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Heterogeneous Effects of Islamic Finance: A Multilevel Analysis for Policy Optimization in Developing Economies

Iman Supriadi[1*], Eva Wany[2]
[1]Faculty of Economics and Business, STIE Mahardhika Surabaya, Indonesia
[2]Faculty of Economics and Business, Universitas Wijaya Kusuma Surabaya, Indonesia
E-mail: [1]iman@stiemahardhika.ac.id, [2]evawany@uwks.ac.id
[*]**Corresponding author**

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ABSTRACT

Research Originality: This study addresses a gap in the literature by examining the heterogeneous impact of Islamic financial instruments. It incorporates various contextual factors and employs panel data regression to control for cross-country and temporal heterogeneity, offering a broader perspective on Islamic finance and economic growth.

Research Objectives: This study analyzes the impact of Islamic financial instruments on economic growth in developing countries with different income levels over time.

Research Methods: A quantitative approach is applied using panel data regression with pooled data classification to account for variations in data treatment.

Empirical Results: The findings reveal that Islamic financial instruments, particularly Total Islamic Financing and Islamic Banking Assets, significantly enhance economic growth. Demographic factors, such as population size, also play a key role, while inflation has no significant impact. Additionally, Fixed Effects (Cross) values, which adjust for country- and year-specific heterogeneity, show substantial variation, with positive and negative values across countries and periods.

Implications: These findings offer policy insights to help governments and regulators develop responsive, economic policies that promote financial inclusion, strengthen regulatory frameworks, and support sustainable growth through Islamic finance.

Keywords:
Islamic financial instruments; economic development; financial institutions; macroeconomic policy; cross-country analysis.

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INTRODUCTION

The expansion of the Islamic finance industry in developing countries has become a critical topic in global economic studies (Kismawadi, 2023; Butt et al., 2023). Within this context, examining the impact of Islamic financial instruments on economic growth is of considerable significance (Saleem et al., 2021; Mensi et al., 2020; Naz & Gulzar, 2023). Previous studies have highlighted the complex relationship between Islamic financial instruments, macroeconomic factors, and economic growth; however, a more comprehensive understanding of this relationship remains necessary. While numerous studies have explored the link between Islamic financial instruments and economic growth, they often focus on specific dimensions and overlook the heterogeneity of developing countries regarding income levels, the maturity of the Islamic finance industry, and broader economic characteristics. Consequently, a significant knowledge gap persists, necessitating further research to enhance the understanding of how Islamic financial instruments influence economic growth in developing countries.

Anwar (2024) and Khattak & Khan (2023) found that Islamic financial instruments positively impact economic growth, particularly in countries with a well-established Islamic finance industry. Additionally, Ledhem and Mekidiche (2020) and Kismawadi (2023) identified macroeconomic factors—such as population and inflation—as key moderators in the relationship between Islamic financial instruments and economic growth, highlighting their significant contextual influence.

Furthermore, Naz and Gulzar (2022), Laldin and Djafri (2021), Avdukic and Asutay (2024), and Boukhatem and Ben Moussa (2018) underscored notable differences in the impact of Islamic financial instruments between developed and developing countries, emphasizing the complexity of their effects in a global context. Meanwhile, Ledhem and Mekidiche (2022) and Saleem et al. (2021) demonstrated that economic characteristics—such as the prominence of agriculture, industry, and service sectors—yield varying implications for the relationship between Islamic financial instruments and economic growth, further contributing to the diversity of findings in this field.

Moreover, Ghroubi (2023) and Amran et al. (2023) observed that differences in the level of Islamic finance development across countries lead to mixed results regarding the impact of these instruments on economic growth, reinforcing the need to account for variations in the industry's maturity. Smolo and Nagayev (2023) and Albaity et al. (2023) further emphasized the importance of considering country- and time-specific heterogeneity when analyzing the effects of Islamic financial instruments, advocating for a more contextualized and dynamic analytical approach. Finally, Khateeb et al. (2023) and Butt et al. (2023) explored temporal shifts in the Islamic finance industry. They revealed that its evolution can have varying implications for economic growth, particularly in developing economies.

These findings underscore the intricate and multifaceted impact of Islamic financial instruments across diverse economic contexts. Islamic financial instruments constitute a fundamental component of the Islamic financial system, which operates based on the

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principles of fairness, transparency, and compliance with Shariah law (Muryanto, 2022; Ebrahim & Abdelfattah, 2021). These instruments are designed in adherence to the prohibition of usury (interest), excessive speculation, and investments in sectors deemed impermissible under Islamic law (Harahap & Risfandy, 2022; Kanwal, 2021).

Several key Islamic financial instruments are widely utilized in practice. Mudharabah is a profit-sharing partnership between investors (shahibul maal) and business managers (mudharib), where profits are distributed according to a pre-agreed ratio (Dawood, 2020; Ishak & Rahman, 2021). Musharakah involves a joint partnership between two or more parties in a business venture, with profits and risks shared based on mutual agreement (Ajmi et al., 2019; Warninda et al., 2019). Murabahah is a cost-plus financing arrangement in which the seller discloses the purchase price and markup transparently, ensuring a fair and predetermined profit margin (Abbasi & Aziz, 2023; Ahroum et al., 2020). Ijarah refers to an Islamic leasing contract that allows the lessee to use an asset in exchange for a predetermined payment. Additionally, Sukuk, often called Islamic bonds, represent ownership in tangible assets and offer profit-sharing benefits to investors while strictly avoiding interest-based returns (Mimouni et al., 2019).

