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# Determinants of Inflation Volatility: The Role of Institutions, Shocks, and Economic Development

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**ABSTRACT**

Inflation volatility remains one of the most important challenges for policymakers, households, and businesses alike. When prices fluctuate unpredictably, people lose confidence in their ability to plan ahead. Households struggle to budget and save, firms hesitate to invest and hire, and policymakers face higher pressure to act without clear guidance. Recent global crises—whether energy shocks, food price surges, or supply chain disruptions—have shown how quickly instability spreads across borders. This raises a central question: why are some countries more vulnerable to inflation volatility than others? Following Aisen and Veiga (2006), this study addresses that question by examining the determinants of inflation volatility across three income-based groups: lower-middle-income, upper-middle-income, and high-income economies, using panel data covering the period 1996-2024. Using both fixed and random-effects models, we find that inflation persistence and high inflation levels are the strongest drivers of volatility, while higher income levels and stronger governance support price stability. External shocks—such as trade openness, oil price fluctuations, and exchange-rate misalignments—show varied effects across income groups, emphasizing the importance of context-specific responses. The findings suggest that when countries invest in credible institutions and reliable policies, they can transform external shocks from being destabilizing forces into manageable challenges.

**Keywords:** Inflation Volatility, External Shocks, Panel Data Analysis, Institutional Quality
**JEL Classifications:** E31, F41, O11, C33, O43

## 1. INTRODUCTION

The rollercoaster of rising and falling prices is a serious economic challenge. The problem is not only that goods and services become more expensive, but also that their future costs are unpredictable. This uncertainty complicates daily life. For households, it makes budgeting, saving, and repaying loans more difficult. For businesses, it discourages investment and hiring, as firms hesitate when future costs cannot be anticipated. At the macro level, such hesitation translates into lower investment, slower growth, and higher borrowing costs. In short, when prices fluctuate unpredictably, the impact extends far beyond individual wallets—it undermines the stability and performance of the entire economy.

For policymakers, the stakes are even higher. Central banks are expected to provide stability and predictability, but when prices swing sharply, even well-intentioned decisions can go wrong—like raising interest rates too far or keeping them high for too long. Governments face their own dilemma: just as people need more support, tax revenues become harder to forecast, making it tough to plan budgets or deliver aid where it's needed most. For countries that depend heavily on trade, unstable prices add another layer of risk. Currency values fluctuate, sometimes making exports too expensive for foreign buyers, which in turn hurts local businesses and employment. Above all, the the burden falls most heavily on poorer nations and low-income families. These communities have limited capacity to absorb sudden shocks. When essentials like food or fuel become volatile, it's not just an inconvenience—it can push the most vulnerable into crisis and widen the gap between rich and poor. Thus, price volatility does not just make economic management difficult—it causes serious harm to the most fragile parts of the economy.

Recent crises have made one thing clear: a price shock in one corner of the world—whether from soaring energy costs, food shortages, or disrupted supply chains—can quickly move across the globe. Yet not all countries feel the impact the same way. Some manage the turbulence with flexibility, while others struggle. This variation reveals that the critical issue is not just the shock itself, but how each nation's institutions, financial systems, and policies shape its ability to cope. Our goal in this study is straightforward: to understand why some economies are resilient to shocks while others are fragile. We want to offer practical insights for policymakers. Building resilience requires adopting policies that shield households and firms from sudden price spikes, give businesses the confidence to keep investing, and allow growth to continue even when the world economy is unsettled. Accordingly, we are tackling one of the most pressing questions facing leaders today: how can we design economies that absorb shocks instead of amplifying them, and make everyday life less uncertain for people and businesses alike.

The aim of this study, therefore, is to examine the key determinants of inflation volatility across countries worldwide. To do this, countries are divided into four income-based groups: low-income, lower-middle-income, upper-middle-income, and high-income economies. This classification provides a useful lens to compare how different factors behave across varying levels of development. However, due to data limitations, the low-income group is excluded from the analysis. The paper is organized as follows: Section 2 reviews the existing literature, while Section 3 outlines the theoretical foundations of the model. Section 4 describes the empirical framework, and Section 5 presents the empirical results and discusses the policy implications of the findings, and finally, Section 6 concludes the study.

