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THE ROLE OF ISLAMIC BANKING, MACROECONOMICS FACTOR, AND REGULATION IN ISLAMIC MORAL ECONOMY: EVIDENCE FROM OIC COUNTRIES USING PANEL GMM

Titis Miranti[1, a*], Zulfa Muasaroh Binti Rahmawati[1, b], Kurniawati Meylianingrum[1,c], Tiara Juliana Jaya[1, d], Ahmad Tibrizi Soni Wicaksono[1, e]

[1]*Economics Faculty, Unversitas Islam Negeri Maulana Malik Ibrahim, Malang, East Java, Indonesia*
[a]*titis@uin-malang.ac.id*
[b]*zulfambr@gmail.com*
[c]*meylianingrum@uin-malang.ac.id*
[d]*tiarajulianajaya@uin-malang.ac.id*
[e]*tibrizisony@uin-malang.ac.id*

*Corresponding Author: *titis@uin-malang.ac.id*

Abstract**:** *Countries that are members of the Organization of Islamic Cooperation (OIC) generally have great wealth potential. However, income inequality is still clearly visible in a number of member countries. In several studies, the inequality is studied through the Islamic Moral Economy (IME) approach with the Gini Ratio as the main proxy. This study aims to analyze the influence of Islamic banking factors represented by non-performing financing (NPF) and financing as well as macroeconomic indicators in the form of Gross Domestic Product (GDP) and inflation on income inequality in OIC countries. On the other hand, the quality of regulation as a guideline that regulates economic activity has the potential to moderate or distort the relationship between these variables. This study uses a sample of 14 OIC member countries with secondary data from the period 2013 to 2023. The analysis method used is a regression panel with the Generalized Method of Moments (GMM) approach as a parameter estimation method. The results of the study show that the financing and GDP variables have a significant effect on IME. In addition, the quality of regulation has been proven to weaken the influence of both on inequality. These findings indicate that policy and institutional quality play not only as control variables, but also as active factors in shaping the relationship between the financial sector and income inequality. Thus, OIC countries need to strengthen the Islamic banking system and maintain macroeconomic stability in order to encourage a fairer and more sustainable distribution of income in accordance with Islamic moral economic principles.*

Keywords: Islamic Moral Economy (IME); non-performing financing (NPF); Inequality; GINI Ratio; GMM; Regression Panel

1. Introduction

In the era of globalization, the implementation of the Islamic Moral Economy (IME) faces significant challenges, especially in member countries of the Organization of Islamic Cooperation (OIC) (Asrari & Wau, 2023). IME is the foundation of the Islamic financial system that emphasizes the principles of distribution justice, social welfare, and economic sustainability in accordance with sharia maqasid (Sukardi et al., 2019). One of the key

indicators in measuring the success of these principles is the Gini Ratio, which reflects the level of income inequality (Avdukic & Asutay, 2024) However, World Bank data shows that some OIC countries, such as Qatar and Bahrain, have high Gini Ratios in 2023, at 0.66 and 0.65, respectively; reflects the concentration of wealth in a few populations.

Islamic banking as the main instrument in IME is expected to contribute to economic equity through profit and loss sharing mechanisms and usury avoidance (Sanghvi et al., 2022). However, the quality of sharia financing is still a problem in a number of OIC countries, which is reflected in the high ratio of Non-Performing Financing (NPF) (Mohamad et al., 2020). In addition to banking factors, economic growth and inflation also have an important role in income distribution (Khairul, 2017). Non-inclusive economic growth and high inflation tend to exacerbate inequality, especially as they impact low-income groups more (Mohamad et al., 2020).

A number of previous studies have provided mixed findings. Several studies state that Islamic banking and economic growth contribute to reducing inequality (Mohamad et al., 2020; Omar & Inaba, 2020; Seven & Coskun, 2016), while other studies have said the impact is not significant (Avdukic & Asutay, 2024). These differences in results suggest that there may be other factors influencing the relationship. One of them that may be able to affect is the quality of regulation, which has the potential to be a moderation variable in strengthening or even weakening the relationship between economic factors and the application of IME values (Ullah et al., 2024)

Based on this background, this study aims to examine the effect of total sharia financing, NPF, economic growth, and inflation on Islamic moral economics proxied through the Gini Ratio, as well as to look at the role of moderation of regulatory quality in OIC countries for the period 2013–2023. This research is expected to make an empirical contribution to strengthening the Islamic financial system in realizing a more just and sustainable economic development.

