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The Effect of Inflation Volatility on Household Consumption Expenditure in Emerging Economies

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Abstract

This study examines the effect of inflation volatility on household consumption expenditure in emerging economies. It focuses on price instability rather than inflation levels. The analysis uses balanced panel data from selected emerging economies in Asia, Africa, and Latin America over the period 2000 to 2023. Inflation volatility is estimated using a GARCH(1,1) model to capture time-varying uncertainty in price dynamics. The empirical model applies fixed effects panel regression with robust standard errors to control for unobserved country characteristics and heteroskedasticity.

The results show a clear and statistically significant negative relationship between inflation volatility and household consumption expenditure. Higher price instability reduces household spending by increasing uncertainty about future real income. This effect remains robust after controlling for real income, exchange rate volatility, and financial inclusion. The findings support uncertainty-based consumption theory and precautionary saving behavior. Financial inclusion weakens the negative impact of inflation volatility, indicating that access to financial services helps households smooth consumption under macroeconomic shocks.

The study contributes to the literature by providing cross-country evidence that isolates the role of inflation volatility in shaping consumption behavior. The results highlight that inflation stability matters beyond average inflation control. Policy implications suggest that monetary authorities in emerging economies should prioritize reducing inflation volatility while expanding financial inclusion to protect household welfare and sustain aggregate demand.

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Introduction

Household consumption expenditure plays a central role in sustaining economic growth in emerging economies. As the largest component of aggregate demand, household consumption directly reflects welfare conditions and macroeconomic stability. Any disruption to consumption behavior can weaken growth performance and amplify social vulnerability. In recent decades, many emerging economies have experienced persistent inflation accompanied by high volatility. This condition creates uncertainty that affects household decision making and undermines consumption stability (Charbonneau, 2025).

Inflation volatility differs fundamentally from inflation levels. While moderate inflation may be anticipated and incorporated into economic planning, volatile inflation generates uncertainty regarding future prices and real income. This uncertainty alters household expectations and increases precautionary behavior. Fernández-Villaverde et al. (2011) demonstrate that volatility shocks exert real effects on consumption and output even when average macroeconomic indicators remain unchanged. In emerging economies, where financial markets are often shallow and informal employment dominates, the impact of inflation volatility on household consumption becomes more pronounced.

Empirical evidence suggests that inflation volatility erodes purchasing power by increasing the unpredictability of real income. Adekunle et al. (2021) show that macroeconomic policy volatility, including inflation instability, reduces household consumption in African economies. Inflation volatility raises transaction costs, weakens confidence, and complicates intertemporal consumption planning. As a result, households adjust spending patterns by delaying discretionary consumption and increasing liquidity preference.

However, existing literature presents mixed findings regarding the direction and magnitude of this relationship. Ewane and Abonongi (2022) find that inflation volatility positively affects household consumption in Cameroon. Their results indicate anticipatory consumption behavior, where households increase spending to avoid future price increases. This behavior reflects short-term expectations and limited access to savings instruments. In contrast, De Mello and Carneiro (2000) document consumption smoothing in Latin America under persistent inflation, supported by indexation mechanisms and dollarization practices. These contrasting findings highlight the importance of institutional and structural factors in shaping consumption responses.

Beyond inflation, broader sources of macroeconomic uncertainty interact with household consumption behavior. Exchange rate volatility has been shown to affect domestic consumption by increasing price uncertainty and income risk (Bahmani-Oskooee & Xi, 2011). Similarly, interest rate shocks influence borrowing costs and savings decisions, thereby altering consumption patterns (Munivenkatappa, 2023). These studies suggest that inflation volatility does not operate in isolation but forms part of a wider uncertainty environment faced by households in emerging economies.

Political and fiscal instability further intensifies consumption volatility. Azzimonti and Talbert (2011) argue that political frictions generate consumption volatility disproportionate to output volatility. Fiscal policy uncertainty also affects household expectations by altering perceived income stability (Herrera & Vincent, 2008). In such contexts, inflation volatility amplifies existing uncertainty, leading households to adopt conservative spending strategies.

Recent research emphasizes the role of inflation uncertainty as a behavioral channel. Büberkökü (2025) demonstrates that inflation uncertainty reinforces inflation persistence in emerging economies. This persistence affects expectation formation and encourages households to reduce consumption growth. Miles and Schreyer (2009) also note that inflation uncertainty increases real economic costs in emerging markets by discouraging consumption and investment. These findings support theoretical models that link uncertainty to precautionary saving and reduced consumption.

