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Inflation and Consumer Demand Reallocation: Evidence from Retail Equity Performance in Metropolitan Houston

[1]ONOCHIE JUDE DIELI, [2]GBOLAHAN SOLOMON OSHO
[1,2]Dept. Management& Marketing, College of Business, Prairie View A&M University, Prairie View, Texas, USA.

ABSTRACT: *This study examines how inflation influences consumer purchasing behavior and the financial performance of retail firms within a large metropolitan economy. The analysis focuses on the Houston metropolitan market. It investigates whether rising prices alter the composition of demand between goods typically associated with higher-income consumption and goods that become relatively more attractive when household purchasing power declines. The research combines macroeconomic indicators, retail sales information, and stock market data covering the period from 2000 to 2025. An econometric framework is employed to evaluate the relationship between inflation, changes in consumer demand patterns, and the stock returns of retail firms. The empirical results indicate that periods of rising prices are associated with noticeable adjustments in household spending behavior. As purchasing power weakens, consumers shift a larger share of expenditures toward more affordable goods. Retail firms in these segments tend to experience stronger equity performance than those that depend more on discretionary spending. The findings highlight the importance of demand composition in explaining retail market outcomes during inflationary periods and provide insight for investors, policymakers, and researchers interested in the interaction between consumer behavior and financial markets.*

KEYWORDS: *Inflation, Consumer Demand, Retail Markets, Stock Performance, Urban Economy, Purchasing Power, Demand Composition.*

1. INTRODUCTION

Understanding how households adjust their consumption decisions during periods of rising prices remains a central concern in modern economic research. Inflation reduces real purchasing power and often compels consumers to reconsider the composition of their expenditures. Classical consumer theory distinguishes between normal goods, whose demand tends to rise as income increases, and inferior goods, whose demand often expands when household purchasing power declines. When prices increase persistently, households may substitute toward lower-cost alternatives to maintain basic consumption levels. These adjustments can reshape the pattern of retail demand and may ultimately influence the financial performance of firms operating in different segments of the retail market (Deaton & Muellbauer, 1980; Uwakonye et al., 2004). The relationship between macroeconomic conditions and financial markets has also attracted considerable attention in economic literature. Equity prices are widely viewed as forward-looking indicators that incorporate expectations about future economic activity and firm profitability. According to the efficient market hypothesis, investors process available information about economic conditions and incorporate these expectations into asset prices (Fama, 1970). As a result, changes in consumer spending patterns may be reflected in the stock valuation of firms whose revenues depend directly on household consumption. Retail firms are an especially relevant sector for studying this interaction because their performance depends heavily on consumer purchasing decisions (Osagie et al., 2005).

Economic theory suggests that inflation can alter consumer demand by reducing real income and encouraging substitution across goods. As households face tighter budget constraints, they may increase spending on relatively cheaper products while reducing purchases of goods perceived as discretionary or income-sensitive. Research in consumer economics indicates that this process often results in increased demand for goods that function as inferior goods during periods of economic stress or declining real income (Mankiw, 2019). Retailers that specialize in such products may therefore experience relatively stable or even expanding demand when inflation erodes household purchasing power. In contrast, firms that primarily sell normal goods may face weaker demand as consumers adjust their spending priorities. Urban retail markets offer a valuable setting for examining these dynamics because they typically encompass a wide range of income groups and consumption patterns. Metropolitan economies are often characterized by diverse retail structures that respond differently to economic fluctuations. The metropolitan region of Houston offers an especially useful setting for such an investigation. Houston is one of the largest urban economies in the United States and hosts an extensive retail sector serving a rapidly growing population. Over the past two decades, the region has experienced several episodes of macroeconomic instability, including the global financial crisis, fluctuations in energy markets, and periods of elevated inflation (Osho & Uwakonye, 2004). These events have created conditions in which changes in household purchasing power and consumer demand patterns can be observed across time.

From the perspective of financial markets, the retail sector also provides insight into how investors interpret macroeconomic developments. When investors expect that certain types of retailers will benefit from shifts in consumer behavior, they may adjust their valuations of those firms accordingly. Research in financial economics suggests that sector-specific equity returns can reveal information about underlying economic trends, particularly in industries closely linked to consumer spending (Campbell, Lo, and MacKinlay, 1997; Osho & Uwakonye, 2003). Consequently, the stock performance of retail companies may provide indirect evidence about how investors perceive the impact of inflation on household consumption. Despite the theoretical connections among inflation, consumer demand, and firm performance, relatively few empirical studies integrate these elements within a unified analytical framework. Much of the literature on consumer demand focuses on household expenditure decisions. At the same time, studies in financial economics often examine how stock markets respond to broad macroeconomic indicators such as inflation and interest rates. Integrating these perspectives may yield a more comprehensive understanding of how changes in purchasing power affect both consumer behavior and the financial valuation of firms. Such an approach is particularly valuable in urban retail markets where demand conditions can vary significantly across income groups and product categories.

This study seeks to contribute to the literature by examining the relationship between inflation-induced changes in demand composition and the equity performance of retail firms categorized by the types of goods they sell. The analysis focuses on retailers associated with normal goods and those associated with inferior goods to reassess how traditional demand classifications operate in a contemporary metropolitan economy. By combining consumer demand indicators with financial market data, the study examines whether shifts in purchasing behavior during inflationary periods are associated with measurable differences in the stock performance of retail firms. The empirical analysis covers the period from 2000 to 2025, a time frame that includes multiple economic cycles and significant fluctuations in price levels. By focusing on the Houston metropolitan region, the study provides a geographically focused investigation that complements national-level research on consumption and financial markets. The econometric framework links indicators of inflation and demand composition to measures of retail equity performance, enabling a systematic evaluation of how changes in purchasing power affect firm valuation.

The findings of this research aim to enhance understanding of how macroeconomic forces shape both consumer behavior and financial market outcomes. By examining the links among inflation, demand composition, and retail equity performance, the study highlights the channels through which changes in purchasing power can influence firm-level valuation in urban retail markets. The results may offer useful insights for investors seeking to interpret sector-specific equity movements as well as for policymakers interested in the broader economic consequences of inflation for households and businesses (Blanchard & Johnson, 2013). Hence, the following hypotheses are to be tested in this research work:

- **H1**: Inflationary pressures increase demand for retailers of inferior goods.
- **H2**: Stock returns of inferior goods retailers outperform normal goods retailers during inflationary periods.
- **H3**: Demand composition significantly explains retail equity performance.

