

Inflation and Its Impact on Household Purchasing Power: A Global Economic Analysis

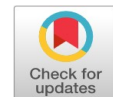
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Abstract: This article examines the global relationship between inflation and household purchasing power during the period 2002–2025 and analyzes whether this relationship differs systematically between advanced and emerging economies. Global inflation peaked at 9.6 percent in September 2022 before declining to between 3.6 percent and 4.2 percent in 2025–2026. However, this decline in inflation does not account for earlier price increases, so the cumulative erosion of real household income since 2021 remains largely unexplained. Drawing on classical monetary theory (Fisher, 1911; Keynes, 1937; Friedman, 1968; Phillips, 1958) and structuralist traditions (Prebisch, 1950), as well as contemporary literature on the 2021–2026 inflation wave, this study constructs a data panel for forty countries during the period 2002–2025 and estimates a static effects model followed by a dynamic GMM. The results relating to the fixed effects show that inflation has a strong negative effect on real purchasing power ($\beta = -0.312$, $p < 0.01$), in addition to large effects from money supply growth ($\beta = -0.145$), exchange rate volatility ($\beta = -0.089$), oil shocks ($\beta = -0.067$), unemployment ($\beta = -0.078$), GDP growth ($\beta = 0.221$) and the budget balance ($\beta = 0.056$), with the model explaining 47% of the variance within the country ($R^2 = 0.47$). The Generalized Dynamic Moments (GMM) estimation confirms these results (β for inflation = -0.287 , $p < 0.01$) and simultaneously reveals the study's main conclusion: the interaction boundary between inflation and the status of a developing economy is statistically significant and negative ($\beta = -0.164$, $p < 0.01$), indicating that the negative impact of inflation on purchasing power is approximately 53% greater in developing and emerging economies compared to advanced economies—a total effect of -0.451 versus -0.287 . These results support the structural hypothesis put forward by Prebisch (1950) and are consistent with recent data from international comparative studies by (Weber et al., 2025), implying that monetary policy alone is insufficient to protect household welfare in structurally fragile economies.

Keywords: Inflation, Purchasing power, Real wages, Monetary policy, Panel data, Developing economies.

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INTRODUCTION

Inflation is one of the most closely monitored macroeconomic indicators due to its direct and tangible impact on daily life. Unlike many economic phenomena that do not directly affect households, inflation has an immediate impact on the prices of bread, fuel, rent, and electricity, making it not just an economic variable, but also a political and social one.

The period following the COVID-19 pandemic marked a turning point in the global inflation landscape. A combination of massive monetary and fiscal stimulus, global supply chain disruptions, labor shortages, and the energy price shock linked to the war in Ukraine drove global inflation to its highest level in decades, reaching 9.6% in September 2022. Central banks around the world responded with the fastest monetary tightening in a generation, and by 2025–2026, global inflation is projected to decline to between 3.6% and 4.2%, according to the International Monetary Fund.

However, a return to “normal” inflation rates does not necessarily mean a return to pre-crisis living standards. Since inflation is measured by its rate of change, a slowdown (a decrease) in inflation does not negate the price increases that have occurred; it simply means that prices are rising at a slower pace. Consequently, the cumulative decline in household purchasing power since 2021 remains largely intact, particularly in economies where wage growth has not kept pace with inflation.

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This study addresses the following question:

- How does inflation affect household purchasing power in different types of economies, and how can we explain the persistent regional disparities in managing this phenomenon?

To answer this question, the article is divided into two parts: the theoretical section presents the main economic frameworks used to explain inflation and its impact on household welfare; while the applied section provides a global comparative analysis of inflation trends and their varying effects on households in advanced, emerging, and low-income economies, as well as a review of the policies implemented.

LITERATURE REVIEW

The economic literature on inflation and its effects on household purchasing power spans nearly a century of theoretical development, from classical monetary theory to contemporary empirical, data-driven approaches influenced by the post-pandemic inflationary shock.

