



A Macroeconomic Framework without Interest: IS-LM Dynamics in the Context of Islamic Economics

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Abstract

Purpose - The reliance on interest rates in conventional macroeconomic models, particularly within the IS-LM framework, creates a fundamental incompatibility with Islamic economics, where interest (*riba*) is strictly prohibited. This incompatibility gives rise to a theoretical gap in the development of macroeconomic models that are aligned with Islamic law (*shari'ah*) principles while maintaining analytical robustness. This study aims to reformulate the IS-LM model into a *shari'ah*-compliant macroeconomic framework by eliminating the interest rate variable. In its place, a profit-sharing rate (π) is introduced as the primary determinant of investment and money demand.

Methodology/approach - To achieve this objective, the research adopts a theoretical and mathematical approach, reconstructing both the IS and LM curves. The proposed model integrates Islamic fiscal instruments, such as zakah, alongside interest-free monetary instruments, including Islamic bonds (*sukuk*). Concurrently, behavioural functions are modified to reflect incentives oriented toward the real sector, in line with the values of Islamic economics.

Findings - This study demonstrate that macroeconomic equilibrium can be achieved without reliance on interest rates. Instead, equilibrium is driven by profitability mechanisms and asset-backed financing structures, which ensure a closer linkage between the financial sector and the real economy. The significance of these findings lies in providing an alternative analytical framework for policymakers, particularly in Muslim-majority countries. Such a framework enables the design of effective fiscal and monetary policies that are also consistent with *shari'ah* principles.

Conclusion - The proposed IS- π /LM model offers a viable and coherent macroeconomic framework. It replaces interest-based mechanisms with profit-sharing arrangements, thereby supporting the development of a distinct, ethical, and productivity-oriented Islamic economic paradigm. Moreover, the model contributes to the theoretical advancement of Islamic macroeconomics by offering a structured and operational alternative to conventional interest-based systems.

Keywords: IS-LM Model; Interest-Free Economy; Islamic Macroeconomics; Profit Sharing; *Shari'ah* Instruments.

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Introduction

For over a century, mainstream macroeconomic models worldwide have predominantly relied on interest rates as the principal instrument for controlling investment, money demand, and macroeconomic stability.¹ The IS-LM model, initially formulated by John Hicks based on Keynesian theory, has served as the primary analytical framework in this context.² According to data from the International Monetary Fund (IMF), approximately 87% of central banks globally utilise interest rates as their main monetary policy tool.³ This reliance presents a fundamental contradiction within the Islamic economic system, which strictly prohibits the practice of interest (*ribā*).⁴ Conversely, total global Islamic financial assets exceeded USD 3.1 trillion by 2023, indicating a significant increase in the relevance and influence of the Islamic-based economy.⁵ This situation necessitates the development of a new macroeconomic framework that is not only technically effective but also aligned with the normative principles of Sharia.

The significance of Islamic economics extends beyond its religious dimensions; it encompasses a distinctive approach to distributional justice, risk-sharing, and direct linkages to the real sector.⁶ The intriguing aspect of this subject lies in its potential to challenge the foundational assumptions of conventional economics and to offer a novel perspective on sustainable development, particularly within Muslim-majority countries.⁷ The prohibition of interest in Islam demands a transition from debt-based financing to equity-based financing, which directly impacts the fundamental structure of macroeconomic theory.⁸ Countries such as Saudi Arabia, Indonesia, and Pakistan are demonstrating substantial progress in the adoption of Islamic financial systems, which are beginning to influence national fiscal and monetary policies.⁹

In recent years, scholarly literature has started to explore Islamic alternatives to conventional economic models; however, it remains dominated by micro-scale studies, such as banking structures and financial instruments.¹⁰ Research explicitly addressing Islamic

¹Frederic Mishkin, *Macroeconomics: Policy and Practice* (United State of America: Pearson, 2015), https://api.pageplace.de/preview/DT0400.9781292067179_A25609155/preview-9781292067179_A25609155.pdf.

²John R Hicks, "Mr. Keynes and the 'Classics'; a Suggested Interpretation," *Econometrica: Journal of the Econometric Society*, 1937, 147–59, <https://doi.org/10.2307/1907242>.

³Mr Simon Black et al., *IMF Fossil Fuel Subsidies Data: 2023 Update* (International Monetary Fund, 2023), <https://www.imf.org/-/media/files/publications/wp/2023/english/wp23169-print-pdf.pdf>.

