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# Real Inflation in The Context of Shrinkflation and Skimpflation\*

Shrinkflasyon ve Skimpflasyon Bağlamında Reel Enflasyon

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One of the most important issues of macroeconomics, which deals with the structure, performance, and behaviour of the economy, is inflation, the continuous increase in the general level of prices. Inflation can be expressed in numbers, but inflation is more than just numbers, both economically and socially. For this reason, inflation is one of the most important issues in the economic literature since it affects many parameters such as economic sustainability, income distribution, competitiveness, and purchasing power. In countries with high inflation, producers who are worried about the increase in costs make changes in the quality and quantity of products with high substitutes. This decrease in quality and quantity is not clearly reflected in inflation calculations. As the inflation rate increases, such practices increase. As a result, the fact that the consumer pays the same amount for a product that is less in quantity and of lower quality repre-sents the part of inflation that is not considered. Therefore, there is a difference between the inflation rate and the inflation rate experienced by the society. While not adding the difference defines inflation, adding or subtracting this difference in quality and quantity defines real inflation. In this study, the concept of real inflation because of the concept of shrinkflation and skimpflation is analysed in the theoretical framework.

Keywords: Inflation, Shrinkflation, Skimpflation, Real Inflation, Turkiye

Ekonominin yapısı, performansı ve davranışlarıyla ilgilenen makroekonominin en önemli konularından biri, fiyatlar genel düzeyindeki sürekli artış olan enflas-yondur. Enflasyon rakamlarla ifade edilebilir, ancak enflasyon hem ekonomik hem de sosyal açıdan rakamlardan çok daha fazlasıdır. Bu nedenle enflasyon, ekonomik sürdürülebilirlik, gelir dağılımı, rekabet gücü ve satın alma gücü gibi birçok parametreyi etkilediği için ekonomi literatürünün en önemli konularından biridir. Enflasyonun yüksek olduğu ülkelerde maliyetlerin artmasından endişe eden üreticiler, ikamesi yüksek olan ürünlerin kalite ve miktarında değişikliğe gitmektedir. Kalite ve miktardaki bu düşüş enflasyon hesaplamalarına net olarak yansımaz. Enflasyon oranı arttıkça bu tür uygulamalar da artmaktadır. Sonuç olarak, tüketicinin daha az miktarda ve daha düşük kalitede bir ürün için aynı miktarı ödemesi, enflasyonun dikkate alınmayan kısmını temsil etmektedir. Dolayı-sıyla enflasyon oranı ile toplumun yaşadığı enflasyon oranı arasında fark vardır. Bu farkın eklenmemesi enflasyonu tanımlarken, nitelik ve nicelik farkının eklenmesi ya da çıkarılması gerçek enflasyonu tanımlamaktadır. Bu çalışmada, shrinkflasyon ve skimpflasyon kavramları nedeniyle gerçek enflasyon kavramı teorik çerçevede incelenmiştir.

Anahtar Kelimeler: Enflasyon, Shrinkflasyon, Skimpflasyon, Gerçek enflasyon, Türkiye

# ARTICLE INFOS

Article History

Received: March 25, 2024 Accepted: May 30, 2024

Article Type
Research Article
Responsible Author

Kaan YİĞENOĞLU

## MAKALE BİLGİSİ

Makale Geçmişi

Başvuru Tarihi: 25 Mart 2024 Kabul Tarihi: 30 Mayıs 2024

Makale Türü Arastırma Makalesi

Sorumlu Yazar

Kaan YİĞENOĞLU

#### 1. Introduction

Inflation is one of the important topics of macroeconomics. Inflation is a fundamental economic concept for economists and policymakers as it has an impact on macroeconomic variables such as employment, growth, and interest rates. Although we speak of high inflation when monthly price increases exceed 6 percent, it is not possible to determine an exact rate for high inflation. An important indicator of high inflation is that all economic units do not consider the

rate of price increase as the most fundamental variable when making decisions on production, consumption, saving, investment, etc. If high inflation rates persist in a country for many years (15-20 years), this situation leads to a chronic inflation problem in the country. It is quite difficult to break and prevent the inertia of inflation that persists for many years. Because in countries with inflation problems, expectations are determined based on the continuity of price increases. In countries experiencing inflation inertia, producers increase prices in the face of high wages. Price increases trigger wage increases again.

<sup>\*</sup> This study is an extended version of the abstract presented at the Van Lake International Social Sciences Challenges and Opportunities Congress.

