

# Unpacking the Inflation Basket: A Systematic Literature Review of Key Determinants of Rising Food Prices and their Global Impact

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## ABSTRACT

Food price inflation is a pervasive global issue with significant negative consequences worldwide. Consumers are particularly burdened by rising living costs, particularly concerning essential necessities such as food, which see alarming yearly price increases. Despite the diverse factors contributing to food price inflation varying from nation to nation, these determinants remain under explored. This systematic literature review aims to investigate the factors influencing food price inflation using the Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA) methodology. The review process involves identification, screening, eligibility assessment, and inclusion, adhering to PRISMA Flow Diagram and utilizing database such as Emerald Insight, Science Direct and Google Scholar. Out of 135 articles initially identified, 48 were selected for the synthesis process. The analysis revealed ten key factors, categorized into internal and external themes. These factors include demand and supply dynamics, exchange rates, elevated oil prices, household income, agricultural shocks, price shocks, food crises, population growth, pandemics, and political factors. Understanding these determinants provides valuable insights for organizations and policymakers to develop strategic responses, supporting the National Food Security Policy Action Plan 2021-2025.

**Keywords:** Food price inflation, PRISMA methodology, inflation determinants, National food security, Systematic literature review

## INTRODUCTION

Inflation is a concept as old as the existence of money. The term “inflation” is derived from the Latin word “inflare”, first used in 1838. According to Simpson and Weiner (1989), inflation signifies the uncontrolled growth of money, which has been a proximately of 2,500 years. The introduction of paper money in the twentieth century worsened inflation [2]. After World War II, nations faced various economic difficulties, leading to significant inflation. High inflation between 1965 to 1982 caused economic depression, labor shortages, and the introduction of wage and price controls [3]. The general price level is influenced by the demand and supply of goods [4]. Food prices refer to the average cost of specific food commodities globally and across countries [5]. Inflation, typically a broad measure, reflect the overall increase in prices or the cost of living in a country [6]. Effective inflation management is crucial for ensuring convenience for all inhabitants but poses significant challenges for governments [7]. In Malaysia, food price inflation is notably more volatile than other consumer items [8]. Recent geopolitical events, such as the war between Russia and

Ukraine have worsened global food crises [9]. Additionally, the rise of oil prices is closely linked to increased food prices [10].

Economic crisis impact all industries, leading to fluctuations in food markets, particularly in agricultural and nutritional domains [11]. Globally, food prices inflation has burdened households with high living expenses. In Malaysia, inflation rose by 3.2% in December 2021 due to increase food and fuel costs (Bala, 2022). The global agricultural market influences domestic food costs [8]. Imported food prices are affected by transportation fuel cost and currency depreciation. Previous research on food price inflation has often been fragmented region-specific. This study aims to identify factors influencing food price inflation using the Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA) methodology.

## LITERATURE REVIEW

### A. Inflation

Inflation is the gradual increase in the price of goods, reducing the purchasing power of consumers. It is commonly associated with the cost of living and can occur in both short and long term, often due to changes in the money supply [12]. Inflation rates become unstable when economic growth exceeds 4%, impacting production costs and exports prices [13]. Federal Reserve Chairman Jerome Powell noted that COVID-19 caused a rise in U.S. inflation, with rates increasing from 1.4% to 6.2% in 2021 and hitting a 40-year high of 8.6% by May 2022 [14]. Similar trends were observed in the Eurozone's economies and other emerging nations such as Germany (8.7%), France (5.8%), Italy (7.3%) and Spain (8.5%) [15], [16]. Inflation is driven by three factors: 1) monetary policy, economic and financial shocks, 2) local production demand, and 3) global inflation trend [16], [17]. In Malaysia, inflation is influenced by both economic and foreign forces, with the money supply being a significant factor [18].

### B. Food Price Inflation

Food price inflation refers to the uncontrollable rise in food costs worldwide, affecting purchasing power and income. This issue disproportionately impacts low and middle income nations [19]. The rise of food costs caused by the war in Ukraine spreads throughout nations, affecting millions of people [20]. Food prices are influenced by the food chain, including the agricultural community, labor, and energy costs [21]. Farm prices also influence food prices and retail salaries. In Finland, the quality of life continues to improve, reflecting the changes in agricultural prices. Additionally, Russia's grain export prohibition has contributed to food price inflation.