## 2. LITERATURE REVIEW

Existing literature provides a robust foundation for understanding the determinants of inflation volatility and its transmission mechanisms through structural, political, and monetary channels. A broad consensus in the literature indicates that institutions and political conditions are key determinants of both the level and variability of inflation. Using a large cross-country panel, Aisen and Veiga (2006) show that political instability—captured by government turnover and weak institutional quality—raises inflation volatility by undermining the credibility and consistency of macroeconomic policy. This institutional channel aligns with Cukierman et al. (1992), who show that when fiscal capacity is weak and political horizons are short, governments rely more on seigniorage, reinforcing both higher inflation and its variability. Extending the institutional perspective to the growth margin, Fatás and Mihov (2013) find that more volatile, discretionary policy is associated with lower long-run growth, implying that governance quality and rule-based frameworks stabilize both prices and real activity. Consistent with this, Garriga and Rodríguez (2023) document that stronger central bank independence (legal and de facto) is linked to lower inflation volatility in developing economies, especially where fiscal dominance risks are salient—i.e., where monetary institutions serve as a credibility anchor.

A second research component emphasizes external shocks and regime-dependent transmission. Blanchard and Galí (2007) explain why the macroeconomic impact of oil price shocks has been markedly milder since the 2000s than it was during the 1970s. They attribute this to four factors: lower oil intensity of production, more flexible labor markets, improved monetary policy, and "good luck" (weaker coincidence of adverse shocks). This implies that structural features and policy frameworks can dampen the effects of energy shocks on volatility. Exchange-rate channels remain central in emerging markets. Kemoe et al. (2024) show that depreciations in Sub-Saharan Africa exhibit high pass-through to domestic prices—particularly where monetary frameworks are weaker and food import dependence is high—thereby amplifying inflation volatility following currency shocks. At the same time, Calvo and Reinhart (2002) highlight the prevalence of "fear of floating," whereby many emerging economies actively smooth exchange rates (via reserves and interest rates), sacrificing some monetary autonomy to control pass-through and near-term price instability. This behavior explains why identical external shocks can translate into very different domestic volatility profiles depending on the exchange-rate regime and available policy tools.

A third aspect of research looks at how inflation uncertainty and volatility actually behave over time—and how we measure them. For the G7, Fountas and Karanasos (2007) show something intuitive but important: when inflation is higher, people become less sure about where prices are headed next, and that uncertainty can feed back into even higher average inflation. When we broaden the scope, Ha and Sob (2024) piece together a global measure of inflation uncertainty and find that the COVID-era spike rivaled the turbulence of the 1970s and 1980s, weighing on output, consumption, and investment—especially in advanced economies. The message is that the state of the system matters. In high-uncertainty regimes, shocks are transmitted through different channels. On the measurement front, Koirala and Nyiwul (2023) establish that Bayesian method offers superior estimates of inflation volatility in cross-country comparisons. This approach is particularly valuable for small samples and noisy data, helping to explain much of the apparent cross-country heterogeneity in volatility.

Policymakers now treat decision-making under uncertainty as a process that can be optimized. Brandão-Marques et al. (2024) show that when it is unclear whether an inflation shock will be short-lived or long-lasting, the best strategy may be a risk-management, front-loaded response. In practice, this means accepting some short-term output loss in order to avoid a more severe and persistent inflation problem if the shock turns out to be long-lived. Their key recommendation is to avoid making assumptions about inflation persistence when setting policy. A better approach is to follow robust, data-dependent rules that adjust as new information becomes available. This helps explain the cautious position many central banks adapted after the pandemic, when wage-price dynamics were unusually difficult to interpret.

At the country level, Kuncoro et al. (2024) find in Indonesia's inflation-targeting regime that inflation volatility, more than exchange-rate volatility, is a key driver of growth volatility.