A comprehensive review of the literature on Islamic financial instruments has underscored their advantages and the challenges associated with their implementation (Foglie & Keshminder, 2022; Hassan, 2020). A deeper understanding of these instruments is essential for assessing their impact on economic growth, particularly in developing countries with diverse income levels (Butt et al., 2023; Kismawadi, 2023).

Economic growth theory is a conceptual framework for understanding the factors that drive a country's economic expansion (Błażejowski et al., 2019; Rahman & Alam, 2021). Solow's economic growth theory emphasizes capital accumulation, population growth, and technological advancement as the primary drivers of long-term economic growth (Gumpert, 2019). In contrast, endogenous growth theory underscores the role of innovation, research and development, education, and institutional quality in fostering economic progress (Bucci & Prettner, 2020; Cristescu & Nerișanu, 2021). This theory highlights the significance of internal factors in generating sustainable economic growth (Tadele & Sirany, 2021).

In the context of Islamic finance, economic growth theory provides a foundation for analyzing how Shariah-compliant financial instruments influence economic development in emerging economies (Butt et al., 2023; Smolo & Nagayev, 2023). Applying economic growth theory in this study facilitates the identification of mechanisms through which Islamic financial instruments contribute to economic expansion in developing countries with diverse economic structures (Gnangnon, 2021; Rehman et al., 2019).

Beyond capital accumulation, demographic factors also play a crucial role in driving economic growth in developing countries (Cristea et al., 2020). These nations typically have large and rapidly growing populations. While a sizable population can provide an abundant labor force, it may also pose significant challenges if not accompanied by improvements in human capital through education and vocational training (Intisar et al., 2020; Matousek & Tzeremes, 2019). Without adequate investment in human capital,

developing economies risk stagnation due to low labor productivity (Dua & Garg, 2019; Makohon et al., 2020).

Another critical determinant of economic growth in developing countries is the macroeconomic policies implemented by governments (Younsi & Nafla, 2019; Petrović et al., 2021). Effective fiscal and monetary policies can foster a conducive investment climate and promote economic stability, whereas poorly designed policies may create uncertainty and hinder growth (Roncoroni et al., 2021; Makohon et al., 2020). In this regard, policymakers in developing countries often face a trade-off between stimulating short-term economic growth through increased public spending and ensuring long-term stability through prudent debt management.

Despite the growing body of research on Islamic finance and its impact on economic growth, existing studies often adopt a narrow focus—either analyzing specific financial instruments or examining macroeconomic conditions in isolation—without sufficiently addressing the heterogeneity of developing economies. Prior research has primarily investigated the relationship between Islamic finance and economic growth at an aggregate level, overlooking the variations across different income levels, stages of Islamic financial industry development, and economic structures. Furthermore, while some studies have explored the role of macroeconomic factors in shaping this relationship, there remains a gap in understanding how these factors interact across countries with varying levels of Islamic financial maturity. Additionally, limited attention has been given to the temporal dimension—how the impact of Islamic finance has evolved in response to structural economic transformations and financial sector development.

To bridge these research gaps, this study conducts a multilevel analysis to systematically assess the heterogeneous effects of Islamic financial instruments on economic growth across developing economies. Unlike previous studies that often adopt a uniform approach, this research introduces a comparative perspective by examining countries with varying levels of Islamic financial development and distinct economic structures. Additionally, it integrates a temporal dimension to analyze how the impact of Islamic finance has evolved over the past decade.

This research makes a significant contribution to the study of optimizing Islamic public finance by examining several key aspects. First, by highlighting the impact of Islamic financial instruments on economic growth in developing countries, this study deepens the understanding of how Islamic financial principles can serve as a crucial driver of inclusive and sustainable economic development. Second, by identifying macroeconomic factors and related variables that influence economic growth, this research establishes a strong foundation for formulating public finance policies based on Islamic principles. These insights can aid governments and regulators in designing more effective policies that align with Islamic financial principles to enhance overall societal welfare. Third, by exploring the heterogeneity in the impact of Islamic financial instruments across countries with varying levels of Islamic finance industry development, this study provides valuable insights into how economic characteristics, industry maturity, and demographic factors shape the effectiveness of Islamic financial instruments in driving economic growth.

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Thus, this study's findings contribute significantly to the theoretical and practical development of Islamic public finance. By offering a deeper understanding of how Islamic financial principles can be optimized, this research supports efforts to achieve inclusive and sustainable economic growth that benefits society.

The novelty of this study lies in its comprehensive approach, which combines heterogeneity analysis, macroeconomic moderation, and temporal comparisons within a multilevel panel data regression framework. Accordingly, the primary objective is to investigate how Islamic financial instruments influence economic growth in developing economies, considering variations in financial development, macroeconomic conditions, and temporal dynamics. By offering a more granular understanding of these relationships, this research aims to generate nuanced policy insights that can inform the development of targeted financial strategies in diverse economic contexts.

