Macroeconomic Volatility and ETF Resilience During an Economic Recession Transition

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Abstract

This study examines the influence of key macroeconomic variables: interest rates, inflation, and gross domestic product (GDP), on the performance of exchange-traded funds (ETFs) in Indonesia from 2019 to 2022, spanning pre- and post-COVID-19 periods. Employing a quantitative econometric approach with time-series data and multiple linear regression analysis in Stata 17, the research tests hypotheses regarding these relationships using the Sharpe ratio as a risk-adjusted performance metric. Descriptive statistics reveal stable interest rates (average 4.35%) and inflation (2.68%), contrasted by high GDP volatility (standard deviation 3.003). Regression results indicate a positive but insignificant effect of interest rates (β = 0.101, p = 0.234), a significant positive impact of inflation (β = 0.170, p = 0.029), and an insignificant negative effect of GDP (β = -0.023, p = 0.377). These findings challenge conventional expectations, highlighting inflation's role in signaling moderate economic expansion that bolsters ETF returns in emerging markets during recovery phases. Notably, this positive inflation effect persists in broader contexts, as seen in Indonesia's sustained growth trajectory post-2022, where controlled inflation around 2.3% in 2025 complemented stable BI rates at 4.75% to support ETF resilience amid ongoing global pressures. The study addresses literature gaps by providing empirical evidence from Indonesia's transitional context, offering implications for policy and investment strategies amid global uncertainties, including recommendations for regulators to leverage moderate inflation for market stabilization.

Keywords: Exchange-Traded Funds (ETF), Interest Rates, Inflation, Gross Domestic Product (GDP), Sharpe Ratio

1. Introduction

Emerging markets like Indonesia have experienced profound economic shifts due to global events, particularly the COVID-19 pandemic, which disrupted traditional patterns of financial asset performance. Prior to the outbreak in 2019, Indonesia's economy demonstrated steady expansion, with GDP reaching approximately 5.02%, fueled by robust domestic consumption and foreign investments. The pandemic's onset in early 2020 triggered a global downturn, leading to a GDP contraction of -2.07% in Indonesia, driven by mobility restrictions, export declines, and supply chain interruptions [1]. Inflation fluctuated, dropping to a low of 1.68% in 2020 amid reduced aggregate demand, while the Bank Indonesia reference rate (BI Rate) was progressively lowered from 5% in 2019 to 3.75% in 2020 to stimulate recovery [2]. By 2021-2022, signs of rebound emerged, with GDP recovering to 3.69% in 2021 and 5.31% in 2022, although inflation rose to 1.87% and 4.21%, respectively, due to escalating global commodity prices [3]. This recovery momentum persisted into the following years, with GDP growth stabilizing at 5.1% in 2023 and 5.0% in 2024, bolstered by resilient domestic demand and strategic fiscal policies. Entering 2025, projections indicated continued expansion around 5.1% or higher, paired with manageable inflation easing to about 2.7% by late in the year and the BI Rate held steady at a three-year low of 4.75% to support balanced growth. Concurrently, the ETF market in Indonesia saw substantial growth, with transaction volumes surging from modest levels in 2024 and increased retail investor participation driving broader adoption amid the improving economic landscape. These dynamics extended beyond the real sector, affecting investment vehicles such as ETFs, which have gained traction in Indonesia as passive investment options tracking indices like the Jakarta Composite Index (IHSG). Introduced in 2007, ETFs in Indonesia expanded rapidly, with assets totaling IDR 10 trillion by late

2019, yet faced heightened volatility during the pandemic, evidenced by net asset value (NAV) drops of up to -0.15% in 2020, though technology and e-commerce-based ETFs exhibited greater endurance [4].

The significance of this topic lies in ETFs' function as diversification tools for retail and institutional investors in volatile emerging markets, where macroeconomic instability can amplify systemic risks. Investigating macroeconomic effects on ETF performance is vital for comprehending how monetary and fiscal policies foster capital market stability, especially in post-crisis recovery contexts [5].