Food price inflation has risen internationally as income disparity has widened. The inflation rate of food costs in Pakistan has expanded the gap between the affluent and the poor. Food price inflation is more prevalent in basic foods, where increased and unexpected demand and pricing result in a per capita rise [22]. Food inflation affects the poor economically since their spending income is less than 75% [7]. Food price inflation impacts macroeconomic stability, small farmers, and poor consumers in developing nations, who must spend half of their resources on food and fuel [23]. The unprecedented rise in liquid bio-fuels has raised worries about the implications of growing food costs. Food consumption patterns must be adjusted indirectly, and greenhouse gas emissions can also impact bio-fuel production. Changes in food calories and greenhouse gas emissions are also included in typical diets below average prices in Brazil, China, and the United States [24].

Food price inflation is causing major economic issues in India. Year-on-year food price inflation was 10.2% from January 2008 to July 2010 [25], [26]. During October 2009 to March 2010, weekly food price inflation exceeded 20% [26]. Researchers have recognized this price increase to causes, including the recent impact

of the food crisis on the international market [25], [26]. Similarly, in Malaysia, commodity price increases drove food price inflation to a record-high level of 8.8% in 2008 [8]. Fuel and fertilizers affect delivery costs, and a spike in oil prices impacts the cost of produced goods and food prices. The price of imported items is also influenced by the price of oil [10].

## METHODOLOGY

This systematic literature review was conducted in accordance with the PRISMA 2020 guidelines, which offer a detailed framework for the transparent reporting of systematic reviews. The PRISMA 2020 statement replaces the PRISMA 2009 statement and provides updated reporting guidelines to reflect advances in methods to identify, select, appraise, and synthesize studies [27], [28]. The methodology encompasses several stages: identification, screening, eligibility, and inclusion, ensuring a thorough and unbiased selection of pertinent literature.

### A. Identification

The initial phase involved a comprehensive search for relevant articles across three major databases: ScienceDirect, Emerald Insight, and Google Scholar. The search aimed to encompass a wide range of studies pertinent to food price inflation. A total of 503 articles were identified from ScienceDirect, 1,670 from Emerald Insight, and 7,770 from Google Scholar. After the removal of duplicates, a cumulative total of 9,440 unique articles remained for subsequent screening. This rigorous approach ensures a broad capture of the relevant literature, aligning with best practices for systematic reviews [29].

### B. Screening

The next phase entailed the screening of titles and abstracts of the identified articles to ascertain their relevance to the research topic. This process was meticulous, involving an initial broad search and subsequent narrowing based on relevance criteria. Specifically, 5 articles from ScienceDirect, 4 from Emerald Insight, and 10 from Google Scholar were deemed relevant after the initial screening. Consequently, 9,421 articles were excluded for not meeting the inclusion criteria, leaving 19 articles for further in-depth assessment. Such a rigorous screening process is critical to ensure the validity and reliability of the systematic review findings [28].

### C. Eligibility

During the eligibility phase, the full texts of the remaining 19 articles were thoroughly assessed to confirm their suitability for inclusion in the review. This assessment focused on the relevance of the articles to the research question, the robustness of their methodologies, and the quality of their findings. The eligibility criteria were stringently applied to ensure that only high-quality studies were included in the final synthesis. This phase is essential to ensure that the systematic review is based on reliable and credible evidence, thereby enhancing the validity of the review's conclusions [30].

### D. Article Selection Procedure

Following the eligibility assessment, all 19 articles were deemed suitable for inclusion in the qualitative synthesis. These articles form the foundation of the systematic review, providing a comprehensive understanding of the factors influencing food price inflation. The inclusion process, as depicted in Figure 1. PRISMA Flow Diagram, demonstrates the transparent and replicable nature of the review methodology. By adhering to the PRISMA 2020 guidelines, this systematic review ensures a rigorous and unbiased approach, ultimately enhancing the reliability and credibility of the findings [27].