METHODS

This study adopts a quantitative approach utilizing panel data regression analysis, categorized by object (pooled data), to account for variations in data treatment. This method enables a comprehensive assessment of the relationship between Islamic financial instruments and economic growth, allowing for cross-country and time variability in the analysis. The dataset consists of annual data from 2013 to 2023, covering six countries with significant Islamic finance development: the United Arab Emirates, Bahrain, Indonesia, Malaysia, Pakistan, and Saudi Arabia. The data were sourced from reputable institutions, including central banks, financial regulatory authorities, and international organizations such as the Islamic Financial Services Board, the World Bank, and the International Monetary Fund. The study incorporates two primary dimensions. The first dimension comprises Islamic financial instruments, including Total Islamic Financing, Sukuk Issuance Value, Islamic Banking Assets, and Islamic Investment. The second dimension consists of macroeconomic variables, namely Population and Inflation, which serve as control variables. Economic growth is measured using Gross Domestic Product (GDP) and GDP per Capita as dependent variables.

Panel data regression models are employed to evaluate the impact of Islamic financial instruments on economic growth. These models enable the control of country-specific and time-specific heterogeneity, ensuring robust estimations. The analysis applies both Fixed Effects Model (FEM) and Random Effects Model (REM), with Hausman tests conducted to determine the most appropriate model. The regression equations for GDP and GDP per capita are specified as follows:

$$GDP_{it} = \beta_0 + \beta_1 Fin_{it} + \beta_2 Sukuk_{it} + \beta_3 Assets_{it} + \beta_4 Invst_{it} + \beta_5 Pop_{it} + \beta_6 Infl_{it} + \varepsilon_{it} \quad (1)$$

$$GDP\ Percapita_{it} = \beta_0 + \beta_1 Fin_{it} + \beta_2 Sukuk_{it} + \beta_3 Assets_{it} + \beta_4 Invst_{it} + \beta_5 Pop_{it} + \beta_6 Infl_{it} + \varepsilon_{it} \quad (2)$$

To further enhance the analysis, a heterogeneity test is conducted to examine variations in the impact of Islamic financial instruments on economic growth across different economic conditions. This model includes comparisons between countries with

varying income levels, economies with differing levels of Islamic finance development, and economic conditions across different periods within the study timeframe. The heterogeneity analysis provides deeper insights into how the effectiveness of Islamic financial instruments varies across different economic environments.

The study employs EViews ver. 13.0 for data processing and estimation, ensuring rigorous econometric analysis. Various diagnostic tests, including multicollinearity checks, heteroskedasticity tests, and robustness assessments, are performed to validate the consistency and reliability of the regression results. The findings from these analyses contribute to a better understanding of how Islamic financial instruments influence economic growth, offering valuable insights for policymakers and financial regulators in developing economies.

RESULTS AND DISCUSSION

In panel data regression analysis, selecting the optimal model is crucial to ensuring valid, accurate, and reliable results. Proper model selection is essential for minimizing bias, controlling for unobserved time effects, and enhancing the consistency and efficiency of the estimators.

Table 1. Redundant Fixed Effects Tests

Effects Test	Test cross-section fixed effects		
	Statistic	d.f.	Prob.
Cross-section F	43.74032	-5.54	0.000
Cross-section Chi-square	106.8800	5	0.000

Table 2. Pooled Least Squares output for GDP

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.42E+11	1.42E+11	1.7032	0.0943
Total Islamic financing	4.35E+08	1.18E+08	3.6860	0.0005
Value of sukuk issuance	6.68E+08	5.01E+08	1.3341	0.1878
Islamic banking assets	3.04E+08	2.11E+08	1.4431	0.1548
Islamic investment	953,668.2	11,316,904	0.0843	0.9332
Population	647.4673	1682.107	0.3849	0.7018
Inflation	1.33E+09	2.08E+09	0.6419	0.5236

The Chow test results indicate that the Cross-Section F probability value is 0.000, suggesting that the Fixed Effects Model is the most appropriate estimation method for the analysis. Several significant findings emerge based on the regression analysis incorporating heterogeneity across countries. Total Islamic financing exhibits a positive effect on GDP. In contrast, sukuk issuance value, Islamic banking assets, Islamic investment, population, and inflation do not significantly affect GDP (see Table 2). However, when considered collectively, total Islamic financing, sukuk issuance value, Islamic banking assets, Islamic

