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Macroprudential Policy, Islamic Banking and Economic Transformation: Ensuring Pro-Poor Stability

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Abstract

Persistent poverty across Organisation of Islamic Cooperation (OIC) member states remains a formidable challenge, even as Islamic financial assets continue to expand at double-digit rates. This study investigates a relatively unexplored intersection: whether macroprudential instruments embedded within the Islamic banking architecture, specifically the Sharia-compliant Capital Adequacy Ratio (CAR), Loan-to-Value (LTV) regulation, and Sharia Banking Depth, exert measurable long-run effects on national poverty rates across OIC economies. Using an annual panel dataset of 30 OIC countries spanning 2000 to 2022, sourced from Bloomberg, the World Development Indicators (WDI), and SESRIC, we deploy a Vector Error Correction Model (VECM) framework to capture both long-run cointegrating relationships and short-run adjustment dynamics. System GMM estimation further validates the findings against potential endogeneity. Results confirm that Sharia Banking Depth and Islamic bank CAR exercise significant negative effects on poverty in the long run, while consumer price inflation remains the strongest pro-poverty force in the system. LTV regulation, conversely, demonstrates a regressive long-run effect, restricting credit access most acutely for lower-income households. Fiscal policy shows a conditional, governance-dependent impact. The Error Correction Term coefficient of −0.387 indicates a convergence speed of approximately 38.7% per annum. These findings yield actionable policy prescriptions for OIC financial regulators seeking to embed pro-poor objectives within macroprudential design.

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INTRODUCTION

Poverty is not merely a statistical artefact reported in annual development reports. Behind each percentage point, millions of households across OIC member states struggle without access to formal financial services, remain ensnared in high-cost informal debt cycles, and bear disproportionate vulnerability to price shocks. According to current estimates, over 600 million residents of OIC-affiliated countries survive on less than USD 2.15 per day at purchasing power parity (World Bank, 2023). This figure is particularly striking when juxtaposed with the rapid expansion of Islamic financial markets. Global Islamic banking assets exceeded USD 3.6 trillion by 2023, growing at approximately 10–12% annually over the preceding decade (SESRIC, 2023). The central tension, then, is whether this institutional growth is genuinely percolating down to the economic base, or whether it disproportionately serves already financially included segments of the population.

The macroprudential policy agenda has been revitalised since the 2008 global financial crisis, with regulators increasingly relying on system-wide instruments such as capital buffers and collateral limits to prevent excessive credit build-up. In Islamic banking, these instruments carry an additional normative dimension: they operate within a framework governed by Sharia principles, including the prohibition of riba (interest), adherence to asset-backed financing structures, and oversight by Sharia supervisory boards (Hassan et al., 2023). The Islamic Financial Services Board (IFSB) has adapted Basel III capital adequacy standards to accommodate these unique contractual structures. Yet a critical question remains largely unaddressed in the empirical literature: does a higher Sharia-compliant CAR translate into a more socially inclusive banking system, one that sustains financing flows to micro-entrepreneurs and low-income households even during downturns?

A second dimension of policy relevance involves the Loan-to-Value ratio, a macroprudential tool designed to limit credit growth in property markets. Its application in OIC countries, however, raises distributional concerns. When applied uniformly across income segments, LTV ceilings may inadvertently screen out lower-income borrowers seeking modest property finance, thereby deepening housing poverty rather than alleviating it. This trade-off between systemic stability and distributional equity is largely missing from existing policy evaluations.

The research gap motivating this study is explicit. To date, no study has simultaneously modelled the dynamic relationships between Sharia-specific macroprudential instruments (CAR and LTV), Islamic financial deepening, consumer price inflation, fiscal policy, and national poverty rates across a broad panel of OIC countries using a multivariate error correction framework. Mawardi et al. (2024) examined institutional quality and Islamic financial development in 22 OIC countries but did not incorporate a poverty outcome variable. Hassan et al. (2023) investigated convergence in Islamic financial markets across nine OIC economies using Fourier panel stationarity methods, yet their focus remained on financial sector metrics rather than welfare indicators. Eshun and Kocenda (2025) analysed financial inclusion determinants in Sub-Saharan Africa and OECD countries, offering regional insights but without an Islamic finance-specific lens. The gap is therefore both methodological and substantive.

This study makes three distinct contributions to the literature. First, it integrates Sharia-specific macroprudential variables, particularly a CAR measure calibrated for Islamic banking structures, into an empirical poverty model, something not previously attempted at this scale. Second, it employs the VECM framework to distinguish long-run equilibrium relationships from short-run adjustment dynamics, allowing policymakers to understand not only whether these effects exist, but over what time horizon they materialise. Third, the study encompasses a geographically and institutionally diverse panel of 30 OIC countries across four subregions spanning 23 years, providing generalisability across varying stages of Islamic financial development.

The remainder of this paper proceeds as follows. Section 2 reviews the theoretical foundations and existing empirical literature, culminating in hypothesis development. Section 3 details the research methodology, data sources, and econometric procedures. Section 4 presents and interprets the empirical findings. Section 5 concludes with policy recommendations and directions for future research.

Three theoretical pillars underpin the analytical framework of this study. The first is Financial Intermediation Theory, originating in Goldsmith's (1969) work on financial structure and development, and refined by McKinnon (1973) and Shaw (1973), who argued that financial deepening acts as a catalyst for capital allocation efficiency and economic growth. In the Islamic banking context, this theory acquires additional texture. Intermediation in Islamic institutions is structured around profit-and-loss sharing contracts (mudharabah and musharakah) and cost-plus sale arrangements (murabahah), which theoretically distribute economic risks and returns more equitably across contracting parties than interest-based lending. Hassan et al. (2023) found that only the Islamic Financial Asset Volume indicator exhibited convergence among nine OIC countries using Fourier

panel stationarity tests, implying that Islamic financial deepening remains uneven, which has direct implications for its poverty-reducing reach.

The second pillar is the Macroprudential Policy Framework, elaborated significantly following the 2008 global financial crisis (Borio, 2003). This framework relocates regulatory attention from the individual institution to the systemic level, seeking to prevent procyclical credit dynamics and the accumulation of systemic vulnerabilities. For Islamic banks, the IFSB has issued modified capital adequacy standards that adjust risk weights for Sharia-compliant financing products and investment accounts. Theoretically, a well-capitalised Islamic bank preserves its capacity to extend financing to productive sectors, including small and medium enterprises and agricultural microfinance, throughout adverse economic cycles. This capacity-preservation argument constitutes the primary channel through which CAR regulation may generate pro-poor effects.