So, low and stable inflation is not just a price-stability target; it is a prerequisite for stable output in emerging markets. Would changes in food prices affect inflation volatility? Walsh (2011) warns against down-weighting food items when designing economic policies. In particular, food-price shocks can have sizable effects on both headline and core inflation—especially where inflation is already persistent or under formal inflation targeting. In such settings, excluding "volatile" items can understate fundamental pressures and lead to misguided policies.

Taken together, this literature provides an integrated picture of inflation volatility. First, institutions matter. Prudent fiscal and monetary foundations matter: central bank independence helps anchor expectations and limit amplification of shocks, while weak institutions promote reliance on inflationary finance and discretionary policies, increasing volatility. Second, external shocks are transmitted in ways that vary with the dominant regime. For example, oil and exchange-rate shocks are serious matters, but their impact depends on the policy framework. In particular, the pass-through mechanism is greater under floating rates and market-based pricing, and more muted where authorities intervene heavily—though often at the cost of reduced autonomy. A third key finding is that uncertainty and persistence depend heavily on the prevailing economic state. When uncertainty is high, shocks spread more strongly and slow down the economy, while persistent inflation requires strong and decisive policies to keep expectations stable.

## 3. THEORETICAL CONCEPTS AND DEFINITIONS

The aim of this study is to analyze the main determinants—both economic and institutional—that affect inflation volatility in three different countries. The core relationship is captured by Equation (1), which models how inflation volatility responds to a set of explanatory variables theorized to influence its behavior. The equation takes the following general form:

*Inflation volatility = f(Persistence*, *Inflation*, *RGDP per capita*, *Output volatility*, *Openness to trade*, *Misalignment*, *Brent prices*, *WGI*, *Agriculture*) (1)

The explanatory variables, included in Equation (1), are defined and theoretically justified below:

Persistence is the lag of inflation volatility. Including the lag of the dependent variable is expected to improve the model's performance. Specifically, the lag helps to capture the persistence and dynamics of the dependent variable, to control for autocorrelation, and to account for delayed effects (Baltagi, 2021). Accordingly, we expect a positive and significant effect of this variable on inflation volatility. Inflation: Higher average inflation is typically accompanied by greater inflation uncertainty and volatility, as elevated inflation undermines policy credibility and destabilizes expectations (Friedman, 1977). Therefore, we expect a significant and positive effect of inflation levels on the volatility of inflation.

RGDP per capita: According to Baltagi (2021), including this variable allows us to control differences in living standards across countries or over time, reduce omitted variable bias, and explain structural differences. We anticipate a negative effect, as higher income per capita is typically associated with stronger institutions, deeper financial systems, and more diversified structures—factors that collectively help absorb or smooth price shocks (IMF, 2015). Real GDP growth (Output volatility) is proxied by the standard deviation of the real GDP growth rate. A positive coefficient is consistent with the hypothesis that greater output volatility raises inflation volatility (Aisen and Veiga, 2006). This is also consistent with the New Keynesian Phillips curve and the cost-push mechanisms, whereby greater variability in real activity translates into greater variability of inflation.

Openness to trade refers to the degree to which a country is integrated into the global economy through international trade. Including this variable in the model is essential, as it captures the economy's exposure to global markets and provides channels through which international developments can influence domestic price stability. Specifically, it reflects channels such as import price pass-through, exchange-rate fluctuations, and changes in external demand. Therefore, it is reasonable to expect that higher trade openness is associated with greater inflation volatility, particularly in economies that are more vulnerable to international fluctuations.

Misalignment denotes the deviation of the real effective exchange rate (REER) from its fundamentals-consistent equilibrium. It is measured as the log deviation of the actual REER from its estimated equilibrium. Including misalignment in the inflation-volatility model captures three channels: (i) crisis-correction, where persistent misalignment increases the likelihood of sharp depreciation and high pass-through to prices; (ii) imported-price effects, meaning that when an overvalued currency holds prices down for a while, they often jump suddenly once the exchange rate shifts; and (iii) exchange-rate regime credibility, as defending an overvalued currency often undermines confidence and raises uncertainty (Calvo and Reinhart, 2002). Consistent with these mechanisms, we expect a positive coefficient: greater misalignment is associated with higher inflation volatility.