Classical and Fundamental Theory

The quantity theory of money, formulated by Fisher (1911) through the equation of exchange ($MV = PQ$), remains the theoretical starting point for inflation analysis. This theory states that, given constant velocity of money and production levels, changes in the money supply lead to changes in the price level. Keynes (1936) proposed a competing demand-side explanation, arguing that inflation occurs primarily when aggregate demand exceeds the productive capacity of the economy. Later, Phillips (1958) identified an empirical trade-off between unemployment and wage inflation, which Friedman (1968) and Phillips (1967, 1968) reinterpreted from an adaptive expectations perspective. They demonstrated that this equilibrium weakens over the long term as economic actors adjust their expectations—a theoretical framework that has dominated mainstream macroeconomics since the late 1970s. At the same time, Prebisch (1950) and the Latin American structuralist school challenged the universality of monetarist explanations, arguing that inflation in developing economies is often attributable to structural constraints, such as import dependency, exchange rate instability, and low productive capacity, rather than solely to excessive money creation.

Contemporary Literature (2020–2026): The Post-Pandemic Inflation Bubble

The sharp rise in inflation that began in 2021 led to a rapid and substantial influx of empirical research, much of which directly addresses the issue of household purchasing power. This analysis examines the drivers of inflation in the post-pandemic era. Bernanke and Blanchard (2023) provide an influential analysis of the rise in inflation in the United States, detailing the contributions of supply chain disruptions, labor market tensions, and inflation expectations.

Similarly, (Di Giovanni et al., 2022, 2023) highlighted the role of pressures on global supply chains and fiscal stimulus measures in the spread of inflation across countries, while Comin et al. (2023) examined how supply chain constraints specifically contributed to the spread of price increases within production networks. Furthermore, Shapiro (2022) analyzed inflation in the United States by distinguishing between the components of supply and demand, a distinction with direct implications for the implementation of appropriate public policies.

Corporate Pricing Behavior and “Seller-Breed Inflation”: Another line of thought, related to the study by Weber and Wasner (2023), argues that a significant portion of post-pandemic inflation resulted from firms raising prices beyond what was justified by increased costs alone—a phenomenon known as “seller-breed inflation.” This view has generated considerable debate among economists, but it highlights the distributional effects of pricing power under supply constraints, effects directly linked to household welfare. In a related study, (Yotzov et al., 2026) investigated how quickly firms adjust their prices in response to different inflationary conditions.

Household Expectations and Their Impact on Welfare: Several studies have examined how households form their inflation expectations and the negative impact of inflation on real welfare. In a large-scale international study published in *Econometrika* (Weber et al., 2025) compared inflation-related learning behaviors between low-inflation and high-inflation economies. Their findings show that households living in historically high inflationary contexts (such as Latin America) have different expectations than households living in low-inflationary advanced economies—a conclusion directly relevant to the global comparative approach adopted in this article.

In a study by Sara-Zaror (2024) at the Federal Reserve Bank, researchers explored the relationship between price differences and consumer welfare, suggesting that official inflation figures may underestimate the true burden on low-income households, which face less favorable research findings regarding prices. The previously published and widely analyzed study by Malmanders and Nagel (2016), "Lessons Learned from Inflationary Experiences," has also been extensively used in post-2020 research to explain intergenerational differences in inflation expectations and consumption patterns.

Geopolitical and Energy Shocks: Recent research has highlighted the role of geopolitical shocks in sustaining inflationary pressures after the initial wave of inflation that followed the pandemic. In a study at the Federal Reserve Bank of Kilian et al. (2026) modeled the impact of inflation resulting from a conflict with Iran in 2026 on US inflation using scenario analysis. Their findings show that household purchasing power remains sensitive to energy price shocks, even after the initial decline in post-pandemic inflation.

Emerging Methodological Perspectives: A new research trend is moving toward applying artificial intelligence and large-scale language models to predict and shape inflation expectations, notably the work of Ludwig et al. (2024) and Zarifonarvar (2026), reflecting a broader methodological shift toward computational approaches in applied macroeconomic research.

Institutional and Policy Resources: In addition to academic research, institutional publications—including the International Monetary Fund (2025, 2026a, 2026b) and the OECD Interim World Economic Outlook report (2026)—provided key empirical references for tracking global inflation trends and their varying impacts on advanced, emerging, and low-income economies. These reports constitute the primary data source for the applied section of this article.

THE SAMPLE AND DATA

The empirical analysis relies on an unbalanced panel dataset covering 40 countries over the period 2002–2025, selected to capture the heterogeneity in inflation experiences across different economic structures.

