How to Increase Prices in High Inflation?

The Moderating Effect of Inflation on the Effect of Price and Reference Prices on Sales

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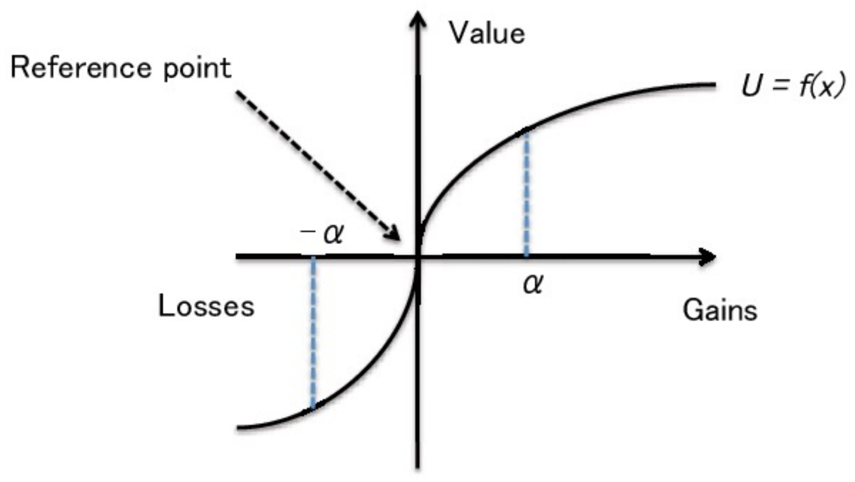
Research Objective

Academic research offers little guidance on pricing during inflationary periods. Inflation-specific literature is limited and insights from other causes of disposable income reductions are non-transferable to the current inflationary context. This study investigates the effects of high inflation on the relationship between price, reference prices, and sales.

External and Internal Reference Prices

When faced with a price, consumers evaluate that price by comparing it with some price of comparison standard. Reference price is the perceived price or the price that the consumer expects to pay for a brand or product category when entering a store. Consumers perceive a gain when the actual price is lower than the reference price, or a loss when the actual price exceeds the reference price.

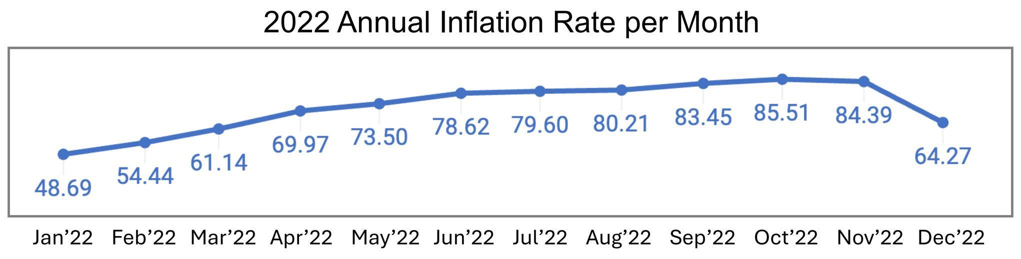


An **internal** reference price (IRP) based on the **recalled previous prices** on the previous purchases. An **external** reference price (ERP) is formed from **current shelf prices** or **retailer supplied list prices**.

Effect of Inflation

Inflation, with its associated price instability, can significantly impact the way consumers perceive and use reference prices. As inflation increases, consumers adjust their reference prices upward, leading them to perceive higher prices as more acceptable. Price instability associated with inflation can reduce the diagnostic value of prices to consumers and, consequently, their desire to learn about prices. So, the **consumer price knowledge suffer under inflation conditions**. Consumers can consider the expected future prices when making purchase decisions during economic downturns. **When consumers anticipate future price increases,** they may be motivated to **increase their current spending**.