2. Literature Review

IME has long been recognized as the philosophical foundation of the Islamic financial system that emphasizes not only economic efficiency, but also on justice, social welfare, and equitable distribution of wealth in accordance with the principles of maqasid sharia. Asutay, (2025) stated that IME are adept at integrating ethics and morals into economic activities, so that Islamic banking is not only seen in terms of profitability, but also from the extent of its contribution to social development. Yilmaz, (2024) emphasizing the importance of a balance between material progress and spiritual value as part of the vision of Islamic development. Furthermore Khan et al. (2022) states that the IME has the goal of realizing equality by emphasizing the principles of social justice and virtue in economic activities. Social justice within the framework of IME is realized through efforts to equitably distribute wealth to reduce the level of income inequality. Therefore, the level of income inequality proxied by the Gini ratio is one of the relevant indicators to measure the implementation of values in the IME Gini ratio is a statistical measurement tool used to assess the extent to which the distribution of income or speech in a society is equal or uneven.

Previous researchers evaluated the role of Islamic banking and several macroeconomic factors in reducing income inequality (Agustina et al., 2023) In this study, the total financing disbursed by banks is an important indicator to measure its contribution to financial inclusion and economic equity in the short and long term. However, no long-term effect was found on the research conducted by Azwar et al. (2022) which is significant between the development of Islamic finance and the Gini ratio but has a short-term positive influence with a significant level of 10%. Meanwhile, GDP and Inflation have a long-term relationship

Meanwhile, NPF as an indicator of asset quality also affects banking stability and effectiveness. Agustina et al. (2023) explained that the high NPF will reduce financing capacity and can worsen income distribution due to the existence of non-performing loans that are not optimally channeled. Economic growth also has a big role in the achievement of IME. Gharleghi & Jahanshahi, (2020) states that inclusive economic growth will improve people's living standards and reduce inequality, as long as it is supported by an equitable distribution of growth results. On the other hand, inflation can trigger income inequality because it has a greater impact on low-income groups. Therefore, the influence of inflation on IME must be studied in depth.

Almomani & Al-Momani, (2025) states that the development of the financial sector can contribute to the reduction of inequality if supported by adequate regulation. Ullah et al., (2024) It also corroborates the finding that financial development accompanied by effective regulation in developing countries can significantly reduce income inequality. The quality of regulation has great potential as a moderation that strengthens or even weakens the relationship between Islamic banking and Islamic moral economics. Luo et al. (2023) indicates that market structure and regulatory co-operation affect the competitiveness and efficiency of banks in the GCC Region. Study by Jan & Othman, (2021) underlined that stakeholder pressure on Sharia governance and compliance becomes more effective when supported by a firm regulatory policy. In other words, good regulation can be a positive influence of Islamic banking on economic development based on morals. On the contrary, weak regulation can weaken the social role of Islamic financial institutions. The relationship between these variables is summarized in the framework as per Figure 1 and the hypothesis.

H_1: Total financing has a significant effect on the Islamic Moral Economy (Agustina, 2023; Avdukic 2024).
H_2: NPF has a significant effect on the Islamic Moral Economy (Agustina 2023).
H_3: Economic growth has a significant effect on the Islamic Moral Economy (Masruri (2016).
H_4: Inflation has a significant effect on the Islamic Moral Economy (Bucevskka, 2019).
H_5: Regulatory Quality moderates total financing to Islamic Moral Economy
H_6: Regulatory Quality moderates NPF against Islamic Moral Economy
H_7: Regulatory Quality moderates' economic growth against Islamic Moral Economy
H_8: Regulatory Quality moderates' inflation against the Islamic Moral Economy

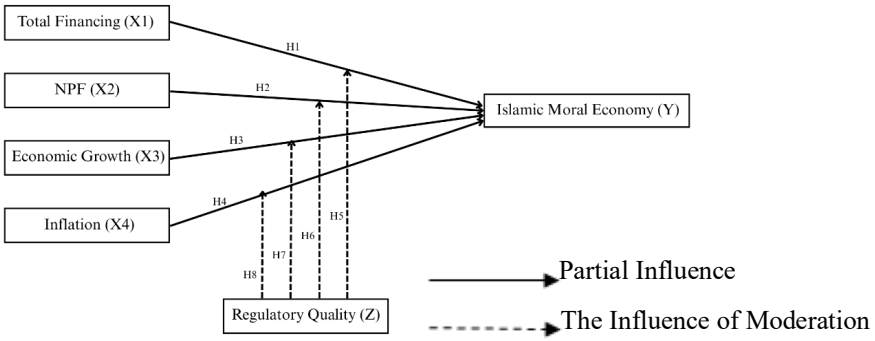

Figure 1. Conceptual Framework

Source: (Agustina, 2023; Avdukic 2024; Masruri, 2016; Bucevskka, 2019).