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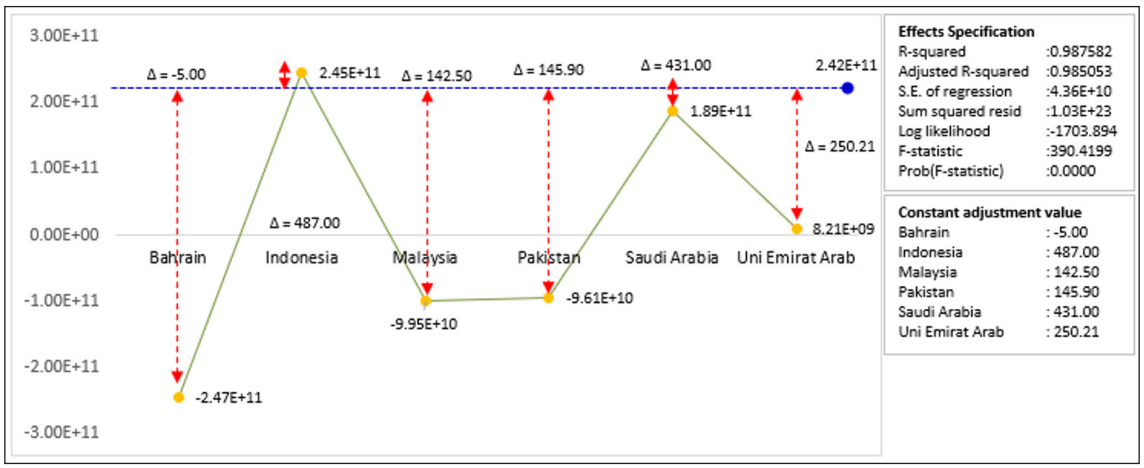
investment, population, and inflation have a significant impact on GDP, as indicated by the Prob (F-statistic) value being less than 0.05. Additionally, the Fixed Effects (Cross) value for the country-specific constant adjusts the intercept for each country. Bahrain, Malaysia, and Pakistan exhibit negative values, whereas Indonesia, Saudi Arabia, and the United Arab Emirates display positive values (See Figure 1).

For the GDP per capita variable, the findings indicate that total Islamic financing, sukuk issuance value, Islamic banking assets, Islamic investment, population, and inflation do not significantly affect GDP per capita, as evidenced by the p-value of each variable being greater than 0.05 (see Table 3). However, collectively, these variables significantly impact GDP per capita, as indicated by the Prob (F-statistic) value being less than 0.05.

Figure 1. GDP Fixed Effects (Cross) Comparison Across Countries



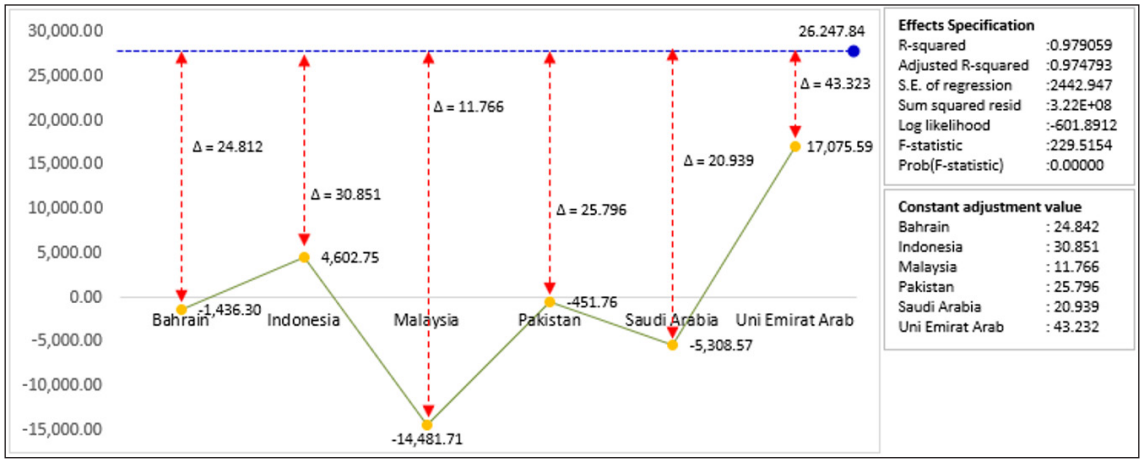
Source: Data processed (2024)

Fixed Effects (Cross) values for country constants also provide corrections to the constant values. Bahrain, Malaysia, Pakistan and Saudi Arabia show negative values, while Indonesia and United Arab Emirates show positive values (See Figure 2).

Table 3. Pooled Least Squares output for GDP

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	26,247.84	7,969.716	3.293448	0.0018
Total Islamic financing	10.45	6.617515	1.579752	0.1200
Value of sukuk issuance	-1.71	28.07465	-0.060744	0.9518
Islamic banking assets	2.34	11.81215	0.198347	0.8435
Islamic investment	-0.03	0.634315	-0.05179	0.9589
Population	-0.00012	9.43E-05	-1.276087	0.2074
Inflation	197.66	116.489	1.696778	0.0955

Figure 2. GDP per capita Fixed Effects (Cross) Comparison across countries



Source: Data processed (2024)

The Chow test results in Table 4 show that the Cross-section F probability value is 0.000, which indicates that the Fix Effect Model is the best model estimation in the analysis used. The regression analysis results, accounting for inter-temporal heterogeneity, reveal several key findings. Total Islamic financing positively impacts GDP, as indicated by a p-value of less than 0.05. In contrast, sukuk issuance does not exhibit a significant effect on GDP. Islamic banking assets positively impact GDP, while Islamic investment shows no significant effect, as reflected by a p-value greater than 0.05. Additionally, population positively impacts GDP, with a p-value of less than 0.05, whereas inflation does not show a significant effect (see Table 5).