Macroeconomic variables critically shape investment outcomes in developing economies. Interest rates, inflation, and GDP serve as primary determinants influencing investor choices and asset valuations. Reduced interest rates typically promote investment by lowering borrowing expenses, thereby channeling capital into markets and enhancing equity attractiveness [2]. In contrast, elevated inflation may undermine purchasing power and consumer trust, constraining expenditure and investment [6]. Research underscores a lack of investment resilience amid high inflation, emphasizing macroeconomic stability's role in sustaining investor confidence and market vitality [4]. GDP, as a proxy for real economic activity, correlates positively with asset performance, as expansion boosts corporate earnings and stock indices [7]. During the pandemic, GDP contraction reduced market liquidity, impacting ETF tracking accuracy against benchmarks [8]. Interactions among these variables create complex settings for emerging markets; for instance, inflationary pressures may prompt central bank hikes in interest rates, potentially curbing growth [4]. Such variations resonate through financial systems, affecting mutual fund performance, particularly ETFs reliant on market fluctuations [5]. The cumulative effects of these macroeconomic changes pose unique challenges and opportunities for investors in Indonesia's financial ecosystem, where post-pandemic government stimuli played pivotal roles in revival [1].

Evaluating ETF performance amid economic crises like COVID-19 entails several hurdles. Heightened market volatility during such events can distort underlying asset values and complicate assessments [8]. Rapid investor behavior shifts in response to macroeconomic announcements, such as stimulus packages or rate adjustments, often cause short-term price swings unrelated to long-term fundamentals [4]. Reliance on historical data for forecasting ETF outcomes may falter in unprecedented scenarios, where new economic patterns emerge, including consumer pivots to digital services or sectoral investment realignments [9]. Scholars advocate dynamic models adaptable to evolving conditions, accurately capturing market sentiments in crises [5]. Empirical inquiries into macroeconomic indicators and ETF returns in developing nations frequently test correlations among GDP growth, inflation, interest rates, and exchange rates, finding substantial impacts on investment yields [6]. For example, GDP increases are hypothesized to elevate ETF returns via heightened economic activity and business profitability [7]. Rising inflation is posited to negatively affect real ETF returns, requiring strategy adjustments by managers to mitigate risks.

The study's specific objectives are to ascertain how macroeconomic factors affect ETF performance in Indonesia from pre-pandemic (2019) to post-pandemic (2022). More precisely, it aims to analyze interest rate impacts on ETF return volatility, evaluate inflation effects on NAV during low and high inflation phases, assess GDP growth contributions to post-crisis ETF recovery, and compare inter-period influence patterns to offer policy recommendations for regulators like the Financial Services Authority (OJK) and Bank Indonesia. This enhances understanding of passive investment instrument resilience amid macroeconomic uncertainty[5]. Literature reviews reveal most studies on macroeconomic factors and mutual fund performance focus on conventional or sharia-compliant stocks, not specifically ETFs in emerging markets like Indonesia [10]. Prior research noted positive inflation effects on sharia ETF NAV, but limited to non-crisis eras [3]. In broader emerging markets, inflation and interest rates influence ETF flows, with heightened sensitivity during global financial cycles [5]. A primary gap is the scarcity of comparative pre- and post-COVID-19 analyses in Indonesia, where empirical ETF studies often overlook GDP interactions during economic contractions [10]. Global literature emphasizes ETFs in advanced markets, leaving voids in emerging contexts like Indonesia, where capital market regulations evolve [11]. This gap justifies the research, as the pandemic altered macroeconomic influence paradigms, such as amplifying financial cycles via ETFs [10].

This study proposes three primary hypotheses grounded in financial economic theory and empirical observations from emerging markets. The first hypothesis (H1) posits that interest rates exert a negative influence on the performance of exchange-traded fund (ETF) mutual funds, as rises in interest rates elevate borrowing costs and diminish the attractiveness of riskier assets, such as the equities underlying ETFs. The second hypothesis (H2) assumes that inflation negatively affects ETF performance, given that inflation can erode real returns and generate uncertainty that suppresses investor sentiment. The third hypothesis (H3) predicts a positive impact from gross

domestic product (GDP) growth on ETF performance, since real economic expansion enhances corporate profitability, market liquidity, and returns on benchmark stock indices tracked by ETFs. These hypotheses will be empirically tested to compare effects across pre- and post-COVID-19 pandemic periods, while considering potential interactions among the macroeconomic variables.

The novelty resides in its focus on Indonesia's pandemic transition period, underexplored, and use of ETF-specific data for temporal comparisons. Unlike prior works on protected mutual funds or stocks, this highlights ETFs as passive instruments vulnerable to macro shocks in developing markets [7]. Expected contributions include fresh empirical evidence on post-pandemic ETF resilience, aiding crisis-resistant product development; policy suggestions for Bank Indonesia in managing rates and inflation for market stabilization; and enriching emerging market literature with models considering ETF age and size moderation [3]. Overall, it advances scientific insight into how macroeconomic factors shape investment performance amid global uncertainty, with practical ramifications for Indonesian investors and regulators [5].

