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ISLAMIC FINANCE AND THE SDGS IN DUAL SYSTEMS: A SELECTIVE-CHANNELS VIEW

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Abstract. This study examines whether Islamic finance advances the Sustainable Development Goals (SDGs) uniformly or through selective channels across economies with dual financial systems. Using a panel of 20 economies over the period 2014–2024, associations with the SDGs are estimated using Method of Moments Quantile Regression (MMQR), which captures effects across the full conditional distribution. Three estimators robust to cross-sectional dependence—Driscoll–Kraay, feasible generalized least squares (FGLS), and panel-corrected standard errors (PCSE)—provide additional robustness checks, while system generalized method of moments (system GMM) serves as an endogeneity diagnostic. Islamic banking is positively and robustly associated with industry, innovation and infrastructure (SDG 9; $b = 0.593$, $p < 0.01$), and moderately associated with poverty reduction (SDG 1; $b = 0.205$) and reduced inequality (SDG 10; $b = 0.405$), while its associations with affordable and clean energy (SDG 7) and decent work and economic growth (SDG 8) require further empirical examination. The association with SDG 9 is strongest among the lowest-performing economies, declining monotonically from the 10th quantile (0.637) to the 90th quantile (0.546), thereby indicating convergence potential. These results support a selective-channels interpretation: Islamic finance contributes to sustainable development primarily through real-sector and asset-backed financing channels rather than uniformly across the entire SDG agenda. The findings have direct implications for Uzbekistan, where the legislative framework for introducing Islamic banking entered into force on 29 June 2026.

Keywords: Islamic finance, Sustainable Development Goals, dual financial systems, Method of Moments Quantile Regression, Central Asia

JEL classification: C23, G21, O16, Q01

Аннотация. В данном исследовании рассматривается вопрос о том, способствует ли исламское финансирование достижению Целей устойчивого развития (ЦУР) равномерно либо посредством избирательных каналов в странах с двойной финансовой системой. На основе панельных данных по 20 странам за 2014–2024 гг. взаимосвязи с ЦУР оцениваются с помощью квантильной регрессии методом моментов (MMQR), позволяющей определить эффекты по всему условному распределению. Три метода оценивания, устойчивые к межобъектной зависимости, — стандартные ошибки Дрисколла–Краая, обобщенный метод наименьших квадратов (FGLS) и панельно-скорректированные стандартные ошибки (PCSE) — используются для дополнительной проверки устойчивости результатов, тогда как системный обобщенный метод моментов (system GMM) применяется для диагностики эндогенности. Исламский банкинг демонстрирует положительную и устойчивую взаимосвязь с развитием промышленности, инноваций и инфраструктуры (ЦУР 9; $b = 0,593$; $p < 0,01$), а также умеренную взаимосвязь с сокращением бедности (ЦУР 1; $b = 0,205$) и уменьшением неравенства (ЦУР 10; $b = 0,405$), в то время как его взаимосвязи с доступной и чистой энергией (ЦУР 7), достойной работой и экономическим ростом (ЦУР 8) требуют дальнейшего эмпирического изучения. Взаимосвязь с ЦУР 9 наиболее выражена в странах с относительно низкими исходными показателями и последовательно уменьшается от 10-го квантиля (0,637) к 90-му квантилю (0,546), что указывает на потенциал конвергенции. Полученные результаты подтверждают концепцию избирательных каналов: исламское финансирование способствует устойчивому развитию преимущественно через финансирование реального сектора и инструменты, обеспеченные активами, а не равномерно по всей повестке ЦУР. Результаты исследования имеют непосредственное значение для Узбекистана, где законодательная основа для внедрения исламского банкинга вступила в силу 29 июня 2026 года.

Ключевые слова: исламское финансирование, Цели устойчивого развития, двойные финансовые системы, квантильная регрессия методом моментов, Центральная Азия

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INTRODUCTION

The 2030 Agenda for Sustainable Development requires financing on a scale that calls for complementary resources beyond public budgets and conventional bank credit. Islamic finance is frequently proposed as one such complementary mechanism: its prohibition of *riba* and *gharar*, asset-backing requirements, and risk-sharing structures link financing to tangible and productive activities rather than purely financial transactions. Global Islamic financial assets are projected to approach US\$6 trillion, while dual financial-system economies—where Islamic and conventional banks operate side by side—now span the Gulf region, Southeast Asia, South Asia, Sub-Saharan Africa, and, most recently, Central Asia.

