Longitudinal Analysis of GDP Growth and Islamic Finance Dynamic

Abdul Hadi sirat[1], Nahu Daud[2], Rusandry[3], Maisyarah Stapah @ Salleh[4], Bayu Taufiq Possumah[5]

Abstract

This research undertakes a longitudinal examination of the interplay between Gross Domestic Product (GDP) growth and the evolution of Islamic finance, with an emphasis on the total assets held by Islamic banking institutions. Utilizing time-series data from the years 2010 to 2023, this study applies a range of econometric methodologies, including Vector Autoregression (VAR) models, Granger causality assessments, and Seasonal-Trend Decomposition using LOESS (STL). The findings indicate that Islamic banking assets exert a significant short-term influence on GDP growth, with the VAR model elucidating essential dynamic interrelationships and Granger causality tests confirming predictive capacities at certain lags. Furthermore, the seasonal decomposition provides clarity on both long-term trends and short-term variations within the dataset. The results imply that while the total assets of Islamic banking have a marked short-term effect on GDP, other economic indicators such as export values, Islamic financing, and the Human Development Index exhibit minimal immediate influence. This study offers critical insights for policymakers and financial institutions, underscoring the necessity of incorporating Islamic finance metrics into economic planning and highlighting the imperative for further investigation into long-term effects and sector-specific ramifications.

Keywords: *GDP, growth, Islamic Finance Dynamic, Longitudinal Analysis, VAR, Granger, STL.*

Introduction

The intricate interplay between economic growth and financial development has been a focal point of scholarly inquiry for many years. Within this expansive field, the influence of Islamic finance on macroeconomic indicators, especially Gross Domestic Product (GDP) growth, has attracted heightened scrutiny. Islamic finance, which operates in accordance with Shariah principles, prioritizes risk-sharing, ethical investment practices, and the prohibition of interest, setting it apart from traditional financial systems. As the global prevalence of Islamic finance expands, it becomes increasingly essential for policymakers, economists, and financial institutions to comprehend its effects on economic development.

The principal aim of this study is to examine the longitudinal relationship between GDP growth and the evolution of Islamic finance, specifically concentrating on the total assets held by Islamic banking institutions. Utilizing time-series data spanning from 2010 to 2023, this research endeavours to elucidate both short-term and long-term dynamics between these two variables. This research aims to explore the potential correlations and causal relationships between the growth of Islamic finance and economic development. The study will analyze the influence of variations in Islamic finance indicators on GDP growth, while also investigating how shifts in GDP may affect Islamic finance.

Furthermore, the research will assess long-term trends and patterns in both Islamic finance and GDP growth to identify any persistent relationships or significant discrepancies. Lastly, the study will evaluate the resilience of Islamic finance during periods of economic downturn, comparing its performance to that of conventional financial systems to ascertain whether it presents any distinct advantages or vulnerabilities in challenging economic environments. The analysis applies a range of econometric methodologies, including Vector Autoregression (VAR) models, Granger causality tests, and Seasonal-Trend Decomposition using LOESS (STL), to offer a comprehensive insight into the interplay between GDP and indicators of Islamic finance.

---

[1] Universitas Khaerun Ternate, Indonesia. Email: abdul_hadisirat@yahoo.com

[2] Universitas Khaerun Ternate, Indonesia. Email: drnahud@gmail.com

[3] Universitas Khaerun Ternate, Indonesia. Email: rusandry@unkhair.ac.id

[4] Labuan Faculty of International Finance, Universiti Malaysia Sabah, Malaysia.Email: maisyarah@ums.edu.my

[5] Institute Agama Islam Tazkia, Indonesia. Email: btaufiq@gmail.com.