Furthermore, the evolution of ETFs in Indonesia has been marked by increasing investor adoption, driven by their low-cost structure and liquidity advantages over traditional mutual funds. As passive investment vehicles, ETFs provide broad market exposure, allowing investors to hedge against macroeconomic risks in a diversified manner. This growth has been particularly evident in sectors like technology and consumer goods, which demonstrated resilience during economic downturns by adapting to digital transformations accelerated by the pandemic. Understanding the interplay between macroeconomic indicators and ETF performance is crucial for forecasting future trends in Indonesia's capital markets, where regulatory enhancements by bodies such as OJK continue to promote transparency and investor protection.

In addition, the transitional phase from recession to recovery presents unique opportunities for analyzing how macroeconomic policies can mitigate volatility in financial instruments like ETFs. For instance, fiscal stimuli and monetary easing implemented during the height of the crisis helped stabilize asset prices, yet their long-term effects on ETF returns remain underexplored. This study aims to bridge this understanding by examining temporal shifts in variable impacts, providing a foundation for more adaptive investment strategies that account for Indonesia's integration into global supply chains and its vulnerability to external shocks.

2. Research Methods

This investigation adopts a quantitative research design grounded in econometric analysis to quantify the causal linkages between macroeconomic variables and ETF performance in Indonesia over the 2019-2022 timeframe. The choice of this approach stems from its efficacy in discerning relationships among economic indicators and financial metrics, enabling robust inferences for policy and investment decisions [12]. Utilizing monthly time-series data facilitates temporal dynamics capture during crisis periods, with panel regression models allowing control for unobserved heterogeneity and time effects [13]. The design proceeds inductively, commencing with empirical data collection followed by pattern derivation, ensuring conclusions derive from observational evidence rather than presuppositions.

Precise variable definition and measurement underpin empirical finance inquiries. The dependent variable, ETF performance, is gauged via the Sharpe ratio, incorporating total returns, NAV fluctuations, and risk adjustments, offering a holistic view of efficiency over time [14]. Independent variables encompass interest rates, proxied by the BI Rate as a monetary policy indicator, expressed in percentages or change rates to assess impacts on financing costs and economic activity [13]. Inflation employs the Consumer Price Index (CPI), reflecting price escalation rates that erode purchasing power and heighten return uncertainty [15]. GDP, adjusted for inflation, measures real economic activity quarterly or annually, contextualizing the environment for financial assets [16]. Potential controls include Rupiah exchange rates and global stock indices to isolate domestic effects. Data sourcing prioritizes credibility: international databases like the World Bank and IMF for macroeconomic sets; national agencies such as Badan Pusat Statistik for local metrics; market providers like Bloomberg for ETF prices and historical data; and academic publications for supplementary datasets [13]. This ensures comprehensive, reliable information spanning the study period for pre- and post-crisis evaluations in emerging contexts.

The performance of Exchange-Traded Funds (ETFs) is measured using the Sharpe Ratio, a metric that evaluates risk-adjusted returns by calculating the excess return per unit of volatility. Developed by William F. Sharpe, this ratio is computed as $(Rp - Rf) / \sigma p$, where Rp represents the portfolio return, Rf is the risk-free rate, and σp is the standard deviation of the portfolio's excess return. In the context of ETF mutual funds, the Sharpe Ratio offers a comprehensive assessment of efficiency, indicating how effectively the fund compensates investors for the risks

assumed relative to a risk-free asset. Higher values denote superior performance, making it an essential tool for comparing ETFs in volatile markets, such as Indonesia's post-pandemic economy, where systemic risks often influence liquidity and NAV returns.

Analysis employs Stata 17 for its proficiency in panel data and GMM estimation, suitable for addressing time-series issues like autocorrelation and heteroskedasticity [17]. Alternatives like R for VAR models or EViews for time-series were considered, but Stata's intuitive interface for multiple regression suits the study's needs (Henriques et al., 2024). Justification for panel regression lies in its ability to handle cross-sectional and temporal variations, controlling for fixed effects and yielding unbiased estimates in heterogeneous datasets [13]. This method outperforms simple OLS by accounting for unobserved factors, enhancing robustness in emerging market volatility [16].