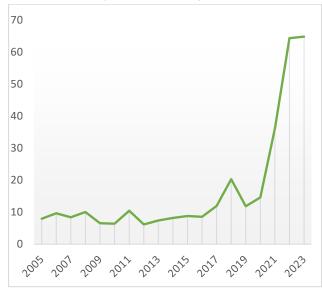
It is not very easy to break the vicious circle created by this situation. Inflation inertia, akin to a self-sustaining cycle, perpetuates the persistence of inflation as it feeds upon itself once ignited. Increasing inflation has negative effects on income inequality, poverty, and purchasing power. Inflation, which has been on a downward trajectory for many years, has been on a rapid rise all over the world since 2019. As a result of the supply and demand shocks caused by COVID-19, the energy crisis caused by the Russia-Ukraine war, as well as wars between other world countries, the chaos in the world is increasing day by day. Amidst the tumultuous backdrop of chaos and uncertainty, the global macroeconomic landscape is marked by a concerning trend of declining performance and escalating risks. Measuring inflation accurately is an important step in the fight against inflation. The GDP deflator, among the earliest techniques for gauging inflation, is calculated by dividing Nominal GDP by Real GDP and then multiplying the result by 100. This method yields the percentage fluctuation in the prices of goods and services produced domestically within a country. However, the result obtained here reveals the problem of inflation that does not affect nominal but affects real terms. These are shrinkflation and skimpflation. Shrinkflation, which is a decrease in the weight or size of a product, and skimpflation, which is the reason for the low quality of the service provided, are important consequences of high inflation, which we have frequently encountered recently, and which reduces our quality of life. To prevent cost increases in the face of rising prices, in other words, it is a marketing strategy to protect themselves from high costs caused by inflation. In an increasingly competitive environment, producers develop various practices to hold onto the market. For example, a producer who sells a 60 gm. chocolate bar for 20 to, to cut costs in the face of increasing costs, makes changes in the weight or size of the product he sells to reduce his costs and starts to sell the product at the same price by reducing the weight of the chocolate bar to 55 gr. while selling the 60 gm. chocolate bar for 20 £. This situation, which creates an asymmetric information problem between the producer and the consumer, is an unethical result in terms of the economy and society because of inflation. Since the consumer is price-orientated, he first looks at the price of the product he will buy and does not pay attention to the quantity. This change is noticed by consumers over time. Another important point is that this change is not reflected in the result of the deflator used in inflation calculation. This situation should be taken into consideration within the scope of the policies to be implemented and the fight against inflation. Namely, in the index obtained as Nominal GDP / Real GDP x 100, based on the chocolate example given in the previous paragraph, it is calculated that the chocolate is 60 gm. and its price is 20 b. However, the price of chocolate, which does not decrease in the face of decreasing quantity when it is 55 gr. is not evaluated in the index. In this case, a concept of inflation that is not reflected in inflation calculations but has a real effect emerges. This concept is called real inflation in this study.

In this article, the concepts of shrinkflation and skimpflation, which arise because of high inflation, will be introduced in outline and based on this framework, the concept of real inflation, which is not directly reflected in the calculation of the GDP deflator used in inflation calculation, will be explained. In the first part of the article, the conceptual framework of the concepts of shrinkflation and skimpflation will be explained, while in the second part, the concept of real inflation, which is not reflected in the GDP Deflator, which does not affect the nominal but has a real effect, will be discussed. In the conclusion section, a general evaluation is made.

# 2. Conceptual Framework of Shrinkflation and Skimpflation Concepts and Literature Review

Inflation, which is among the important indicators of macroeconomics, is an undesirable situation for all segments of society. This is because inflation, with its social and economic consequences, is more than what the figures express. Since one of the basic conditions of a stable economy is to achieve and maintain price stability, the inflation phenomenon is an important macroeconomic problem that countries have been struggling with for years within the framework of their internal dynamics (Songur and Sertkaya, 2020). The whole world entered a global trend with COVID-19. In Türkiye, total demand contracted and the money supply increased due to the pandemic. There was high inflation, low interest rates, uncontrolled increase in money supply and then a demand explosion. Inflation started to increase due to all these. In addition, the confidence problem caused by political turmoil triggered the markets. Due to socioeconomic and political reasons, Türkiye's trend was different from the rest of the world. Figure 1 shows Türkiye's inflation rates for the 2005-2022 period.