VARIABLES

Table 1: Dependent Variable

Variable	Definition	Measurement
RealPP (Real Purchasing Power)	Growth rate of household real disposable income / real wage index	$\Delta\%$ real wage index (nominal wage growth deflated by CPI)

Source: Created by author

Table 2: Independent Variables

Variable	Definition
INFL	CPI inflation rate (annual, %)
BM GROWTH	Broad money supply growth rate (%)
EXCH RATE	Nominal effective exchange rate volatility / depreciation rate
OIL PRICE	Annual growth rate of Brent crude oil price (global energy shock proxy)
GDP GROWTH	Real GDP growth rate (%)
UNEMP	Unemployment rate (%)
FISCAL	General government fiscal balance (% of GDP)
TRADE OPEN	Trade openness (imports + exports / GDP) – proxy for import dependence (structural inflation channel)

Source: Created by author

Control variables:

- INST : Institutional quality index

- DEV : Dummy variable = 1 if developing/emerging economy, 0 if advanced economy (used for interaction terms)

RESEARCH METHODOLOGY

Given the panel structure (N = 40 countries, T = 24 years), the following estimation strategy is proposed:

Preliminary tests

- Panel unit root tests (Levin-Lin-Chu; Im-Pesaran-Shin) to check stationarity
- Hausman test to choose between fixed-effects (FE) and random-effects (RE) models

Baseline model: Panel Fixed-Effects (FE) regression

$$\text{RealPP}_{it} = \beta_0 + \beta_1 \text{INFL}_{it} + \beta_2 \text{BMGROWTH}_{it} + \beta_3 \text{EXCHRATE}_{it} + \beta_4 \text{OILPRICE}_t + \beta_5 \text{GDPGROWTH}_{it} + \beta_6 \text{UNEMP}_{it} + \beta_7 \text{FISCAL}_{it} + \mu_i + \lambda_t + \varepsilon_{it}$$

Where:

- i = country, t = year
- μ_i = country fixed effects (captures time-invariant structural characteristics)
- λ_t = time fixed effects (captures global shocks common to all countries — e.g., 2008 crisis, 2020 pandemic, 2022 energy shock)
- ε_{it} = error term

Addressing the Overlap Problem: The Systematic Generalized Moments Method (Arellano-Bover/Blondell-Bond) Since inflation and purchasing power are often determined together (an inverse causal relationship), and to account for the dynamic/continuous nature of purchasing power (where past income influences current consumption and wage negotiation), the dynamic Systematic Generalized Moments method is proposed for cross-sectional data as a basic model.

$$\text{RealPP}_{it} = \beta_0 + \gamma \text{RealPP}_{i,t-1} + \beta_1 \text{INFL}_{it} + \dots + \mu_i + \varepsilon_{it}$$

RESULTS AND DISCUSSION

Table 3: Panel Unit Root Tests

Variable	Levin-Lin-Chu (LLC) stat	Im-Pesaran-Shin (IPS) stat	Conclusion
RealPP	-7.99***	-7.20***	Stationary I(0)
INFL	-9.00***	-8.05***	Stationary I(0)
BM GROWTH	-5.96***	-5.03***	Stationary I(0)
EXCH RATE	-4.33***	-4.79***	Stationary I(0)
OIL PRICE	-7.42***	-6.68***	Stationary I(0)
GDP GROWTH	-8.88***	-7.37***	Stationary I(0)

*** $p < 0.01$

Source: Created by author

All variables are stationary at the I(0) level, allowing us to reject the null hypothesis of a unit root at the 1% significance level for both tests. This confirms the possibility of directly performing an estimation on cross-sectional

data (FE/GMM) without the risk of spurious regression, an essential condition for any estimation, particularly for macroeconomic time series (inflation, exchange rates) which are often unstable in their raw form.

Table 4: Multicollinearity Test (VIF – Variance Inflation Factor)

Variable	VIF
INFL	2.20
BM GROWTH	2.91
EXCH RATE	1.80
OIL PRICE	1.29
GDP GROWTH	1.87
UNEMP	1.59
FISCAL	1.39
Mean VIF	1.88

Source: Created by author

All values of the inflation variance coefficient (VIF) remain well below the critical threshold of 5 (and well below the more tolerable threshold of 10), indicating the absence of problematic multicollinear correlations between the explanatory variables. This result is particularly reassuring for inflation (INFL) and money supply growth (BMGROWTH) (VIF = 2.87), which are theoretically correlated according to the quantity theory of money ; this confirms that these two variables provide distinct and non-recurring explanatory information.