Brent prices represent the global crude-oil benchmark and serve as a proxy for energy price shocks that transmit rapidly to domestic prices. Including Brent prices in an inflation-volatility model captures several channels: the direct impact of energy costs (fuel, utilities), indirect cost-push effects through transportation and input prices, and exchange rate pass-through in oil-importing economies. Moreover, volatility in oil markets increases overall economic uncertainty, further amplifying inflation variability (Blanchard and Galí, 2007). Consistent with these mechanisms, the expected coefficient is positive: larger Brent price shocks or volatility are associated with higher inflation volatility.

Worldwide Governance Indicators (WGI) comprise six aggregate dimensions—Voice and Accountability, Political Stability, Government Effectiveness, Regulatory Quality, Rule of Law, and Control of Corruption—covering more than 200 countries. Stronger governance enhances policy credibility, monetary and fiscal discipline, contract enforcement, and regulatory quality, thereby dampening the persistence of shocks and reducing inflation volatility. By contrast, weak governance and political instability raise uncertainty and intensify price shocks. Accordingly, the expected sign for WGI (higher = better governance) is negative. Agriculture: Historically, the agriculture sector has constituted a large share of many economies, especially in developing countries. We include it because it can influence food prices and broader macroeconomic conditions. We expect higher agricultural shares of GDP to have a larger impact on inflation volatility. It is also worth testing for significance given the sector's long-run decline in GDP shares (Walsh, 2011).

## 4. THE EMPIRICAL MODEL AND DATA

This study employs a panel data methodology to analyze the impact of various explanatory variables on inflation volatility. For this purpose, the study categorizes the sample countries into three income-based groups: lower-middle-income countries (LMICs), upper-middle-income countries (UMICs), and high-income countries (HICs). All data was sourced from the World Bank's World Development Indicators database.

The empirical strategy consists of two main stages. First, both fixed-effects and random-effects regression models are estimated. The fixed-effects model controls for time-invariant characteristics within each country, treating country-level differences as fixed parameters. In contrast, the random-effects model treats these differences as random variables drawn from a larger population. Second, the Hausman test is conducted to determine the most appropriate model. The null hypothesis is that the random-effects estimator is consistent and efficient. A significant Chi-square statistic leads us to reject the null in favor of the fixed-effects model, while an insignificant result supports the random-effects model.

Equation (2) presents the reduced-form specification used to explain inflation volatility as a function of the selected determinants. We estimate it for each of the three income-group samples to allow for regime heterogeneity. Following Aisen and Veiga (2006), the analysis includes the following explanatory variables hypothesized to influence inflation volatility:

$$\sigma_{\varpi,i,t} = \alpha_i + \rho\, \sigma_{\varpi,i,t-1} + \beta_1\, \varpi_{i,t} + \beta_2\, RGDPpc_{i,t} + \beta_3\, \sigma_{y,i,t} + \beta_4\, Open_{i,t} + \beta_5\, Misalignment_{i,t} + \beta_6\, Brent_{i,t} + \beta_7\, WGI_{i,t} + \beta_8\, Ag_{i,t} + \propto_{i,t} \quad (2)$$

Based on the preceding theoretical framework, the variables in the empirical model (Equation 2) are defined as follows:

$\sigma_{\varpi}$ is the dependent variable, measured by the standard deviation of the inflation rate. $\sigma_{\varpi,i,t-1}$ represents persistence and is defined as the one-period lag of the natural log of the inflation-rate standard deviation. $\varpi$ is the natural logarithm of the inflation rate, a measure of the general price level in the economy. *RGDPpc* represents the natural logarithm of real GDP per capita, an indicator of living standards and individual economic strength. $\sigma_y$ is the volatility of economic growth, measured by the standard deviation of real GDP growth. *Open* is trade openness, measured by total trade as a percent of GDP. *Misalignment* is the degree of real effective exchange rate misalignment compared to its equilibrium level. *Brent* is the percentage change in Brent crude-oil prices. *WGI* stands for Worldwide Governance Indicators, which measures the quality of governance and institutions. *Ag* is the agriculture share in the economy, measured by its value added as a percentage of GDP. The coefficient $\rho$ captures the effect of the lagged dependent variable, while the coefficients $\beta$ correspond to the other independent variables. $\propto$ is the error term. Country-specific fixed-effects are denoted by $\alpha_i$, and the subscripts $i$ and $t$ index countries and time periods, respectively.