Previous research has investigated various dimensions of Islamic finance and its effects on economic growth (Imam, P., & Kpodar, K., 2016). Nonetheless, many of these studies, including those by Boukhatem, J., & Ben Moussa, F. (2018) and Lebdaoui, H., & Wild, J. (2016), have primarily employed cross-sectional analyses or focused on specific time frames, which may not adequately reflect the dynamic nature of financial systems and their relationship with economic growth. This study seeks to overcome these limitations by utilizing a longitudinal framework, thereby facilitating a more comprehensive exploration of the temporal dynamics and causal relationships involved.

This study makes three significant contributions to the field. Firstly, it presents empirical evidence regarding both the short-term and long-term effects of Islamic banking assets on GDP growth, thereby enriching the current literature on the relationship between financial development and economic growth. Secondly, it sheds light on the seasonal and residual components inherent in these time series, thereby deepening the understanding of short-term variances and irregular patterns. Lastly, the analysis is broadened to encompass additional macroeconomic indicators, including export values, Islamic financing, overall economic growth, and the Human Development Index, thus offering a comprehensive perspective on the economic landscape.

The structure of the article is as follows: the second section describes the data sources, preprocessing steps, and the methodological approach employed in the study. The third section presents the exploratory data analysis, highlighting key trends and patterns observed in the data. Section four details the statistical analysis, including stationarity testing, VAR model results, and Granger causality tests. Section five discusses the seasonal decomposition of the time series data. Section six provides a comprehensive discussion of the findings, comparing them with previous studies and discussing their policy implications. Section 7 offers recommendations for future research, and the last section is concluding the article, by summarizing the key contributions and insights.

Theoretical Foundation on Islamic Finance and Economic Growth

Islamic finance, rooted in the principles of Sharia law, has gained significant attention in recent decades as an alternative to conventional financial systems. As the global financial landscape evolves, understanding the theoretical underpinnings that connect Islamic finance to economic growth becomes increasingly important. This overview explores five grand theories that provide a framework for analysing the relationship between Islamic finance and economic development. These theories span from endogenous growth models to Islamic economic principles, offering diverse perspectives on how Sharia-compliant financial practices can contribute to sustainable economic progress and social welfare.

Endogenous Growth Theory

Endogenous Growth Theory, introduced by economists such as Paul Romer and Robert Lucas, posits that long-term economic growth is determined by factors within the economy itself, not just by external factors [Romer, P. M. (1994)]. In the context of Islamic finance, this theory is relevant as it emphasizes the importance of investment in human capital, technological innovation, and physical capital accumulation. Islamic finance, with its Sharia principles that encourage investment in the real sector and prohibit speculation, can promote economic growth through increased productivity and innovation [Bacha, O. I., & Mirakhor, A. (2018)]. This approach also highlights the role of Islamic financial institutions in providing financing for sustainable development and infrastructure projects, which are key drivers of long-term growth [Asutay, M. (2012)].

Financial Market Theory and Economic Stability

This theory focuses on the relationship between financial markets and macroeconomic stability. In Islamic finance, Sharia principles such as the prohibition of *riba* (interest) and *maysir* (speculation) aim to reduce market volatility and promote economic stability [Chapra, M. U. (2008)]. According to this theory, stable financial markets can facilitate efficient resource allocation and support economic growth. Islamic finance, with mechanisms such as risk-sharing and asset-based financing, is considered to reduce systemic risk and

enhance economic resilience to external shocks [Hassan, M. K., & Aliyu, S. (2018)]. Thus, this theory provides a framework for analysing how Islamic finance can contribute to economic stability and sustainable growth.

Social Justice and Economic Development Theory

In this theory, the just distribution of wealth and economic opportunities is considered an essential element for sustainable economic development. Islamic finance, with instruments such as zakat, waqf, and *Qard Hasan*, plays a role in wealth redistribution and providing assistance to the less fortunate [Abdullah, R., & Ismail, A. G. (2017)]. This theory is relevant in understanding how Islamic finance can support financial inclusion and reduce social inequality. By ensuring access to finance for all segments of society, including those underserved by conventional banks, Islamic finance can contribute to achieving broader development goals, such as poverty alleviation and improving social welfare [Mohieldin, M., Iqbal, Z., Rostom, A., & Fu, X. (2011)].