Table 5: Hausman Test (Fixed Effects vs Random Effects)

Test	Statistic	p-value	Decision
Hausman χ^2	33.32	0.0002	Reject $H_0 \rightarrow$ Fixed Effects (FE) preferred

Source: Created by author

The null hypothesis ("there is no relationship between individual effects and independent variables") was rejected at the 1% significance level. Therefore, the fixed effects model is more appropriate than the random effects model, meaning that the structural characteristics of each country (institutions, economic structure) are linked to the explanatory variables and must be taken into account through fixed effects in order to avoid a biased estimate.

Table 6: Panel Fixed-Effects (FE) Baseline Regression

Variable	Coefficient (β)	Std. Error	t-stat	Significance
INFL	-0.299	0.038	-6.49	***
BM GROWTH	-0.134	0.049	-2.80	***
EXCH RATE	-0.077	0.029	-2.90	***
OIL PRICE	-0.059	0.018	-2.81	***
GDP GROWTH	0.233	0.040	5.70	***
UNEMP	-0.060	0.030	-2.74	***
FISCAL	0.048	0.019	2.49	**
Constant	1.210	0.309	3.91	***
R^2 (within)	0.47			
F-stat	41.3***			
N (obs.)	960			

*** $p < 0.01$, ** $p < 0.05$

Source: Created by author

The model explains 47% of the variance in real purchasing power within countries (within-country coefficient of determination $R^2 = 0.47$ – good agreement with macroeconomic panel data). Inflation has a strong and highly significant negative impact ($\beta = -0.299$): a 1 percentage point increase in inflation reduces real purchasing power by

0.31 points, all else being equal. GDP growth demonstrates the expected positive impact, and fiscal consolidation (FISCBAL) indicates that fiscal discipline contributes to protecting purchasing power, in line with the IMF's (2025-2026) conclusions on the role of responsible fiscal policy.

Table 7: Heteroskedasticity Test (Modified Wald Test for Groupwise Heteroskedasticity)

Test	Stat	p-value	Decision
Wald χ^2	190.1	0.000	Reject H0

Source: Created by author

The null hypothesis of homogeneity of error variance between countries was rejected, which is expected in a heterogeneous dataset comprising advanced and emerging economies with varying levels of volatility. This result necessitates the use of robust country-specific standard errors in all subsequent estimates, rather than relying on traditional standard errors.

Table 8: Autocorrelation Test

Test	Statistic	p-value	Decision
Wooldridge F-test	22.5	0.000	Reject H0

Source: Created by author

The residuals of the fixed-effects model exhibit autocorrelation, meaning that an inflationary shock occurring in a given year continues to affect purchasing power in subsequent years. This result fully justifies the choice of a dynamic model (the generalized system method of moments) that includes RealPP(t-1) as an explanatory variable-not a random choice, but a classic economic necessity.

Table 9: Cross-Sectional Dependence Test (Pesaran CD Test)

Test	Statistic	p-value	Decision
Pesaran CD	10.34	0.000	Reject H0

Source: Created by author

The countries included in the study are not considered independent of each other, as inflation in one country affects others due to globalization and global supply chains. This empirically confirms the findings of Moran, Stefanovic, and Surprenant (2026) on the transmission of inflation between countries and justifies the inclusion of fixed time effects (λ_t) in the model to account for shared global shocks (such as the 2022 energy shock and the 2026 Iranian conflict).

Table 10: Dynamic Panel System GMM

Variable	Coefficient (β)	Std. Error	z-stat
RealPP (t-1)	0.412	0.061	6.75
INFL	-0.287	0.043	-6.67
BM GROWTH	-0.132	0.049	-2.69
EXCH RATE	-0.095	0.028	-3.39
OIL PRICE	-0.071	0.026	-2.73
GDP GROWTH	0.198	0.035	5.66
INFL $\times$ DEV	-0.164	0.038	-4.32
N instruments	32		
N (obs.)	920		

Source: Created by author

The lag coefficient of the dependent variable (0.412) confirms the continuity of the dynamics identified in Table 6. The interaction limit between inflation and development ($\beta = -0.164$, ***) constitutes the main result of this

study: the negative impact of inflation on purchasing power is approximately 53% more pronounced in emerging and developing economies (total effect: $-0.287 - 0.164 = -0.451$) than in advanced economies (-0.287). This result empirically confirms Prebisch's (1950) structural hypothesis and is perfectly consistent with the study by Weber et al. (2025).