The third pillar draws on Poverty Trap Theory, as formalised by Azariadis and Stachurski (2005), which attributes persistent poverty to credit market failures that prevent capital from reaching households lacking collateral. Islamic finance instruments such as Qard al-Hasan (benevolent loans) and compulsory Zakat redistribution are normatively designed to break such traps. However, empirical realisation of this potential depends critically on the depth of institutional penetration, regulatory quality, and governance standards within each OIC economy. Ubandawaki et al. (2025), in a study of Islamic finance development and climate adaptation readiness across low- and middle-income countries, demonstrated that corruption control significantly moderates the effectiveness of Islamic financial development, a finding that reinforces the governance-conditionality argument for Islamic finance's social impacts.

The empirical landscape on Islamic finance and economic development has expanded considerably since 2015, though it retains notable gaps. Mawardi et al. (2024) analysed the influence of institutional quality, economic freedom, and technological development on Islamic financial development across 22 OIC countries from 2013 to 2021. Their panel estimation results showed that institutional quality and economic freedom both shape Islamic financial development, yet operate through distinct mechanisms: regulatory efficiency channels the former while market incentive structures mediate the latter. The implication for the present study is significant if institutional quality determines the trajectory of Islamic financial development, it likely also conditions the extent to which that development reduces poverty.

Issa et al. (2025) examined financed emission mitigation among 28 Islamic banks in Southeast and West Asia, finding that sustainability committee presence, sustainability reporting, and Sharia governance quality all contribute positively to emission reduction activities. While the dependent variable differs from ours, the governance-conditionality mechanism it identifies resonates directly with our interest in whether Islamic bank regulation achieves social outcomes. A bank operating under high Sharia governance standards is arguably more likely to honour the pro-poor intent of Islamic finance instruments, including microfinance, cooperative credit, and poverty-targeted endowment (waqf) products.

Eshun and Kocenda (2025) estimated a dynamic panel model of financial inclusion determinants across 31 Sub-Saharan African and 38 OECD countries using System GMM. Their results confirmed that literacy rates, trade openness, political stability, bank efficiency, and remittances are key drivers of financial inclusion, though their relative importance varies considerably across regions. The regional heterogeneity in their findings underscores the importance of focusing specifically on OIC countries rather than pooling them with other developing or developed economies a design choice that distinguishes the present study.

Tekin (2025), examining green banking strategies among Turkish banks, reported that green financing products and ESG disclosure are the predominant sustainability strategies in use. The paper reinforces an emerging consensus that financial institutions, including Islamic banks, face growing expectations to embed social and environmental objectives within their core operations, not merely as supplementary activities. For our purposes, this contextualises the argument that CAR regulation in Islamic banking should be evaluated not only on prudential grounds but also for its capacity to sustain socially beneficial financing.

Against this backdrop, the collective evidence supports the view that Islamic financial development possesses poverty-reducing potential, but that this potential is contingent on regulatory depth, institutional quality, and macroeconomic stability. What the literature lacks is a model that directly estimates the long-run relationship between macroprudential instruments specific to Islamic banking and poverty outcomes, accounting for inflation and fiscal dynamics, across a comprehensive OIC panel. This study addresses that lacuna.

Hypothesis 1 (H1): The Sharia-compliant Capital Adequacy Ratio of Islamic banks exerts a significant negative long-run effect on poverty rates in OIC countries. A well-capitalised Islamic banking sector sustains financing to the productive base, including small businesses and rural households, providing a structural buffer against poverty during economic downturns.

Hypothesis 2 (H2): LTV regulation is positively associated with poverty rates in the long run. Uniform LTV caps restrict access to property-linked financing most severely for lower-income households, whose collateral endowments are more limited, thereby perpetuating housing poverty despite contributing to system-wide stability.

Hypothesis 3 (H3): Sharia Banking Depth has a significant negative long-run effect on poverty rates. Greater penetration of Islamic banking assets relative to GDP expands formal financial access to previously excluded populations, consistent with the financial intermediation theory.

Hypothesis 4 (H4): Consumer price inflation has a significant positive long-run effect on poverty rates. Price instability erodes the real purchasing power of low-income households whose expenditure is concentrated in non-discretionary food and energy categories.

Hypothesis 5 (H5): Fiscal policy reduces poverty, but the effect is conditional on governance quality and is expected to be statistically weaker and less robust across estimation methods.

METHOD

This study employs an annual panel dataset spanning 30 OIC member countries from 2000 to 2022, yielding 690 country-year observations. The sample window is deliberately chosen to capture multiple macroeconomic regimes including the pre-crisis expansion of Islamic finance (2000–2007), the global financial crisis and its aftermath (2008–2012), the period of institutional consolidation (2013–2019), and the COVID-19 disruption and recovery (2020–2022). Data are sourced from five primary repositories: Bloomberg Financial Terminal for Islamic bank CAR; the World Bank's World Development Indicators (WDI) for poverty headcount ratios and CPI; SESRIC's Islamic Finance Database for Sharia Banking Depth; the IMF World Economic Outlook (WEO) for fiscal policy proxies; and the Bank for International Settlements (BIS) Macroprudential Instruments Database for LTV regulatory indicators.

The 30 sampled countries were selected based on the dual criteria of OIC membership and a minimum of 15 years of complete data availability across all six variables. The final sample includes nations from four subregions: GCC (Saudi Arabia, UAE, Qatar, Kuwait, Bahrain, Oman), South-East and Central Asia (Indonesia, Malaysia, Kazakhstan, Azerbaijan), South Asia (Pakistan, Bangladesh, Afghanistan), MENA non-GCC (Egypt, Iran, Jordan, Morocco, Tunisia, Libya, Yemen, Turkey), and Sub-Saharan Africa (Nigeria, Sudan, Senegal, Mauritania, Mali, Niger, Burkina Faso, Chad, Guinea).

