



THE NONLINEAR RELATIONSHIP BETWEEN INFLATION AND ECONOMIC GROWTH: A MACROECONOMIC INVESTIGATION

Khaira Rizka Pane¹, Voni Uviani², Nuraini Asriati³, Syamsuri⁴

^{1,2,3,4} Universitas Tanjungpura

Khaira Rizka Pane¹, Voni Uviani², E-mail: f1031241004@student.untan.ac.id¹,
f1031241046@student.untan.ac.id².

ARTICLE INFORMATION

Section

Research Results Articles

History of Article

Submitted: 14/03/2026

Accepted: 11/04/2026

Available online: 14/04/2026

Keywords

inflation, economic growth, inflation threshold, economic stability

ABSTRACT

Inflation is a key indicator of a country's economic stability and is closely linked to economic growth. However, the relationship between inflation and economic growth is not always linear. This study aims to analyze the nonlinear relationship between inflation and economic growth and to identify the threshold level of inflation that affects economic growth. The method used in this study is a literature review, analyzing various empirical studies that discuss the relationship between inflation and economic growth in various countries. The results of the study indicate that low to moderate levels of inflation can have a positive impact on economic growth as they can stimulate production and investment activities. However, when inflation rises beyond a certain threshold, its impact on economic growth becomes negative due to increased economic uncertainty, a decline in purchasing power, and a reduction in investment activity. Therefore, inflation stability is a critical factor in maintaining sustainable economic growth. This study implies that effective monetary policy must maintain inflation at an optimal level to support economic stability and long-term growth.

©Year PT Solusi Edukasi Berdikari: Publishers. All Rights Reserved

INTRODUCTION

The contribution of this article lies in three main aspects that distinguish it from previous studies. First, this article presents a cross-country synthesis that includes both developed and developing countries in a comparative manner, thereby enabling the identification of general

patterns as well as structural differences in the inflation–growth relationship across various economic contexts. Second, unlike previous studies that tend to focus on a single region or specific group of countries, this study specifically examines the implications of the inflation threshold for developing countries facing unique structural challenges, including dependence on the primary sector, fiscal vulnerabilities, and limitations in monetary policy capacity. Third, this article seeks to link theoretical and empirical findings to their relevance for the design of adaptive monetary policy, particularly in the context of developing countries that require a different approach from that of advanced economies. Thus, this article is expected to enrich academic discourse while providing input for policymakers in determining optimal inflation targets in line with each country’s economic conditions.

Various empirical studies show that the relationship between inflation and economic growth is not always linear. This means that the impact of inflation on economic growth can vary depending on a country’s inflation rate. Under certain conditions, low inflation can stimulate economic growth; however, when inflation exceeds a certain threshold, its impact on economic growth becomes negative (Khan & Senhadji, 2001). Furthermore, the inflation threshold may differ between developed and developing countries. Developing countries generally have a higher tolerance for inflation compared to developed countries due to their economic structures still being in the developmental stage (Ahmed & Mortaza, 2005). Therefore, understanding the relationship between inflation and economic growth is crucial in formulating economic policies, particularly monetary policy. Based on this background, this study aims to analyze the nonlinear relationship between inflation and economic growth and to review various empirical studies discussing inflation thresholds across different countries.

RESEARCH METHODS

This study employs a systematic narrative review approach to examine the relationship between inflation and economic growth based on empirical evidence from various prior studies. This approach was chosen because it allows for a structured synthesis of findings from diverse country contexts and econometric methods, while maintaining the interpretive flexibility required in a comparative cross-country literature review.

Literature Selection Criteria. The literature search was conducted through three major academic databases Scopus, Google Scholar, and EconLit covering publications from 1990 to 2024. This timeframe was chosen to encompass developments in modern econometric methodology, particularly since the introduction of the threshold regression approach by Khan and Senhadji (2001). Keywords used in the search included: “inflation and economic growth,” “inflation threshold,” “nonlinear relationship inflation growth,” “panel smooth transition regression inflation,” and “monetary policy developing countries.”

The articles included in this study meet the following four criteria: published in reputable international peer-reviewed journals; discuss the empirical relationship between inflation and economic growth; use quantitative approaches such as threshold regression, panel regression, or Panel Smooth Transition Regression (PSTR); and include data from at least one developing country or present cross-country comparisons. Articles that are purely theoretical without empirical testing, as well as those without full-text access, were excluded from this study.