Model selection stages begin with data compilation and preprocessing, aggregating monthly time-series from official sources and cleansing for missing values or outliers to uphold integrity. Stationarity tests follow to detect trends or seasonality potentially biasing estimates, with transformations applied if needed (Henriques et al., 2024). Autocorrelation and heteroskedasticity diagnostics identify serial dependence or variance inconsistencies, prompting corrections via robust standards or lagged terms [17]. Multicollinearity assessment via VIF ensures variable independence, averting coefficient inflation [13]. Regression estimation computes coefficients and significance, succeeded by robustness checks through specification variations or subsamples for validation [5]. These steps yield reliable estimates, deferring specific model interpretation to results. This methodological framework furnishes a solid basis, contributing to deeper insights into Indonesia's ETF macro dynamics and evidence-based recommendations for stakeholders [14].

To ensure the robustness of the findings, the study incorporates sensitivity analyses by segmenting the data into pre-pandemic (2019) and post-pandemic (2020-2022) subsets, allowing for comparative evaluation of macroeconomic effects across distinct economic phases. This segmented approach helps isolate the pandemic's influence on variable relationships, using fixed-effects models to control for time-invariant factors. Additionally, diagnostic checks for endogeneity are performed through instrumental variable techniques if preliminary tests indicate potential reverse causality between GDP growth and ETF performance.

3. Results and Discussions

Empirical analysis in this inquiry unveils the nuanced interplay of macroeconomic variables on ETF performance in Indonesia across the 2019-2022 span, encompassing pre-pandemic stability, crisis-induced disruptions, and subsequent recovery. Through inductive reasoning, patterns emerge from data observations, revealing stable yet varied economic conditions influencing financial outcomes.

Table 1: Descriptive Statistics Table

Variable	Obs	Min	Max	Mean	Std. Dev
Interest Rate	80	4.35	0.79	3.52	5.63
Inflation	80	2.68	1.01	1.56	4.21
GDP	80	2.99	3.00	-2.07	5.31
Sharpe Ratio	80	-0.19	0.59	-1.83	2.47

source: processed with Stata 17

Descriptive statistics establish foundational characteristics, with interest rates averaging 4.35% and a low standard deviation of 0.789, indicative of minimal variance and accommodative monetary stance, particularly the BI Rate reductions to counter pandemic effects [12]. This stability suggests moderate investment decision impacts, aligning with theories positing low rates foster capital inflows to riskier assets like ETFs [15]. Inflation's average of 2.68% with a 1.014 deviation denotes controlled levels, ranging from 1.56% to 4.21%, potentially beneficial for investments by preserving purchasing power and market predictability [13]. GDP displays an average growth of 2.99% but high volatility (standard deviation 3.003), with a -2.07% nadir in 2020 reflecting recessionary pressures and a 5.31% peak in 2022 signaling rebound, which could elevate systemic risks and affect ETF liquidity [16]. The dependent variable, Sharpe ratio, averages -0.188 with a 0.588 deviation, spanning -1.83 to 2.47, implying predominant negative risk-adjusted returns, where yields often fail to offset volatility, especially amid 2020's NAV

declines (Maistrenko, 2023). Collectively, these descriptors affirm macroeconomic steadiness in rates and inflation against GDP turbulence, with adverse ETF implications from pandemic uncertainty [5].

Table 2: Normality Test

Shapiro–Wilk W Test for Normal Data					
Variable	Obs	W	V	z	Prob>z
res	80	0.97489	0.552	-1.189	0.88283

source: processed with Stata 17

The multicollinearity test evaluates the degree of correlation among independent variables, as high multicollinearity can inflate standard errors and destabilize coefficient estimates. Variance Inflation Factor (VIF) values were calculated for each predictor, resulting in a mean VIF of 1.31, with no individual VIF exceeding the common threshold of 5. This low level suggests minimal intercorrelation among interest rates, inflation, and GDP growth. As a result, the regression coefficients are stable and interpretable without undue distortion from overlapping explanatory power. This outcome enhances confidence in the individual significance tests and supports accurate attribution of effects to specific macroeconomic variables.

Table 3: Multicolinearity test

Variable	VIF	1/VIF
Interest Rate	1.07	0.938
Inflation	1.45	0.688
GDP	1.41	0.707
Mean VIF	1.31	

source: processed with Stata 17

The multicollinearity test evaluates the degree of correlation among independent variables, as high multicollinearity can inflate standard errors and destabilize coefficient estimates. Variance Inflation Factor (VIF) values were calculated for each predictor, resulting in a mean VIF of 1.31, with no individual VIF exceeding the common threshold of 5. This low level suggests minimal intercorrelation among interest rates, inflation, and GDP growth. As a result, the regression coefficients are stable and interpretable without undue distortion from overlapping explanatory power. This outcome enhances confidence in the individual significance tests and supports accurate attribution of effects to specific macroeconomic variables.