3. Method

The research object consists of 14 OIC countries with a research period from 2013 to 2023. These countries include Bahrain, Bangladesh, Egypt (Egypt), Indonesia, Iran, Jordan (Jordan), Kuwait, Malaysia, Pakistan, Qatar, Saudi Arabia (Saudi Arabia), Sudan, Turkey, and the United Arab Emirates (UAE). The selection of these countries is based on the consideration of the consistency of reporting of Islamic economic and financial data. Islamic banking data is sourced from the Prudential and Structural Indicators of Islamic Finance (PSIFIs). Furthermore, economic growth and inflation data were obtained from the World Bank and Our World websites

This research uses a dynamic panel data model. Dynamic GMM estimation is generally divided into two categories, namely first difference and systematic models. GMM difference models generally have poor performance (Blundell & Bond, 1998). This is particularly true when the variables exhibit behavior similar to a random walk, as the lagged levels then become weak instruments for the first-differenced equations. Furthermore, when the time dimension is limited and the dependent variable exhibits strong persistence, the difference GMM estimator can suffer from substantial sample bias (Alonso-Borrego & Arellano, 1999). Therefore, in line with the approach proposed by Arellano and Bover (1995) and Blundell and Bond (1998), this study also employs the system GMM estimator to present more robust results.

To ensure that the dynamic panel model used is the best, several tests were carried out. First, the Sargan Test as a validity test. Furthermore, the consistency is measured using the Arellano Bond value (2). The unbiased model estimation is indicated by the estimated Lag value of the dependent variable GMM model being greater than the fixed effect (FEM) model and smaller than the Pooled model. However, to ensure that the variables in the model are fit, correlation analysis and multicollinearity tests are carried out before the formation of the panel dynamic model.

This model aims to identify the influence of NPF, Financing, GDP, and inflation on IME as well as the influence of regulatory quality as a moderation factor. The influence of moderation requires an interaction between the quality of regulation and all independent variables. In this case, the model is written as Equation (1)

$$IME_{i,t} = \alpha_0 + \beta_{1(i,t)}NPF + \beta_{2(i,t)}Financing + \beta_{3(i,t)}GDP + \beta_{4(i,t)}INF + \beta_{5(i,t)}Reg + \beta_{6(i,t)}NPF * Reg + \beta_{7(i,t)}Financing * Reg + \beta_{8(i,t)}GDP * Reg + \beta_{9(i,t)}INF * Reg \quad (1)$$

i,t indicate the country and period of study, INF as inflation and Reg as regulatory quality. Although it does not specifically show a partial hypothesis about the quality of regulation, the variables are still present in the model (Leandro et al., (2025); Khan & Krishnan, (2021).

4. Result dan Discussion

The initial stage carried out was correlation analysis (Figure 2). The correlation analysis used is Pearson correlation. This analysis aims to see the relationship between independent variables and IME. Correlation analysis is used as the first identification for advanced influence analysis. A fairly high correlation of independent variables to dependent variables is a good first step to create a good model. Based on the results of Pearson's correlation value, the value of financing, GDP, inflation and regulatory quality have a significant correlation with the IME. However, the correlation shown has a different nature. Finacing, GDP fan quality regulation has a positive correlation with IME. Meanwhile, inflation is negatively correlated.

Next, a multicollinearity test (Table 1) to see the correlation between independent variables. This test ensures that there is no very high correlation between financing, NPF, GDP and inflation. A fairly high correlation will make the model unfit. So, if that happens, one of the independent variables must be replaced. Multicollinearity tests were performed using VIF, tolerance, and collinearity diagnostics. The results showed that all variables had a VIF value below 10 and a tolerance above 0.1, indicating no serious multicollinearity. The highest Condition Index was recorded at 5.31, well below the limit of 30 (Cristiano et al., (2016); Liyew et al., (2025)). Despite high loading on GDP and regulatory, there is no strong pattern of multicollinearity. Thus, all variables are feasible to use in the model.