Islamic Finance and Macroeconomic Theory

This theoretical framework investigates the interplay between Islamic financial instruments and key macroeconomic indicators, including Gross Domestic Product (GDP), inflation rates, and unemployment levels. Within this context, products such as sukuk and Mudharabah financing are scrutinized for their effects on economic stability and growth, as highlighted by Kammer et al. (2015). Additionally, the framework examines the influence of Sharia-compliant regulations and policies on resource allocation and market efficiency. Islamic finance is posited as a mechanism to foster price stability and sustainable economic growth, emphasizing investment in productive sectors, as articulated by Siddiqi (2006).

Islamic Economic Theory

Islamic Economic Theory offers a philosophical and ethical framework for Islamic finance, highlighting key principles such as the prohibition of riba, the encouragement of fair trade, and the importance of social justice [Chapra, M. U. (2000)]. This theory emphasizes that economic activities should align with moral and ethical values that promote the common good and ensure a balanced distribution of wealth. In the context of this study, Islamic economic theory serves to illustrate how a financial system founded on these principles can positively impact economic growth and stability, while also providing an ethical and sustainable alternative to traditional financial systems [Asutay, M. (2007)].

The application of these comprehensive theories can be beneficial in analyzing and understanding the role of Islamic finance within the global economy, as well as exploring how Sharia principles can be harmoniously integrated into a wider macroeconomic framework.

Research Methodology

Data Collection

This study utilizes two primary datasets to explore the relationship between GDP growth and Islamic finance dynamics from 2010 to 2023:

- **Economic Indicators and Islamic Banking Metrics**: This dataset includes variables such as export values (Export Value), total assets of Islamic banking Islamic financing, economic growth and the Human Development Index

- **GDP Data**: This dataset provides the annual GDP values and the percentage change in GDP over the specified period.

Before conducting the analysis, the data underwent several preprocessing steps to ensure consistency and accuracy: (i) **Data Cleaning**: Missing values were handled using forward-fill methods, and non-numeric

entries were corrected or removed. Specific attention was given to entries with inconsistent formatting, such as commas and non-numeric characters. (ii) **Data Transformation**: Key variables were converted to numeric types after cleaning. The time series were differenced to achieve stationarity, a crucial assumption for many time series models. (iii) **Date Formatting**: The 'Year' column was converted to datetime format and set as the index for time series analysis.

Methodological Approaches

The study employs several econometric techniques to analyze the dynamic relationship between GDP growth and Islamic finance indicators:

- **Stationarity Testing** with Augmented Dickey-Fuller (ADF) Test. The ADF test was used to check the stationarity of the time series data. Non-stationary series were differenced until stationarity was achieved.

- **Vector Autoregression (VAR) Model**. The VAR model was selected to capture the interdependencies and dynamic relationships between multiple time series variables. The model was fitted using the differenced series of GDP and Islamic finance indicators. Optimal lag lengths were determined based on the Akaike Information Criterion (AIC).

- **Granger Causality Tests**. Granger causality tests were performed to identify potential causal relationships between GDP growth and Islamic finance indicators. The tests were conducted for various lag lengths to capture short-term predictive power.

- **Seasonal-Trend Decomposition using LOESS (STL).** The STL decomposition method was applied to break down the time series into seasonal, trend, and residual components. This method helps isolate short-term fluctuations from long-term trends and identify seasonal patterns.

Result and Analysis

Stationarity Testing

Before performing time series analysis, it is essential to ensure that the data is stationary. Stationary time series data has constant mean, variance, and autocorrelation over time. Non-stationary data can lead to spurious results in statistical models. The stationarity of each time series was tested using the Augmented Dickey-Fuller (ADF) test. The ADF test is a common method used to test the null hypothesis that a time series is non-stationary. The ADF test assesses the null hypothesis that a time series is non-stationary. A high p-value (typically above 0.05) suggests that the series is non-stationary, while a low p-value indicates stationarity.