⁴M Umer Chapra, *Islam and the Economic Challenge* (International Institute of Islamic Thought (IIIT), 1992), <https://share.google/xJRqjt9mcpMOsqTJs>.

⁵Md Habib and Md. Emon Arefin, "Banking Review Series-2024 Sustainable Banking Activities by Banks in Bangladesh Review Team Khondkar Morshed Millat," September 23, 2025, https://www.researchgate.net/publication/395733458_Banking_Review_Series-2024_Sustainable_Banking_Activities_by_Banks_in_Bangladesh_Review_Team_Khondkar_Morshed_Millat.

⁶Mohammad N Siddiqi, "Islamic Banking and Finance in Theory and Practice: A Survey of State of the Art," *Islamic Economic Studies* 13, no. 2 (2006), <https://ssrn.com/abstract=3161388>.

⁷Feisal Khan, "How 'Islamic' Is Islamic Banking?," *Journal of Economic Behavior & Organization* 76, no. 3 (2010): 805–20, <https://doi.org/10.1016/j.jebo.2010.09.015>.

⁸Zamir Iqbal and Abbas Mirakhor, *An Introduction to Islamic Finance: Theory and Practice*, vol. 687 (John Wiley & Sons, 2011), [https://ia600809.us.archive.org/13/items/IntroductionToIslamicFinance/An Introduction To Islamic Finance.pdf](https://ia600809.us.archive.org/13/items/IntroductionToIslamicFinance/An%20Introduction%20To%20Islamic%20Finance.pdf).

⁹Otoritas Jasa Keuangan (OJK) Indonesia, "Laporan Perkembangan Keuangan Syariah Indonesia 2023" (Jakarta, 2023), <https://share.google/lzLqsIerYYsS9P38k>.

¹⁰Mahmoud A El-Gamal, *Islamic Finance: Law, Economics, and Practice* (Cambridge University Press, 2006), <https://share.google/vYTGyJDop0DNOsD1u>.

profit-sharing ratio (π) as the primary variable influencing investment and money demand.¹⁹ Employing a library research analysis method, the study critically reviews both primary and secondary literature relevant to Islamic economics, conventional macroeconomic theory (Keynesian), and pertinent sharia-compliant economic models.²⁰ Data are sourced from a variety of academic and institutional repositories, including textbooks, scholarly journals, reports from the Islamic Financial Services Board (IFSB), the Islamic Development Bank (IsDB), and economic policies of Muslim nations.²¹

The analytical process is structured into three principal stages. The first stage involves the identification and classification of key variables within the conventional IS-LM model, such as consumption, investment, national income, money demand, and interest rates,²² alongside an examination of their compatibility with Islamic principles. The second stage entails the reformulation of the IS and LM functions in mathematical terms, substituting the interest rate (r) with the expected real rate of profit (π), while integrating Islamic financial instruments such as zakah, sukuk, and profit-sharing partnership (*muḍārabah*) or equity partnership (*mushārah*) financing schemes.²³ The third stage conducts a conceptual simulation of macroeconomic equilibrium to elucidate the interaction between the real sector and the monetary sector within the context of an interest-free economic system.²⁴

The model is normative-analytical, indicating that it is not quantitatively tested using statistical data, but rather validated through economic logic, internal consistency, and alignment with *maqāṣid al-sharī'ah* values.²⁵ The validity of the model is evaluated based on its coherence with Islamic economic principles, including distributional justice, stability of the real sector, and the prohibition of interest or pure speculation.²⁶ This research aspires to provide a robust theoretical foundation for the establishment of a macroeconomic model that is not only devoid of interest but also promotes productive, equitable economic activities in accordance with Islamic ethical standards.²⁷

Effectiveness of the IS-LM model in macroeconomic analysis

Amidst the prevailing global economic uncertainty, the IS-LM approach continues to hold relevance. The escalation of global inflation, driven by geopolitical conflicts and disruptions to supply chains, necessitates a judicious combination of fiscal and monetary policies. Central banks across various nations encounter a dilemma: whether to combat inflation through elevated interest rates or to stimulate economic growth via expansionary policies.

¹⁹Abbas Mirakhor and Zamir Iqbal, *An Introduction to Islamic Finance* (John Wiley & Sons, 2022), <https://share.google/12SCfUhKosS8XxiHx>.