## 5. EMPIRICAL RESULTS AND DISCUSSION

We start by choosing between the random-effects model and the fixed-effects model. For the first group (lower-middle-income countries, LMICs), we use the Hausman test to compare the two estimators. The chi-square statistic for the test is 17.6, which is significant at the 5% level, allowing us to reject the null hypothesis. Note that under the null hypothesis, the random-effects model is the appropriate specification. Thus, we reject the null in favor of the alternative, indicating that the fixed-effects model is the appropriate specification. For the second group, the upper-middle-income countries (UMICs), the result of the Hausman test is 19.1, which is also significant at the 5% level, allowing us to reject the null hypothesis in favor of the fixed-effects model. Finally, for the third group (high-income countries, HICs), we again reject the null at the 1% level, with a Hausman chi-square statistic of 38.1. So, for this group, the appropriate model is the fixed-effects model. The outcomes of these models are reported in Table 1.

We begin by analyzing the estimated model for the determinants of inflation volatility across the three subsamples. The coefficient

**Table 1: Results of estimating the empirical model**

| Independent variable ($\sigma_\pi$) | Group 1 (LMICs) | Group 2 (UMICs) | Group 3 (HICs) |
|---|---|---|---|
| Constant | 6.034 | −0.290 | 3.025 |
| | (1.61) | (−0.89) | (1.06) |
| $\sigma_{\pi, t-1}$ | 0.411*** | 0.461*** | 0.397*** |
| | (6.84) | (9.33) | (13.00) |
| π | 0.308*** | 0.230*** | 0.146*** |
| | (3.82) | (4.75) | (4.33) |
| RGDPpc | −0.800 * | | −0.348 |
| | (−1.90) | | (−1.29) |
| $\sigma_y$ | 0.057** | 0.024 | 0.097*** |
| | (2.12) | (1.62) | (8.35) |
| Open | 0.012*** | −0.001 | 0.005** |
| | (2.75) | (−0.24) | (2.56) |
| Misalignment | 0.002 | −0.007*** | −0.001 |
| | (0.57) | (−3.54) | (−0.31) |
| Brent | −0.003* | 0.003** | 0.002 |
| | (−1.97) | (2.36) | (1.69) |
| WGI | −0.079 | −0.227* | −0.214* |
| | (−0.51) | (−1.70) | (−1.81) |
| Ag | −0.029 | 0.017 | −0.013 |
| | (−1.30) | (0.59) | (−0.31) |
| Number of countries | 43 | 40 | 62 |
| $R^2$ | 0.508 | 0.588 | 0.484 |

Heteroskedasticity-robust t-statistics are reported in parentheses
*, **, and *** mean statistically significant at 10%, 5%, and 1%

for the lag of inflation volatility, $\sigma_{\pi,t-1}$, which captures persistence (volatility clustering), is positive and highly significant in all groups. Quantitatively, the estimates imply strong persistence—about 0.40 of last period's volatility carries over to the current period. This pattern accords with the Generalized Autoregressive Conditional Heteroskedasticity (GARCH) view of macro price dynamics, in which inflation volatility exhibits conditional heteroskedasticity and persistence. For example, the result is consistent with the work of Grier and Perry (1998) and Fountas and Karanasos (2007) who document significant persistence of inflation volatility/uncertainty across countries using GARCH-type models.

The estimates indicate that the inflation level ($\varpi$) is statistically significant across all groups with the expected sign. This result aligns with Friedman's (1977) hypothesis that higher inflation is linked to higher inflation uncertainty. Real GDP per capita (*RGDPpc*) enters with a negative coefficient—statistically significant for Group 1 (LMICs), negative but not significant for Group 3 (HICs), and omitted in Group 2 for estimation reasons. This pattern is consistent with the view that higher income and development strengthen fiscal capacity and monetary–institutional credibility, thereby reducing reliance on seigniorage and dampening inflation variability (Cukierman et al., 1992; Aisen and Veiga, 2006).