Figure 1
Inflation Rates in Türkiye (Annual % Change)



Source: TCMB,

 $\underline{https://www.tcmb.gov.tr/wps/wcm/connect/TR/TCMB+TR/Main+Menu/Ist\ atistikler/Enflasyon+Verileri$ 

The problem of high inflation negatively affects the expectations and behavior of economic units by reducing predictability in an economy (Erer, 2023). In the face of rising inflation, producers will be adversely affected first, and then consumers will start to be adversely affected. In the face of severe rising inflation, producers will change the quantity, size, and quality of their products while keeping the price of the goods they produce the same to reduce their costs. Since consumers are more price-oriented, they do not notice this deterioration in goods in the first place. In other words, an asymmetric information problem arises between producers and consumers. While producers have information about the deterioration in the goods they produce, consumers have incomplete information. Thus, the concept of shrinkflation and skimpflation, which emerges in the face of high inflation, is both an inflationary concept that is the result of high inflation and a marketing strategy for producers. Figure 1 shows examples of shrinkflation and skimpflation.

**Figure 2** Examples of Shrinkflation and Skimpflation



Source: Uçar, 2020.

Figure 2 illustrates the changes in the quantity, size, and quality of products due to shrinkflation and skimplation. As can be seen in the figure, there has been no change in the prices of bread and chocolate, but the quantities of the products have decreased.

### 2.1 Shrinkflation

Shrinkflation and skimpflation are both causes and consequences of inflation. Shrinkflation is not a new phenomenon in the literature. Since costs increase when inflation is high, companies change the weight of the product while keeping the price the same to reduce costs. Shrinkflation and skimpflation are painful consequences of inflation. In general, when shrinkflation is first applied, the changes in products take time and are noticed by consumers over time. Shrink' in English means to shrink and reduce. Shrinkflation is a term made up of two separate words: shrinkage and inflation. The "shrink" in shrinkflation refers to the change in the size of products, while the "-inflation" part refers to inflation, i.e. the increase in the price level (Liberto, 2021). Shrinkflation is a reduction in the size or quantity of a product while its price remains the same. According to Wood (2022), shrinkflation is defined as the practice of reducing the size of a product while maintaining the sticker price. Shrinkflation was introduced by economist Pippa Malmgren (Rosalsky, 2021). While this marketing strategy to avoid inflation minimizes production costs for producers, it reduces the quality of products used by consumers. As inflation soars, the sale of low-unit price packs jumps; FMCG (Fast Moving Consumer Goods) firms go for grammage cut bridge packs or It has been observed that some consumers are turning to affordable bundles or LUPs (Low Unit Price Pack) to manage their monthly shopping

Shrinkflation is a form of inflation that is not easily visible to consumers. Even if the reduction in quantity or size of products due to inflation is not very noticeable, due to the high inflation that the world has experienced recently, any reduction in products by companies affects the consumer basket. To overcome the high costs in the world and in Turkiye, some companies reduce the product packages without changing the price (Venkatesan and Tandon, 2022). This practice is perceived by firms as a hidden tactic to increase profit margins or maintain profit margins during rising input costs. This is because it increases during periods of rising inflation when companies must cope with rising costs of ingredients, packaging, labour, and transport. It's not entirely the consumers' fault if they don't notice. People are generally price-conscious; they tend to notice that the net weight of a box of cereal has gone down by half an ounce, or that a 2-litre Coke is now only 1.75 liters. "They are more sensitive to changes in price than

to changes in quantity. Of course, companies have known this for years" (Wood, 2022: 3).

The concept of shrinkflation has been widely discussed in the literature in recent years. For example, Kim (2022), uses data from the retail milk market in South Korea to analyze how consumers react differently to package downsizing and package price increases that cause the same degree of the unit price increase. The study finds that consumers strongly prefer package downsizing to package price increases and that this trend has not diminished over time. Wood (2022) discusses the ethical implications of shrinkflation and presents case studies of organizations that have implemented shrinkflation, such as Mondelez International and PepsiCo, and their results. The article highlights the importance of organisations being transparent with consumers about shrinkflation and the potential backlash they may face if they are not. The article also discusses the role of government intervention in contributing to shrinkflation, and the potential consequences of policies such as price controls and subsidies. Chaliot and Serfes (2024), show that the presence of inattentive consumers who do not notice subtle reductions in product size leads to higher prices per unit, especially in less competitive markets. Downsizing reduces the utility for all consumers and should be addressed. Erdoğan and Gürbüz (2023) stated that shrinkflation and loss of quality inflation have an impact on consumers' purchasing decisions and have a negative impact on marketing ethics and sustainable development. Saleh et al (2018), in a study aimed at understanding consumer attitudes towards packaging shrink in Egypt, found that while Egyptian consumers are aware of packaging shrink, their attitudes towards it are not very positive. This suggests that companies may need to work harder to maintain customer loyalty.