²⁰Asad Zaman, *Crisis in Islamic Economics: Diagnosis and Prescriptions* (SSRN, 2017), https://marz.kau.edu.sa/Files/1001002/Researches/65359_36709.pdf.

²¹Madina Kalimullina, "Developments of Islamic Finance in Eastern Europe and Caucasus Region," in *Islamic Finance in Eurasia* (Edward Elgar Publishing, 2024), 28–44, <https://doi.org/10.4337/9781035308705.00010>.

²²Hicks, "Mr. Keynes and the 'Classics'; a Suggested Interpretation."

²³Chapra, *The Future of Economics: An Islamic Perspective*.

²⁴Siddiqi, "Islamic Banking and Finance in Theory and Practice: A Survey of State of the Art."

²⁵ Mohamed Aslam Haneef, "Islamic Finance Education: Is There a Misallocation of Resources Between Curriculum and Academic Talent?," *Islamic Banking and Finance Review* 05 (November 28, 2018): 58–67, <https://doi.org/10.32350/ibfr.2018.05.04>.

²⁶Mohammad Hashim Kamali, *Maqasid Al-Shariah Made Simple*, vol. 13 (International Institute of Islamic Thought (IIIT), 2008), <https://iiit.org/wp-content/uploads/MaqasidAl-ShariahMadeSimple-UPDATED-RED.pdf>.

²⁷Hossein Askari, Zamir Iqbal, and Abbas Mirakhor, "New Issues in Islamic Finance and Economics: Progress and Challenges," 2011, <https://doi.org/10.1002/9781119207696>.

For instance, the United States Federal Reserve's decision to maintain high interest rates in 2025 in order to suppress inflation has resulted in a deceleration of the global economy, including that of developing nations reliant on foreign capital. Conversely, countries such as Japan have adopted expansionary fiscal policies aimed at enhancing domestic demand, thereby illustrating the diverse strategies employed in response to differing national economic conditions. In February 2025, Indonesia recorded a deflation rate of 0.09% on an annualised basis, marking the first occurrence of deflation in over two decades. This phenomenon primarily stemmed from the government's implementation of substantial discounts on electricity bills to stimulate economic growth. Moreover, the prices of certain food products, including rice and red chilli, experienced declines as agricultural production rebounded from the adverse effects of the previous year's drought.²⁸

In an effort to support President Prabowo Subianto's key policy initiatives, the Indonesian government launched budget austerity measures totalling \$18.8 billion in 2025. These measures encompassed budget reductions across various ministries, curtailments in official travel, and restrictions on the use of stationery and air conditioning. The intended savings are designed to redirect funds towards programmes such as "Free Nutritious Food," which aims to benefit over 82 million schoolchildren and pregnant women, at an annual cost of \$28 billion. In 2024, Indonesia's budget deficit was recorded at 2.29% of GDP, a decrease from the previous estimate of 2.7%. Revenues increased by 2.1% to IDR 2,842.5 trillion, while expenditure rose by 7.3% to IDR 3,350.3 trillion.²⁹ This reduced deficit provides a fiscal buffer for the requirements of 2025, particularly following the government's cancellation of the planned value-added tax (VAT) increase that was scheduled to take effect on January 1, 2025.

In September 2024, Bank Indonesia unexpectedly reduced its benchmark interest rate by 25 basis points to 6.00%, marking the first reduction since February 2021, with the objective of bolstering national economic growth. This decision was made in anticipation of an easing cycle from the US Federal Reserve. Bank Indonesia Governor Perry Warjiyo articulated that the rate cut aligned with expectations of low inflation and stability of the rupiah for 2024 and 2025, thus providing an opportunity for the implementation of this policy change. The Ministry of Finance underscored that the effectiveness of fiscal policy would facilitate accelerated economic transformation and improvements in welfare. Targets include reducing the open unemployment rate to between 5.0% and 5.7%, decreasing the poverty rate to a range of 6.5% to 7.5%, enhancing the Gini ratio to between 0.374 and 0.377, and increasing the Human Development Index (HDI) to between 73.99 and 74.02. Bank Indonesia remains committed to enhancing the effectiveness of monetary policy to maintain inflation within a target range of $2.5 \pm 1\%$ for 2024 and 2025, while concurrently supporting economic growth.³⁰

The analysis of the IS-LM curve and money demand is addressed in an article by Ratnasari et al., which explores the impact of fiscal and monetary policy on the economy through the lens of IS-LM curve analysis and money demand theory. Fiscal policy influences

²⁸ Marro'aini Marro'aini, "Deflation and Middle-Class in Indonesia: An Empirical Analysis in January 2022-January 2025," *International Journal of Applied Finance and Business Studies* 13, no. 1 SE-Articles (June 30, 2025): 104–11, <https://doi.org/10.35335/ijafibs.v13i1.355>.