2. LITERATURE REVIEW

The relationship between consumer demand, inflation, and firm performance has long attracted attention in economic research. Classical consumer theory provides the foundation for understanding how changes in income and prices influence household consumption decisions. In this framework, goods are often categorized according to how demand responds to changes in income. Demand for normal goods tends to increase as household income rises, while demand for inferior goods may rise when real income declines, as consumers search for less expensive alternatives. Early theoretical work emphasized that consumer preferences and budget constraints jointly determine these responses, and that shifts in relative prices can lead to significant changes in consumption patterns (Hicks, 1946). Later developments in demand analysis further clarified the role of substitution and income effects in shaping household behavior under changing economic conditions (Deaton & Muellbauer, 1980).

Inflation is one of the most important macroeconomic forces influencing these consumption adjustments. When prices rise faster than wages, households experience a decline in real purchasing power, which can alter their spending decisions. Economic models of intertemporal consumption emphasize that individuals respond to such conditions by reallocating expenditures across goods and services in accordance with budget constraints and expectations about future income (Hall, 1978). Empirical research has shown that sustained inflation can lead households to reduce discretionary spending while increasing purchases of goods that are perceived as essential or relatively inexpensive substitutes (Mankiw, 2019). These behavioral responses imply that inflation not only affects aggregate consumption but also changes the composition of demand across different types of goods.

Several empirical studies have investigated how households adjust their purchasing patterns during periods of economic stress or declining real income. Research on consumer expenditure behavior suggests that households often respond to economic pressure by substituting toward lower-priced products or private-label alternatives (Aguiar & Hurst, 2007). This adjustment reflects consumers' efforts to maintain consumption levels amid tighter budget constraints. Other studies indicate that the

demand for discount retail outlets tends to increase when economic conditions deteriorate, supporting the idea that inferior goods may experience stronger demand during adverse economic circumstances (Nevo & Wong, 2019). These findings highlight the importance of income-related demand responses in shaping retail market outcomes.

The retail sector provides an especially informative context for analyzing the consequences of these demand shifts. Retail firms operate at the final stage of the supply chain and are directly affected by changes in household purchasing decisions. When consumers modify their expenditure patterns, retailers' revenues and profitability may change accordingly. Firms that specialize in products associated with lower-income consumption may benefit from increased demand during periods of economic pressure. In contrast, retailers that rely on discretionary spending may face declining sales. Research on retail economics has therefore emphasized the importance of consumer income and price dynamics in determining firm-level performance (Varian, 2014).

Financial economics provides an additional perspective on how these economic forces influence firm valuation. According to asset pricing theory, stock prices reflect investors' expectations about future earnings and economic conditions. The efficient market hypothesis holds that new information about macroeconomic developments is quickly incorporated into asset prices, leading to adjustments in equity valuations across sectors (Fama, 1970). Empirical research has shown that inflation and other macroeconomic variables can influence stock returns by affecting both corporate profitability and investor expectations (Fama & Schwert, 1977). When inflation changes consumer purchasing behavior, the expected revenues of retail firms may shift, prompting investors to reassess the value of those firms in financial markets.

Sector-specific studies have further explored the relationship between macroeconomic conditions and equity performance. Researchers have found that industries closely linked to consumer spending often exhibit greater sensitivity to fluctuations in income, inflation, and employment (Campbell, Lo, and MacKinlay, 1997). Retail companies, in particular, may experience changes in stock performance when economic conditions alter households' purchasing behavior. Evidence suggests that investors often monitor consumer-related indicators as signals of future firm profitability, especially in sectors where revenue depends heavily on discretionary spending (Blanchard & Johnson, 2013). This connection between macroeconomic variables and sector-level stock returns highlights the relevance of retail equities for understanding broader economic trends (Solomon & Nazemzadeh, 2003).

Despite the extensive literature on consumer demand and financial market performance, relatively few studies have examined the direct relationship between shifts in demand composition and the equity performance of retail firms. Many investigations focus either on household consumption patterns or on the response of financial markets to macroeconomic indicators. Studies of consumer demand often emphasize microeconomic models of household behavior. At the same time, research in finance frequently analyzes aggregate stock market responses to variables such as inflation, interest rates, and economic growth. Integrating these approaches may offer a more comprehensive understanding of how economic forces influence both consumer decisions and firm valuation (Nwankwo et al., 2010). Regional economic studies provide another perspective that can enhance this understanding. Metropolitan economies often exhibit diverse income distributions and retail structures that influence consumption behavior. Local economic conditions such as employment opportunities, demographic characteristics, and income inequality can shape demand patterns in ways that differ from national averages. Examining these relationships within a metropolitan setting can therefore reveal how broader macroeconomic forces interact with local market dynamics (Osho, 2025). Large urban regions with diverse populations offer particularly valuable opportunities to study how consumption patterns vary across income groups and retail sectors.

The metropolitan region of Houston represents an important example of such an environment. Houston has developed into one of the largest economic centers in the United States and possesses a highly diversified retail sector. The city's population growth and economic expansion have created a complex consumer market characterized by varied income levels and purchasing preferences. Over the past two decades, Houston has also experienced significant economic fluctuations associated with national recessions, changes in energy markets, and periods of elevated inflation. These developments provide a natural setting for examining how shifts in purchasing power influence consumer demand and retail firm performance.

Previous research on urban consumption patterns indicates that large metropolitan areas often display pronounced differences in consumption behavior across income groups. Higher-income households tend to allocate more resources to goods with strong income elasticities. In contrast, lower-income households devote a larger share of their expenditures to essential goods and lower-priced substitutes (Deaton & Muellbauer, 1980). When inflation erodes purchasing power, these differences can become more pronounced as households adjust their consumption choices according to financial constraints. Retailers serving different market segments may therefore experience varying levels of demand depending on how consumers respond to changes in prices and income.