The factors causing shrinkflation can be listed as follows:

- Cost-push inflation: If the cost of inputs such as labor or raw materials rises, firms can pass these costs on to consumers in the form of higher prices. However, if firms are unable or unwilling to raise prices, they may instead choose to reduce the size of their products while keeping their prices the same (Dholakia, 2021).
- Competition: In a competitive market, companies are constantly looking for ways to reduce their costs to beat their competitors. One way to do this is to reduce the size of their products without reducing the price. This can be a successful strategy if consumers are unaware that the size of the product has changed (Thompson, 1984).
- Consumer behavior: Some consumers may be less sensitive to changes in the size of a product than to changes in its price.
   This means that companies can reduce the size of their products without losing a significant number of customers (Kagan, 2022).

## 2.2. Skimpflation

In addition to the concept of shrinkflation, another concept that has become widespread in the literature is that of skimpflation. Skimpflation symbolises the deterioration in the quality of a product or service for the same price (Kireeva, 2022). In other words, skimpflation means cutting costs and reducing services. For example, hotels may change their housekeeping services. Instead of hiring workers to clean guest rooms every day, they can hire workers to clean them every other day. This helps to reduce labour costs (Bennett, 2022: 3-4). The reason why companies reduce the quality of their products or services is that they want to maintain their profitability by reducing the quality of the materials they use or the number of people they employ (Euronews, 2022).

Skimpflation has not been very well analyzed in terms of its effects and consequences, so its effects and consequences have not been fully

revealed. The service sector accounts for 57 percent of the US consumer price index (Tradingeconomics, 2023). This ratio clearly shows the importance of skimpflation. In Germany, this ratio is 50.3 percent. Negative changes in the quality and variety of services should be reflected as inflation, while improvements and developments should be reflected as disinflation. Skimpflation and its effects are not reflected in inflation rates, hiding real inflation rates and their impact on consumers. Services account for 43.5% of the total euro area CPI.

**Table 1**Ratio of Services Sector to CPI in Selected Countries

Countries	Services CPI and HCPI Rate (%)	Years
USA(CPI)	57.0	1950-2024
Germany (CPI)	50.3	1992-2024
European Union (HCPI)	43.5	1991-2024
France (CPI)	50.1	1961-2024
United Kingdom (CPI)	47.0	1952-2024
Italy (CPI)	42.4	1997-2024

**Source:** Tradingeconomics, Euro Area Services Inflation. <a href="https://tradingeconomics.com/euro-area/services-inflation">https://tradingeconomics.com/euro-area/services-inflation</a> (Access date: 15.04.2024).

- \* The table has been created by us.
- \* CPI(CPI, measures the change in the average level of prices of a fixed basket of consumer goods and services)( Central Statistics Office, 2024).
- \* HCPI (The HICPs enable international comparisons of inflation rates to make between member states within the European Union)(Central Statistics Office, 2024).

Changes in the quantity and quality of products and services, especially positive or negative changes in the quality of services, are an obstacle to obtaining real values in GDP measurement if they are not reflected in prices, and as a result, the deflator is under- or overestimated. In other words, the real deflator cannot be obtained. Since inflation is a result of the deflator, shrinkflation, and skimpflation are an obstacle to real inflation. Skimplation and shrinkflation refer to the difference between nominal and real inflation. In the next section, the relationship between these two concepts and real inflation is explained with the help of formulae and tables.

### 3. Real Inflation

To talk about the existence of inflation in an economy, the supply and demand balance in the economy must be. When this balance is disturbed, there is a supply and demand shock. However, an increase in the price of a good does not mean inflation. To talk about inflation in an economy, prices must rise continuously. For this purpose, the price index in the basket of goods created to calculate inflation based on the base year is analyzed (Tüzün, 2023: 396-397). The inflation rate is the percentage increase in the general level of prices in a period. When GDP data are analyzed, it is seen that nominal GDP increases faster than real GDP, and the reason for this is inflation. While real GDP analyzed increases in a way that reflects only the physical increase in production, nominal GDP increases in a way that reflects both the physical increase in production and the increase in the prices of goods and services (Yıldırım, 2019: 18). To evaluate economic developments in a healthy way, real and monetary movements should be distinguished. Economic events, which are divided into real and nominal, are tried to be measured by different methods and indices (Emek, 2020: 8). Three different indices are used in the calculation of inflation: Consumer Price Index (CPI), Producer Price Index (PPI) and GDP deflator.