The autocorrelation and heteroskedasticity tests further validate the reliability of the regression model in this time-series context. The Breusch-Godfrey Lagrange Multiplier test for autocorrelation produced a p-value of 0.914, well above the 0.05 threshold, leading to failure in rejecting the null hypothesis of no serial correlation and confirming that residuals are independent across observations. This independence is crucial for preserving the efficiency of OLS estimators and avoiding underestimated standard errors that could artificially inflate statistical significance. Similarly, the Breusch-Pagan/Cook-Weisberg test for heteroskedasticity yielded a p-value of 0.061, indicating no significant evidence against the null hypothesis of constant residual variance. Together, these results ensure that the model's standard errors and inference procedures remain accurate, supporting robust interpretations of the macroeconomic effects on ETF risk-adjusted performance without necessitating corrective adjustments.

Table 4: Multiple Linear Regression Test

y	Coefficient	std. Err	t	P>|t|	[95% conf. Interval]	
x1	0.101	0.084	1.20	0.234	-0.067	0.268
x2	0.170	0.076	2.22	0.029	0.018	0.322
x3	-0.023	0.025	-0.89	0.377	-0.073	0.028
_cons	-1.014	0.374	-2.71	0.008	-1.759	-0.270

source: processed with Stata 17

Regression estimation via $Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$ produces. $Y = -1.014 + 0.101 X_1 + 0.170 X_2 - 0.023 X_3$. The constant -1.014 is significant (p=0.008), denoting baseline negative ETF performance absent macroeconomic influences, consistent with crisis-era. Interest rate coefficient 0.101 is positive yet insignificant (p=0.234), suggesting marginal Sharpe ratio gains from rate hikes, with confidence intervals crossing zero. Inflation's 0.170 coefficient is significantly positive (p=0.029), implying 1% inflation rise boosts Sharpe ratio by 0.170, fully positive intervals. GDP's -0.023 is insignificantly negative (p=0.377), intervals spanning zero [16]. R-squared of 0.0943 reflects that the model explains about 9.43% of variance in ETF performance, while the adjusted R-squared of 0.0585 accounts for predictor count, indicating modest fit after adjustments [18]. The F-statistic of 2.64 with a p-value of 0.0557 suggests joint significance of variables at the 10% level, affirming collective macroeconomic relevance despite individual variations, based on 80 observations [17]. These regression outcomes collectively underscore the limited yet nuanced explanatory power of the selected macroeconomic variables on ETF risk-adjusted performance in Indonesia's transitional economic landscape, where inflation emerges as the predominant positive driver amid otherwise subdued individual effects.

Figure 1: Determination & Hypothesis test

source: processed with Stata 17

Hypothesis testing addresses research queries. H1 posits negative interest rate effects; positive insignificant coefficient rejects H1, retaining null. H2 assumes negative inflation impact; positive significance rejects null, accepting alternative with reversed direction. H3 expects positive GDP influence; negative insignificance rejects H3. These outcomes resolve inquiries: interest rates exert negligible effects, indicating accommodative policies minimally alter ETF risk-adjusted returns in Indonesia's post-crisis norm [13]. Inflation positively drives performance in moderate regimes, signaling light expansion aiding equity yields underlying ETFs [15]. GDP insignificance, with negative tilt, suggests lag distortions from 2020 contraction, where rebounds fail immediate ETF reflection due to persistent uncertainty. These hypothesis testing results collectively emphasize inflation's pivotal role in enhancing ETF resilience during Indonesia's economic recovery, while underscoring the need for nuanced policy considerations beyond traditional macroeconomic levers.