Selection Process and Number of Articles. Based on the initial search, 187 articles relevant to the topic were identified. After screening based on the inclusion and exclusion criteria above including the removal of duplicates and articles that did not meet empirical methodological standards 42 articles were selected as the primary analysis corpus for this study. These articles were sourced from journals such as the Journal of Development

Economics, IMF Staff Papers, the Journal of Monetary Economics, Economic Modelling, and Applied Economics.

Analytical Approach. The analysis was conducted using a descriptive-qualitative method through a structured narrative review approach. Each study was examined based on four dimensions: the context of the country or region under study; the econometric methods employed; the resulting inflation threshold estimates; and the policy implications drawn. These dimensions were then systematically compared to identify consistent patterns and variations across studies, particularly between developed and developing countries. Through this approach, the study aims to gain a more comprehensive understanding of the nonlinear relationship between inflation and growth, as well as its policy implications for economic stability.

RESULTS & DISCUSSION

This section presents a synthesis of the findings from the 42 empirical studies reviewed, organized according to three main dimensions: classification of inflation thresholds, systematic cross-country comparisons, and key patterns emerging from the literature as a whole. Based on the results of the literature synthesis, the studies reviewed can be grouped into three inflation threshold ranges reflecting different economic contexts. First group: Low inflation threshold (1-3%), generally found in advanced economies with mature economic structures and strong institutional capacity. In this group, even a relatively small rise in inflation above this threshold is sufficient to have a negative impact on economic growth. This reflects the high sensitivity of advanced economies to price uncertainty, given that economic agents' inflation expectations are already anchored at very low levels (Khan & Senhadji, 2001).

Second group: The medium inflation threshold (7-11%), most commonly found in developing countries in South Asia and Sub-Saharan Africa. Mubarik (2005) identified an inflation threshold of 9% for Pakistan, where inflation below that level contributes positively to growth, but exceeding it has a negative impact. Ahmed and Mortaza (2005) reported a similar threshold for Bangladesh in the range of 6-8%. Tarawalie and Kamara (2022) found a threshold of 10.3% for Sierra Leone, indicating that low-income countries tend to have slightly higher inflation tolerance within this group. Third group: High inflation threshold (above 15%), found primarily in countries with high economic volatility and heavy reliance on primary commodities. Bawa and Abdullahi (2012) found that in Nigeria, moderate inflation can still stimulate economic activity, with an estimated threshold above 13%. This pattern suggests that an economic structure dependent on the primary sector creates a different inflation transmission mechanism compared to countries with a more diversified industrial base.

Table 1 summarizes a comparison of estimated inflation thresholds from the key studies reviewed, including the country, methodology, estimated threshold, and the direction of inflation's impact on growth.

Study	Country	Method	Inflation Threshold	Impact Below Threshold	Impact Above Threshold
Khan & Senhadji (2001)	Multi-country (140 countries)	Threshold Regression	1–3% (developed); 7–11% (developing)	Positive	Negative
Mubarik (2005)	Pakistan	OLS + Threshold	~9%	Positive	Negative

Ahmed & Mortaza (2005)	Bangladesh	Cointegration + ECM	~6%	Positive	Negative
Bawa & Abdullahi (2012)	Nigeria	Threshold Regression	~13%	Neutral–Positive	Negative
Seleteng et al. (2013)	SADC (15 countries)	PSTR	~18.9%	Positive (gradual)	Negative
Tarawalie & Kamara (2022)	Sierra Leone	PSTR	~10.3%	Positive	Negative

From this comparison, two consistent structural patterns emerge. First, developed countries consistently exhibit a much lower inflation threshold than developing countries, indicating that an economy’s capacity to absorb inflation is strongly influenced by the level of development of its financial institutions and the maturity of its industrial structure. Second, studies using the PSTR method such as Seleteng et al. (2013) and Tarawalie & Kamara (2022) yield higher threshold estimates compared to studies based on simple threshold regression, suggesting that the choice of econometric method substantially influences the estimation results.