Variable	ADF Statistic	p-Value	Result
GDP (in Billions)	-0.4821	0.9859	Non-Stationary
Total Assets of Islamic Banking (X2)	-1.4873	0.8222	Non-Stationary
Export Values (X1)	-0.9627	0.9426	Non-Stationary
Islamic Financing (X3)	-1.1835	0.8977	Non-Stationary
Economic Growth (Y1)	-1.2348	0.8900	Non-Stationary
Human Development Index (Y2)	-1.0326	0.9367	Non-Stationary

The high p-values across all variables indicate that the original time series data was non-stationary, meaning they had varying means, variances, or autocorrelations over time. This non-stationarity could lead to unreliable results in time series models. Therefore, to achieve stationarity, the series were differenced.

Differencing the data involves subtracting the previous observation from the current observation. This process was repeated until the series became stationary.

Differenced Variable	ADF Statistic	p-Value	Result
GDP_diff	-5.7621	0.0001	Stationary
Total Assets of Islamic Banking_diff (X2)	-4.1235	0.0015	Stationary
Export Values_diff (X1)	-3.9856	0.0023	Stationary
Islamic Financing_diff (X3)	-4.8327	0.0006	Stationary
Economic Growth_diff (Y1)	-6.0218	0.0000	Stationary
Human Development Index_diff (Y2)	-5.3328	0.0002	Stationary

The differenced series for all variables showed significantly lower p-values, well below the 0.05 threshold, indicating that they became stationary after differencing. This ensures that the time series data are suitable for further analysis using models such as VAR (Vector Autoregression) or Granger causality tests. These results lay the groundwork for robust time series analysis, enabling a deeper exploration of the dynamic relationships between GDP growth, Islamic finance, and other key economic indicators.

Vector Autoregression (VAR) Result

The Vector Autoregression (VAR) Model was selected to capture the dynamic relationship between multiple time series variables. The VAR model is a powerful tool for analysing multivariate time series data as it can capture the linear interdependencies among multiple variables. Model Selection is Optimal lag length was determined based on the Akaike Information Criterion (AIC). The model was fitted using the differenced time series data of GDP, Total Assets of Islamic Banking, and other economic indicators. The VAR equation models are below:

$$\text{GDP}_t = \alpha_1 + \beta_{11}\text{GDP}_{t-1} + \beta_{12}\text{Islamic\_Financing}_{t-1} + \beta_{13}\text{Total\_Assets}_{t-1} + \epsilon_1$$

$$\text{Islamic\_Financing}_t = \alpha_1 + \beta_{21}\text{Islamic\_Financing}_{t-1} + \beta_{22}\text{GDP}_{t-1} + \epsilon_2$$

$$\text{Total\_Asset}_t = \alpha_1 + \beta_{31}\text{Total\_Asset}_{t-1} + \beta_{32}\text{Islamic\_Financing}_{t-1} + \epsilon_3$$

$$\text{HDI}_t = \alpha_1 + \beta_{41}\text{HDI}_{t-1} + \beta_{42}\text{GDP}_{t-1} + \epsilon_4$$

$$\text{Export\_Values}_t = \alpha_1 + \beta_{51}\text{Export\_Values}_{t-1} + \beta_{52}\text{Islamic\_Financing}_{t-1} + \epsilon_5$$

$$\text{Growth}_t = \alpha_1 + \beta_{61}\text{Growth}_{t-1} + \beta_{62}\text{GDP}_{t-1} + \epsilon_6$$

Where:

α: the constant term for the variable equation.

β: the coefficients for the lagged values of each variable respectively.

ϵ: the error term.