Interpretations argue connections to theory and prior work. CAPM theory anticipates negative rate-ETF links via borrowing cost hikes; insignificance counters this, as stable low rates (4.35% average) redirect focus to equities, echoing [13] on emerging inflows [12]. Empirical facts show 2020 BI Rate cuts bolstered IHSG recovery, ETF benchmarks [18]. Novelty: in Asian emergings, post-crisis low rates mitigate negatives, diverging from advanced market classics [5]. Inflation's positive effect challenges erosion theories, supported by Hermuningsih et al. [3] on sharia ETF NAV gains in non-crises; moderate rises (to 4.21% in 2022) signal recovery without extreme tightening, boosting technology ETF sentiment [15]. Novelty: post-pandemic, controlled inflation acts as recovery cue, contrasting high-inflation negatives in globals [13]. GDP's negative insignificance defies positive expectations from expansion boosting earnings; volatility (3.003 deviation) induces distortions, aligning with Yeoh [19] on pandemic contractions overriding domestics [16]. Empiricals: 2022 rebound not fully ETF-translated due to Rupiah weakness. Novelty: in Indonesia, GDP not primary post-crisis driver, influenced by pandemic amplification, differing Keynesian aggregates [14]. These interpretive insights collectively advance the discourse

on emerging market finance by revealing context-specific deviations from established theories, thereby offering a refined framework for understanding post-crisis ETF dynamics in volatile environments.

Broader argumentation integrates literature. Moodley et al., [20] highlight crisis assessment challenges, mirroring negative Sharpe averages; positive inflation diverges from Hayet et al. [4] negatives, underscoring Indonesia's OJK-supported ETF diversification [5]. Pre-post comparisons fill gaps where Ridwan et al. [10] ignored GDP contractions. Contributions enrich models with ETF moderation, per Saini & Sehgal [13]; Asian resilience varies, technology robust per Maistrenko [21]. Regressions akin Chudík et al. [12] expose interactions, suggesting VAR extensions [18]. This broader integration of literature underscores the study's contributions to adaptive modeling in Asian contexts, paving the way for enhanced investment strategies and regulatory frameworks attuned to macroeconomic interdependencies.

Expanding on the regression outcomes, the positive coefficient for inflation suggests that in emerging markets like Indonesia, moderate inflationary pressures can act as a stimulus for ETF performance by encouraging consumer spending and corporate revenue growth without triggering aggressive policy tightening. This finding aligns with the observed recovery in ETF NAVs during 2021-2022, where rising commodity prices contributed to sectoral gains in export-oriented industries tracked by popular ETFs. However, the model's modest R-squared value indicates that other unmodeled factors, such as global trade disruptions or domestic fiscal policies, may play complementary roles in shaping ETF resilience.

Moreover, the insignificant negative effect of GDP on the Sharpe ratio highlights potential lags in economic transmission to financial markets, where initial growth spurts post-recession may not immediately benefit ETFs due to investor caution and liquidity constraints. This underscores the importance of considering market sentiment indicators in future models to capture short-term deviations from long-term trends. Overall, these results emphasize the need for diversified ETF portfolios that prioritize inflation-hedging assets during transitional economic periods.

4. Conclusion

Our study of how key economic factors affected exchange-traded funds (ETFs) in Indonesia between 2019 and 2022 offers fresh insights that push back against and build on what we already know about finance in developing markets. We found that interest rates have a positive but not statistically meaningful connection to risk-adjusted returns, meaning that the supportive low-rate policies after the pandemic didn't really shake up how well ETFs performed, investors had come to expect that stability anyway. On the other hand, inflation stood out as a strong positive force: when it rose moderately, it pointed to healthy growth without causing harm, boosting companies' ability to set prices and improving stock returns that ETFs rely on. This flips the usual story about inflation eating away at value and shows how context matters in keeping it under control. GDP growth, though, showed a weak negative tie that wasn't significant, likely due to its wild swings and the slow ripple effects from the pandemic's downturns, it reminds us that economic bounces don't instantly lift financial assets when uncertainty still lingers. Taken together, these results highlight inflation's key part in helping ETFs weather tough transitions, while interest rates and GDP take a backseat, shaped by worldwide disruptions and local comebacks. In doing so, our work adds new data on how economic shifts remake simple investment tools in growing markets, plugging gaps in before-and-after crisis studies and giving a sharper view of how markets adapt in shaky times. By shedding light on these local twists away from standard ideas, the research deepens talks about resilience in emerging economies and gives real-world advice to decision-makers and investors facing recovery challenges, stressing the value of watching mild inflation as a spark for keeping ETFs strong amid persistent global risks. In short, this work underlines how ETFs can flexibly handle economic ups and downs, and it points to smart policies around inflation control as a way to strengthen their place as reliable choices in developing countries. This helps everyday investors create tougher portfolios and advances wider efforts to make finance more inclusive in Indonesia, opening up market-based gains to more people despite the world's ongoing hurdles.

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