy products, fresh produce, housing, healthcare, and education would

offer a more representative picture of overall inflation and better reflect the actual spending patterns of Finnish consumers.

Another critical area for improvement is employing dynamic weightings that adjust to reflect changes in consumer behaviour over time. Finnish consumer habits are not static and can shift in response to economic conditions. Future research can develop dynamic weightings that more accurately represent Finnish consumption patterns by using data from national consumer expenditure surveys or real-time purchasing data. This approach would provide a more nuanced understanding of how price changes impact the overall basket.

It is also important to consider geographical variability within Finland. Different regions of the country experience distinct economic conditions and supply chain dynamics. For example, urban areas may face different price pressures compared to rural regions. By collecting and analysing regional data, researchers can uncover local variations in price changes and their underlying causes, providing more tailored insights into regional economic impacts.

Including non-food items in the analysis is crucial for capturing the full impact of inflation on Finnish households. Categories such as clothing, housing, healthcare, and transportation are significant components of household expenditure and can experience substantial price fluctuations. A comprehensive view of overall inflation requires including these non-food items, which would better reflect the diverse spending patterns of Finnish consumers.

Higher temporal resolution data, such as weekly or daily data, would allow for a more detailed analysis of price dynamics. Monthly data aggregation might overlook short-term price volatility and sudden spikes caused by events like supply chain disruptions or policy changes. Using higher temporal resolution data would capture these immediate impacts, providing deeper insights into the short-term fluctuations experienced by consumers.

Future studies should also incorporate a multifactorial analysis that considers various external factors affecting prices, such as natural disasters, currency fluctuations, and changes in EU trade policies. By using econometric models that account for multiple variables simultaneously, researchers can isolate the specific impacts of global events from broader economic trends. This approach would provide a more comprehensive understanding of the factors driving price changes.

Establishing a robust comparative baseline from periods of economic stability would help isolate the impacts of crises. Comparing current price trends against stable periods would provide more precise insights into the deviations caused by extraordinary events, enhancing the interpretation of data. This baseline comparison would highlight the extent to which crises like the pandemic and the war disrupt normal economic conditions.

Understanding how Finnish consumers respond to price changes is crucial for accurate analysis. Future research should model consumer substitution effects, where households switch to cheaper alternatives when prices rise. This would offer a more realistic assessment of how price changes affect consumer behaviour and overall expenditure. By considering these substitution effects, researchers can better capture the adaptive strategies employed by consumers during periods of economic instability.

Ensuring high-quality, standardized data is essential for robust analysis. Future research should prioritize using reliable and consistent data sources, minimizing biases and discrepancies. Collaboration with national statistical agencies and using advanced data analytics techniques would help ensure the accuracy and reliability of the findings. Standardizing data collection methods across regions and over time would enhance the comparability and validity of the results.

Finally, future research should explore the policy implications of price changes and provide recommendations for mitigating adverse effects. Analysing the effectiveness of Finnish government interventions, such as subsidies, price controls, or social safety nets, would help develop strategies to support consumers during economic instability. By linking research findings to policy recommendations, studies can contribute to developing more effective economic policies and strategies in Finland.

By addressing these areas, future research can provide a more detailed and accurate understanding of price dynamics during global crises from a Finnish perspective. Expanding the scope of the basket, using dynamic weightings, considering geographical variability, including non-food items, employing higher temporal resolution data, conducting multifactorial analyses, establishing comparative baselines, accounting for consumer substitution effects, ensuring data quality, and exploring policy implications will enhance the robustness and applicability of research findings. These methodological improvements will offer deeper insights into the economic impacts on Finnish households and inform more effective policy responses.

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