²⁹ Sri Mulyani Indrawati, Elan Satriawan, and Abdurrohman, "Indonesia's Fiscal Policy in the Aftermath of the Pandemic," *Bulletin of Indonesian Economic Studies* 60, no. 1 (January 2, 2024): 1–33, <https://doi.org/10.1080/00074918.2024.2335967>.

³⁰ Cosimo Thawley, Masyita Crystallin, and Kiki Verico, "Towards a Higher Growth Path for Indonesia," *Bulletin of Indonesian Economic Studies* 60, no. 3 (September 1, 2024): 247–82, <https://doi.org/10.1080/00074918.2024.2432035>.

the IS curve through alterations in aggregate demand, while monetary policy affects the LM curve through variations in the money supply.³¹

Further research by Mochamad Salva Putra and Agus Wahyudi evaluates the effectiveness of fiscal and monetary policies in fostering sustainable economic growth in Indonesia. Aspects such as budget management, the tax system, and subsidies inherent in fiscal policy significantly influence economic growth.³²

Research conducted by Akhyar et al. examines the interaction between fiscal and monetary policy within the context of the Indonesian economy, employing the IS-LM model to predict the impacts of these policies on aggregate output and interest rates. The findings indicate that fiscal policy exerts a more dominant influence when implemented in the current economic landscape.³³

In a study by Delin, the effectiveness of monetary and fiscal policies in affecting Indonesia's Gross Domestic Product (GDP) was analysed using the IS-LM model. Theresia Nova Delin (2020) employed the Two-Stage Least Squares (TSLS) method to estimate simultaneous equations using time-series data from the first quarter of 2010 to the fourth quarter of 2019. The results revealed that the monetary policy multiplier was 1.64, while the fiscal policy multiplier was 0.06, suggesting that monetary policy is more effective than fiscal policy in influencing GDP during this period.³⁴

Moreover, research by Ridho Windi Atmojo, which also utilised the IS-LM model and the TSLS method, found that the monetary policy multiplier was 1.72, while the fiscal policy multiplier was 0.63. This further corroborates the conclusion that monetary policy is more effective in influencing Indonesia's GDP.³⁵

However, it is essential to recognise that the efficacy of monetary and fiscal policies may fluctuate over time and be influenced by prevailing economic conditions. Consequently, an updated analysis is imperative to comprehend the effectiveness of such policies within the current economic context.

In the contemporary global economic landscape, the rise in inflation attributable to geopolitical conflicts and supply chain disruptions necessitates an appropriate blend of fiscal and monetary policies. Central banks across various nations grapple with the challenge of either reducing inflation through elevated interest rates or fostering economic growth via expansionary policies. For instance, the policy of the US Federal Reserve to sustain high interest rates in 2025 to mitigate inflation has led to a deceleration of the global economy, including that of developing nations dependent on foreign capital. In contrast, nations such as Japan implement expansionary fiscal policies to stimulate domestic demand, thereby

³¹ Melani Azzahra Nur and Maryam Batubara, "Model Analisis IS-LM Dalam Perspektif Islam" 7, no. kurva LM (2023), <https://doi.org/10.33059/jensi.v7i1.7663>.

³² Mochamad Salva Putra E and Agus Wahyudi, "Evaluasi Kebijakan Fiskal Dan Moneter Dalam Mendukung Pertumbuhan Ekonomi Berkelanjutan Di Indonesia," *Jurnal Ekonomi, Akuntansi, Dan Perpajakan* 1, no. 3 (2024): 183–91, <https://doi.org/10.61132/jeap.v1i3.266>.

³³ Muhammad Akhyar, Sofyan Syahnur, and Asmawati Asmawati, "Analisis Interaksi Kebijakan Fiskal Dan Moneter Terhadap Perekonomian Indonesia," *Jurnal Perspektif Ekonomi Darussalam* 5, no. 2 (2019): 112–23, <https://doi.org/10.24815/jped.v5i2.15080>.