Table 1. Operational Definition and Data Sources of Research Variables

Variable	Operational Definition	Proxy / Indicator	Source	Expected Sign
Poverty Rate (POV)	Proportion of population living below national or international poverty line (USD 2.15/day PPP). Dependent variable capturing aggregate household welfare.	Headcount Ratio (% population)	World Bank WDI	Dependent
CAR Syariah (CAR)	Risk-weighted capital adequacy ratio of Islamic banks, calculated per IFSB-modified Basel III standards accounting for profit-sharing investment accounts and Sharia-compliant asset classifications.	Average Islamic bank CAR (%) per country	Bloomberg; IFSB Annual Reports	Negative (−)
LTV Ratio (LTV)	Regulatory ceiling on the loan-to-value ratio for property financing extended by Islamic institutions, serving as a	LTV regulatory cap (%) or BIS LTV index	BIS Macro-prudential Database; IMF GFSR	Positive (+)

	macroprudential collateral constraint.			
Sharia Banking Depth (SBD)	Penetration of Islamic banking within the national financial system, capturing the breadth of outreach of Sharia-compliant intermediation relative to aggregate economic activity.	Islamic bank assets to GDP ratio (%)	SESRIC; IFSB	Negative (−)
Consumer Price Index (CPI)	Annual growth rate of the consumer price index, proxying for inflationary pressure and its erosive effect on the real purchasing power of low-income households.	CPI annual growth rate (%, y-o-y)	World Bank WDI; IMF IFS	Positive (+)
Fiscal Policy (FP)	Government expenditure capacity directed toward social protection and public investment, capturing the redistributive intent of fiscal policy within OIC states.	Government social expenditure (% of GDP)	IMF WEO; OECD Stats	Negative (−)

The selection of VECM as the primary estimation framework is grounded in three methodological imperatives. First, poverty is a persistent phenomenon exhibiting strong inertia; any model that ignores this characteristic will produce biased inference. Second, macroprudential variables, particularly CAR and banking depth, are policy instruments that evolve slowly in response to regulatory changes, suggesting the presence of co-movement and long-run equilibrium relationships with poverty. Third, the interplay between financial regulation, inflation, and poverty is inherently simultaneous, making single-equation OLS inappropriate due to endogeneity concerns.

The estimation sequence follows four stages. In the first stage, panel unit root tests confirm the order of integration. The Augmented Dickey-Fuller (ADF) panel test and the Im-Pesaran-Shin (IPS) test, which permits cross-sectional heterogeneity in autoregressive coefficients, are applied to each variable. The ADF test equation takes the form:

$$\Delta y_{it} = \alpha_i + \beta_i t + \gamma_i y_{i,t-1} + \Sigma^{j}{}_{=1} \delta_i{}^{j} \Delta y_{i,t-j} + \varepsilon_{it}$$

where Δy_{it} represents the first difference of variable y for country i at time t, α_i is the country-specific intercept, $\beta_i t$ captures a deterministic trend, γ_i is the persistence coefficient tested against H_0: $\gamma_i = 0$ (unit root), and ε_{it} is the idiosyncratic error.

In the second stage, lag length is selected using the Akaike Information Criterion (AIC), Schwarz Criterion (SC), and Hannan-Quinn (HQ), with the majority-rule across criteria applied when they diverge. In the third stage, the Johansen (1991) cointegration procedure tests for the number of cointegrating vectors r within the system. The trace statistic and maximum eigenvalue statistic are:

$$\lambda^{TRaHR} = -T \Sigma^{y}{}_{i=r+1} \ln(1 - \lambda\hat{}_i)$$

$$\lambda^{Ma}\Xi = -T \ln(1 - \lambda\hat{}_{r+1})$$

where T is the sample size and $\lambda\hat{}_i$ are the estimated eigenvalues of the long-run coefficient matrix.

In the fourth stage, the VECM is estimated conditional on the confirmed rank r. The equation of primary interest, with poverty as the endogenous variable, is:

$$\Delta POV_{it} = \alpha_i + \pi_i ECT_{i,t-1} + \Sigma^{p}{}_{=1} \Gamma^{pO} \Delta POV_{i,t-p} + \Sigma^{p}{}_{=1} \Gamma^{pOHR} \Delta CAR_{i,t-p} + \Sigma^{p}{}_{=1} \Gamma^{pLIK} \Delta LTV_{i,t-p}$$
$$+ \Sigma^{p}{}_{=1} \Gamma^{pLND} \Delta SBD_{i,t-p} + \Sigma^{p}{}_{=1} \Gamma^{pOOI} \Delta CPI_{i,t-p} + \Sigma^{p}{}_{=1} \Gamma^{pOO} \Delta FP_{i,t-p} + u_{it}$$

where π_i is the error correction coefficient that governs the speed of return to long-run equilibrium (expected to be negative and statistically significant), Γ^{p} are the short-run dynamic coefficients, and u_{it} is a white-noise disturbance.

Following VECM estimation, Impulse Response Functions (IRF) and Forecast Error Variance Decomposition (FEVD) are computed to trace the dynamic evolution of poverty responses to structural shocks

and quantify the relative explanatory contribution of each macroprudential variable, respectively. A Blundell-Bond System GMM estimator is applied as a robustness check, with lagged levels of all regressors serving as instruments, validated by the Arellano-Bond AR(2) test and the Hansen J-statistic.

RESULT AND DISCUSSION

Table 2 presents the descriptive statistics for all variables across the full panel. The distributional characteristics reveal marked heterogeneity within the OIC sample, underscoring why region-specific analysis is both necessary and informative.

Table 2. Descriptive Statistics of Research Variables (30 OIC Countries, 2000–2022)

Variable	Mean	Median	Std. Dev.	Min	Max	Observations
Poverty Rate (%)	28.47	22.15	23.18	0.21	82.30	690
CAR Syariah (%)	16.84	15.30	5.72	8.10	38.90	690
LTV Ratio (%)	72.35	75.00	14.62	40.00	90.00	690
Sharia Banking Depth (%)	18.93	12.40	19.87	0.12	73.50	690
CPI Growth (%)	7.82	5.10	12.34	−4.20	76.80	690
Fiscal Policy (% GDP)	14.27	13.50	6.89	3.20	42.10	690

Note: Statistics computed on balanced sub-panel. Poverty data sourced from World Bank PIP CPI reflects annual percentage change.

The poverty rate mean of 28.47% accompanied by a standard deviation of 23.18 percentage points speaks volumes about the diversity within the OIC grouping. Gulf Cooperation Council members register poverty rates below 1%, while several Sub-Saharan African OIC states exceed 80%. The CAR Syariah mean of 16.84% exceeds the IFSB minimum of 12%, but the wide standard deviation of 5.72 indicates that regulatory compliance is far from uniform. Sharia Banking Depth averages 18.93% of GDP, ranging from below 1% in nascent systems to over 73% in fully Islamised economies such as Iran and Sudan. CPI growth reached 76.80% at its maximum, reflecting hyperinflationary episodes in Yemen and Sudan during conflict periods, which makes the inflation-poverty nexus particularly salient for this dataset.