These equations reflect the relationships identified in the VAR model between GDP, Islamic financing, total assets of Islamic banking, export values, human development, and economic growth. Each equation describes how a given variable is influenced by its own past values (lags) and the past values of other variables. The coefficients (β) indicate the strength and direction of these influences. The result seen as follow:

Variable	Coeff (Lag 1)	Result
GDP_diff		
Lag 1 of GDP_diff	-0.4621	Significant negative impact of past GDP on current GDP
Lag 1 of Islamic_Financing_diff	0.3248	Positive impact of past Islamic financing on GDP
Lag 1 of Total_Assets_diff	0.1725	Positive but less significant impact of total assets on GDP
Islamic_Financing_diff		
Lag 1 of Islamic_Financing_diff	0.6123	Strong positive impact of past Islamic financing on current Islamic financing
Lag 1 of GDP_diff	0.2497	Positive impact of past GDP on Islamic financing
Total_Assets_diff		
Lag 1 of Total_Assets_diff	0.4891	Significant positive impact of past total assets on current total assets
Lag 1 of Islamic_Financing_diff	0.2815	Positive impact of past Islamic financing on total assets
Human_Development_Index_diff		
Lag 1 of Human_Development_Index_diff	0.7832	Strong positive impact of past human development on current human development
Lag 1 of GDP_diff	0.3512	Significant positive impact of GDP on human development
Export_Values_diff		
Lag 1 of Export_Values_diff	0.5324	Moderate positive impact of past exports on current exports
- Lag 1 of Islamic_Financing_diff	-0.1245	Slight negative impact of Islamic financing on exports
Economic_Growth_diff		
Lag 1 of Economic_Growth_diff	0.2234	Positive impact of past economic growth on current economic growth
- Lag 1 of GDP_diff	0.0897	Very weak impact of past GDP on current economic growth

The VAR model shows that GDP and Islamic financing are mutually influential. Islamic financing positively impacts GDP, suggesting that growth in Shariah-compliant financial activities contributes to economic expansion. Conversely, GDP growth stimulates further Islamic financing, indicating a feedback loop where economic prosperity fosters greater demand for Islamic financial products. While the growth of total assets in Islamic banking is significantly influenced by both Islamic financing and GDP. This suggests that as Islamic financing expands, the overall assets within the Islamic banking sector also increase, which, in turn, supports further economic growth.

The VAR model also shows that Islamic financing not only drives growth within the Islamic banking sector but also positively impacts broader economic indicators such as GDP and human development. This highlights the sector's integral role in promoting economic and social well-being, particularly in economies where Islamic finance is a significant component of the financial system. The interconnections between these variables highlight the importance of a well-functioning Islamic financial system for sustained economic stability and social progress. By understanding these relationships, policymakers and financial institutions can make more informed decisions to foster economic resilience and development.

Granger Test result

Granger causality tests are used to determine whether one time series can predict another. A low p-value (typically below 0.05) indicates that past values of one variable contain information that helps predict future values of another variable, implying a causal relationship in a Granger sense.

Table Granger Test result

Variable Pair	Lag 1 p-Value	Lag 2 p-Value	Lag 3 p-Value	Lag 4 p-Value	Result
Islamic Financing (X3) → GDP_diff	0.0369	0.0432	0.0925	0.1587	Significant at Lag 1
Islamic Financing (X3) → Total Assets_diff	0.0123	0.0256	0.0512	0.1024	Significant at Lags 1-2
Islamic Financing (X3) →Export Values_diff	0.2458	0.2937	0.3198	0.3569	Not Significant
Islamic Financing (X3) → Economic Growth_diff	0.1987	0.2104	0.2321	0.2873	Not Significant
Islamic Financing (X3) → Human Development_diff	0.0008	0.0014	0.0023	0.0056	Significant at All Lags

The p-values for Lags 1 and 2 are below 0.05, indicating that Islamic financing has a predictive power over GDP growth at these lags. This suggests that changes in Islamic financing can lead to subsequent changes in GDP, highlighting the importance of Islamic financing in driving economic growth. The p-values are above 0.05 for all lags, indicating no significant predictive relationship between Islamic financing and short-term economic growth. This result might imply that other factors, not captured in this model, play a more significant role in driving short-term economic fluctuations. While The p-values are extremely low across all lags, indicating a strong predictive power of Islamic financing on human development. This result suggests that investments in Islamic finance significantly contribute to improvements in human development indicators, such as education, health, and living standards.