The financial market implications of these demand adjustments remain an area that requires further empirical exploration. If inflation alters consumer purchasing behavior, the revenues and profitability of retailers selling different types of goods may

change as well. Investors observing these developments may revise their expectations about firm performance, leading to adjustments in stock prices. Understanding this mechanism is important for both economic theory and financial market analysis because it links macroeconomic conditions to firm-level valuation through consumer demand. Therefore, this study contributes to the literature by examining how inflation-induced changes in demand composition influence the equity performance of retail firms categorized by the goods they sell. By focusing on retailers of normal and inferior goods, the analysis reassesses how traditional demand classifications operate in a contemporary metropolitan economy. The empirical investigation integrates insights from consumer demand theory and financial economics to evaluate whether shifts in purchasing behavior are reflected in the stock performance of retail companies. Through this approach, the study seeks to extend existing research by providing new evidence on the relationship between inflation, consumer demand composition, and firm valuation within an urban retail market.

3. CONCEPTUAL FRAMEWORK

The conceptual framework of this study explains the mechanism through which inflation influences consumer demand and ultimately affects the financial performance of retail firms. The framework links macroeconomic conditions with consumer behavior and financial market outcomes through a sequence of economic responses. Rising prices affect households' purchasing power, which, in turn, alters their consumption decisions. These changes affect retailers' revenue performance and, in turn, influence the valuation of firms in financial markets. Inflation represents a sustained increase in the general price level of goods and services within an economy. When the price level rises more rapidly than household income, the real purchasing power of consumers declines. This reduction in purchasing power creates financial pressure on households because the same level of income can purchase fewer goods and services than before. Economic theory suggests that consumers respond to this situation by adjusting their spending to maintain essential consumption while staying within their budget constraints (Deaton & Muellbauer, 1980). As a result, households begin to reconsider how they allocate their expenditures across different categories of goods.

The first stage of the mechanism occurs when inflation puts income pressure on wages and salaries by eroding their real value. When purchasing power declines, households experience tighter budget constraints and must allocate their income more carefully. This situation often encourages consumers to cut back on discretionary or relatively expensive goods. At the same time, consumers seek alternatives that allow them to maintain consumption at a lower cost. The adjustment reflects the combined influence of income and substitution effects, as outlined in consumer demand theory. The second stage involves a shift in the composition of consumer demand. As financial pressure increases, households substitute lower-cost alternatives for products they previously preferred when purchasing power was stronger. Goods normally associated with higher-income consumption may see demand decline, while affordable substitutes become more attractive to consumers. In economic terms, these products may be inferior goods, as demand for them rises when real income declines. This substitution behavior reflects households' efforts to preserve consumption while responding to changing economic conditions (Mankiw, 2019).

The third stage of the mechanism occurs within the retail sector. Because retailers sell goods directly related to household consumption, shifts in demand composition affect their revenue performance. Firms that specialize in products associated with lower-cost consumption may experience relatively stable or rising sales during periods of inflation. In contrast, retailers that focus primarily on products associated with higher-income consumption may face declining demand as consumers adjust their spending priorities. These differences in demand conditions create variation in revenue growth across retail firms.

The final stage of the framework concerns the response of financial markets. Investors observe changes in retail sales performance and incorporate this information into their expectations of firms' future profitability. According to financial market theory, equity prices reflect the discounted value of expected future earnings. When investors anticipate stronger revenue performance from certain retailers, they adjust those firms' valuations accordingly (Fama, 1970). Conversely, firms that appear vulnerable to declining consumer demand may experience weaker equity performance as investors revise their expectations.

Through this sequence of relationships, inflation creates a chain of economic responses that connect macroeconomic conditions with financial market outcomes. Rising prices reduce real purchasing power, which places pressure on household budgets. Consumers respond by adjusting their expenditure composition, often increasing demand for lower-cost substitutes. Retail firms that provide such products may experience stronger sales, while others may encounter declining demand. Investors then interpret these changes and adjust the valuation of retail firms in financial markets. This conceptual framework provides the theoretical foundation for the empirical analysis conducted in this study. By linking inflation, consumer demand composition, retail revenue performance, and stock valuation, the framework highlights the mechanism through which macroeconomic conditions can influence the financial outcomes of firms operating in consumer-oriented industries. The framework also guides the econometric investigation that follows by identifying the key variables linking changes in purchasing power to the equity performance of retail companies operating in Houston's metropolitan economy.

3.1. DATA SOURCES

The empirical analysis relies on several reliable economic and financial databases that provide information on prices, retail activity, and financial market performance. Inflation data and price indices are obtained from the U.S. Bureau of Labor Statistics, which publishes the Consumer Price Index and other measures of price movements across the United States. These indicators provide a consistent measure of changes in the general price level that influence household purchasing power. Information on retail trade activity and sector-level sales patterns is obtained from the U.S. Census Bureau. Retail trade statistics provide detailed records of sales performance across different categories of retail establishments and offer insight into how consumer spending evolves. These data help identify changes in demand across retail segments associated with different types of goods (Ojumu et al., 2025).

Financial market data used to measure the performance of retail firms are drawn from the Center for Research in Security Prices database. This database contains historical records of stock prices, returns, and market capitalization for publicly traded companies in the United States. Retail firms operating within or closely connected to the metropolitan economy are selected from this dataset to examine how investor valuations respond to changes in consumer demand (Osho, 2025).

Additional regional economic indicators are obtained from the Federal Reserve Bank of Dallas. These indicators include regional employment conditions, economic growth measures, and other variables that capture the broader economic environment influencing consumption behavior in the Houston metropolitan economy.

3.2. SAMPLE PERIOD

The study examines data from 2000 to 2025. This time span provides a sufficiently long horizon to capture several economic cycles and episodes of changing inflation conditions. The period includes years of economic expansion as well as periods of financial instability and price volatility, allowing us to observe how consumer demand and retail firm performance respond to different macroeconomic environments. Using this extended period also allows the analysis to capture structural changes in the retail sector and consumer behavior. Over the past two decades, retail markets have evolved through the expansion of discount retail formats, shifts in household income patterns, and changes in consumer purchasing preferences. Observing these developments over time provides a more comprehensive understanding of how demand composition interacts with financial market outcomes.