According to Mankiw (2016), the GDP deflator, also called implicit price deflator, is a statistical method used to calculate inflation. It is calculated by dividing Nominal GDP by Real GDP. The GDP deflator reflects what happens to the general price level in the economy.

GDP Deflator = Nominal GDP / Real GDP x 100

The main difference of the GDP deflator from the indices used in other inflation calculations is that it is not based on a basket of goods and services, but tracks price changes in the entire economic output of a country (Man Institute, 2021).

In economic life, there may be situations that are not reflected in the indices but have the characteristics of inflation because they cause the relative price structure to deteriorate. For example, in the USA in the 1920s and in the Netherlands in 1930, falling costs as a result of technological developments were not reflected in prices, but increased profits excessively. Giersch evaluated this situation within the scope of the phenomenon of "relative inflation" and explained it as "income inflation" (Paya, 2013: 439). The concepts of shrinkflation and skimpflation, which occurred because of high inflation because of COVID-19 in the world and the Russian-Ukrainian war, are important concepts that we face today. The concept of shrinkflation, which is expressed as a decrease in the size or quantity of the goods, and the concept of skimpflation, which causes a decrease in the quality of services, are not included in the calculation of inflation. This situation emphasizes the concept of real inflation in the study. When these changes made by producers in the weight, size, or quantity of goods are not included in the inflation calculation, the inflation calculation becomes inaccurate. Therefore, the difference between the actual inflation and the statistically calculated inflation can be defined as real inflation.

Explanation of the concept of real inflation with the formula:

The following formula for real inflation has been formulated by us and labeled as the HNK hypothesis.

HNK Hypothesis

Real Inflation= Nominal Inflation  $\pm$  skimpflation  $\pm$  shrinkflation Example 1: Real Inflation= % 20 + % 2+ % 1 Real Inflation= % 23

Although the inflation (nominal) calculated in the above example is 20 percent, 2 percent due to the deterioration in the quality of products, 2 percent due to the decrease in the quality of service in the service sector, and 1 percent due to the decrease in the quantity of products should be added to the nominal inflation.

Example 2: Real Inflation= Nominal Inflation  $\pm$  skimpflation  $\pm$  shrinkflation

Real Inflation= % 10 - % 2 %1
Real Inflation= %9

There is not always deterioration in the quality of products or the service sector; when there is improvement, the improvement should be reflected in the rate. In the example above, Skimpflation is therefore shown as (-) negative. The result is reflected as a decrease in the nominal inflation rate.

Example: Assume that the relative effect of bread on total income is 10%. Accordingly, let us explain the effect of a 10% decrease in the weight of bread at the same price on total inflation with the help of the example given in the table below.

**Table 2** Shrinkflation Sample Table

Grammage	Price	Decrease Increase	Impact (%)
2000 gr.	30 ₺		
1800 gr.	30 ₺	- %10	%1

<sup>\*</sup>The table has been created by us.

As seen in the table, let's assume that the weight of bread is initially 2000 gr. When the price is 30th, there is no effect on inflation in case of any increase or decrease. However, when there is a 10% decrease in the weight of the bread, the weight of the bread decreases to 1800 gr. and the price remains the same. In this case, a 10% decrease caused 1% inflation. Normally, the price of bread should increase while its weight remains the same, or the price is expected to decrease when its weight decreases. However, in an increasingly high inflationary environment, producers change the weight/size of their products to fight against increasing costs and sell their products at the same price.

Example: A reduction in the quality of the service against high costs is defined as skimpflation. Therefore, a 10 percent decrease in the services provided in the service sector has a 5 percent effect on inflation. For example, let us assume that the tourism sector has a 20% share of total inflation. Accordingly.

**Table 3** Skimpflation Sample Table

Service	Price	Decrease in Service Quality	Effect (%)
Accommodation	2000 ½ (nightly rate)		
Accommodation	2000₺	- %10	%2

<sup>\*</sup> The table has been created by authors.