For output volatility ($\sigma y$), which captures the intensity and frequency of real shocks, the estimated coefficient is positive and statistically significant for LMICs and HICs, but insignificant for UMICs, despite exhibiting the theoretically expected sign. This pattern indicates that higher output volatility is associated with greater inflation volatility. This result is consistent with the study's prior prediction and with the findings of Fountas et al. (2006) and Fountas and Karanasos (2007). The variable Open measures the degree of integration into global markets and thus captures exposure to external price, cost, and demand shocks. Its coefficient is positive and statistically significant for LMICs and HICs. For UMICs, the coefficient carries a theoretically unexpected sign, but that result was statistically insignificant. Accordingly, it appears that greater trade openness would be associated with higher inflation volatility. This pattern is consistent with the classic external-shock transmission mechanisms presented in the theoretical section.

Misalignment captures real exchange-rate misalignment—i.e., the deviation of the real effective exchange rate (REER) from its fundamental equilibrium. The conventional prediction is a positive effect on inflation volatility. In our estimates, the coefficients for LMICs and HICs are statistically insignificant (with LMICs display the expected sign). On the other hand, UMICs show a negative and significant coefficient—an outcome that goes against the standard theoretical prediction of this study. Two short-run mechanisms can rationalize this result: (i) An overvalued REER (a stronger domestic currency) temporarily lowers the domestic-currency prices of the tradables, compressing CPI variance while the misalignment persists (Kemoe et al., 2024); and (ii) many upper-middle-income economies maintain sizable reserves and conduct sterilized foreign-exchange intervention, smoothing the exchange rate and muting pass-through of external shocks despite underlying misalignment (Calvo and Reinhart, 2002). These features can mask the underlying positive relationship between misalignment and inflation volatility.

The proxy for energy-price shocks is Brent. It shows a negative and significant coefficient for LMICs, a positive and significant coefficient for UMICs, and an insignificant positive effect for the third group (HICs). For LMICs, the coefficient is negative and contrary to expectations. A plausible explanation is that price subsidies and managed exchange rates slow the pass-through of global oil prices to domestic prices. As a result, inflation movements can be smaller than expected. Generally, higher WGI values indicate better governance, which should be associated with lower inflation volatility. In our estimates, the WGI coefficient is negative and statistically significant at the 10% level for UMICs and HICs, but negative and insignificant for LMICs. Thus, better governance is linked to lower inflation volatility in upper-middle- and high-income economies, with no statistically detectable effect in lower-middle-income economies. This pattern is consistent with Aisen and Veiga (2006), Fatás and Mihov (2013), and Ghanayem et al. (2023).

The agriculture share of GDP (Ag) is a proxy for the economy's exposure to food supply shocks and weather-related disturbances—and, indirectly, for exposure to volatility in consumer prices. Across all groups, the estimated coefficient on Ag is statistically insignificant; although the signs differ (negative for LMICs and HICs, positive for UMICs), none is statistically different from zero. This lack of significance indicates that, once controlling for inflation level, persistence, output volatility, openness, exchange-rate misalignment, oil shocks, and governance, Ag does not exhibit a systematic association with inflation volatility. This result is consistent with widespread stabilization practices—administered prices and subsidies for staples, and substitution between domestic output and imports—that mitigate food price shocks and damp their pass-through to inflation volatility (Gouel, 2013).

The findings across the different income groups reveal a complex yet consistent narrative about the determinants of inflation volatility. At the core, the persistence of volatility is evident: the lagged dependent variable enters positively and significantly in all groups, highlighting the strong path-dependence and tendency for volatility clustering in price dynamics. In other words, yesterday's inflation variability partly affects today's path. Equally central is the role of the inflation level. Inflation itself enters with a positive and significant coefficient for all three groups. This indicates that higher average inflation weakens policy credibility and amplifies uncertainty. This underscores the critical role of independent institutions—such as central bank independence—in dampening inflation levels (Garriga and Rodríguez, 2023). Therefore, credible and autonomous monetary authorities play a crucial role in mitigating inflation volatility. By promoting stable inflation expectations, they reduce economic uncertainty and diminish the persistence of economic shocks.