3.3. VARIABLES

The empirical analysis employs a set of dependent, independent, and control variables designed to capture the relationship between inflation, consumer demand composition, and retail equity performance. The dependent variable represents the financial performance of retail firms. This variable is measured using stock returns of selected retail companies whose business activities are linked to consumer goods markets. Stock returns serve as an indicator of investor expectations regarding the profitability and future growth prospects of these firms. The primary independent variable is the inflation rate, measured using changes in the Consumer Price Index. Inflation captures the degree to which the general price level changes over time and reflects the pressure placed on household purchasing power. Another key explanatory variable is the demand composition indicator. This variable represents the relative strength of consumption across categories of goods, distinguishing normal goods from inferior goods. The indicator captures shifts in consumer purchasing behavior as households respond to changes in income and prices. Several control variables are included in the model to account for other macroeconomic influences that may affect retail performance and financial market outcomes. These variables include economic growth, interest rates, unemployment levels, and consumer confidence indicators. Incorporating these factors helps isolate the effect of inflation-related demand shifts on the equity performance of retail firms.

4. METHODOLOGY

This study employs an econometric approach to examine the relationship among inflation, changes in consumer demand composition, and the financial performance of retail firms. The methodological framework integrates macroeconomic indicators with financial market data to determine whether inflation-related shifts in consumer purchasing behavior influence the valuation of retail companies. The empirical strategy focuses on identifying the statistical relationships among movements in the general price level, adjustments in consumption patterns, and stock market returns for retail firms operating in the Houston metropolitan economy.

The analysis relies on a quantitative model that links retail firm stock returns to macroeconomic and consumption-related variables. Stock returns serve as the principal indicator of firm performance because financial markets incorporate expectations regarding future earnings and demand conditions. If inflation alters consumer purchasing decisions, the expected revenues of retailers selling different types of goods may change, which may be reflected in their stock price movements.

To evaluate these relationships, the study applies a regression-based framework to estimate the influence of inflation and demand composition on retail equity performance. The basic empirical specification models retail stock returns as a function of inflation, indicators of consumer demand composition, and a set of control variables representing broader macroeconomic

conditions. This structure allows the analysis to isolate the contribution of demand shifts associated with inflation while accounting for other economic influences.

The general regression specification is expressed as follows:

$$RetailReturn_{it} = \alpha + \beta_1 Inflation_t + \beta_2 DemandComposition_t + \beta_3 X_t + \varepsilon_{it} \quad \text{Eq. 1}$$

In this expression, $RetailReturn_{it}$ represents the stock return of retail firm i during the time period t. Inflation refers to the rate of change in the overall price level, which captures the intensity of price pressure affecting household purchasing power. $DemandComposition_t$ represents an index designed to measure the relative strength of consumption across goods associated with different income responses. The term X_t represents a vector of additional macroeconomic control variables, including economic growth, interest rates, unemployment conditions, and measures of consumer sentiment. The disturbance term captures random factors that may influence firm performance but are not explicitly included in the model. Panel estimation techniques are used to exploit both cross-sectional variation among retail firms and time-series variation across the study period. Panel data analysis allows the model to account for firm-specific characteristics that remain relatively stable over time while examining how macroeconomic changes influence firm performance.

Fixed effects estimation is employed to control for unobserved firm attributes, such as brand reputation, management practices, and long-term business strategies, that could otherwise bias the estimated relationship between macroeconomic conditions and stock returns. Robust standard errors are applied to address potential heteroskedasticity and serial correlation that may arise in financial data. Financial time series often display volatility clustering and other forms of statistical dependence, which can influence the reliability of estimated coefficients if not properly addressed. Adjusting the estimation procedure improves the accuracy of statistical inference regarding the effect of inflation and demand composition on retail equity performance.

The econometric framework also allows for supplementary tests designed to examine the stability of the estimated relationships. Alternative model specifications are considered in order to verify whether the results remain consistent when different measures of inflation or consumption indicators are employed. These additional estimations confirm that a particular model specification does not drive the observed relationship between demand composition and retail equity performance. Through this methodological approach, the study seeks to provide systematic empirical evidence on the connection between macroeconomic price dynamics, consumer demand behavior, and financial market valuation. By combining data on inflation, retail demand indicators, and stock market returns, the econometric analysis provides a structured framework for evaluating how shifts in purchasing power affect the performance of firms operating in consumer-oriented industries.

5. RESULTS AND DISCUSSION

This section reports the empirical findings obtained from the econometric analysis. The results evaluate the relationship among inflation, demand composition, and the stock performance of retail firms. The analysis proceeds in three stages. First, descriptive statistics summarize the main characteristics of the data. Second, correlation analysis examines the degree of association among the variables. Third, regression estimation evaluates the statistical relationship between inflation, shifts in consumer demand, and retail equity returns.

5.1. MODEL SPECIFICATION

The empirical model estimated in this study follows the econometric framework presented in the methodology section. The baseline regression equation is expressed as

$$RetailReturn_{it} = \alpha + \beta_1 Inflation_t + \beta_2 DemandComposition_t + \beta_3 GDP_t + \beta_4 InterestRate_t + \beta_5 Unemployment_t + \varepsilon_{it} \quad \text{Eq. 2}$$

In this model, $RetailReturn_{it}$ represents the stock return of retail firm i during time period t. Inflation represents the rate of change in the consumer price level. $DemandComposition_t$ represents the relative demand for goods associated with lower-income consumption compared with those associated with higher-income consumption. GDP represents economic growth. Interest rate represents the prevailing lending rate in the economy. Unemployment represents labor market conditions. The error term captures unexplained variation in retail equity returns. Table 1 reports the descriptive statistics for the principal variables used in the analysis. These statistics provide an overview of the distribution of the variables across the study period from 2000 to 2025.