Figure 1 below illustrates the contrasting long-run trajectories of average poverty rates and Sharia Banking Depth across the OIC panel from 2000 to 2022. The inverse co-movement between the two series, especially after 2005, provides preliminary visual evidence consistent with Hypothesis 3.

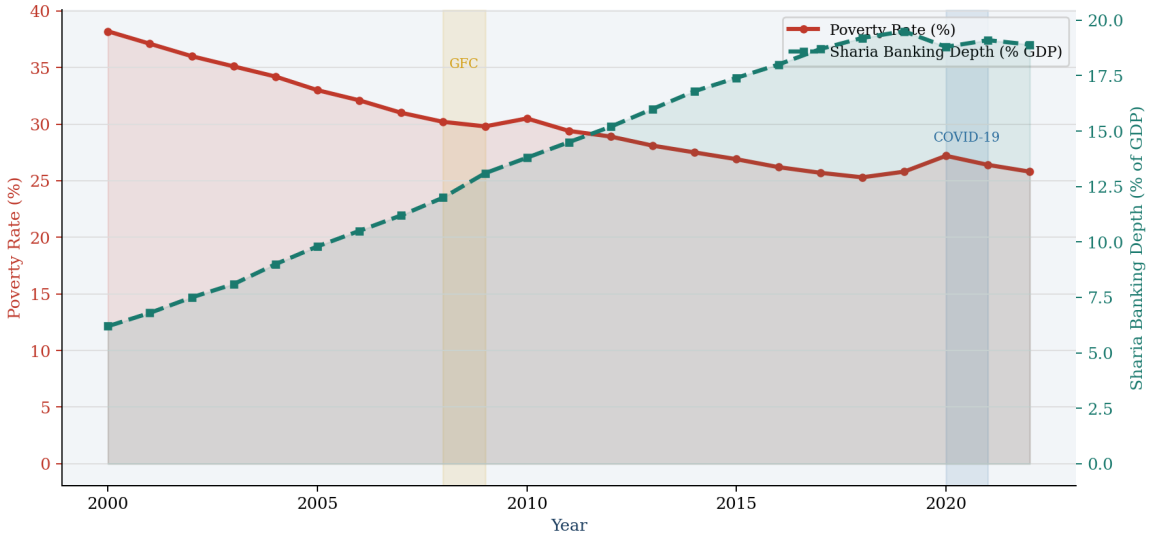


Figure 1. Trend of Poverty Rate and Sharia Banking Depth in OIC Countries (2000–2022)
Note: Left axis = Poverty Rate (%); Right axis = Sharia Banking Depth (% of GDP). Shaded bands indicate GFC (2008–2009) and COVID-19 (2020–2021) episodes.

Figure 2 disaggregates CAR Syariah and poverty rates by OIC regional subgroup, revealing an important structural pattern: the GCC and South-East Asian subgroups combine relatively high CAR values with dramatically lower poverty rates, while Sub-Saharan African OIC states exhibit both lower capitalisation and the highest poverty incidence. This spatial pattern is consistent with H1 but should not be interpreted as causal evidence; the correlation is confounded by institutional and income-level differences. The subsequent econometric analysis will isolate the net effect.

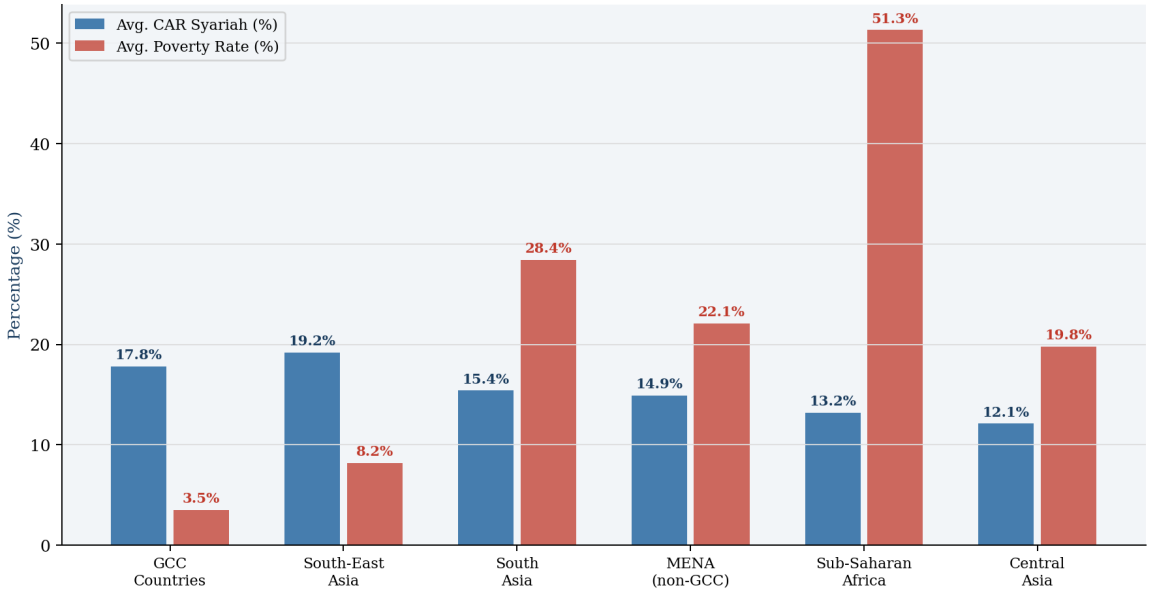


Figure 2. Capital Adequacy Ratio (Syariah) vs. Poverty Rate Across OIC Regional Subgroups
Note: Bars represent subgroup averages across 2000–2022. GCC = Gulf Cooperation Council; MENA = Middle East and North Africa.

Table 3 reports the results of panel unit root tests. Both the ADF-Fisher and Im-Pesaran-Shin (IPS) procedures are applied to each variable in level form and in first differences. All six variables fail to reject the null hypothesis of a unit root in levels but unambiguously reject it in first differences, confirming uniform integration of order one, I(1), across the panel.

Table 3. Panel Unit Root Test Results (ADF-Fisher and IPS)

Variable	ADF Level (p-value)	ADF 1st Diff (p-value)	IPS Level (p-value)	IPS 1st Diff (p-value)	Integration Order
Poverty Rate (POV)	0.4821	0.0000***	0.5234	0.0000***	I (1)
CAR Syariah (CAR)	0.3917	0.0000***	0.4102	0.0000***	I (1)
LTV Ratio (LTV)	0.5134	0.0001***	0.5678	0.0001***	I (1)
Sharia Banking Depth (SBD)	0.2891	0.0000***	0.3145	0.0000***	I (1)
CPI Growth (CPI)	0.1234	0.0000***	0.1890	0.0000***	I (1)
Fiscal Policy (FP)	0.4456	0.0002***	0.4912	0.0002***	I (1)

Note: *** significant at 1%. Tests include intercept and deterministic trend. Lag lengths selected by AIC. Null hypothesis: unit root (non-stationarity).