³⁴ Theresia Nova Delin, "Analisis Efektivitas Kebijakan Fiskal Dan Moneter Dengan Model Is-Lm" (Universitas Airlangga, 2020), <https://repository.unair.ac.id/104278/>.

³⁵ Ridho Windi Atmojo, "Analisis Efektivitas Kebijakan Moneter Dan Kebijakan Fiskal Terhadap Produk Domestik Bruto Indonesia," *Economics Development Analysis Journal* 7, no. 2 (2018): 194–202, <https://doi.org/10.15294/edaj.v7i2.20160>.

exemplifying the varied strategies adopted in light of distinct national economic circumstances.

Ultimately, an understanding of the interplay between monetary and fiscal policies, alongside current economic conditions, is paramount for policymakers, economists, and market participants in devising effective strategies to achieve macroeconomic objectives, such as sustainable economic growth and price stability.

The necessity of reformulating the IS-LM model within the context of Islamic economics

The conventional IS-LM model, developed by John Hicks and Alvin Hansen, constitutes a fundamental component of Keynesian macroeconomic theory, elucidating the interaction between the goods market (IS) and the money market (LM) through a pivotal variable: the interest rate.³⁶ Within this framework, the interest rate assumes a dual role, serving as both a determinant of investment decisions and an incentive for the holding or release of money.³⁷ However, this model cannot be seamlessly integrated into an Islamic economic framework, as it fundamentally contradicts the prohibition of usury (*ribā*) as articulated in the Qur'an and Sunnah.³⁸

Islamic teachings regard interest *ribā* as an inequitable instrument, as it engenders profit without commensurate risk or participation in genuine economic activity.³⁹ There exists a consensus among all schools of jurisprudence that usury in money-lending transactions is forbidden (*harām*) and constitutes a major sin, as delineated in QS. Al-Baqarah: 275-279. Consequently, positioning interest rates as the primary variable within macroeconomic models is inconsistent with Sharia principles, both from normative and moral standpoints.⁴⁰

Furthermore, the Islamic economic system posits that sound economic activity should be predicated on tangible profits derived from productive engagements, facilitated through cooperative schemes such as profit-sharing partnership (*muḍārabah*), equity partnership (*mushārah*), or legitimate trade (*al-bai'*).⁴¹ Therefore, the variable that supplants the interest rate is the expected rate of profit (π), representing a rational estimate of the return on investment originating from genuine economic activity, rather than from monetary speculation.⁴² This reformulation not only renders the IS-LM model compatible with Islamic values but also fortifies the connection between macroeconomic policy and the attainment of the objectives of Islamic law (*maqāṣid al-sharī'ah*).⁴³

In addition, the Islamic IS-LM model fosters enhanced systemic stability, as it does not engender dependence on the debt-based financial sector, which has demonstrated vulnerability to crises, as evidenced by the global crisis of 2008.⁴⁴ By anchoring the economy

³⁶Hicks, "Mr. Keynes and the 'Classics'; a Suggested Interpretation."

³⁷N Gregory Mankiw, "Intermediate Macroeconomics" (Worth Publishers, 2016), <https://share.google/t3Rhfr2RQfixgh6mN>.

³⁸M Umar Chapra, *Towards a Just Monetary System*, vol. 35 (Leicester: The Islamic Foundation London, 1985), <https://kgsmiqbal.wordpress.com/wp-content/uploads/2013/02/a1-towards-a-just-monetary-system.pdf>.

³⁹Siddiqi, "Islamic Banking and Finance in Theory and Practice: A Survey of State of the Art."

⁴⁰Monzer Kahf, "Islamic Economics: Notes on Definition and Methodology," *Review of Islamic Economics*, 2003, 23–48, https://monzer.kahf.com/papers/english/paper_of_methodology.pdf.

⁴¹Mufti Muhammad Taqi Usmani, *An Introduction to Islamic Finance*, vol. 20 (Brill, 2021), <https://mcca.com.au/wp-content/uploads/2021/09/an-introduction-to-islamic-finance.pdf>.

⁴²Askari, Iqbal, and Mirakhor, "Globalization and Islamic Finance: Convergence, Prospects and Challenges."

⁴³Muhammad Umer Chapra, "The Islamic Vision of Development in the Light of Maqāṣid Al-Sharī 'Ah," *Islamic Research and Training Institute Islamic Development Bank Jeddah*, DOI 10 (2008), <https://doi.org/10.13140/RG.2.1.4188.5047>.