TABLE 1 Descriptive Statistics of Variables

Variable	Mean	Standard Deviation	Minimum	Maximum
Retail Stock Return	0.082	0.154	-0.321	0.442
Inflation Rate	0.027	0.014	0.001	0.089
Demand Composition Index	1.215	0.305	0.712	1.948
GDP Growth	0.023	0.018	-0.035	0.056
Interest Rate	0.041	0.017	0.006	0.084

Unemployment Rate	0.058	0.021	0.034	0.109

The descriptive statistics indicate that retail stock returns show noticeable variability across the study period. This variation reflects retail firms' sensitivity to changes in economic conditions and consumer demand. Inflation also displays fluctuations that correspond with major macroeconomic events during the sample period. The demand composition index varies over time, indicating that the balance between consumption of normal and inferior goods shifts as economic conditions evolve. Table 2 presents the correlation matrix for the principal variables used in the analysis. The correlation coefficients provide an initial indication of the relationships among inflation, demand composition, and retail stock performance.

TABLE 2 Correlation Matrix

Variable	Retail Return	Inflation	Demand Composition	GDP Growth	Interest Rate	Unemployment
Retail Return	1.000					
Inflation	-0.241	1.000				
Demand Composition	0.318	0.426	1.000			
GDP Growth	0.287	-0.165	0.142	1.000		
Interest Rate	-0.195	0.374	0.214	-0.221	1.000	
Unemployment	-0.304	0.208	0.176	-0.452	0.148	1.000

The correlation results suggest that inflation is negatively related to overall retail stock returns but positively associated with the demand composition index. This pattern indicates that periods of rising prices coincide with stronger demand for goods that function as substitutes when household purchasing power declines. Retail returns also show a positive association with the demand composition indicator, suggesting that firms supplying lower-priced goods tend to perform better when consumers shift toward such products. Table 3 reports the regression estimates for the relationship between inflation, demand composition, and retail stock performance.

TABLE 3 Regression Results for Retail Stock Performance

Variable	Coefficient	Standard Error	t Statistic
Constant	0.032	0.014	2.29
Inflation	-0.412	0.128	-3.22
Demand Composition	0.276	0.091	3.03
GDP Growth	0.318	0.106	3.00
Interest Rate	-0.257	0.113	-2.27
Unemployment	-0.301	0.121	-2.49
Observations	260		
R^2	0.41		

The regression results provide several important findings. Inflation has a negative and statistically significant effect on retail stock performance. This result indicates that rising prices tend to weaken retail firms' overall performance, reflecting the negative impact of declining purchasing power on consumer spending (Dieli et al., 2020). The demand composition variable shows a positive, statistically significant relationship with retail stock returns. This finding suggests that retailers associated with goods that serve as substitutes during periods of income pressure experience stronger financial performance when consumer demand shifts toward lower-priced alternatives. Economic growth shows a positive relationship with retail equity performance, indicating that expanding economic activity supports consumer spending and retail profitability. Interest rates negatively affect stock returns, reflecting the influence of higher borrowing costs and discount rates on firm valuation. Unemployment also shows a negative relationship with retail stock performance, suggesting that weaker labor market conditions reduce consumer spending.

5.2. INTERPRETATION OF RESULTS

The empirical results support the theoretical framework developed in the earlier sections of the study. Inflation reduces households' real purchasing power, prompting them to adjust their spending patterns. As consumers substitute lower-priced goods for more expensive alternatives, retailers that supply such goods experience stronger demand. Investors recognize these shifts in demand and adjust their expectations regarding firm profitability. Consequently, the stock performance of retail firms reflects the interaction between inflation, consumer behavior, and revenue prospects. Overall, the findings provide empirical evidence that demand composition plays a significant role in shaping the financial outcomes of retail firms. The results demonstrate that macroeconomic price dynamics influence not only consumer behavior but also the valuation of companies operating in consumer-oriented industries. These relationships are particularly evident in Houston's metropolitan retail economy, where diverse income groups and consumption patterns create a dynamic environment for observing the interaction between inflation and retail market performance.

5.3. ROBUSTNESS TESTS

Robustness analysis is conducted to confirm that the empirical findings reported in the previous section are not dependent on a particular model specification or on specific variable measurements. Robustness tests help verify that the estimated relationship between inflation, demand composition, and retail equity performance remains stable across alternative measures and sampling methods. Three types of verification procedures are implemented. These include the use of alternative inflation indicators, the examination of different stock return horizons, and subsample analysis across different economic periods.

5.4. ALTERNATIVE MEASURES OF INFLATION

The primary analysis relies on the inflation rate derived from the Consumer Price Index. Although this measure is widely used in economic research, it is important to verify that the empirical results remain consistent when alternative indicators of price changes are considered. Inflation can be measured using several indices that capture different aspects of price movements. To address this concern, the model is re-estimated using two additional indicators of price dynamics. The first alternative measure uses the core inflation index, which excludes volatile components such as food and energy prices. Core inflation is often used in macroeconomic analysis because it reflects underlying price trends that are less affected by temporary supply disturbances. The second alternative measure employs the producer price index, which reflects price changes at earlier stages of production. This indicator captures the cost pressures faced by firms, which may, in turn, influence retail prices and consumer demand. The regression specification remains the same as the baseline model, but the inflation variable is replaced with each alternative measure. The estimated equation becomes

$$RetailReturn_{it} = \alpha + \beta_1 AltInflation_t + \beta_2 DemandComposition_t + \beta_3 GDP_t + \beta_4 InterestRate_t + \beta_5 Unemployment_t + \varepsilon_{it} \quad \text{Eq. 3}$$

where $AltInflation_t$ represents the alternative measure of price changes. Table 4 reports the estimation results using these alternative indicators. The coefficients remain similar across the different inflation measures. Inflation continues to display a negative association with retail equity performance, while demand composition remains positively associated with stock returns. The consistency of these coefficients suggests that the results are not driven by the specific inflation indicator used in the baseline model.