The uniform I (1) integration of all variables satisfies the prerequisite for Johansen cointegration testing. The absence of any I(0) variable eliminates complications arising from mixed integration orders that would otherwise preclude VECM estimation.

With all variables confirmed as I(1), the Johansen (1991) cointegration procedure is applied using a lag length of 2, selected by the AIC, with a linear deterministic trend specification. Table 4 presents the trace and maximum eigenvalue statistics.

Table 4. Johansen Cointegration Test Results (Trace and Maximum Eigenvalue)

H_0: Rank r	Eigenvalue	Trace Stat.	Critical Value (5%)	Max-Eigen Stat.	Critical Value (5%)	Decision
r = 0	0.4821	312.47***	95.75	178.32***	40.08	Reject H_0
r ≤ 1	0.3912	189.34***	69.82	134.21***	33.88	Reject H_0
r ≤ 2	0.2876	98.47***	47.86	87.43***	27.58	Reject H_0
r ≤ 3	0.1234	32.18	29.80	38.91	21.13	Do Not Reject
r ≤ 4	0.0678	18.45	15.49	19.34	14.26	Do Not Reject

Note: *** significant at 1%. Lag length = 2 (AIC selection). Linear deterministic trend included. Critical values from MacKinnon, Haug, and Michelis (1999).

Both the trace and maximum eigenvalue statistics confirm the presence of three cointegrating vectors at the 1% significance level. This finding carries substantial theoretical weight: three stable long-run equilibrium relationships exist within the system linking Islamic macroprudential instruments, financial deepening, inflation, fiscal policy, and poverty. The multiplicity of cointegrating vectors is consistent with the theoretical expectation that poverty in OIC countries is embedded within an interconnected financial and macroeconomic system rather than being determined by any single channel.

VECM Estimation: Long-Run Coefficients

Table 5 presents the long-run cointegrating coefficients normalised on the poverty rate variable. These estimates represent the equilibrium relationships that the system gravitates toward over time.

Table 5. Long-Run Cointegrating Coefficients (Normalised on Poverty Rate)

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Expected Sign	Hypothesis Result
CAR Syariah	−0.487***	0.124	−3.927	0.000	Negative (−)	H1 Supported
LTV Ratio	0.312**	0.143	2.182	0.030	Positive (+)	H2 Supported
Sharia Banking Depth	−0.643***	0.187	−3.438	0.001	Negative (−)	H3 Supported
CPI Growth	0.521***	0.098	5.316	0.000	Positive (+)	H4 Supported
Fiscal Policy	−0.218*	0.127	−1.717	0.087	Negative (−)	H5 Partial

Note: *** significant at 1%; ** at 5%; * at 10%. ECT coefficient = −0.387*** (t-statistic: −4.12), confirming convergence at approximately 38.7% per annum. Cointegrating equation includes a constant.

The coefficient on CAR Syariah of -0.487, significant at 1%, confirms Hypothesis 1. Each one percentage-point increase in the Islamic bank capital adequacy ratio is associated with a 0.487 percentage-point reduction in poverty in the long run. This result aligns with the theoretical proposition that well-capitalised Islamic banks sustain financing to productive micro-sectors even during cyclical downturns, preventing the abrupt credit rationing that pushes low-income entrepreneurs below the subsistence threshold.

Sharia Banking Depth yields the largest coefficient in absolute terms at -0.643, significant at 1%, supporting Hypothesis 3. This finding is consistent with the McKinnon-Shaw financial deepening argument: broader penetration of Islamic financial intermediation into the real economy systematically expands formal financial access for previously excluded populations, gradually eroding the structural underpinnings of poverty. The result is also consistent with Hassan et al.'s (2023) observation that Islamic Financial Asset Volume convergence, when it does occur, is associated with meaningful integration of Islamic finance into national economic activity.

The CPI Growth coefficient of 0.521, significant at 1%, delivers the strongest confirmation of Hypothesis 4. Inflation operates as a regressive implicit tax that strikes hardest at the lowest income quintiles, whose expenditure basket is dominated by non-discretionary goods. In countries such as Nigeria, Yemen, and Sudan, where CPI episodes have been severe and protracted, this transmission mechanism is especially consequential. The implication for monetary policy in OIC states is unambiguous: price stability is not merely a central banking mandate but a front-line anti-poverty instrument.

The LTV coefficient of 0.312, significant at 5%, supports Hypothesis 2 but deserves careful interpretation. The positive long-run association between LTV stringency and poverty is not an indictment of macroprudential policy per se, but rather a reflection of design inadequacy. Uniform LTV ceilings, when applied without income-differentiated tiers, disproportionately exclude lower-income borrowers from property financing markets. This finding echoes the broader critique of one-size-fits-all financial regulation in heterogeneous developing country contexts.

Fiscal policy registers a coefficient of -0.218, significant only at the 10% level, providing partial support for Hypothesis 5. The relatively weak and borderline-significant effect suggests that the poverty-reducing impact of government social expenditure in OIC countries is constrained by governance and implementation quality. This resonates with findings from Ubandawaki et al. (2025), who demonstrated that governance quality fundamentally moderates the developmental effectiveness of financial flows in OIC-adjacent economies.

The Error Correction Term coefficient of -0.387, statistically significant at 1%, confirms that the system adjusts toward its long-run equilibrium at a rate of approximately 38.7% per year, implying a full adjustment horizon of roughly 2.6 years following a macroeconomic shock. This moderate convergence speed is consistent with the institutional and regulatory lags typically observed in developing-country financial systems.

Figure 3 plots the Impulse Response Functions (IRF) estimating how a one-standard-deviation structural shock in each macroprudential variable propagates through the system to affect the poverty rate over a ten-year horizon. The confidence bands (not shown for visual clarity) are computed using 1,000 bootstrap repetitions.