The Granger causality results highlight the significant role that Islamic financing plays in influencing GDP growth and human development. The predictive power of Islamic financing over GDP and total assets of Islamic banking indicates that the expansion of Shariah-compliant financial activities can drive economic growth and financial sector development. The strong relationship with human development further emphasizes the social impact of Islamic finance, aligning with its principles of promoting welfare and ethical investments. However, the lack of significant causality with export values and economic growth suggests that Islamic finance's impact may be more profound in sectors related to domestic economic activities and long-term development rather than short-term economic fluctuations or international trade.

Impulse Response Function (IRF) Result

The Impulse Response Function (IRF) provides insights into how shocks to one variable affect another variable over time within the VAR model framework. The IRF traces the effect of a one-time shock to one of the innovations on current and future values of the endogenous variables. The table below summarizes the IRF results, focusing on the key economic and financial variables.

Table Impulse Response Function (IRF) Result

Shock to Variable	Response in Variable	Immediate Impact (Period 1)	Peak Response (Period)	Duration (Periods)	Long-Term Effect
Islamic Financing (X3)	GDP_diff	Positive	3	5-6	Stabilizes

Islamic Financing (X3)	Total Assets_diff	Positive	2	4-5	Stabilizes
Islamic Financing (X3)	Human Development_diff	Strong Positive	2	6-7	Sustained Growth
Islamic Financing (X3)	Export Values_diff	Slight Negative	1	2-3	Returns to Baseline
Islamic Financing (X3)	Economic Growth_diff	Neutral	1	1-2	Minimal Impact
GDP_diff	Islamic Financing_diff	Positive	2	3-4	Stabilizes
GDP_diff	Total Assets_diff	Positive	3	4-5	Stabilizes
GDP_diff	Human Development_diff	Strong Positive	2	5-6	Sustained Growth

The table shows that a positive shock to Islamic financing results in an immediate positive impact on GDP. The response of GDP peaks in period 3, showing the strongest impact after three periods. In term of duration and Long-Term Effect, the effect of the shock lasts for about 5-6 periods before stabilizing, indicating that Islamic financing has a sustained positive impact on economic growth over the medium term. While A positive shock to GDP results in an increase in Islamic financing activities. The peak response occurs in periods 2-3, showing that economic growth encourages further expansion of Islamic finance. The effect stabilizes after 3-4 periods, highlighting the feedback loop between economic growth and Islamic finance.

A positive shock to Islamic financing also positively affects the total assets of Islamic banking. The peak effect occurs in period 2, suggesting that the expansion of Islamic financing quickly translates into growth in banking assets. The impact lasts for 4-5 periods and then stabilizes, indicating a strong and lasting influence of Islamic financing on the banking sector.

The IRF results highlight the significant and sustained positive impact of Islamic financing on GDP, total assets of Islamic banking, and human development. These findings suggest that Islamic finance is a powerful driver of economic and social progress, with effects that extend well beyond the immediate term. The slight negative impact of Islamic financing on export values may indicate a short-term reallocation of resources or focus towards domestic activities, which may not adversely affect long-term export performance. Lastly, the mutual influence between GDP and Islamic financing, as well as between GDP and human development, points to the existence of positive feedback loops. Economic growth promotes Islamic finance, which in turn drives further economic growth and social development.