2022 Annual Inflation Rate per Month

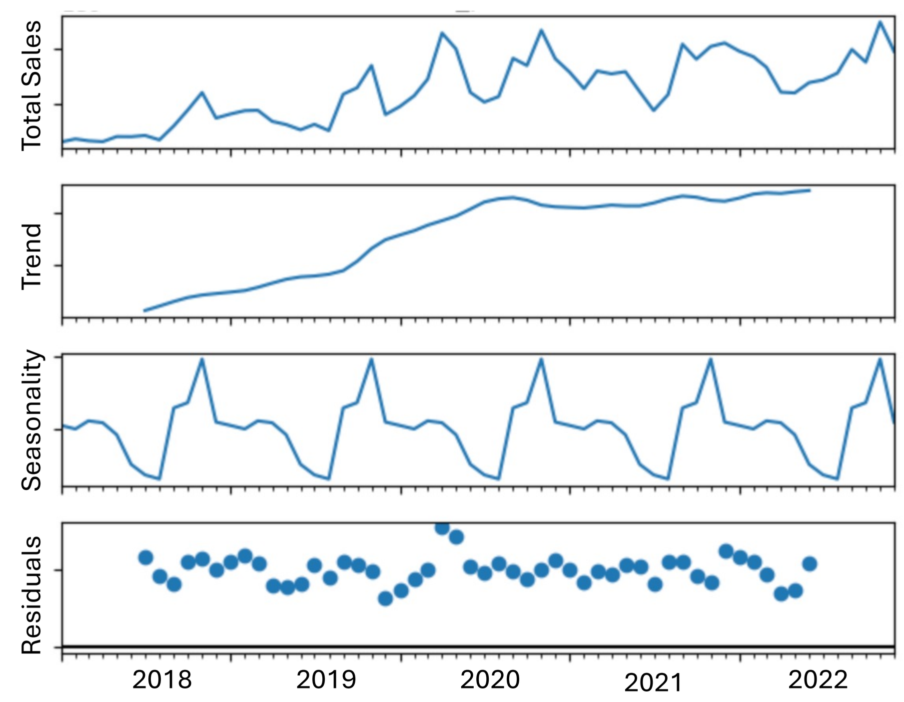


Data Collection

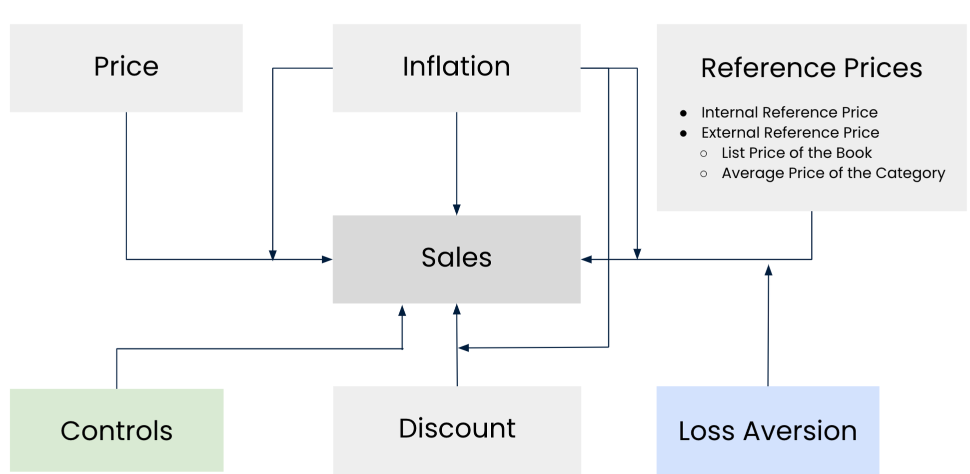
The dataset for this study is sourced from KitapYurdu, an esteemed online bookstore in Türkiye, spanning a collection period of of 7 months starting from March 31, 2022, to October 31, 2022. Renowned as one of the leading online bookstores in Turkiye, KitapYurdu provides a comprehensive dataset encompassing price, list price, discount, and sales data for a total of 143,000 books. Daily number of books sold on the website on average within this 7 months is 13K.

Seasonality in Book Sales

Seasonality is controlled via an external data that is obtained from another online store. Data provides monthly book sales from 2018 to the end of 2022. Only 2018 and 2019 data is used to eliminate the effects of pandemic and high inflationary periods.



Conceptual Model



Three different reference price variables are included into the model. Past prices of the related book as **IRP**; list price advertised on the website as **ERP** and current average price of the related books category as secondary **ERP**.

Reference prices are operationalized as gains and losses in accordance with the prospect theory to identify the loss aversion coefficient.

LOSS = max { Price - Reference Price, 0 }

GAIN = max { Reference Price - Price, 0 }

Preliminary Results

	Coefficient	Std. Err.	T-stat
Price	**-1.7176**	0.0903	-19.023
Inflation	**1.0258**	0.1582	6.4847
Gain of List Price	**0.2804**	0.0386	7.2582
Loss of IRP	**0.0486**	0.0079	6.1708

Preliminary findings of the Panel OLS suggest a positive relationship between list prices (ERP) and book sales. There is also a positive relationship between the loss of internal reference price (past prices) and sales.

Discussion

During periods of high inflation, when prices rise, consumers may perceive it as a signal of further increases, prompting a sense of urgency **to purchase immediately**. Consequently, this perception could result in a positive coefficient, as the loss relative to the expected price is still viewed as a gain. The presence of this anticipated loss establishes the expected price. Inflation triggers a **shopping frenzy**, where consumers perceive gains regardless of price movements due to their psychological response to inflationary pressures.

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Further information

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