The empirical literature linking Islamic finance to development outcomes has grown rapidly, yet it remains primarily based on two research designs that provide opportunities for further policy-oriented analysis. The first treats sustainable development as a single composite index, making it difficult to determine which specific goals Islamic finance advances. The second estimates conditional-mean effects, which may not reveal whether the contribution is concentrated among lower- or higher-performing economies. Both designs implicitly assume that Islamic finance affects the SDG agenda uniformly—an assumption that warrants further examination in light of the structural characteristics of Islamic financial contracts.

This paper tests that assumption directly. It examines whether Islamic banking depth is uniformly associated with SDG achievement across different goals or operates selectively through channels corresponding to the real-sector and asset-backed nature of Islamic financing. Five goals are examined and grouped into three theoretical channels: the real-sector channel (SDG 9: industry, innovation and infrastructure; SDG 7: affordable and clean energy), the distributive channel (SDG 1: no poverty; SDG 10: reduced inequalities), and the labour channel (SDG 8: decent work and economic growth).

The study makes three contributions. First, it replaces the composite-index design with a goal-specific typology, demonstrating that Islamic banking depth is robustly associated with SDG 9, moderately associated with SDG 1 and SDG 10, and has no robust association with SDG 7 or SDG 8. Second, it applies the Method of Moments Quantile Regression developed by Machado and Santos Silva (2019) to estimate associations across the full conditional distribution, revealing that the SDG 9 association is strongest where SDG 9 achievement is lowest—a convergence pattern that conditional-mean estimators may not fully capture. Third, it subjects the principal result to three estimators robust to cross-sectional dependence and a system GMM endogeneity diagnostic, transparently reporting estimator sensitivity rather than relying on a single preferred specification.

The findings are directly relevant to Uzbekistan, where legislative amendments establishing the legal framework for Islamic banking entered into force on 29 June 2026, creating a legal pathway for dedicated Islamic banks, Islamic windows within conventional banks, and full conversion. The convergence pattern documented in this study suggests that a country entering the sector from a relatively low SDG 9 base may experience a stronger association per unit of Islamic banking depth than the cross-country average.

LITERATURE REVIEW

Existing studies generally indicate that Islamic finance can support economic growth, banking-sector development and financial inclusion by directing resources towards asset-backed and productive activities. Gheeraert (2014), Imam and Kpodar (2016), and Butt et al. (2023) identify positive links between Islamic financial development and economic growth, while Athief et al. (2025) show that its effects may differ across economic sectors. Ameziane (2024) further demonstrates that Islamic financial inclusion has heterogeneous effects across OIC countries, highlighting the importance of quantile-based analysis.

Recent research has extended this discussion to sustainable development. The Arab Monetary Fund (2022) links Islamic banking to the achievement of the SDGs, while Avazkhodjaev et al. (2024) and Cil et al. (2026) examine its contribution to clean energy and environmental sustainability. Other studies emphasise poverty alleviation, financial inclusion and institutional quality as relevant channels through which Islamic finance may influence development outcomes (Banna and Alam, 2021; Jan et al., 2023; Alnasser Mohammed et al., 2025).

However, much of the existing literature evaluates sustainable development through aggregate indicators or average effects, providing limited evidence on individual SDGs and differences across the conditional distribution. This study addresses this research gap by examining five separate SDGs and applying Method of Moments Quantile Regression to determine whether Islamic banking contributes uniformly or through selective real-sector, distributive and labour-market channels.

RESEARCH METHODOLOGY

Data and sample. The study uses an annual panel of 20 dual financial-system economies over the period 2014–2024. Islamic banking depth is measured by the Islamic banking asset share (IBA), expressed as a percentage of total banking assets, with data obtained from the Islamic Financial Services Board's Prudential and Structural Islamic Financial Indicators (PSIFIs). The five SDG outcome variables—SDG 1 (no poverty), SDG 7 (affordable and clean energy), SDG 8 (decent work and economic growth), SDG 9 (industry, innovation and infrastructure), and SDG 10 (reduced inequalities)—are each measured on a 0–100 achievement scale and obtained from the Sustainable Development Report. The control variables comprise the logarithm of GDP per capita, inflation, trade openness, foreign direct investment, and domestic credit to the private sector, with data sourced from the World Bank's World Development Indicators and the IMF's World Economic Outlook. Table 1 reports the descriptive statistics.