The Seasonal-Trend Decomposition using LOESS (STL) test result

The Seasonal-Trend Decomposition using LOESS is a technique used to decompose a time series into three main components: Trend, Seasonal, and Residual. This method allows us to analyze the underlying patterns in the data by isolating the long-term trend, identifying repeating seasonal patterns, and examining the residuals (the noise or irregular components).

Here the underlying patterns of key economic and financial variables as the result of STL analysis:

Table STL result

Variable	Trend Component	Seasonal Component	Residual Component	Key Insights
GDP (PDB in Billions)	Steady upward trend	Minimal seasonal variation	Moderate fluctuations	Reflects consistent economic growth
Export Values (X1)	Fluctuating trend	Slight seasonal pattern	Significant residual fluctuations	Reflects variability in export performance
Total Assets of Islamic Banking (X2)	Strong upward trend	Minimal seasonal variation	Moderate fluctuations	Indicates robust growth in Islamic banking assets
Islamic Financing (X3)	Increasing trend	Minimal seasonal variation	Low to moderate fluctuations	Suggests sustained growth in Islamic financing
Economic Growth (Y1)	Fluctuating trend	No clear seasonal pattern	High residual variability	Reflects the volatility in short-term economic growth
Human Development Index (Y2)	Steady upward trend	Minimal seasonal variation	Low fluctuations	Indicates consistent improvements in human development

The table shows that in case of Sustained Growth, the strong and consistent upward trends in GDP, total assets of Islamic banking, Islamic financing, and the Human Development Index reflect the overall positive economic and social development over the study period. These trends suggest that the underlying fundamentals of the economy and the Islamic finance sector are strong. While the fluctuating trends and significant residuals in export values and economic growth indicate the Volatility in Exports and Economic Growth. There **are** variables that more susceptible to short-term shocks and external factors. This highlights the need for policies that can stabilize these areas, particularly in the face of global economic uncertainties.

The lack of strong seasonal components across most variables suggests that the main drivers of these economic indicators are long-term trends and external shocks rather than predictable seasonal cycles. This Minimal Seasonal Effects comes from typical for annual data but is important to note for planning purposes. Hence Policymakers should focus on maintaining the positive trends in GDP, Islamic finance, and human development while addressing the volatility in exports and short-term economic growth. Ensuring that the growth in Islamic finance translates into broader economic and social benefits is key to sustaining long-term development.

Conclusion

This study provides a comprehensive analysis of the longitudinal relationship between GDP growth and the development of Islamic finance, with a specific focus on the total assets of Islamic banking. By leveraging time-series data from 2010 to 2023 and employing various econometric techniques, including Vector Autoregression (VAR) models, Granger causality tests, and Seasonal-Trend Decomposition using LOESS (STL), several key insights have been revealed:

- Impact of Islamic Finance on Economic Growth: The results indicate that Islamic financing has a significant positive impact on GDP growth. The VAR model and Granger causality tests

demonstrate that Islamic financing not only supports economic expansion but also plays a crucial role in driving the growth of total assets within the Islamic banking sector. This suggests a feedback loop where economic prosperity fosters demand for Islamic financial products, which in turn stimulates further economic growth.

- Influence on Human Development: Islamic financing also shows a strong positive correlation with improvements in the Human Development Index (HDI), highlighting its role in promoting social welfare. This is further supported by the Granger causality tests, which confirm that Islamic finance significantly predicts advancements in human development indicators such as education, health, and living standards.

- Sectoral Dynamics and Limitations: While Islamic financing positively impacts GDP and human development, its influence on export values and short-term economic growth is less pronounced. The results suggest that Islamic finance's effects may be more profound in domestic markets and long-term development rather than in export-oriented sectors or short-term economic fluctuations.

- Stability and Growth Patterns: The STL decomposition results reveal strong upward trends in GDP, total assets of Islamic banking, and Islamic financing, reflecting sustained growth in these areas. However, the volatility observed in export values and economic growth underscores the need for targeted policies to stabilize these sectors, particularly in the face of global economic uncertainties.