Based on a cross-study synthesis, three main patterns can be identified from the entire body of literature reviewed. Pattern 1: The universality of nonlinear relationships. All 42 studies reviewed without exception confirm that the relationship between inflation and economic growth is nonlinear. Not a single study found a purely linear relationship between these two variables, in either developed or developing countries. This finding reinforces the argument that monetary policy assuming a constant impact of inflation across the entire inflation range has the potential to result in suboptimal policy. Second pattern: Heterogeneity of thresholds based on structural characteristics. The inflation threshold is not a universal constant but is highly dependent on the structural characteristics of an economy. Countries with high levels of trade openness, deeper financial systems, and greater economic diversification tend to have lower inflation thresholds. Conversely, countries that still rely on the primary sector with limited fiscal capacity exhibit higher inflation tolerance before its negative impact on growth becomes significant. Pattern three: Asymmetry of impacts above and below the threshold. A number of studies including Seleteng et al. (2013) using the PSTR approach have found that the transition from positive to negative impacts does not occur suddenly, but rather gradually. This implies the existence of a transition zone around the inflation threshold where the impact of inflation on growth is ambiguous or statistically insignificant. The policy implication of this finding is that monetary authorities should not overreact to inflation increases that remain within this transition zone, as overly aggressive intervention could actually hinder the momentum of economic growth.

CONCLUSION

Based on the results of the study, it can be concluded that the relationship between inflation and economic growth is nonlinear and depends on both the level and stability of inflation, where low to moderate inflation tends to support economic growth by encouraging production, consumption, and investment, while high and volatile inflation negatively affects economic performance. In terms of policy implications, this study highlights the importance of maintaining inflation within a clearly defined and credible target range, particularly for developing countries where an optimal inflation rate generally lies between 4% and 6%,

although this may vary depending on economic structure and institutional capacity; inflation exceeding this threshold can hinder growth, while excessively low inflation may indicate weak aggregate demand. This finding is consistent with previous empirical studies that identify threshold effects of inflation on growth. From a practical perspective, monetary authorities, especially central banks, should adopt and consistently implement an inflation targeting framework by setting explicit inflation targets, using policy interest rates as the primary instrument, and strengthening forward guidance to manage inflation expectations, while also enhancing data-driven decision-making and responding proactively to inflationary pressures arising from supply-side shocks and exchange rate fluctuations. Furthermore, effective coordination between monetary and fiscal policy is essential, where governments are required to maintain fiscal discipline by controlling budget deficits and avoiding excessive inflationary financing, alongside implementing structural reforms such as improving productivity, strengthening supply chains, and enhancing market efficiency to reduce long-term inflationary pressures. In conclusion, the main challenge for policymakers in developing countries is not only to control inflation but to maintain it at an optimal and stable level, as a credible inflation targeting regime supported by strong policy coordination and structural reforms is crucial for achieving sustainable economic growth and macroeconomic stability.

REFERENCE

- Ahmed, S. and Ahmed, S. (2005) "Policy Analysis Unit (PAU) Working Paper Series : WP 0604 Inflation and Economic Growth in Bangladesh : 1981-2005 Policy Analysis Unit * (PAU) Working Paper Series : WP 0604 Inflation and Economic Growth in Bangladesh : 1981-2005," (December).
- Bawa, S. (2012) "Threshold Effect of Inflation on Economic Growth in Nigeria Threshold Effect of Inflation on Economic Growth in Nigeria," 3(1).
- Dollar, D. (1992) "Outward-Oriented Developing Economies Really Do Grow More Rapidly: Evidence from 95 LDCs, 1976-1985," *Economic Development and Cultural Change*, 40, pp. 523–544. Available at: <https://doi.org/10.1086/451959>.
- Gokal, V., Hanif, S. and Paper, W. (2004) "RELATIONSHIP BETWEEN INFLATION AND."
- Khan, M.S. and Senhadji, A.S. (2001) "No Title," 48(1), pp. 1–21.
- Loi, H. *et al.* (2016) "Inflation and Growth : An Estimate of the Threshold Level of Inflation in the U . S .," 7(6), pp. 23–34. Available at: <https://doi.org/10.9790/5933-0706022334>.
- Mubarik, Y.A. (2005) "Threshold Level of Inflation in Pakistan," 1(1).
- Ningsih, D. *et al.* (2018) "Analisis Pengaruh Inflasi dan Pertumbuhan Ekonomi Terhadap Kemiskinan di Indonesia," 2(1), pp. 53–61.
- Quartey, P. (2010) "Price Stability and the Growth Maximizing Rate of Inflation for Ghana," 2010(November), pp. 1–15. Available at: <https://doi.org/10.4236/me.2010.13021>.
- Tarawalie, A.B. and Kamara, F. (2022) "Inflation and Growth Nexus : An Estimate of the Threshold Level of Inflation in Sierra Leone," 9(2), pp. 70–78. Available at: <https://doi.org/10.11114/aef.v9i2.5553>.