TABLE 4 Regression Results Using Alternative Inflation Measures

Variable	CPI Inflation	Core Inflation	Producer Price Inflation
Inflation Measure	-0.412	-0.386	-0.351
Demand Composition	0.276	0.259	0.241
GDP Growth	0.318	0.304	0.297
Interest Rate	-0.257	-0.241	-0.233
Unemployment	-0.301	-0.287	-0.279
R^2	0.41	0.39	0.37

5.5. ALTERNATIVE STOCK RETURN WINDOWS

The second robustness test evaluates whether the empirical results depend on the time horizon used to measure stock performance. The baseline analysis measures retail equity performance using annual stock returns. However, stock market responses to macroeconomic conditions may occur over shorter or longer time horizons. To examine this possibility, the regression analysis is repeated using quarterly returns and three-year cumulative returns. The regression equation remains unchanged, but the dependent variable is modified to reflect the alternative return measures.

$$QuarterlyReturn_{it} = \alpha + \beta_1 Inflation_t + \beta_2 DemandComposition_t + \beta_3 X_t + \varepsilon_{it} \quad \text{Eq. 4}$$

$$ThreeYearReturn_{it} = \alpha + \beta_1 Inflation_t + \beta_2 DemandComposition_t + \beta_3 X_t + \varepsilon_{it} \quad \text{Eq. 5}$$

where X_t represents the vector of macroeconomic control variables. Table 5 summarizes the results of these alternative estimations.

TABLE 5 Regression Results with Alternative Stock Return Windows

Variable	Quarterly Returns	Annual Returns	Three-Year Returns
Inflation	-0.294	-0.412	-0.437
Demand Composition	0.221	0.276	0.302
GDP Growth	0.256	0.318	0.334
Interest Rate	-0.205	-0.257	-0.281
Unemployment	-0.247	-0.301	-0.319
R^2	0.34	0.41	0.44

The results remain broadly consistent across the different return windows. Inflation maintains a negative relationship with retail equity performance, while the demand composition variable remains positively associated with stock returns. The

magnitudes of the coefficients change slightly across time horizons, but the directions and statistical significance of the relationships remain stable.

5.6. SUBSAMPLE ANALYSIS

The final robustness test examines whether the estimated relationships vary across different macroeconomic periods. Economic conditions have changed considerably during the study period, including episodes of financial crisis and rising inflation. To assess whether the results are sensitive to these structural changes, the dataset is divided into two subsamples. The first subsample covers the period from 2000 to 2009, which includes the early 2000 economic slowdown and the global financial crisis. The second subsample covers the period from 2010 to 2025, which includes the economic recovery and the recent inflationary environment. The regression model is estimated separately for each subsample using the same econometric specification.

TABLE 6 Subsample Regression Results

Variable	2000 to 2009	2010 to 2025
Inflation	-0.368	-0.429
Demand Composition	0.249	0.291
GDP Growth	0.304	0.327
Interest Rate	-0.221	-0.268
Unemployment	-0.284	-0.316
R^2	0.38	0.43

The subsample results show that the estimated relationships remain stable across different economic periods. In both subsamples, inflation is negatively associated with retail equity performance, whereas the demand composition variable remains positively associated with stock returns. These findings indicate that the relationship between consumer demand shifts and retail firm valuation persists across different macroeconomic environments.

5.7. INTERPRETATION OF ROBUSTNESS FINDINGS

The robustness tests provide strong support for the reliability of the empirical findings. The negative relationship between inflation and retail stock performance remains consistent when alternative price indicators are used. Similarly, the positive association between demand composition and retail equity performance persists across different return horizons and across subsamples representing different economic periods. These results confirm that neither a particular inflation measure, a specific return window, nor a single economic episode drives the study's main conclusion. Instead, the evidence suggests that inflation-related shifts in consumer demand consistently influence the financial performance of retail firms operating in the Houston metropolitan economy.

The empirical findings presented in this study provide important insight into how inflation influences consumer behavior, retail sector performance, and broader urban economic activity. By linking changes in the price level to shifts in demand composition and retail equity performance, the analysis demonstrates that macroeconomic conditions affect both household decision-making and financial market outcomes. The discussion that follows examines the implications of these findings for consumer behavior during inflation, investment patterns in the retail sector, and the economic dynamics of large metropolitan markets.

5.8. CONSUMER BEHAVIOR DURING INFLATION

The results indicate that inflation plays a significant role in shaping households' purchasing decisions. When the general price level rises, the real purchasing power of income declines unless wages increase at a comparable rate. This reduction in purchasing power places financial pressure on households and encourages them to adjust their spending patterns. Economic theory suggests that under such circumstances, consumers attempt to preserve essential consumption while managing tighter budget constraints. The empirical findings in this study support this theoretical expectation by showing that demand composition shifts during periods of rising prices. Households respond to inflation by reallocating their expenditures across different categories of goods. In particular, consumers appear to substitute lower-cost alternatives for goods they previously purchased when purchasing power was stronger. This behavior reflects the combined influence of income effects and substitution effects within consumer demand theory. When real income declines, households may increase purchases of goods that provide similar utility at a lower cost. As a result, goods that function as inferior goods experience stronger demand relative to goods whose demand is closely associated with higher levels of income.

These consumption adjustments reveal how inflation affects households' everyday economic decisions. Consumers do not simply reduce spending uniformly across all goods. Instead, they reallocate their expenditures toward products that allow them to maintain consumption within their financial constraints. This behavior illustrates the adaptive nature of consumer decision-making in response to changing economic conditions. The observed shift in demand composition, therefore, reflects households' efforts to preserve economic well-being despite the erosion of purchasing power.

5.9. RETAIL SECTOR INVESTMENT PATTERNS

The findings also carry important implications for investors and firms operating in the retail sector. Because retail companies depend directly on household spending, changes in consumer demand patterns can influence their revenue performance and long-term profitability. The empirical results suggest that retailers associated with goods that serve as lower-cost substitutes may experience relatively stronger financial performance during periods of rising prices. This outcome occurs because consumer demand shifts toward more affordable products as purchasing power declines.

Investors appear to recognize these changes in demand conditions and adjust their expectations accordingly. Financial markets incorporate information about macroeconomic developments and consumer behavior when valuing firms. When investors anticipate that certain retailers will benefit from shifts in consumer demand, they may raise those firms' valuations. Conversely, firms that depend heavily on discretionary spending may face weaker equity performance when inflation reduces household purchasing power. These findings highlight the importance of understanding the relationship between macroeconomic conditions and sector-specific investment opportunities. For investors, recognizing how inflation influences consumer demand can provide valuable insight into which segments of the retail sector are more likely to experience growth or decline during periods of economic pressure. Retail firms may also respond to these conditions by adjusting pricing strategies, product offerings, and marketing approaches in order to maintain competitiveness in a changing demand environment.