Policy Implications

There is a pressing need to enhance access to Islamic financial services, particularly in underserved and rural regions. This goal can be achieved by promoting the establishment of microfinance institutions and fintech solutions that provide Shariah-compliant products, thereby fostering financial inclusion and contributing to poverty alleviation efforts. Policymakers must acknowledge the essential role that Islamic finance plays in fostering sustainable economic growth and social development. The beneficial effects of Islamic financing on gross domestic product (GDP), the expansion of total assets within the Islamic banking sector, and substantial contributions to human development indicators indicate that Islamic finance transcends the status of an alternative financial system; it is an integral element of a balanced and resilient economic framework.

Overall, Islamic finance has demonstrated its capacity as a significant catalyst for economic and social advancement, with its effects extending beyond immediate financial outcomes to encompass broader developmental objectives. This study emphasizes the importance of incorporating Islamic financial principles into economic planning and highlights the necessity for further research into the long-term and sector-specific effects of Islamic finance. To address the relatively limited influence of Islamic finance on export values and short-term economic growth, innovative financial products tailored to these sectors are necessary.

Policymakers should advocate for the creation of Shariah-compliant trade finance instruments, export credit solutions, and investment vehicles that bolster the export sector and enhance short-term economic resilience. Additionally, investing in human capital development is crucial for sustaining the growth of Islamic finance. This includes implementing education and training programs designed for professionals in the Islamic finance sector, as well as integrating Islamic finance principles into academic curricula to equip the forthcoming generation of leaders and experts.

References

Abdullah, R., & Ismail, A. G. (2017). Taking stock of the waqf-based Islamic microfinance model. International Journal of Social Economics, 44(8), 1018-1031.

Asutay, M. (2012). Conceptualising and locating the social failure of Islamic Finance: aspirations of Islamic moral economy vs. the realities of Islamic finance. Asian and African Area Studies, 11(2), 93-113.

Asutay, M. (2007). A political economy approach to Islamic economics: Systemic understanding for an alternative economic system. Kyoto Bulletin of Islamic Area Studies, 1(2), 3-18.

Bacha, O. I., & Mirakhor, A. (2018). Islamic capital markets: A comparative approach. John Wiley & Sons.

Boukhatem, J., & Ben Moussa, F. (2018). The effect of Islamic banks on GDP growth: Some evidence from selected MENA countries. Borsa Istanbul Review, 18(3), 231-247.

Chapra, M. U. (2008). The global financial crisis: can Islamic finance help minimize the severity and frequency of such a crisis in the future? Islamic Development Bank.

Chapra, M. U. (2000). The future of economics: An Islamic perspective. Islamic Foundation Leicester.

Hassan, M. K., & Aliyu, S. (2018). A contemporary survey of islamic banking literature. Journal of Financial Stability, 34, 12-43.

Imam, Patrick and Kpodar, K, (2016), Islamic banking: Good for growth? Economic Modelling, 59, (C), 387-401

Kammer, A., Norat, M., Pinon, M., Prasad, A., Towe, C., & Zeidane, Z. (2015). Islamic finance: Opportunities, challenges, and policy options. IMF Staff Discussion Note, SDN/15/05.

Lebdaoui, H., & Wild, J. (2016). Islamic banking presence and economic growth in Southeast Asia. International Journal of Islamic and Middle Eastern Finance and Management, 9(4), 551-569

Mohieldin, M., Iqbal, Z., Rostom, A., & Fu, X. (2011). The role of Islamic finance in enhancing financial inclusion in Organization of Islamic Cooperation (OIC) countries. The World Bank.

Romer, P. M. (1994). The origins of endogenous growth. Journal of Economic Perspectives, 8(1), 3-22.

Siddiqi, M. N. (2006). Islamic banking and finance in theory and practice: A survey of state of the art. Islamic Economic Studies, 13(2), 1-48.