Let's assume that there is a 10% decrease in the quantity of the service provided by a hotel where the nightly accommodation fee is 2000 L. In this case, a 10% decrease caused inflation of 2%. While people could stay all-inclusive in a place where the accommodation fee was 2000½ per night before, when there is a 10% decrease in service quality, they will have to pay the same price in case any service is not deducted from the accommodation fee. In other words, even if prices do not increase directly, consumers pay the same price and receive lower-quality services. Moreover, these examples can be multiplied: Narrowing the scope of insurance coverage in insurance policies, airline companies reducing the number of stewardesses and thus providing less service to consumers on long-haul flights, telephone companies reducing the number of employees in call centers so that it takes longer to reach you when you call for a technical problem (Economicshelp, Skimpflation - Definition and examples. https://www.economicshelp.org/blog/glossary/skimpflation/).

**Table 4**Skimpflation Sample Table

Product	Price	Change in Product Quality	Effect (%)
Dark chocolate	5₺	cocoa beans	-
Dark chocolate	5 tb	cheap jackfruit seeds and cocoa mix (adulteration)	depends on the price and proportion of the cheap product

Skimpflation can lead to deterioration in service quality as well as deterioration in product quality. Table 3 gives an example of deterioration in service quality, while Table 4 shows the change in product quality. Accordingly, while the price and quantity of a dark chocolate bar remain the same, the addition of cheap cocoa beans to a dark chocolate bar made from original cocoa beans changes the content of the product and reduces its quality.

#### 4. Conclusion

Shrinkflation, which means reducing the weight, size, or quantity of products, or skimpflation, which means providing lower services for the same price by reducing the quality of services or products, are concepts that are not new in the literature and have emerged due to high inflation. However, in today's world, where the economic and social effects of inflation have been felt the most in the last 20 years and have many negative causes, these concepts have started to come to the agenda more and more due to high inflation. These types of inflation, in which prices are generally the same but the quality of the product decreases and the quantity decreases, cause incorrect inflation calculations that are not reflected in the indices. In the fight against high inflation, this situation should be taken into account both for the protection of consumers and for policymakers to develop effective policy implementations.

In a high-inflation environment, producers often charge the same price or more when reducing the quantity of goods or reducing the quality of services. This is not only unethical for producers and society but also leads to lower living standards for individuals in society. Shrinkflation and skimpflation have no nominal impact because they are not included in the calculation of inflation, but they are inflation problems that affect us in real terms. Shrinkflation and skimpflation are economic phenomena that are more common in a high-inflation environment and cause deterioration in the economic and social structure.

High inflation is a source of many problems, not only economic but also social. High inflation leads to a cascade of negative reactions. Especially in high-inflation countries like Türkiye, more careful and detailed inflation calculations will have healthier results in closing the gap between actual inflation and headline inflation. The emergence of bad goods, not low goods, will be prevented in the market. In other words, the negative effects of bad goods, which is a different concept from low goods, will be avoided as much as possible. In this respect, governments need to strike a balance between market flexibility and the consumer. The most important way to protect consumers in an inflationary environment is to raise consumer awareness. Because in an environment where prices increase rapidly due to cost increases, changes in the quality and quantity of the product in order not to cut demand are unethical and deceive the consumer. The problem of asymmetric information arises here. While the producer has information about the change in the quality and quantity of the product, the consumer does not have this information. For this reason, it is necessary to increase consumer awareness of all individuals in the society. Although it may look like shrinkflation and skimpflation during the high inflation period, it is a situation that damages consumer confidence and economic stability.

While contraction and underinflation may not be evident in traditional inflation calculations, their real-world impact on purchasing power and consumer welfare is significant. Addressing these issues requires a multi-pronged approach, such as increasing supply chain resilience, promoting competition to reduce pricing power, and ensuring transparency and accountability in business practices. Policymakers should also prioritize measures such as targeted fiscal stimulus, monetary policy adjustments, and investments in infrastructure and innovation to support economic

recovery and stability. By addressing the root causes of inflationary pressures and promoting sustainable economic growth, governments can mitigate the negative effects of inflation on businesses and households and ultimately foster a more resilient and inclusive economy.

Skimplation and Shrinkflation are seen as a strategy of some firms in some countries around the world, a practice that masks real inflation in high-inflation countries. This study argues that the recently frequently heard concepts of shrinkflation and skimpflation do not have a nominal effect because they are not included in inflation calculations, but they do affect the inflation problem in real terms.

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