5.10. URBAN ECONOMIC DYNAMICS

The study's results also have broader implications for the economic dynamics of large metropolitan regions. Urban economies often contain diverse populations with varying income levels, consumption preferences, and employment opportunities. As a result, economic shocks such as inflation can produce complex effects across different sectors of the local economy. The demand for goods that serve as lower-cost substitutes tends to increase during periods of economic pressure, and the metropolitan economy of Houston offers a compelling example of a large and diverse urban market where these dynamics are clearly observable. Within such metropolitan areas, retail markets serve as a critical transmission channel through which macroeconomic factors, such as inflation and shifts in purchasing power, affect local economic activity and consumer behavior. When consumer purchasing power declines, retail establishments must adjust to changes in demand conditions. Some retailers may experience stronger demand if they offer goods consumers view as affordable alternatives, while others may see declining sales if their products depend heavily on discretionary spending. These shifts in retail demand can influence employment levels, investment decisions, and business expansion within the urban economy.

The relationship between consumer demand and retail firm performance also affects the flow of investment within metropolitan markets. Financial capital tends to flow toward firms with strong revenue prospects and favorable growth expectations. When inflation alters consumer purchasing behavior, investors may reallocate resources to retail firms that appear better positioned to meet changing demand. This process can reshape the competitive landscape of urban retail markets and influence the long-term development of local business sectors. In addition, the interaction between consumer demand and retail sector performance may influence broader patterns of economic resilience in metropolitan regions. Cities with diverse retail structures may be better able to adapt to economic disturbances because they contain firms that serve a wide range of consumer needs. Such diversity can help stabilize economic activity by allowing different segments of the retail sector to respond to changing economic conditions in distinct ways. Thus, this study's findings demonstrate that inflation influences urban economic systems through multiple interconnected channels. Changes in the price level alter household purchasing behavior, which affects the performance of retail firms and the allocation of investment capital within financial markets (Ochonogor et al., 2024). These interactions illustrate how macroeconomic forces can shape both the structure of consumer demand and the economic development of metropolitan economies. Understanding these relationships is therefore essential for investors, policymakers, and businesses seeking to navigate the economic challenges associated with inflation.

5.11. POLICY IMPLICATIONS

The empirical findings of this study provide several policy-relevant insights into the interaction among inflation, consumer demand behavior, and the financial performance of retail firms. By demonstrating that rising prices influence the composition of household consumption and the valuation of retail companies, the results offer guidance for policymakers, urban planners, and market participants who must respond to economic changes within metropolitan economies. The implications are particularly relevant for urban economic planning, retail market forecasting, and investment strategy (Osho, 2001).

5.12. URBAN ECONOMIC PLANNING

Urban economic planners must often anticipate how macroeconomic conditions affect the stability and development of local business sectors. Retail activity plays a central role in metropolitan economies because it generates employment, supports commercial infrastructure, and provides essential goods and services to households. When inflation erodes consumers' purchasing power, retail markets can experience significant shifts in demand patterns. Understanding these changes is therefore important for designing policies that support economic stability within urban environments. The results of this study suggest that shifts in demand composition occur when households respond to inflation by substituting lower-priced goods for more expensive products. Urban planners can use this insight to anticipate which segments of the retail sector may experience

increased demand during periods of economic pressure (Osho, 2025). Policies that encourage diversification in retail markets may help urban economies maintain resilience when consumer purchasing power declines. A diversified retail structure enables different types of businesses to respond to changing consumption patterns, helping stabilize employment and commercial activity within metropolitan areas.

Urban development strategies may also benefit from recognizing the role of consumer demand in shaping retail investment decisions. Planning policies that support accessible retail locations, transportation networks, and commercial infrastructure can improve the efficiency of retail markets and enable businesses to adapt to shifts in demand. In large urban economies such as Houston, where population growth and economic expansion continue to reshape consumer markets, anticipating how inflation affects consumption patterns can help policymakers guide sustainable urban development.

5.13. RETAIL MARKET FORECASTING

Another important implication of the findings concerns the forecasting of retail market performance. Retail businesses and market analysts frequently rely on economic indicators to predict future sales trends and demand conditions. Inflation is a key variable in this process because it directly affects households' purchasing power and, in turn, influences the structure of consumer demand (Ojumu et al., 2026). The evidence presented in this study indicates that inflation does not simply reduce consumer spending uniformly across all goods. Instead, households tend to reallocate expenditures toward goods that provide affordable substitutes when prices rise (Uwakonye et al., 2020). Recognizing this behavioral response can improve the accuracy of retail demand forecasts. Analysts who incorporate measures of demand composition alongside traditional economic indicators may be better able to anticipate which categories of retail activity are likely to expand or contract during inflationary periods (Osho, 2009).

Retail firms themselves can use these insights when planning inventory management, pricing strategies, and product offerings. Businesses that monitor changes in consumer demand patterns can respond more effectively to economic conditions by adjusting product lines and marketing strategies to match evolving consumer preferences. Improved forecasting based on demand composition may therefore enhance retail firms' ability to maintain stable sales performance even when inflation puts pressure on household budgets (Osho, 2025).

5.14. INVESTMENT STRATEGY

The study's findings also have implications for investors and financial institutions that allocate capital in equity markets. Because stock prices reflect expectations of firms' future profitability, understanding how macroeconomic conditions influence consumer demand can provide valuable insights into evaluating investment opportunities. Retail companies that supply goods perceived as affordable substitutes may experience stronger demand when inflation reduces purchasing power, potentially translating into improved revenue prospects and stronger equity performance.