Table 1. Descriptive statistics¹

Variable	Definition	Transform	Source	Coverage
SDG1/7/8/9/10	SDG goal scores (0–100): poverty, clean energy, decent work, industry and inequality	level	SDR 2025	SDG7/8/9 220; SDG1/10 165
IBA	Islamic-bank assets / total banking assets (%) — primary IF proxy	level	IFSB	159/220
lnIBF	Islamic-bank financing (USD mn) — secondary IF proxy	natural log	IFSB PSIFI	147/220
lnGDPpc	GDP per capita, current US\$	natural log	World Bank	220/220
INF	Inflation, consumer prices (%)	level	World Bank	220/220
TRADE	Trade openness (% of GDP)	level	World Bank	213/220
FDI	FDI net inflows (% of GDP)	level	World Bank	220/220
PRIVCR	Domestic credit to private sector (% GDP) — primary FD control	level	World Bank	201/220

Missing data are handled according to a no-imputation principle: where an indicator is not reported for a particular country-year, the observation is left blank rather than coded as zero, ensuring that the absence of reported data on the Islamic banking sector is not interpreted as a zero market share. This produces an effective sample of $N = 136$ for SDG 7, SDG 8 and SDG 9, and $N = 104$ for SDG 1 and SDG 10, with the latter based on a 14-economy regression subsample for which the distributive indicators are consistently reported.

Estimation strategy. The primary estimator is the Method of Moments Quantile Regression (MMQR) developed by Machado and Santos Silva (2019), which extends the quantile regression framework of Koenker and Bassett (1978) to panel data with individual fixed effects. MMQR estimates the effect of each regressor across the full conditional distribution of the outcome variable through a location-scale specification, producing separate coefficients at the 10th, 25th, 50th, 75th and 90th quantiles. This is essential to the research question: while a conditional-mean estimator reports the average association, MMQR determines whether the contribution of Islamic banking is concentrated among lower- or higher-performing economies.

Three estimators robust to cross-sectional dependence provide an additional robustness layer based on the same specification: fixed effects with Driscoll–Kraay standard errors, feasible generalized least squares (FGLS) and panel-corrected standard errors (PCSE). These estimators apply different assumptions regarding the error covariance structure; therefore, agreement across them strengthens confidence in the direction and approximate magnitude of the association, while differences transparently indicate sensitivity to model specification. A two-step system generalized method of moments (system GMM) specification serves as an endogeneity diagnostic, with the AR(2) and Hansen J tests reported.

Diagnostics. The Pesaran CD test rejects cross-sectional independence for SDG 7, SDG 8, SDG 9 and IBA (all $p < 0.001$), confirming the appropriateness of inference methods robust to cross-sectional dependence. SDG 1 and SDG 10 demonstrate weak or no cross-sectional dependence. The Pesaran–Yamagata slope homogeneity test produces a finite statistic for SDG 1 ($\delta = -1.913$, $p = 0.056$), which is consistent with broadly homogeneous slopes for the distributive channel. All models were estimated in Stata, with country fixed effects absorbed.

¹ author's development

ANALYSIS AND RESULTS

A typology of effects across five SDGs. Table 2 reports the MMQR location coefficient of the Islamic banking asset share for each SDG. A clear gradient emerges across the three theoretical channels. The association is strongest for SDG 9 ($b = 0.593$, $p < 0.01$): a one-percentage-point increase in Islamic banking depth is associated with a 0.593-point increase in the composite SDG 9 score, holding other determinants constant. The distributive channel follows at a moderate level—SDG 10 ($b = 0.405$) and SDG 1 ($b = 0.205$)—while the associations with the remaining real-sector goal (SDG 7: affordable and clean energy) and the labour channel (SDG 8: decent work and economic growth) require further empirical confirmation (Table 2).

Table 2. MMQR location coefficients of Islamic bank asset share across five SDGs

SDG	q10	q25	q50	q75	q90
SDG9	0.637 (0.118)***	0.617 (0.097)***	0.593 (0.085)***	0.568 (0.094)***	0.546 (0.116)***
SDG10	0.467 (0.463)	0.435 (0.315)	0.400 (0.187)**	0.371 (0.175)**	0.361 (0.201)*
SDG1	0.195 (0.139)	0.200 (0.113)*	0.205 (0.095)**	0.210 (0.096)**	0.214 (0.108)**
SDG7	-0.003 (0.088)	0.000 (0.069)	0.004 (0.048)	0.009 (0.038)	0.011 (0.041)
SDG8	0.038 (0.032)	0.034 (0.025)	0.030 (0.018)*	0.027 (0.016)	0.024 (0.018)

Note: MMQR location (mean) coefficient of IBA. Controls: In GDP per capita, inflation, trade openness, FDI, private credit; country fixed effects absorbed. SE in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. $N = 136$ for SDG7/SDG8/SDG9; $N = 104$ for SDG1/SDG10.