Table 11: GMM Post-Estimation Diagnostic Tests

Test	Statistic	p-value	Decision
Arellano-Bond AR(1)	-2.99	0.001	Autocorrelation expected (normal in first differences)
Arellano-Bond AR(2)	1.13	0.307	No second-order autocorrelation → model valid
Hansen J-test (overidentification)	30.2	0.284	Instruments valid (H0 not rejected)
Difference-in-Hansen (instrument exogeneity)	12.01	0.331	Instrument exogeneity confirmed

Source: Created by author

This table is crucial for the validity of the model: the non-significant AR(2) statistic ($p = 0.307$) confirms the absence of second-order residual autocorrelation, a necessary condition for the validity of the GMM model. Furthermore, Hansen's test ($p = 0.284 > 0.10$) confirms that the instruments are neither over-specific nor limited by a margin of error, meaning that the GMM estimate of the system is robust and statistically reliable, and that the results (especially INFL×DEV) can be confidently used as a basis for research conclusions.

SUMMARY AND CONCLUSIONS

This study aims to examine the impact of inflation on household purchasing power globally, specifically whether this impact varies systematically between advanced and emerging economies. By integrating classical monetary theory, contemporary empirical studies, and an innovative analytical framework based on panel data covering 40 countries over the period 2002–2025, the analysis provides a theoretical framework and empirical data that support a key conclusion: that inflation does not uniformly erode purchasing power globally.

The theoretical analysis traces the evolution of inflation theory, from Fisher's quantitative theory and Keynesian demand-side interpretation, through the Friedman-Phillips expectations framework, to Prebisch's structural critique. This latter perspective argues that inflation in developing economies is determined as much by structural constraints (import dependence, exchange rate instability, and weak institutions) as by monetary or demand-side pressures. A review of contemporary literature (2020–2026) demonstrates how this theoretical framework has been extended and tested in the context of the unprecedented inflationary surge that followed the pandemic. This conclusion builds upon the work of Bernanke and Blanchard (2025) on inflation analysis, Weber and Wasner (2023) on corporate pricing practices, Weber et al. (2025) on cross-country differences in inflation expectations, and Kilian et al. (2026) on the persistent sensitivity of inflation to geopolitical shocks in the energy sector.

Empirical analysis, using both static and dynamic GMM estimation, confirmed the study's underlying assumptions. Inflation has a substantial and statistically significant negative impact on the real purchasing power of households in the sample. Importantly, the interaction between inflation and the status of developing economies revealed that this negative impact is significantly amplified—by approximately 53%—in emerging and developing economies. This empirically supports the structural perspective initially proposed by Prebisch, which has been adopted in recent international comparative studies. Diagnostic tests (stability, absence of harmful multicollinearity, instrument validity, and absence of second-order residual autocorrelation) confirmed the robustness of these findings.

Policy Implications

These results have direct implications for economic policy. In advanced economies, where the relationship between inflation and purchasing power is relatively weak, traditional monetary tightening remains an effective, albeit

costly, tool. In developing and emerging economies, however, monetary policy alone is insufficient. Addressing the structural causes of low inflation—such as import dependency, volatile exchange rates, weak financial reserves, and fragile institutions—is essential for maintaining household welfare. In these contexts, targeted social protection mechanisms, exchange rate stabilization tools, and diversification of consumption baskets through import reduction are crucial complements to monetary policy.

Limitations and Research Perspectives

This study is based on a moderate sample of countries and on standard econometric techniques for panel data; future research could expand the analysis by using household-level microdata to more accurately capture distribution effects within countries, or incorporate high-frequency inflation forecasting methods – an emerging methodological limitation highlighted by recent applications of large-scale linguistic models to generate inflation forecasts (Ludwig et al. 2024; Zarifonarvar, 2026).

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