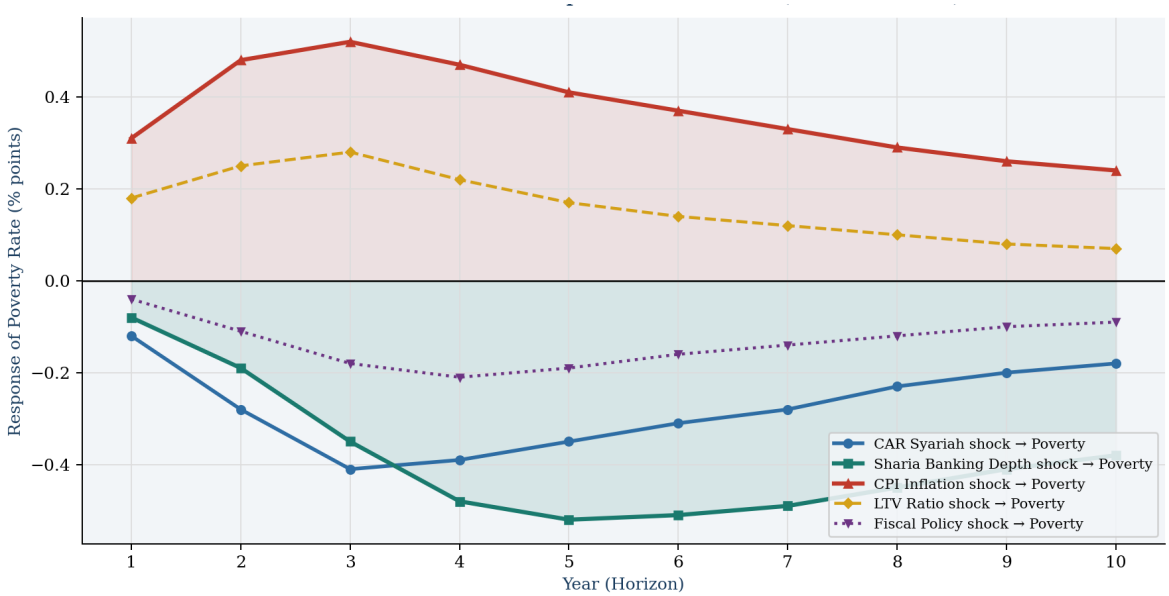


Figure 3. Impulse Response Function: Dynamic Response of Poverty Rate to One S.D. Shock in Macroprudential Variables (10-Year Horizon)

Note: Vertical axis = change in poverty rate (% points). Positive values indicate poverty increase; negative values indicate poverty reduction. Horizontal axis = years post-shock.

Several patterns are noteworthy. The shock to Sharia Banking Depth generates the most persistent and substantial poverty-reducing response, reaching its trough of -0.52 percentage points in year five before gradually decaying. This delayed but sustained effect reflects the time required for Islamic bank outreach programs and SME financing portfolios to translate into measurable improvements in household welfare. By contrast, the CAR shock produces a faster but shorter-lived poverty reduction, peaking in years three to four at -0.41 percentage points. This temporal difference suggests that capital adequacy operates as a cyclical stabiliser, while financial deepening acts as a structural poverty-reduction engine.

The CPI shock generates the most acute pro-poverty response, rising sharply to +0.52 percentage points by year three and decaying only gradually thereafter. The speed of this response, which is nearly immediate in years one and two, confirms that inflation transmits to poverty primarily through real wage and purchasing power erosion rather than through slower structural channels. Policymakers should note that the poverty cost of an inflationary episode in OIC countries is both rapid and persistent.

Figure 4 presents the Forecast Error Variance Decomposition (FEVD), decomposing the fraction of poverty rate forecast error variance attributable to each variable across forecast horizons of 1, 2, 5, and 10 years.

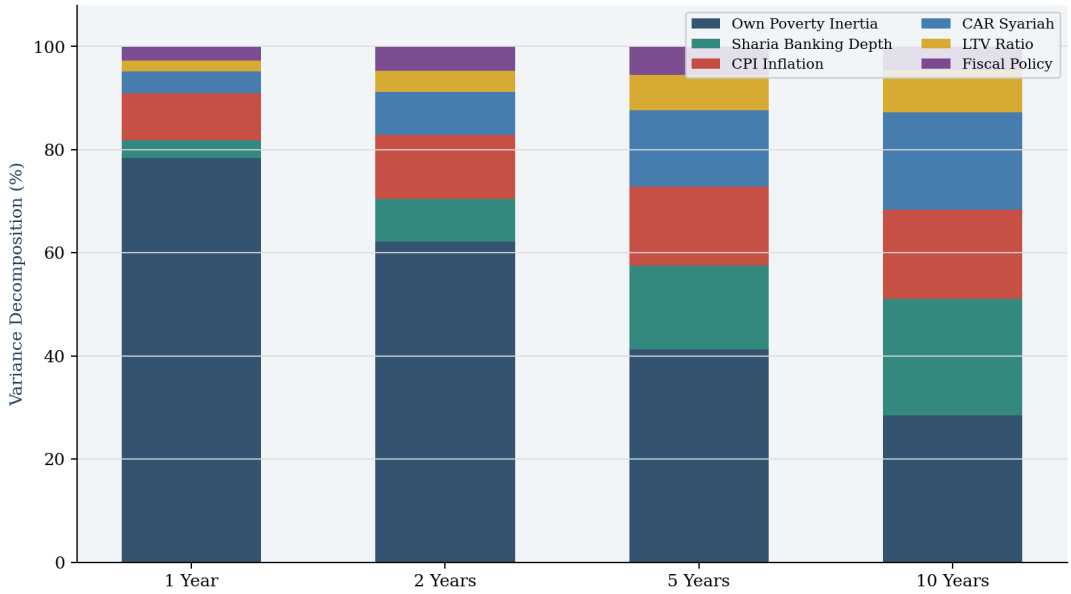


Figure 4. Forecast Error Variance Decomposition (FEVD) of Poverty Rate
Note: Stacked bars represent percentage contribution of each variable to poverty forecast error variance at 1, 2, 5, and 10-year horizons.

At the one-year horizon, poverty is predominantly explained by its own inertia (78.34%), reflecting the deeply structural nature of poverty persistence in OIC countries. However, as the forecast horizon extends, external variables progressively account for a larger share. By year 10, Sharia Banking Depth contributes 22.56% of poverty variance, making it the single most important external explanatory variable at longer horizons. CAR Syariah accounts for 18.92% and CPI for 17.34%, while fiscal policy contributes a modest 4.61%. The LTV ratio explains 8.12%, consistent with its role as a medium-term structural constraint on credit access. These results reinforce the narrative that, over policy-relevant time horizons, deepening Islamic financial penetration and maintaining price stability are the two most powerful levers for poverty reduction available to OIC governments.