Table 4. Redundant Fixed Effects Tests

Effects Test	Test cross-section fixed effects		
	Statistic	d.f.	Prob.
Cross-section F	2.467036	-10.49	0.0177
Cross-section Chi-square	26.9135	10	0.0027

Table 5. Pooled Least Squares Output for GDP

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.40E+10	2.35E+10	1.872649	0.067
Total Islamic financing	4.25E+08	1.91E+08	2.228177	0.031
Value of sukuk issuance	-1.11E+09	5.69E+08	-1.960404	0.056
Islamic banking assets	1.30E+09	2.77E+08	4.695308	0.000
Islamic investment	12,232,818	16,736,536	0.730905	0.468
Population	1133.128	190.3091	5.954144	0.000
Inflation	8.71E+08	3.44E+09	0.253183	0.801

Collectively, total Islamic financing, sukuk issuance value, Islamic banking assets, Islamic investment, population, and inflation have a significant impact on GDP,

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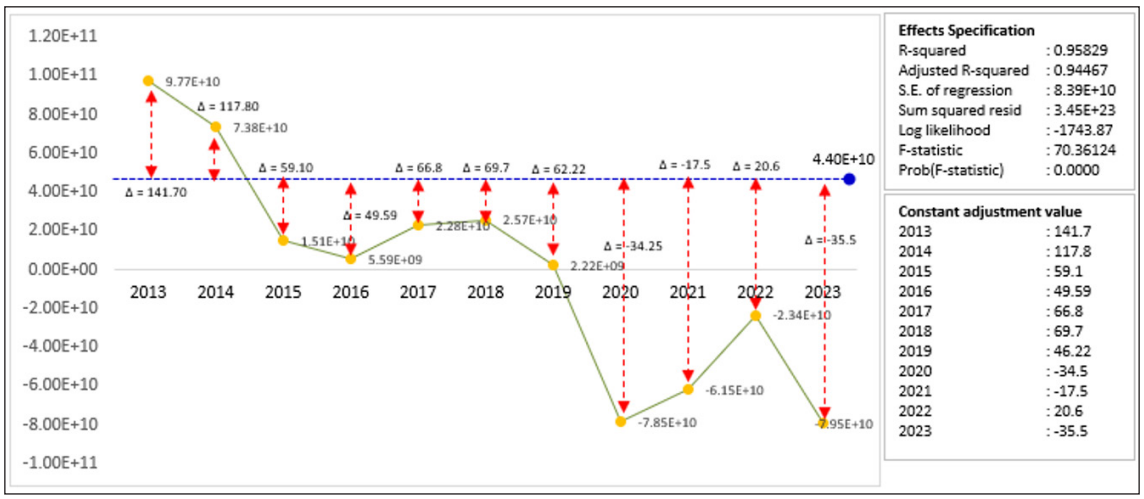
as evidenced by the Prob (F-statistic) value being less than 0.05. The results of the simultaneous test further confirm that these variables jointly exert a significant influence on GDP. In addition, the Fixed Effects (Cross) value which is a correction of the constant value for each year shows variation, with positive values in some years and negative values in certain years (see Figure 3).

Figure 3. GDP Fixed Effects (Cross) Comparison across time



Source: Data processed (2024)

Meanwhile, GDP per capita, total Islamic financing, sukuk issuance value, Islamic banking assets, Islamic investment, population, and inflation do not have a significant partial impact on GDP per capita. However, the results of the simultaneous test indicate that these variables collectively have a significant impact on GDP per capita (see Table 6).

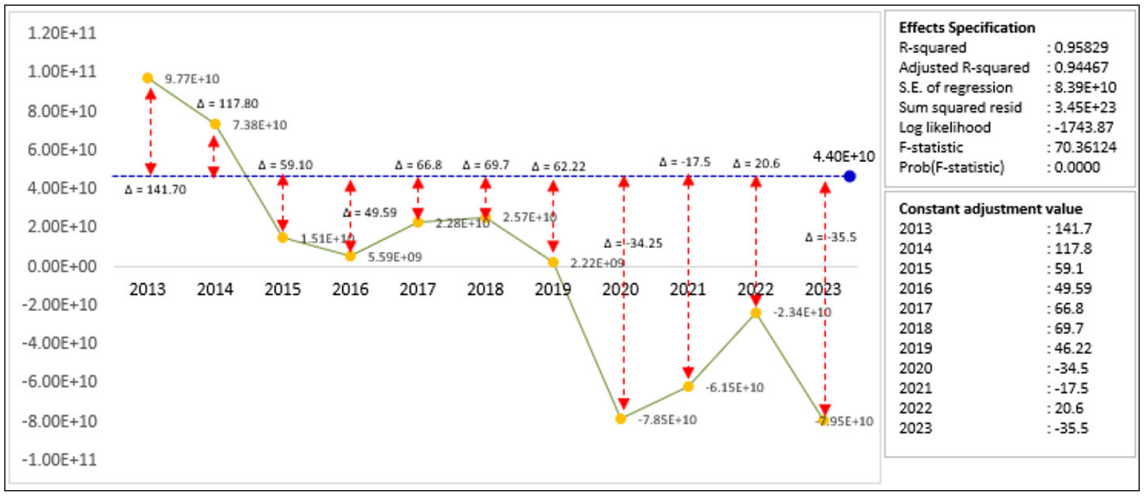
Table 6. Pooled Least Squares Output for GDP per capita