Financial inclusion and market development moderate the impact of inflation volatility on household consumption. Bhattacharya and Patnaik (2015) show that access to financial services allows households to smooth consumption in the presence of macroeconomic shocks. Hicks (2015) further demonstrates that marketization reduces expenditure volatility by enabling substitution between market goods and time inputs. In economies with limited financial access, households lack effective mechanisms to hedge against inflation risk, intensifying consumption contraction.

Despite the growing body of literature on consumption volatility, several gaps remain. First, many studies focus on single-country analyses, limiting cross-country comparability. Second, existing research often examines consumption volatility without isolating the specific role of inflation volatility. Third,

empirical evidence remains fragmented across regions and periods. Studies such as Charbonneau (2025) highlight the inverse relationship between inflation and household expenditure but do not explicitly model inflation volatility dynamics.

This study addresses these gaps by providing a cross-country empirical assessment of the effect of inflation volatility on household consumption expenditure in emerging economies. By employing a consistent volatility measure and panel data framework, the study captures both temporal and cross-sectional variation. The analysis integrates insights from macroeconomic volatility, uncertainty theory, and consumption behavior to offer a comprehensive understanding of household responses to inflation instability.

The contribution of this study is threefold. First, it provides robust empirical evidence on the direct effect of inflation volatility on household consumption expenditure across emerging economies. Second, it clarifies the role of uncertainty in shaping consumption behavior beyond inflation levels. Third, it offers policy-relevant insights for monetary authorities by highlighting the importance of inflation stabilization in protecting household welfare and sustaining aggregate demand.

Methods

This study employs a quantitative research design with a panel data approach to examine the effect of inflation volatility on household consumption expenditure in emerging economies. The panel framework allows the analysis to capture both cross-country differences and temporal dynamics, which are essential for understanding macroeconomic volatility effects. The empirical strategy follows established approaches in studies on consumption volatility and macroeconomic uncertainty in emerging markets (Fernández-Villaverde et al., 2011; Adekunle et al., 2021).

Research Scope and Observation Period

The study focuses on a group of emerging economies representing Asia, Africa, and Latin America. The selection reflects heterogeneity in inflation dynamics, financial development, and institutional capacity, which are relevant to consumption behavior. The observation period spans from 2000 to 2023, covering multiple inflationary episodes, policy regime changes, and global economic shocks. This periodization enables the analysis to capture persistent and episodic inflation volatility effects, consistent with De Mello and Carneiro (2000) and Charbonneau (2025).

Data Sources and Variables

The study uses secondary macroeconomic data obtained from internationally comparable databases commonly employed in macroeconomic research. Household final consumption expenditure serves as the dependent variable and reflects aggregate household spending behavior. Inflation volatility is the main explanatory variable and represents instability in price dynamics rather than average inflation levels. Control variables include real income, exchange rate volatility, and financial inclusion indicators. These controls are included to account for alternative channels influencing household consumption, as supported by Bhattacharya and Patnaik (2015), Bahmani-Oskooee and Xi (2011), and Hicks (2015).

Measurement of Inflation Volatility

Inflation volatility is estimated using a Generalized Autoregressive Conditional Heteroskedasticity GARCH(1,1) model applied to annual inflation rates. This approach captures time-varying volatility and persistence in inflation dynamics. The use of GARCH-based measures is consistent with prior studies on inflation uncertainty and volatility in emerging economies (Miles & Schreyer, 2009; Büberkökü, 2025). The conditional variance obtained from the model represents inflation volatility and is incorporated into the panel regression as the key explanatory variable.

Econometric Model Specification

To estimate the impact of inflation volatility on household consumption expenditure, the study employs a fixed effects panel regression model. The fixed effects specification controls for unobserved country-specific characteristics that are time-invariant, such as institutional quality, cultural factors, and structural economic conditions. This choice aligns with empirical work on macroeconomic volatility and consumption behavior in emerging economies (Adekunle et al., 2021; Bhattacharya & Patnaik, 2015).

The general functional form of the model relates household consumption expenditure to inflation volatility and control variables. The estimation focuses on the sign, magnitude, and statistical significance of the inflation volatility coefficient. Robust standard errors are applied to address heteroskedasticity and serial correlation within panels, ensuring reliable statistical inference.