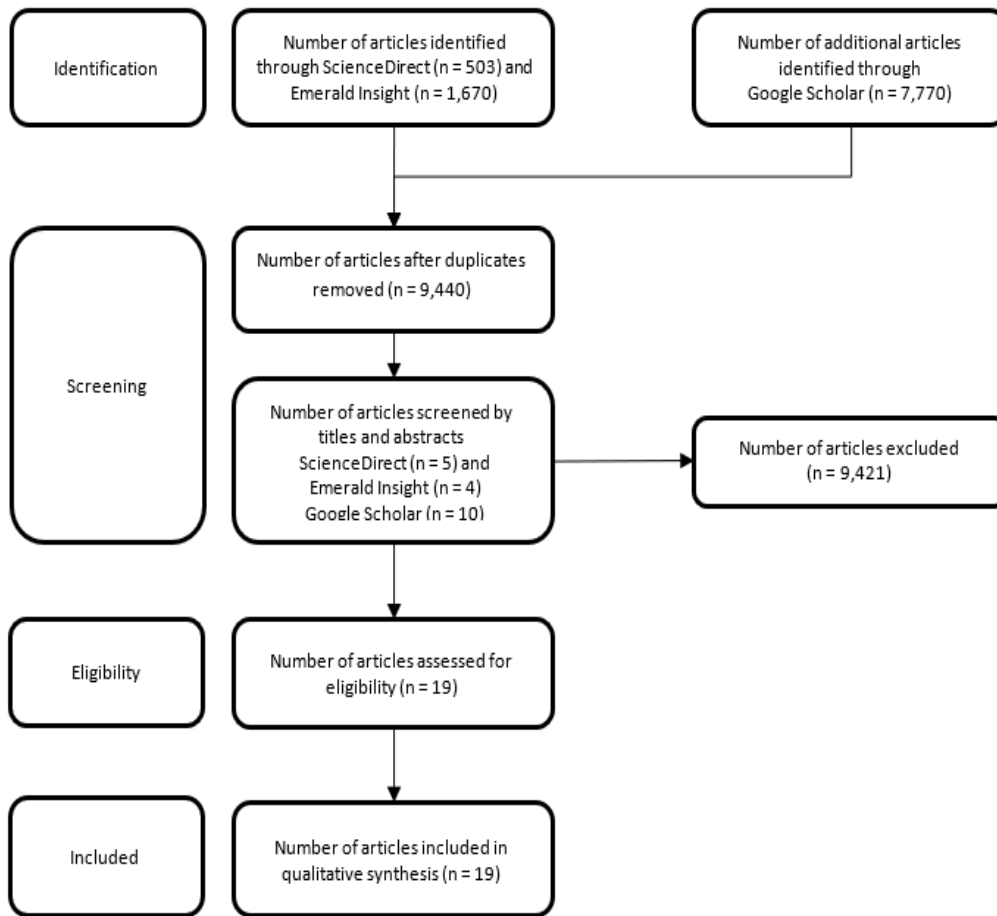


Fig. 1 PRISMA Flow Diagram

**E. Inclusion and Exclusion Criteria**

The criteria for article inclusion and exclusion were meticulously defined and are summarized in Table 1. Articles included in the review were published between 2012 and 2022, ensuring the relevance and currency of the data. Only journal articles were considered, excluding business articles, letters, editorials, conference proceedings, notes, and books. All included articles were in English, with non-English articles excluded to maintain consistency in language comprehension. The review focused on international studies, utilizing keyword searches such as “Determinants” AND “Inflation” AND “Food Price” across the specified databases: Emerald Insight, Science Direct, and Google Scholar. Articles were selected based on the relevance of their titles and abstracts to the determinants of food price inflation, ensuring that only pertinent studies were included in the final synthesis.

TABLE I ARTICLES INCLUSION AND EXCLUSION CRITERIA

Criteria	Included	Not Included
Timeline	2012 until 2022	Records below 2012 and after 2022
Document type	Journal articles	Business article, letter, editorial, conference proceeding, note, book.
Language	English	Other than English
Region	International	Nil
Selection of article	Based on keyword search	Others than the keyword search

Search option	Databases: Emerald Insight, Science Direct, Google Scholar	Other than these three databases
Keywords	“Determinants” AND “Inflation” AND “Food Price”	Other than these keywords
Search for relevance	Title and abstract of each article	All the unclear articles title and abstract
Final selection	Articles that were related to determinants of food price inflation	Articles that were not related to the determinants of food price inflation

## FINDINGS

The synthesis of 19 articles identified several factors influencing food price inflation. The most dominant factor, highlighted in 41.7%, is the supply and demand dynamic as the primary source of food price inflation. The exchange rate element ranks second at 33.3%, with currency depreciation having adverse effects on several countries, causing the demand for goods to be charged at higher rates. High oil prices, affecting 31.3% of the factors, contribute significantly since some countries do not produce oil and rely on the international oil market. Household income is the fourth most common factors, cited in 20.9% of the studies. Countries are categorized into low, middle, and high-income group, with low-income groups having less purchasing power and being severely affected by food price inflation. Agricultural shock and price shocks each account for 16.7%. Agricultural shock results from extreme seasonal changes and weather changes negatively impacting crop yield and harvesting.

The factor of food crisis, at 12.5% indicates that the global economy’s year-to-year changes significantly influence consumers’ ability to obtain and maintain food supplies. Population growth, influencing 8.3% of food price inflation, contributes to high food demand and results in a lack of resources to support such demand. The COVID-19 pandemic, one of most recent factors at 4.2%, significantly impacted countries’ socio-economic stability, preventing them from effectively providing food necessities. Political factors, though the least cited at 2.1%, still exert a significant influence on food price inflation. The recent war between Russia and Ukraine has not only affected these countries but also impacted European countries dependent on or politically related to them, complicating economic exchanges. The summary of these factors is depicted in Figure 2.