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	31,020.4			0.00000
Total Islamic financing	-53.73629			0.02100
Value of sukuk issuance	-242.0096			0.00070
Islamic banking assets	87.91301			0.00980
Islamic investment	2.974212			0.13930
Population	-0.000123			0.00000
Inflation	-198.6934			0.62750

Note: significant at 5%

Additionally, the Fixed Effects (Cross) value, which adjusts the constant for each year, exhibits significant variation, with positive values in some years and negative values in others (see Figure 4).

Figure 4. GDP per capita Fixed Effects (Cross) Comparison across time



Source: Data processed by Eviews 13, 2024

The varying levels of development in the Islamic finance industry across different countries provide valuable insights into how Islamic financial instruments influence economic growth. The regression results demonstrate that total Islamic financing positively affects GDP, reinforcing the notion that Islamic financing plays a crucial role in stimulating economic activity. However, other financial instruments, such as sukuk issuance value, Islamic banking assets, and Islamic investment, do not exhibit a statistically significant partial effect. Nevertheless, when analyzed collectively, these instruments significantly impact GDP, as indicated by the Prob (F-statistic) < 0.05, suggesting their complementary function in driving economic growth, with their effectiveness varying based on country-specific economic conditions.

These findings align with prior studies that emphasize the heterogeneous impact of Islamic financial instruments. For instance, Anwar (2024) and Khattak and Khan (2023) found that Islamic financial instruments contribute positively to economic growth, particularly in countries with well-established Islamic finance industries. Additionally, Ledhem and Mekidiche (2020) highlighted the role of macroeconomic factors in shaping the effectiveness of Islamic finance, a perspective further reinforced by the current study's findings. This result suggests that while Islamic financial instruments may not always exhibit direct effects, their combined influence can be substantial, depending on the broader financial ecosystem and macroeconomic context.

Regarding GDP per capita, the results reveal that no single Islamic financial instrument has a significant partial effect, yet their combined influence is significant. Total Islamic financing, sukuk issuance value, Islamic banking assets, and Islamic investment do not individually exhibit significance. This result suggests that the economic benefits of Islamic financial instruments may take time to translate into tangible improvements in individual income levels. This finding resonates with the work of Naz and Gulzar (2022), who highlighted the delayed impact of financial instruments on income distribution and social welfare, particularly in developing economies.

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A comparative analysis of countries with well-established Islamic finance industries, such as Malaysia, Saudi Arabia, and the United Arab Emirates (UAE), reveals important insights into the role of financial instruments in economic growth. The findings indicate that total Islamic financing significantly contributes to GDP in these countries, consistent with previous research by Boukhatem and Ben Moussa (2018) and Avdukic and Asutay (2024), who emphasized that countries with strong financial regulatory frameworks and institutional support tend to experience greater economic benefits from Islamic finance. However, the effects of Sukuk issuance value and Islamic investment remain inconsistent, suggesting that factors beyond financial instruments—such as industrial diversification and macroeconomic stability—also play critical roles in shaping economic outcomes.

For example, despite having a well-developed sukuk market, Malaysia does not show a significant partial effect of sukuk issuance on GDP. This result aligns with the argument by Laldin and Djafri (2021), who suggested that Malaysia's broader economic diversification reduces the relative impact of sukuk on overall economic performance. Similarly, Saudi Arabia and the UAE exhibit positive contributions from total Islamic financing but with varying correction values in GDP and GDP per capita, highlighting the structural differences in their economies. These variations support the findings of Smolo and Nagayev (2023), who underscored the importance of accounting for country-specific heterogeneity when evaluating the effectiveness of Islamic financial instruments.

Regarding GDP per capita, Malaysia's negative correction value suggests that despite its strong Islamic finance sector, income distribution challenges may limit the sector's impact on individual welfare. This observation is consistent with Butt et al. (2023), who noted that financial market maturity does not always translate into equitable income gains, particularly in economies where wealth concentration remains high.

A key finding of this study is the divergent impact of Islamic financial instruments on GDP and GDP per capita. While total Islamic financing significantly impacts GDP, its influence on GDP per capita remains limited. This result suggests that while Islamic financial instruments contribute to overall economic expansion, their effects on individual income distribution take longer to materialize. This finding aligns with the research of Ledhem and Mekidiche (2022), who argued that the structural transformation of an economy—such as shifts in labor markets and investment patterns—plays a crucial role in determining how financial growth translates into per capita income gains. Similarly, Saleem et al. (2021) demonstrated that Islamic financial instruments tend to have more substantial aggregate economic effects but may require supportive policies, such as financial inclusion initiatives, to translate into widespread income improvements.