This pattern is theoretically coherent rather than arbitrary. SDG 9 encompasses industry, innovation and infrastructure—precisely the areas supported by asset-backed project financing, *sukuk* issuance and trade financing, which are the principal instruments through which Islamic banking channels capital into tangible productive assets. The moderate associations with SDG 1 and SDG 10 are consistent with a secondary distributive effect operating through employment and income generated by real-sector investment rather than through direct redistribution. The association with SDG 7 appears more conditional, as the clean-energy transition is predominantly influenced by technology policy, feed-in tariffs and public capital intensity in addition to the composition of bank financing. The result for SDG 8 suggests that aggregate labour-market outcomes are primarily shaped by broader macroeconomic and institutional factors that may exceed the influence of financial-sector composition.

Distributional heterogeneity. Table 3 reports the IBA associations across the conditional distribution of each SDG. For SDG 9, the association is positive and statistically significant at every quantile, declining monotonically from the 10th quantile (0.637) to the 90th quantile (0.546). Islamic banking penetration is therefore associated with the largest differences in SDG 9 performance among economies where initial infrastructure achievement is relatively low—a convergence pattern with direct policy relevance. Economies at the frontier of industrial and infrastructural development demonstrate smaller marginal associations, plausibly because further progress in these economies depends increasingly on advanced manufacturing capacity and research intensity rather than primarily on the availability of asset-backed financing (Table 3).

Table 3. Quantile coefficients of Islamic bank asset share (MMQR)²

SDG	MMQR (q50)	Driscoll–Kraay	FGLS	PCSE	System GMM
SDG9	0.593 (0.085)***	0.593 (0.049)***	0.169 (0.038)***	0.091 (0.051)*	0.036 (0.074)
SDG10	0.405 (0.200)**	0.405 (0.110)***	0.508 (0.124)***	0.581 (0.194)***	0.103 (0.677)
SDG1	0.205 (0.095)**	0.205 (0.103)*	0.018 (0.083)	0.153 (0.147)	0.134 (0.085)
SDG7	0.005 (0.046)	0.005 (0.037)	-0.012 (0.021)	-0.014 (0.035)	0.039 (0.058)
SDG8	0.031 (0.018)*	0.031 (0.019)	-0.018 (0.025)	-0.072 (0.029)**	-0.022 (0.014)

Note: A full quantile spectrum (q10–q90) was estimated directly only for SDG9; for SDG1, SDG7, SDG8 and SDG10 the reported quantile values are derived from the estimated location and scale parameters (Machado and Santos Silva, 2019), with the q50 quantile estimated directly.

2 author's development

This convergence result is the paper's most policy-relevant finding. It indicates that the developmental contribution associated with expanding the Islamic banking sector varies across countries and is potentially greater in economies with wider scope for infrastructure advancement. *Batter. A – A country.*

Robustness and estimator sensitivity. Table 4 assesses the principal SDG 9 result using three estimators robust to cross-sectional dependence and a system GMM diagnostic. The IBA coefficient is positive and significant under the fixed-effects estimator with Driscoll–Kraay standard errors (0.593, SE = 0.049) and remains positive and significant, although smaller, under FGLS (0.169, SE = 0.038) and PCSE (0.091, SE = 0.051, $p < 0.10$). Under the two-step system GMM estimator, the coefficient remains positive but is not statistically significant (0.036, SE = 0.074). The AR(2) test ($p = 0.980$) provides no evidence of second-order serial correlation, while the Hansen J test ($p = 0.271$) does not reject the validity of the instrument set (Table 4).

Table 4. Robustness of the SDG9 association across estimators

Hypothesis	Verdict	Evidence
H1a: IF → SDG9; H1b: IF → SDG7	H1a supported; H1b not	SDG9 strong (0.59***); SDG7 null (n.s.)
H2: IF → distributive SDGs (1, 10)	Supported	SDG10 0.41, SDG1 0.21
H3: IF → labour SDG (8) weak	Supported	SDG8 not significant at 5%
H4: lnIBF dominates IBA in joint spec.; no interaction (substitution, not independence)	Partly supported	lnIBF sig. (14.05***); IBA n.s. when volume added; no interaction
H5: controls stable	Supported	lnGDPpc, PRIVCR positive & significant

Note: IBA coefficient on the SDG indicated; SE in parentheses. System-GMM AR(2) $p = 0.980$ and Hansen J $p = 0.271$ for SDG9.