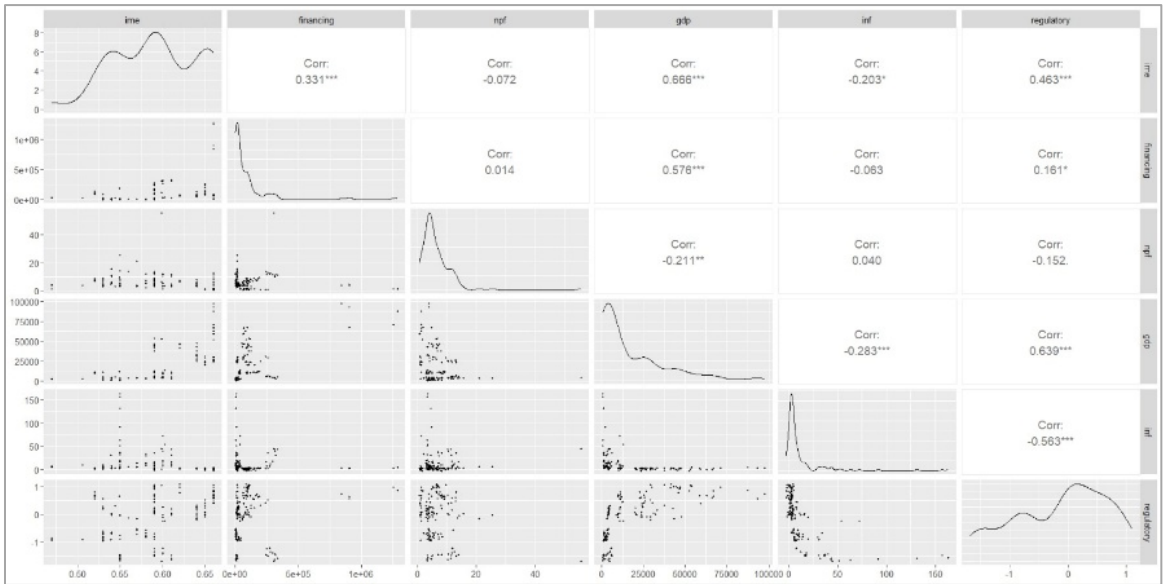

Figure 2. Pearson Correlation
Source: Data analysis (2025)

Table 1. Multicollinearity Test

Variable	Tolerance	VIF	Eigen value	Condition Index
Financing	0.5778	1.7306	1.8041	5.3112
NPF	0.9260	1.0799	1.8041	5.3112
GDP	0.3396	2.9450	1.8041	5.3112
INF	0.6709	1.4904	1.8041	5.3112
Regulatory	0.3914	2.5549	1.8041	5.3112

Source: Data Analysis (2025)

Based on table 2, the results of the Sargan test show a p-value of 0.973, which means that the instrument used in the GMM model is valid and there is no overidentification. The autocorrelation test showed first-order autocorrelation (AR(1)), which is common in dynamic models, but no second-order autocorrelation (AR (2)) was found with a p-value of 0.399, which ensured that the GMM estimator remained consistent (Jha, (2019); Zhu et al., (2022)). In addition, the Wald test shows that the model is significant. Thus, the GMM model used has met the requirements of validity, consistency, and free from bias, so that the estimation results can be relied upon in explaining the dynamics of economic inequality in OIC member countries.

The estimated results show that the IME in the previous period (IME lag) has a significant and positive effect on the current IME. This indicates the persistence of inequality. Financing also has a significant positive effect on IME, albeit with a relatively small coefficient value, which shows that an increase in sharia financing tends to encourage inequality if it is not accompanied by an equitable distribution. In contrast, NPF has no significant influence. GDP

was found to have a positive and significant effect, indicating that an increase in economic output does not necessarily have an impact on the equitable distribution of income. Inflation and the quality of regulation directly have no significant effect on IME, although regulation shows a marginal influence.

Furthermore, interaction analysis shows that regulation has an important moderation role. The interaction between regulation and financing as well as between regulation and GDP shows a significant negative influence on IME, which means that regulation can weaken the negative impact of increased financing and economic growth on inequality. This suggests that quality regulation can serve as a policy tool to mitigate the impact of inequality caused by key economic variables.

Based on the results of the above hypothesis test, there are findings in the form of total Islamic bank financing and economic growth measured using GDP significantly have a positive effect on the IME which is proxied with the Gini Ratio. This shows that increased financing and economic growth are correlated with increasing income inequality in OIC countries. This indicates that the distribution of development and financing results is not even. On the other hand, NPF and inflation variables do not have a significant impact on IME. Furthermore, the results of the moderation analysis showed that the quality of regulation was statistically able to moderate the relationship between total financing and GDP to IME, but the direction of influence was negative.

Within the framework of the financial intermediation theory put forward by Gorton & Winton, (2002) Banks act as financial intermediaries that channel funds from surplus units (savers) to deficit units (borrowers), so that they are expected to be able to encourage economic activity and create equitable distribution of welfare. The total financing disbursed by Islamic banking reflects the extent to which this intermediation function is running. However, in the IME, the findings show that higher financing is followed by an increase in the Gini Ratio, which indicates that income inequality is getting bigger. This can be interpreted as that the financing provided has not fully reached the poor group or the lower middle product sector and tends to be absorbed by the upper middle group who are freer. Thus, the role of Islamic micro banking has not fully led to the achievement of the macro-objectives of IME, namely distributive justice and social welfare.