The results also highlight the distinct dynamics of Islamic finance between developed and developing economies. While Malaysia and Saudi Arabia, with more mature financial

industries, show stable yet moderate contributions from Islamic finance, emerging economies such as Indonesia and Pakistan exhibit more substantial short-term effects due to their rapid financial sector growth. This echoes the findings of Ghroubi (2023) and Amran et al. (2023), who identified that financial sector maturity influences the stability and effectiveness of Islamic financial instruments.

Malaysia and Indonesia exhibit distinct economic characteristics, particularly in developing their Islamic finance sectors. Malaysia is regarded as a developed country in this sector, while Indonesia, as a developing country, is actively working to expand its Islamic finance industry. When examining the impact of Islamic financial instruments and macroeconomic factors on GDP, Malaysia's constant correction value suggests that the contribution of Islamic financial instruments to GDP is relatively lower than anticipated despite Malaysia being a pioneer in Islamic finance. This condition may be attributed to the country's greater reliance on other economic sectors, such as manufacturing and international trade. Conversely, Indonesia's constant correction value indicates a more substantial positive influence of Islamic financial instruments on GDP. Although Indonesia is still a developing country, the rapid expansion of its Islamic finance sector, supported by the world's largest Muslim population, has begun to yield significant results. The disparity in constant correction values suggests that in the short term, Islamic financial instruments may have a more pronounced impact on GDP in a developing country like Indonesia, where the sector is still in an early growth phase. In contrast, Malaysia's Islamic finance sector may have reached a level of maturity, resulting in a more stable contribution to GDP.

When analyzing the impact of Islamic financial instruments and macroeconomic factors on GDP per capita, Malaysia's correction value indicates that the sector's influence on individual welfare is more limited. Although Malaysia has a well-established Islamic finance industry, the benefits may not be equitably distributed across the population. In contrast, Indonesia's correction value suggests that, despite being a developing country, its Islamic finance instruments are beginning to contribute positively to individual welfare. This comparison highlights that while Malaysia is more advanced in Islamic finance development, its per capita impact in Indonesia is incredible due to its higher growth potential.

Saudi Arabia and Pakistan exhibit different levels of Islamic finance development. As one of the global centers of Islamic finance, Saudi Arabia has a well-established industry, whereas Pakistan remains in the developmental stage despite its long history in Islamic finance. When examining the impact of Islamic financial instruments and macroeconomic factors on GDP, the constant correction value for Saudi Arabia suggests that Islamic finance plays a significant role in driving the country's GDP growth. With strong policy support and a well-developed financial infrastructure, Saudi Arabia effectively leverages Islamic financial instruments to bolster its economy. In contrast, Pakistan's constant correction value indicates a relatively low contribution of Islamic finance instruments to GDP, highlighting challenges in integrating the sector with the broader economy. While Pakistan has substantial potential, its Islamic finance industry

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has yet to develop sufficiently to impact overall GDP significantly. This disparity underscores the critical role of regulatory and infrastructural support in fostering the Islamic finance industry. With its robust foundation, Saudi Arabia demonstrates more positive outcomes than Pakistan, which continues to face challenges in advancing its sector.

When assessing the impact of Islamic financial instruments and macroeconomic factors on GDP per capita, the constant correction value for Saudi Arabia suggests a marginally negative impact of Islamic finance on individual welfare. Despite Saudi Arabia's advanced Islamic finance sector, the equitable distribution of its benefits remains a challenge. In contrast, Pakistan's constant correction value for GDP per capita indicates that, while the country's Islamic finance sector is still underdeveloped, its negative impact on individual welfare is relatively small. This contrast suggests that a well-developed Islamic finance sector does not necessarily guarantee a stronger positive impact on per capita welfare. Meanwhile, a developing country like Pakistan may be laying the groundwork for future growth, potentially leading to a more significant impact in the long run.

The United Arab Emirates (UAE), with its oil-based economy, and Bahrain, as a financial center in the Gulf region, illustrate how economic characteristics influence the impact of Islamic financial instruments on economic growth. When analyzing the effect of Islamic financial instruments and macroeconomic factors on GDP, the UAE's constant correction value indicates a moderate contribution of Islamic finance to GDP. Despite being a key hub for Islamic finance, the UAE's heavy reliance on the oil sector diminishes the relative significance of Islamic finance in driving GDP growth compared to other countries. In contrast, Bahrain's constant correction value suggests a substantial negative effect on GDP, indicating that although Bahrain is a center for Islamic finance, the overall size of its economy and its dependence on the financial sector limit the ability of Islamic financial instruments to stimulate GDP growth significantly. This contrast highlights how underlying economic structures shape the impact of Islamic financial instruments. With its oil-dominated economy, the UAE may not rely as heavily on Islamic finance. In contrast, Bahrain, despite its financial sector focus, faces challenges in achieving a sufficiently large economic scale to maximize the benefits of Islamic finance.