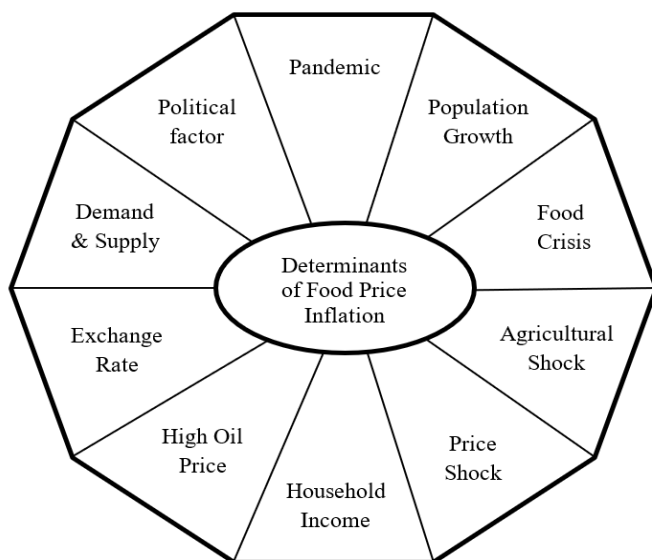


Fig. 2 Internal and External Factors for Food Price Inflation Model.



## DISCUSSION

The findings of this study highlight the complex interplay of factors influencing food price inflation, underscoring the significant economic and social challenges it poses globally. Food is a fundamental necessity, and each country's food supply is directly linked to its population's purchasing power. The variability in food demand across countries necessitates a robust system of food importation and exportation. Price increases disproportionately affect low-income consumers due to their limited purchasing power, emphasizing the need for effective agricultural development to reduce reliance on imported food sources. While improving the agricultural sector demands substantial time and capital, advancement in technology prove promising opportunities for achieving the goal.

The exchange rate and currency depreciation play crucial roles in international trade and market stability. Countries with weaker currencies, such as Indonesia, Ethiopia, and India are particularly vulnerable to the adverse effects of unstable exchange rates, impacting both global and domestic businesses and households. Additionally, high oil prices have a direct impact on food production costs, thereby influencing the final prices paid by consumers. Countries dependent on imported food experience heightened import costs when oil prices spike, further worsening domestic food prices inflation.

This study offers valuable implications for both theoretical development and practical applications. Theoretically, it recognizes the necessity of incorporating a multifaceted approach to understanding food price inflation, integrating factors such as supply and demand dynamics, exchange rates, oil prices, household income, agricultural shocks, and political instability. This comprehensive perspective enriches existing economic models and provides a more nuanced understanding of food price determinants. Practically, the study informs policymakers and stakeholders about the critical factors influencing food price inflation, guiding the development of targeted strategies to mitigate its impact. For instance, investing in agricultural technology and infrastructure can enhance domestic food production, reducing dependency on imports. Moreover, stabilizing currency exchange rates and managing oil price fluctuations can help maintain reasonable food prices. Governments must also focus on supporting low-income households through subsidies or food assistance programs to alleviate the burden of rising food costs.

Despite its contributions, this study has several limitations. Firstly, the reliance on secondary data from 19 articles may introduce biases related to the selection and interpretation of findings. Secondly, the study's focus on specific factors may overlook other potential influences on food price inflation, such as climate change, trade policies, and geopolitical events. Additionally, the study's time frame from 2012 to 2022 may not fully capture long-term trends and emerging factors affecting food prices.

Future research should address these limitations by incorporating primary data collection to validate and expand upon the findings of this study. Longitudinal studies could provide deeper insights into the evolving factors influencing food price inflation over extended periods. Additionally, exploring the impact of emerging trends such as climate change, technological advancements in agriculture, and global trade policies can offer a more comprehensive understanding of the issue. Comparative studies across different regions and income groups can also elucidate the varied impacts of food price inflation, guiding more tailored policy interventions.

## CONCLUSIONS

In conclusion, the study identifies key factors influencing food price inflation, providing a foundation for further analysis and policy development. Understanding these factors allows governments and stakeholders to focus on the most influential aspects and implement effective strategies to mitigate the impact on

consumers. By leveraging insights from researchers and innovations in technology, it is possible to develop sustainable solutions to address food price inflation and ensure food security for all.

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