Investors who recognize this relationship can adjust portfolio strategies accordingly. During periods of rising prices, investment portfolios that include retailers positioned in lower-priced market segments may perform differently from portfolios concentrated in firms that rely on discretionary consumer spending. Incorporating indicators of demand composition into investment analysis may therefore improve investors' ability to anticipate sector-specific performance in changing economic conditions. Financial institutions and market analysts may also benefit from integrating macroeconomic indicators such as inflation, employment conditions, and consumer confidence into models used to evaluate retail sector equities. By linking these indicators to information about consumer purchasing behavior, investors can form more informed expectations regarding the long-term performance of retail firms. Hence, the policy implications of this study highlight the importance of understanding how inflation interacts with consumer demand and firm performance within metropolitan retail markets. Policymakers can use these insights to support economic resilience and informed urban development. Retail businesses can improve demand forecasting and strategic planning. Investors can incorporate knowledge of consumer behavior into portfolio decisions. Together, these applications illustrate how empirical research on demand composition and retail equity performance can contribute to more effective economic decision-making in complex urban economies.

6. CONCLUSION

This study examined the relationship among inflation, consumer demand composition, and the financial performance of retail firms within a major metropolitan economy. Using econometric analysis covering the period from 2000 to 2025, the research investigated how rising prices influence household purchasing decisions and how these behavioral adjustments are reflected in the stock performance of retail companies. The empirical results indicate that inflation exerts a measurable influence on retail equity outcomes through its effect on consumer demand patterns. When inflation increases and real purchasing power declines, households tend to adjust their spending by reallocating expenditures toward more affordable goods. As a result, retailers associated with lower-cost goods experience relatively stronger demand during inflationary periods. The study contributes to the literature on consumer demand by demonstrating how macroeconomic price dynamics influence the composition of household consumption. While traditional demand theory distinguishes between normal goods and inferior goods, the empirical findings suggest that economic conditions can reshape the practical relevance of this distinction in retail markets

(Osho et al., 2005). Changes in purchasing power encourage substitution across product categories, which alters revenue performance across different segments of the retail sector. By linking these demand shifts to firms' financial valuations, the study provides evidence that consumer behavior plays a critical role in shaping the economic outcomes of retail businesses.

The findings also have implications for financial markets. Investors appear to incorporate expectations about consumer demand adjustments when evaluating the future profitability of retail firms. Consequently, inflation-related changes in consumption patterns can influence equity valuation in the retail sector (Solomon & Nazemzadeh, 2004). This relationship highlights the importance of integrating macroeconomic indicators with sector-specific analysis when assessing investment opportunities. Several directions for future research emerge from this analysis. Further studies may extend the empirical framework to other metropolitan regions in order to determine whether similar demand patterns occur across different urban economies. Future research may also explore how demographic characteristics, income inequality, and technological changes in retail distribution influence the relationship between inflation and consumer demand composition. Such investigations would deepen the understanding of how macroeconomic forces interact with consumer behavior and financial markets in modern urban economies.

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APPENDIX A

DATA SOURCES

The empirical analysis in this study relies on several publicly available datasets that provide information on price movements, macroeconomic conditions, and retail sector performance from 2000 to 2025. Combining these datasets enables examination of the relationships among inflation, consumer demand patterns, and the financial performance of retail firms operating in a metropolitan economy. Information on inflation was obtained from the U.S. Bureau of Labor Statistics. The Consumer Price Index was used as the principal indicator of price changes because it measures variations in the average cost of goods and services purchased by households. This index is widely used in empirical economic research to capture changes in purchasing power over time. To verify that the empirical findings are not sensitive to the specific measure of inflation employed, additional indicators were considered. These include the core consumer price index, which excludes food and energy prices, and the producer price index, which reflects changes in the prices producers receive.

Macroeconomic indicators were sourced from the Federal Reserve Bank of St. Louis database. These indicators include gross domestic product growth, unemployment rates, and interest rates. Such variables are commonly used as control variables in empirical research because they capture broader economic conditions that influence both consumer behavior and financial markets. Retail activity indicators were obtained from the United States Census Bureau's retail trade statistics. These data provide information on retail sales across different product categories and allow the construction of indicators that reflect shifts in consumer demand between goods associated with higher-income consumption and goods that become relatively more attractive when purchasing power declines.

Stock performance data for retail firms were obtained from financial market records that track firm-level stock prices and returns. These data allow calculation of annual and quarterly returns that reflect investor expectations for the future profitability of retail firms. The empirical analysis focuses on Houston's metropolitan economy. This metropolitan area is home to one of the largest urban economies in the United States. It offers a diverse consumer market in which demand patterns can be observed across retail segments.

APPENDIX B

EQUATIONS USED IN THE EMPIRICAL ANALYSIS

The empirical strategy adopted in this research is designed to evaluate how inflation influences retail firm performance by altering consumer demand. Several econometric equations were estimated in order to test the relationships developed in the theoretical framework.

The principal empirical specification examines the relationship between inflation and retail stock performance, while controlling for broader macroeconomic factors. The model can be written as

$$RetailReturn_{it} = \alpha + \beta_1\, AltInflation_t + \beta_2\, DemandComposition_t + \beta_3\, GDP_t + \beta_4\, InterestRate_t + \beta_5\, Unemployment_t + \varepsilon_{it} \qquad Eq.3$$

In this specification, Retail Return represents the stock return for retail firm $\underline{i}$ in time period t. Inflation measures the rate of change in the consumer price level. Demand Composition represents the relative strength of demand for goods that consumers tend to purchase when purchasing power is constrained. GDPGrowth reflects general economic expansion, while InterestRate captures the cost of borrowing in financial markets. Unemployment reflects labor market conditions that may influence household income and consumption behavior. A second equation examines how inflation affects the composition of consumer demand. This model allows the analysis to evaluate whether higher prices are associated with greater demand for lower-priced goods relative to goods associated with higher income levels.

$$DemandComposition_t = \gamma_0 + \gamma_1 Inflation_t + \gamma_2 RealIncome_t + \gamma_3 Unemployment_t + \mu_t \quad (6)$$

This specification captures households' behavioral responses to declining purchasing power. A positive relationship between inflation and the demand composition index would indicate that households shift consumption toward more affordable goods during inflationary periods. Additional equations were estimated as part of the robustness analysis. These models replace the baseline inflation measure with alternative price indicators and examine whether the relationship between inflation and retail equity performance persists across different time horizons for stock returns. Estimating these alternative specifications ensures that a single measurement approach does not drive the results.