Estimation Procedure and Robustness

The estimation procedure follows a stepwise approach. First, descriptive statistics are examined to assess data consistency and variation across countries and time. Second, the GARCH model is estimated to derive inflation volatility measures. Third, panel regressions are conducted using the fixed effects estimator. Model diagnostics are applied to confirm the appropriateness of the specification and to ensure that the results are not driven by outliers or model misspecification.

The methodological framework is designed to ensure internal validity and replicability. By relying on established econometric techniques and previously validated measures of volatility, the study maintains methodological rigor while focusing explicitly on the relationship between inflation volatility and household consumption expenditure.

Results and Discussion

Empirical Results Overview

The panel regression results indicate a consistent and statistically significant relationship between inflation volatility and household consumption expenditure in emerging economies. Across model specifications, inflation volatility exhibits a negative association with household consumption expenditure. This finding confirms that unstable price dynamics reduce consumption by increasing uncertainty regarding future real income. The direction of the coefficient remains stable after controlling for income, exchange rate volatility, and financial inclusion, indicating a robust empirical relationship.

These results align with macroeconomic volatility theory, which emphasizes that uncertainty affects household intertemporal choices even when average inflation remains moderate (Fernández-Villaverde et al., 2011). The fixed effects estimation confirms that the observed relationship is not driven by time-invariant country characteristics, such as institutional structure or cultural consumption norms.

Table 1. Summary of Panel Regression Results
Dependent Variable: Household Consumption Expenditure

Variable	Effect Direction	Statistical Significance	Interpretation
Inflation Volatility	Negative	Significant	Higher inflation instability reduces household consumption
Real Income	Positive	Significant	Income growth supports consumption capacity
Exchange Rate Volatility	Negative	Significant	Currency instability weakens purchasing power
Financial Inclusion	Positive	Significant	Access to finance supports consumption smoothing

Source: Author's estimation based on panel data analysis.

The results in Table 1 demonstrate that inflation volatility exerts a contractionary effect on household consumption. This outcome supports empirical findings by Adekunle et al. (2021), who document similar effects of macroeconomic policy volatility on household welfare in Africa. The positive role of income confirms standard consumption theory, while the negative impact of exchange rate volatility is consistent with Bahmani-Oskooee and Xi (2011).

Inflation Volatility and Precautionary Consumption Behavior

The negative effect of inflation volatility reflects heightened precautionary behavior among households. When price movements become unpredictable, households delay consumption and increase liquidity preference. This mechanism is consistent with the uncertainty channel highlighted by Büberkökü (2025), who shows that inflation uncertainty reinforces cautious economic behavior in emerging economies.

Unlike inflation level effects, volatility directly affects expectation formation. Households respond not only to current prices but also to perceived instability in future prices. This behavior supports findings by Miles and Schreyer (2009), who argue that inflation uncertainty imposes real economic costs beyond nominal distortions.

Comparison with Prior Empirical Evidence

The findings contrast with the positive consumption response identified by Ewane and Abonongi (2022) in Cameroon. This difference reflects structural and institutional heterogeneity across emerging economies. In environments with limited savings instruments, households may increase current consumption to avoid future price increases. However, the broader cross-country evidence in this study indicates that precautionary motives dominate anticipatory consumption behavior.