The direction of the association is therefore stable across all four estimators, although its magnitude is sensitive to the selected estimator. The attenuation observed under FGLS and PCSE reflects the different assumptions that these estimators impose on the error covariance structure. The lack of statistical significance under system GMM, based on a panel of 20 countries over 11 years, may reflect the recognised limited-sample performance of dynamic panel estimators in short panels with relatively few cross-sectional units rather than necessarily indicating the absence of an underlying relationship. In accordance with the transparency principle adopted throughout the study, this sensitivity is reported openly without relying exclusively on a single preferred specification. The appropriate interpretation is that the association with SDG 9 is stable in direction and consistently positive, while its magnitude should be considered as a range rather than a single-point estimate.

Interpretation: selective channels rather than uniform effects. Taken together, the results support an alternative to the uniform-effect assumption implicit in composite-index designs. The contribution of Islamic finance to the SDG agenda is selective, advancing specific goals through an identifiable structural mechanism. The ranking of effects—SDG 9 as the strongest, SDG 1 and SDG 10 as moderate, and SDG 7 and SDG 8 as requiring further empirical confirmation—corresponds directly to the extent to which each goal depends on real-sector and asset-backed financing. This has an important measurement implication: research designs that summarise sustainable development using a single index may understate the contribution to SDG 9 while overstating contributions to goals for which robust evidence has not been identified. It also has a policy implication: Islamic finance reform packages should be promoted and evaluated primarily in relation to industrial and infrastructural outcomes rather than the SDG agenda in general.

CONCLUSION AND RECOMMENDATIONS

This study examined whether Islamic finance advances the Sustainable Development Goals uniformly or through selective channels. Using a panel of 20 dual financial-system economies over the period 2014–2024 and applying the Method of Moments Quantile Regression, it identifies a clear typology. Islamic banking depth is positively and robustly associated with SDG 9 (industry, innovation and infrastructure; $b = 0.593$, $p < 0.01$), and moderately associated with SDG 10 (0.405) and SDG 1 (0.205), while its associations with SDG 7 (affordable and clean energy) and SDG 8 (decent work and economic growth)

require further empirical confirmation. The association with SDG 9 declines monotonically across the conditional distribution, from 0.637 at the 10th quantile to 0.546 at the 90th quantile, indicating that the developmental contribution associated with Islamic banking is greatest where there is greater scope for improving infrastructure performance.

For Uzbekistan, these results are timely. The legislative amendments aimed at introducing Islamic banking entered into force on 29 June 2026, establishing a legal pathway for licensed Islamic banks, Islamic windows within conventional banks and full conversion to Sharia-compliant status. Uzbekistan enters this sector from a below-median SDG 9 position, which—based on the convergence pattern documented in this study—places it in the segment of the distribution where the marginal association with Islamic banking depth is estimated to be strongest. The policy implication is that the sector should be developed with an explicit orientation towards industrial and infrastructural financing—including project *sukuk*, asset-backed trade finance and supply-chain instruments—rather than towards general financial deepening, since the measurable contribution to the SDGs operates primarily through the real-sector channel.

Three considerations should be taken into account when interpreting these conclusions. First, the panel comprises 20 economies over 11 years; the associations documented in this study are robust partial correlations and should be interpreted as associative rather than causal, notwithstanding the proposed theoretical mechanism. Second, the magnitude of the association with SDG 9 is sensitive to the estimator used, ranging from 0.593 under Driscoll–Kraay fixed effects to a positive but statistically insignificant coefficient of 0.036 under system GMM; thus, the direction of the association is stable, while its estimated magnitude varies. Third, the Islamic banking asset share is a bank-based proxy that does not capture the broader Islamic finance ecosystem—including *sukuk* markets, *takaful* and Islamic asset management—through which additional developmental effects may operate.

These considerations define a promising agenda for future research. Extending the panel as newly adopting countries such as Uzbekistan accumulate further observations would strengthen empirical identification; incorporating instrument-level data on *sukuk* issuance and project finance would enable the real-sector mechanism to be tested directly rather than inferred; and constructing a Sharia governance index would make it possible to examine whether institutional quality specific to Islamic finance, rather than general governance, explains the cross-country variation documented in this study.

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