When examining the effect of Islamic financial instruments and macroeconomic factors on GDP per capita, the UAE's correction value reflects a substantial positive impact of Islamic finance on individual welfare, suggesting a more equitable distribution of its benefits compared to other countries in this study. Conversely, Bahrain's constant correction value indicates a negative impact of Islamic finance on per capita welfare despite Bahrain's status as a financial center. This contrast suggests that while both the UAE and Bahrain serve as financial hubs, the UAE has been more effective in channeling the benefits of Islamic finance to society, whereas Bahrain continues to face distributional challenges.

Several significant findings emerge based on the results of the multilevel panel data regression analysis, which accounts for period heterogeneity. First, regarding GDP as the dependent variable, the analysis reveals that Total Islamic Financing and Islamic Banking Assets exert a significant and positive influence on economic growth, as indicated by their positive regression coefficients. This result suggests that Islamic financial instruments, such as Islamic financing and banking assets, are crucial to economic expansion in the studied countries. Islamic Investment also demonstrates a positive impact, although its effect is not statistically significant.

Second, the Population variable is found to have a positive and significant effect on economic growth, highlighting the critical role of demographic factors in shaping the economic dynamics of these nations. However, Inflation does not exhibit a significant relationship with economic growth in the estimated model.

When examining the fixed effects, substantial variation is observed across different years. In 2013, a constant correction value of 9.77 suggests the presence of positive factors supporting economic growth. 2014 indicates stability, with a correction value of 7.38, while 2015 experiences a decline, reflected in a correction value of 1.51. In 2016, positive influences reemerge with a correction value of 5.59, followed by a positive impact in 2017, with a correction value of 2.28.

When considering GDP per capita as the dependent variable, the regression results indicate that Islamic financial instruments and macroeconomic factors do not significantly influence GDP per capita. However, when examined simultaneously, the tested variables demonstrate a statistically significant impact on GDP per capita. Similar to the GDP model, substantial variation is observed across years in the fixed effects. In 2014, the high constant correction value of 294.7187 reflects positive factors contributing to GDP per capita. However 2015, a sharp decline was observed, with a correction value of -2512.465, followed by another negative correction in 2016 at -1371.447. The downward trend continues in 2017 and 2018, with correction values of -1181.718 and -1036.804, respectively.

The year-by-year interpretation of these constant correction values provides a deeper insight into the factors influencing economic growth and GDP per capita in the countries studied. These fluctuations reflect the complex interplay of economic conditions and policy changes over time, underscoring the importance of understanding these dynamics when formulating effective and sustainable economic policies for the future.

The findings of this study indicate that Islamic financial instruments, such as Total Islamic Financing and Islamic Banking Assets, have a significant positive impact on economic growth in countries with varying levels of Islamic finance industry development. Additionally, demographic factors, particularly Population, play a crucial role in driving economic growth, whereas Inflation does not exhibit a significant influence. The heterogeneity between countries with well-established and emerging Islamic finance industries highlights differences in the effects of Islamic financial instruments on GDP and GDP per capita. Furthermore, another key finding is the substantial year-to-year

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variation in the impact of Islamic financial instruments and macroeconomic factors on economic growth and per capita welfare.

Several important implications can be drawn from these findings. First, it is essential to continuously promote the development of the Islamic finance industry as a driver of economic growth in developing countries, particularly by strengthening instruments such as Islamic financing and banking assets. Second, demographic factors should be recognized as a critical element influencing national economic dynamics. Third, countries with a well-established Islamic finance industry should consider diversifying their economic sectors to enhance the contribution of Islamic finance to overall economic growth. Fourth, expanding access to and developing Islamic financial instruments in emerging economies, such as Pakistan and Bahrain, could be pivotal in increasing the sector's contribution to long-term economic growth. Finally, governments and regulators must remain attentive to shifts in economic dynamics and policy changes to formulate responsive and effective economic policies that support both economic growth and the Islamic financial sector in the future.

CONCLUSION

This study examines the impact of heterogeneous Islamic financial instruments and macroeconomic factors on economic growth in developing countries with varying income levels. The findings confirm that Islamic financial instruments, particularly total Islamic financing and banking assets, play a significant role in economic growth. This study underscores the importance of the Islamic finance industry in supporting sustainable economic expansion. Additionally, demographic factors, particularly population size, notably influence economic performance, while inflation appears to have no significant effect within the examined models. The study also reveals heterogeneity in the impact of Islamic financial instruments across countries, depending on the maturity of their Islamic finance sectors. Countries with well-established Islamic finance industries exhibit more stable positive effects on growth, whereas emerging markets demonstrate greater potential for expansion. Temporal analysis further indicates fluctuations in the effectiveness of Islamic financial instruments, influenced by evolving economic policies and external conditions.

Based on these findings, several policy recommendations are proposed. Governments and financial regulators should focus on expanding the accessibility and development of Islamic financial instruments, particularly in developing economies. Policy frameworks should include fiscal incentives, strengthened financial infrastructure, and increased public awareness of Islamic finance principles. Additionally, demographic factors should be incorporated into economic planning to promote long-term stability and productivity. Economic diversification beyond finance is crucial for countries with mature Islamic finance sectors to reduce dependency and enhance resilience. Future research should explore the intricate interactions between Islamic financial instruments, macroeconomic variables, and economic growth in various economic contexts to offer deeper insights for effective policymaking.

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