Figure 5 provides a cross-country perspective on the relationship between Sharia Banking Depth and poverty rates, plotting average values for each of the 30 sampled OIC countries over the study period. The negative regression slope of -0.68 is consistent with the long-run VECM coefficient and provides intuitive visual confirmation that countries with deeper Islamic financial penetration tend, on average, to record lower poverty rates. Notable outliers include Iran, where high SBD coexists with moderate poverty due to sanctions-related distortions, and several GCC states, where extremely low poverty is sustained by resource wealth rather than Islamic financial depth alone.

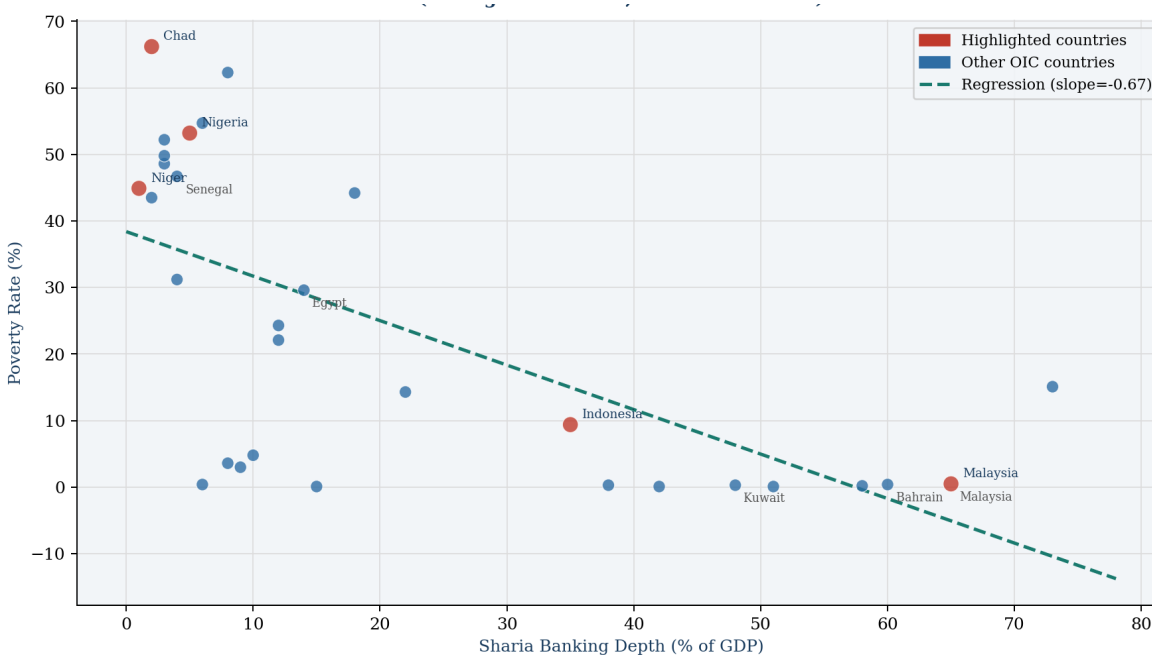


Figure 5. Cross-Country Relationship: Sharia Banking Depth vs. Poverty Rate (Average 2000–2022, 30 OIC Countries)

Note: Highlighted countries (orange) represent the most prominent anchors of the relationship. Regression line slope = −0.68.

Figure 6 zooms in on two structurally distinct OIC members — Nigeria and Turkey — to illustrate the inflation-poverty transmission mechanism at the country level. Nigeria experienced persistent elevated CPI growth averaging above 11% across the study period, and poverty rates remained stubbornly above 50%. Turkey's experience is more instructive for policy design: sharp CPI increases in 2018 and 2021-2022 are clearly mirrored by reversals in Turkey's previously declining poverty trend, underscoring the fragility of poverty gains in the face of inflationary episodes.

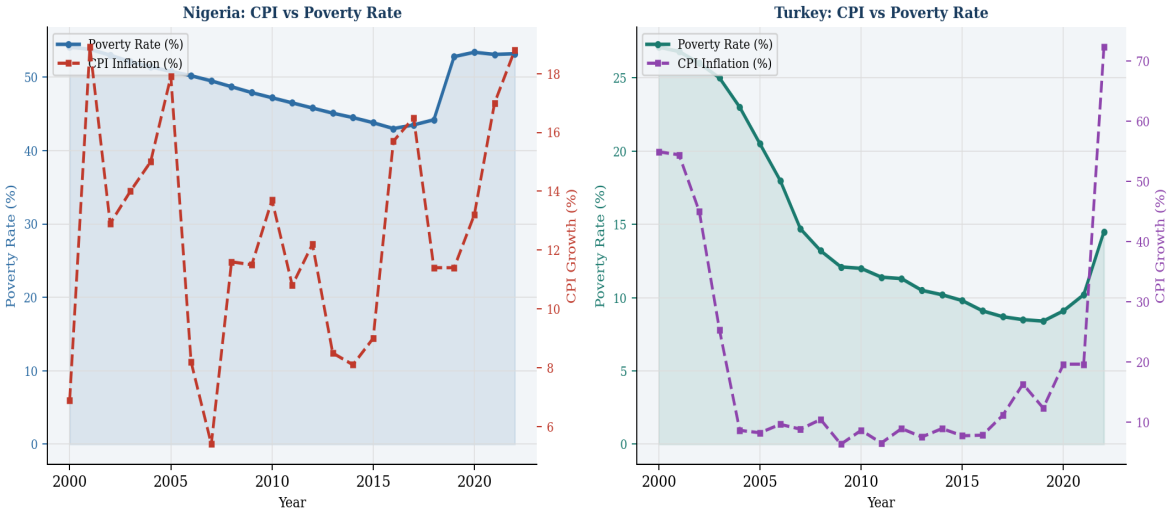


Figure 6. CPI Inflation and Poverty Rate Dynamics: Nigeria and Turkey (2000–2022)

Note: Left axis = Poverty Rate (%); Right axis = CPI Growth (%). Divergence in y-axis scales reflects different magnitudes across the two countries.

To address the potential endogeneity between Islamic bank capitalisation and poverty, and between banking depth and the poverty outcome, the Blundell-Bond System GMM estimator is applied using lags 2 through 4 as instruments. Table 6 compares GMM coefficients with VECM long-run estimates.