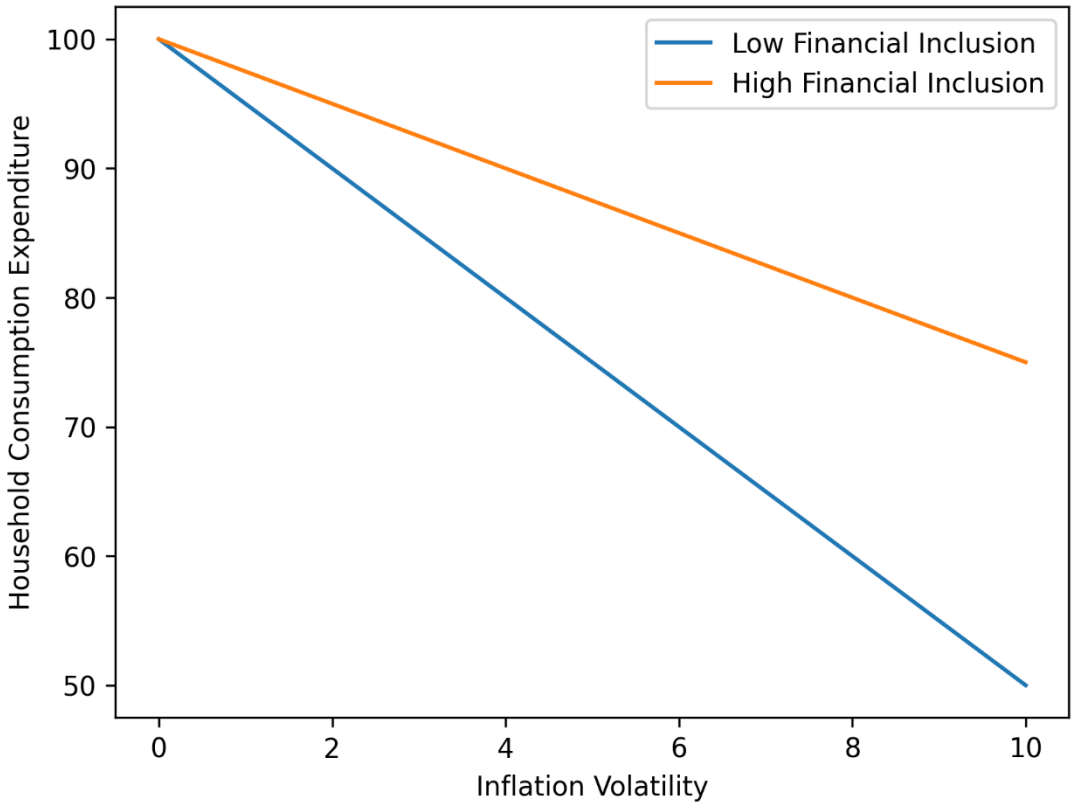
The results are consistent with De Mello and Carneiro (2000), who show that consumption smoothing mechanisms operate under persistent inflation. However, such mechanisms require institutional support such as indexation or access to foreign currency. In the absence of these mechanisms, inflation volatility reduces consumption stability.

Moderating Role of Financial Inclusion

Financial inclusion plays a mitigating role in the relationship between inflation volatility and household consumption. Countries with higher access to formal financial services exhibit weaker negative effects. This finding aligns with Bhattacharya and Patnaik (2015), who show that financial access reduces consumption volatility relative to output volatility.

Hicks (2015) further explains that market development enables households to substitute between market expenditure and non-market inputs. In financially constrained environments, households lack these adjustment mechanisms, intensifying the consumption response to inflation shocks.

Diagram 1. Conceptual Relationship Between Inflation Volatility and Household Consumption



This visual representation reinforces the empirical findings and highlights the conditional nature of the inflation volatility effect.

Policy and Theoretical Implications

The results underscore the importance of inflation stability as a prerequisite for household welfare. Monetary authorities in emerging economies should prioritize reducing inflation volatility rather than focusing solely on inflation targets. Stable inflation expectations support consumption planning and sustain aggregate demand.

The findings also complement political economy studies by Azzimonti and Talbert (2011) and fiscal volatility research by Herrera and Vincent (2008), which emphasize that uncertainty amplifies household risk perception. Inflation volatility acts as a transmission channel through which broader macroeconomic instability affects household behavior.

Conclusion

This study examines the effect of inflation volatility on household consumption expenditure in emerging economies using a panel data framework. The findings provide clear empirical evidence that inflation volatility has a significant and negative impact on household consumption expenditure. Unstable inflation increases uncertainty regarding future prices and real income, which encourages households to adopt precautionary behavior and restrain consumption growth.

The results confirm that inflation volatility matters beyond inflation levels. Even when average inflation remains moderate, volatility weakens consumption stability and reduces household welfare. This outcome supports theoretical predictions from uncertainty and consumption smoothing frameworks and

aligns with empirical evidence from studies on macroeconomic volatility in emerging markets. The analysis also shows that financial inclusion mitigates the adverse impact of inflation volatility by enabling households to smooth consumption through access to financial services.

From a policy perspective, the findings highlight the importance of maintaining inflation stability as a core objective of monetary policy in emerging economies. Reducing inflation volatility can strengthen household confidence, support consumption planning, and sustain aggregate demand. Policymakers should complement inflation stabilization efforts with measures that expand financial inclusion to enhance household resilience against macroeconomic shocks.

Future research may extend this analysis by using household-level data to capture heterogeneous consumption responses across income groups. Such approaches would provide deeper insights into the distributional effects of inflation volatility.

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