Table 2. Model Parameter Estimation with GMM

	GMM		FEM		CEM		Hypothesis
	Estimate	Std. Error	Estimate	Std. Error	Estimate	Std. Error	
(Intercept)	1.93E-01***	2.54E-02			1.85E-01	2.53E-02	
Lag(Ime)	6.47E-01***	4.38E-02	2.33E-01	4.66E-02	6.60E-01	4.37E-02	
Financing	2.44E-08*	1.35E-08	-3.69E-09	2.88E-08	2.37E-08	1.34E-08	Accepted
NPF	-8.15E-05	4.59E-04	5.42E-04	5.40E-04	-8.90E-05	4.57E-04	Rejected
GDP	1.16E-06***	2.08E-07	2.08E-07	3.99E-07	1.14E-06	2.07E-07	Accepted
INF	1.95E-04	2.36E-04	-2.21E-04	2.46E-04	2.12E-04	2.35E-04	Rejected
Regulatory	9.65E-03*	5.04E-03	-2.31E-02	1.27E-02	9.39E-03	5.00E-03	Rejected
Financing:Regulatory	-3.42E-08**	1.44E-08	-4.37E-09	3.16E-08	-3.37E-08	1.43E-08	Accepted
Npf:Regulatory	1.09E-05	3.63E-04	4.42E-04	3.51E-04	3.14E-06	3.64E-04	Rejected
Gdp:Regulatory	-7.73E-07***	2.26E-07	4.75E-07	4.22E-07	-7.61E-07	2.23E-07	Accepted
Inf:Regulatory	5.42E-05	1.58E-04	-1.60E-04	1.64E-04	6.59E-05	1.57E-04	Rejected
Test Model							P-value
Sargan Test							0.973
Autocorrelation test (AR 1)							0.045993
Autocorrelation test (AR 2)							0.39995
Wald Test							< 2.22e-16

Source: Data Analysis (2025)

The results of the hypothesis test also show that *regulatory quality* moderates the relationship between total financing and GDP on the IME negatively, meaning that higher regulation weakens the positive influence of financing and economic growth on IME. This phenomenon does not necessarily indicate that regulation is bad but indicates that there are structural barriers that arise due to the implementation of strict but not yet inclusive regulations. In Islamic finance, overly administrative or formal regulations have the potential to make it difficult for the informal sector which is the main group in economic equity to access financing. As a result, even as financing increases and the economy grows, the impact on the fairness of income distribution becomes suboptimal. This is in line with the reality in many OIC countries, where financial system stability takes precedence over the expansion of access, so that IME values such as inclusion and equity have not been fully achieved.

5. Conclusion

This study concludes that Islamic financing and GDP have a positive and significant impact on the IME, as measured by the Gini Ratio in OIC member countries. This indicates that increased financing and economic output have not fully contributed to income equality and even tend to increase inequality. In contrast, NPF and inflation did not have a significant impact on IME. Furthermore, a key finding of this study is the moderating role of regulatory quality. The interaction between regulation and financing and GDP significantly attenuated the influence of both on inequality, confirming that strong and inclusive regulations can help mitigate the negative impacts of growth and financing on income distribution.

The implications of these findings suggest that the Islamic financial system in OIC countries needs to be directed not only at expanding the volume of financing but also at ensuring its equitable distribution to align with the IME's goals of social justice and shared prosperity. Regulation also plays a key role in ensuring the inclusive and equitable functioning of financial intermediation. The government and financial authorities need to design regulations that not only focus on system stability but also expand financial access for vulnerable groups, particularly the informal sector and MSMEs, which have played a crucial role in promoting equity. The successful implementation of IME values depends heavily on the synergy between macroeconomic policies, the sustainability of the Islamic banking sector, and the effectiveness of existing regulations.

While providing significant empirical contributions, this study has several limitations. First, the sample size is limited to 14 OIC countries with complete data for the 2013–2023 period, so the results cannot be generalized to all OIC members. Second, the measurement of regulatory variables uses an aggregate approach, which does not reflect the specific regulatory dynamics in each country. Third, the model used does not explicitly distinguish between short-term and long-term effects. Therefore, future research is expected to expand the geographic scope, use more comprehensive institutional indicators, and consider other dynamic modeling approaches such as cointegration or error correction models to more accurately capture temporal dynamics.

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