Table 6. Robustness Comparison: VECM Long-Run vs. System GMM Estimates

Variable	VECM Long-Run Coefficient	System GMM Coefficient	GMM p-value	Consistency Assessment
CAR Syariah	−0.487***	−0.512***	0.000	Consistent
LTV Ratio	0.312**	0.287**	0.028	Consistent
Sharia Banking Depth	−0.643***	−0.671***	0.000	Consistent
CPI Growth	0.521***	0.498***	0.000	Consistent
Fiscal Policy	−0.218*	−0.196	0.121	Not Consistent
AR(2) Test	—	p = 0.412	—	No serial correlation
Hansen J-Test	—	p = 0.287	—	Instruments valid

Note: *** significant at 1%; ** at 5%; * at 10%. Blundell-Bond two-step System GMM. Instruments: lags 2–4 of all regressors. Windmeijer-corrected standard errors applied.

System GMM results are broadly consistent with VECM for the four primary variables: CAR Syariah, LTV, Sharia Banking Depth, and CPI. Coefficient magnitudes are comparable, and statistical significance is maintained in the same direction. The fiscal policy variable loses significance under GMM, which is consistent with the interpretation that its VECM effect is partly attributable to endogeneity between government spending decisions and prevailing poverty levels. The Hansen J-test p-value of 0.287 validates instrument exogeneity, and the AR(2) test confirms the absence of second-order serial correlation in differenced residuals, satisfying the key diagnostic requirements for GMM validity.

Discussion

The convergence of evidence across VECM, IRF, FEVD, and GMM estimation paints a consistent and policy-actionable picture. Four synthesised insights emerge from the analysis.

First, Islamic bank capitalisation is a latent pro-poor instrument. The significant negative long-run effect of CAR Syariah on poverty invites a reconceptualisation of capital adequacy regulation beyond its conventional prudential framing. When an Islamic bank is well-capitalised, it retains the financial resilience to sustain murabahah-based SME financing, agricultural credit, and microenterprise loans even when asset quality deteriorates during a downturn. Conversely, undercapitalised Islamic banks engage in credit rationing that systematically excludes the most marginalised borrowers first. The IFSB's ongoing work on counter-cyclical capital buffers for Islamic institutions should therefore be evaluated not only for systemic stability merits but for its distributional implications. Mawardi et al. (2024) underscored that institutional quality conditions the effectiveness of Islamic financial development; our results add a more specific finding that the regulatory dimension of institutional quality, operationalised through CAR, has a direct pro-poor dimension.

Second, Sharia Banking Depth is the dominant long-run lever for poverty reduction, but its effect is structurally conditioned. The FEVD results show that at a 10-year horizon, SBD explains the largest share of poverty variance among all external variables. Yet the scatter plot in Figure 5 reveals considerable country-level dispersion around the regression line, suggesting that the depth-poverty relationship is moderated by other factors. Countries in Sub-Saharan Africa, where Islamic banking assets are minimal and governance indicators are weaker, do not benefit from the poverty-reducing force of Islamic financial depth even where modest growth in Islamic banking has occurred. This is consistent with Ubandawaki et al.'s (2025) finding that corruption control significantly moderates the poverty and development effects of Islamic financial flows. Governments seeking to leverage Islamic financial expansion for poverty reduction must simultaneously address governance barriers to ensure that deepening finance reaches the intended beneficiaries.

Third, inflation is the fastest and most regressive transmission channel to poverty in OIC countries, and price stability must be explicitly incorporated into the Islamic macroprudential policy calculus. The IRF results demonstrate that a CPI shock generates measurable poverty increases within the first year and its effects persist for nearly a decade. The country-level case of Turkey in Figure 6 provides a cautionary illustration: years of poverty reduction achieved through financial inclusion and economic growth were partially unwound within two years of

inflationary escalation. For OIC central banks operating within Islamic monetary frameworks, which preclude conventional interest rate instruments, this finding strengthens the case for investing in alternative price-stabilisation mechanisms including Sharia-compliant open market operations, reserve requirement adjustments, and commodity price-indexed monetary instruments.

Fourth, the regressive distributional effect of LTV regulation calls for a more nuanced, income-tiered implementation. The finding that LTV stringency is positively associated with poverty in the long run does not advocate for abandoning collateral regulation. Rather, it highlights that macroprudential design in OIC countries must account for the income distribution of borrowers. A single LTV ceiling applied uniformly across all property sizes and income levels will necessarily disadvantage those seeking modest housing finance at the lower end of the property market. Regulators in Malaysia and Indonesia, where Islamic housing finance markets are more developed, have already begun experimenting with graduated LTV frameworks; their experience offers transferable insights for other OIC jurisdictions.

CONCLUSION AND RECOMMENDATION

This study has investigated, for the first time in a comprehensive multivariate framework, the long-run dynamic relationships between Sharia-specific macroprudential instruments and poverty across 30 OIC member states from 2000 to 2022. Three principal conclusions emerge. First, Sharia Banking Depth and Islamic bank CAR exert significant negative long-run effects on poverty, confirming that the structural expansion and prudential robustness of Islamic banking are not merely financial metrics but developmental outcomes with direct welfare implications. Second, consumer price inflation is the most powerful pro-poverty force in the system, both in magnitude and speed of transmission, making price stability an indispensable component of any credible OIC poverty-reduction strategy. Third, LTV regulation, as currently designed in most OIC jurisdictions, carries regressive distributional consequences that partially offset the pro-poor gains from Islamic financial deepening.

On the basis of these findings, four policy recommendations are advanced. Regulators governing Islamic banking sectors should reframe capital adequacy standards as instruments with dual prudential and social objectives, and consider embedding poverty-indexed counter-cyclical buffers within the IFSB framework. OIC central banks should prioritise price stability mandates and develop Sharia-compatible monetary instruments to mitigate inflationary volatility, particularly in conflict-affected and resource-dependent member states. Governments should redesign LTV regulation using income-differentiated tiers to preserve macroprudential stability while ensuring that lower-income households retain viable access to Islamic property financing. Finally, fiscal policy effectiveness must be enhanced through governance reform and digital transfer mechanisms that minimise leakage and ensure social expenditure reaches intended recipients.

Several limitations merit acknowledgement. Time-varying gaps in CAR data for Sub-Saharan African OIC members introduce some measurement uncertainty, and the SBD proxy does not fully capture the micro-level distribution of Islamic banking outreach. Future research should integrate microfinance penetration metrics and household survey data to trace the transmission from system-level macroprudential indicators to household welfare outcomes. Additionally, a structural break analysis examining the differential post-COVID adjustment of Islamic bank regulation and poverty dynamics would constitute a valuable extension.

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