⁴⁴Askari, Iqbal, and Mirakhor, "Globalization and Islamic Finance: Convergence, Prospects and Challenges."

in the real sector and profit-sharing schemes, this model engenders a more equitable interaction between capital owners and business managers, ensuring the distribution of returns in accordance with each party's contributions and associated risks.

IS function in profit sharing system

In the Islamic economic framework, investment is guided by the potential for real profit (expected profit rate) derived from halal productive business activities, rather than by interest rates, as is customary in conventional economics.⁴⁵ This approach aligns with the prohibition of usury as outlined in the Qur'an and the principles of Islamic transaction (*mu'āmalah*), which underscore the importance of fairness and equitable risk distribution between capital owners and business operators.⁴⁶ Consequently, the investment function within the IS model necessitates reformulation to reflect a function of the expected profit rate, as opposed to the interest rate.⁴⁷

Mathematically, the investment function is expressed as:

$$I = I(\pi) \text{ With } I'(\pi) > 0$$

This means that the higher the expected rate of return π , the greater the incentive to invest.⁴⁸ The consumption function (C), as in the Keynesian model, is still determined by the national income Y, i.e., the consumption function (C):

$$C = C_0 + cY$$

Where C_0 is autonomous consumption and c is the marginal propensity to consume (MPC).⁴⁹ Thus, the equilibrium equation of the goods market (IS function) in Islamic economics becomes:

$$Y = C_0 + cY + I(\pi) + G + NX,$$

Can be rearranged as:

$$Y(1 - c) = C_0 + I(\pi) + G + NX$$

So, the national income Y is:

$$Y = \frac{C_0 + I(\pi) + G + NX}{1 - c}$$

This function illustrates that national income (Y) will increase along with the increase in profit expectation (π) which triggers an increase in investment (I).⁵⁰ In this system, investors

⁴⁵Mirakhor and Iqbal, *An Introduction to Islamic Finance*.

⁴⁶Muhamad Haqiqi et al., "Tadarruj Fi At-Tasyri'Keharaman Riba Dalam Tafsir Al-Misbah Dengan Pendekatan Linguistik," *Basha'ir: Jurnal Studi Al-Qur'an Dan Tafsir* 2, no. 1 (2022): 7–15, <https://doi.org/10.47498/bashair.v2i1.888>.

⁴⁷Chapra, *Towards a Just Monetary System*.

⁴⁸ Muhammad Akram Khan, *What Is Wrong with Islamic Economics?: Analysing the Present State and Future Agenda* (Edward Elgar Publishing, 2013), <https://doi.org/10.4337/9781782544159>.

⁴⁹N Gregory Mankiw, *Macroeconomics* (New York: Worth Publishers, 2016), https://library.nlu.edu.ua/POLN_TEXT/SENMK/mankiw_macroconomics.pdf.

⁵⁰Siddiqi, "Islamic Banking and Finance in Theory and Practice: A Survey of State of the Art."

tend to allocate funds if the prospect of profit sharing is considered high and business risks can be shared through contracts such as *muḍārabah* and *mushārah*.⁵¹

Implementation Example: Calculation of π -based IS Function

Suppose:

- Autonomous consumption: $C_0 = 100$
- MPC: $c = 0.8$
- Investment function: $I(\pi) = 50 + 200\pi$
- Expected profit rate: $\pi = 10\% = 0.10$
- Government spending: $G = 150$
- Net exports: $NX = 20$

Substitute it into the Islamic IS function:

1. Calculate investment:

$$I(\pi) = 50 + 200 \times 0.10 = 70$$

2. Calculate national income:

$$Y = \frac{100 + 70 + 150 + 20}{1 - 0.8} = \frac{340}{0.2} = 1700$$

Under these assumptions, the Islamic economy within the framework of the IS- π function generates national income of $Y = 1700$ monetary units.