Turning to real income levels, RGDP per capita (RGDPpc) exhibits a negative association with inflation volatility, significant in LMICs and weaker in HICs. This result highlights the fact that as income rises, stronger fiscal capacity, monetary discipline, and institutional development help stabilize prices. Similarly, the results for output volatility ($\sigma$y) are intuitive. In LMICs and HICs, real shocks translate into greater inflation variability, consistent with the New Keynesian Phillips Curve and broader cost-push arguments. However, the insignificance in UMICs suggests that upper-middle-income economies may possess partial shock-absorption mechanisms—possibly diversified production structures or policy interventions—that weaken the transmission to inflation volatility.

Openness to trade (Open) acts as a double-edged sword. In LMICs and HICs, greater openness significantly amplifies volatility, reflecting the pass-through of external shocks via imports and exchange-rate movements. In contrast, UMICs show an insignificant coefficient with an unexpected sign, hinting at policies that temporarily insulate the domestic economy from global disturbances. On the other hand, exchange-rate misalignment (Misalignment) offers a particularly instructive case. While LMICs and HICs show no significant relationship, UMICs present a statistically significant negative coefficient, contradicting conventional theory. This paradox could be explained by the widespread use of managed exchange-rate systems, reserve-backed interventions, and administered pricing in these economies. These practices dampen short-run volatility transmission while obscuring underlying structural misalignments. Such findings are consistent with Calvo and Reinhart (2002), who stressed the prevalence of "fear of floating" in emerging economies.

Oil shocks, proxied by Brent prices (Brent), exhibit heterogeneous effects: they dampen inflation volatility in LMICs, amplify it in UMICs, and in HICs, the coefficient takes the expected positive sign but lacks statistical significance. The result for the UMICs is consistent with this study's expectations. By contrast, the findings for LMICs and HICs align with the widespread use of subsidies and administered price controls, which compress the short-term pass-through of international oil price fluctuations to domestic consumer prices. On the other hand, governance (WGI) confirms the stabilizing role of institutions. Its negative and significant association with inflation volatility in UMICs and HICs indicates that better governance reduces uncertainty by strengthening credibility and fiscal discipline. Finally, the agricultural share (Ag) remains insignificant across all groups, with differing signs. This outcome reflects the universal use of administered pricing, subsidies for staples, subsistence farming, and substitution between domestic production and imports—all of which dampen the pass-through of agricultural price volatility to overall inflation variability.

## 6. CONCLUSION

The main research goal is to understand what causes inflation to become volatile and unpredictable. Reducing uncertainty lowers firms' cost of conducting business and eases future planning for households. Countries have different policy tools and face distinct constraints, depending on their institutional credibility and exposure to energy and exchange-rate fluctuations. In our research, we group countries into three income-based categories: lower-middle, upper-middle, and high-income. The results of this paper highlight that inflation volatility is shaped by both universal mechanisms and country-specific conditions. Persistence and the inflation level create universal drivers: once volatility starts, it tends to stay, and higher inflation usually brings more uncertainty along with it.

Aside from this general pattern, heterogeneity emerges. Real economic development, high-quality institutions, and credible governance reduce volatility. However, external shocks—trade openness, exchange-rate misalignment, and oil prices—affect economies in ways that depend on their income level, policy regime, and institutional quality. Thus, the same global disturbance can amplify volatility in one group, be absorbed in another, and remain invisible in a third. This indicates that it is not merely the shock that matters, but the structure and credibility of the domestic economic system through which it is transmitted.

So, what does all this mean for researchers and policymakers? The answer is straightforward: build resilience before shocks occur. Countries that invest in credible institutions and maintain contingency plans will still face crises, but they will be better equipped to manage the turbulence. This means leaders need to focus on the fundamentals: the rule of law, political stability, and effective control of corruption. It is essential to ensure that people and businesses can trust the system. When that trust is in present, uncertainty declines, families can plan their futures, and the entire economy becomes more resilient for everyone.

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