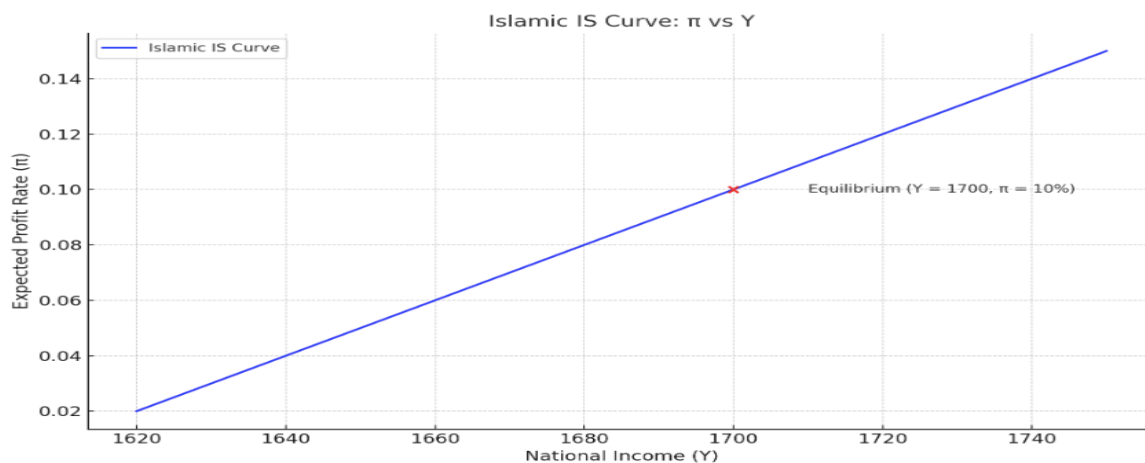


Figure 1. Here is the Islamic IS Curve plotted as a relationship between the expected profit rate (π) and national income (Y).

⁵¹Kahf, "Islamic Economics: Notes on Definition and Methodology."

This curve models how national income (Y) responds to changes in the expected profit rate (π) in an Islamic economy. At $\pi = 10\%$, the resulting equilibrium income is $Y = 1700$ units. This illustrates that investment decisions, driven by real-sector profit expectations rather than interest rates, can effectively stimulate aggregate demand and national income-aligning economic dynamics with Islamic principles such as risk-sharing, productivity, and prohibition of *ribā*.

LM function in non- *ribā* perspective

In the conventional economic framework, the LM curve illustrates the equilibrium in the money market, predicated on the interplay between the demand for money (liquidity preference) and the supply of money, which is influenced by the interest rate as the cost of utilising money.⁵² The demand for money in this context is typically expressed as $L = L(Y, r)$, where $L_Y > 0$ and $L_r < 0$, indicating that the demand for money increases with rising income but diminishes as interest rates escalate, owing to the incentive to hold money in the form of interest-bearing assets.⁵³ However, this model is inapplicable within an Islamic economy, as the presence of usury (interest rates) contravenes the tenets of Sharia.

Conversely, in the Islamic economy, the interest rate (r) is supplanted by the expected profit rate (π), which signifies the outcomes of real economic activity grounded in cooperation and profit-sharing.⁵⁴ Consequently, the demand for money within the Islamic system can be articulated as:

$$L = L(Y, \pi)$$

With partial derivatives $\frac{\partial L}{\partial Y} > 0$ and $\frac{\partial L}{\partial \pi} < 0$, which shows that the demand for money increases as income increases and decreases as expected profit (π) increases because economic agents will prefer to allocate their money into the real sector that produces.⁵⁵

The supply of money (M) in the Islamic system also does not come from money creation through commercial interest or fractional credit, but from real asset-based financial instruments such as sukuk, Islamic agency contract (*wakālah*), or benevolent loan (*qard al-hasan*).⁵⁶ Islamic banks or Islamic monetary authorities provide liquidity based on the principles of partnership and participation, not interest-bearing debt.⁵⁷ Therefore, money market equilibrium in the Islamic framework is determined by:

$$M = L(Y, \pi)$$

Islamic LM balance problem example

Unknown:

- The demand function of money in the Islamic system:

$$L = 0.3Y - 40\pi$$

- Real money supply:

⁵²Olivier Blanchard, *Macroeconomics; Seventh Edition* (Pearson Higher Education AU, 2017), https://library.bsma.edu.ge/BOOKS/Macroeconomics_7th,-blanchardpdf,2017.pdf.

⁵³Mankiw, "Intermediate Macroeconomics."

⁵⁴Khan, "Islamic Interest-Free Banking: A Theoretical Analysis."

⁵⁵Mirakhor and Iqbal, *An Introduction to Islamic Finance*.

⁵⁶Iqbal and Mirakhor, *An Introduction to Islamic Finance: Theory and Practice*.

⁵⁷Askari, Iqbal, and Mirakhor, "Globalization and Islamic Finance: Convergence, Prospects and Challenges."

$$\frac{M}{P} = 600$$

- Objective: Determine the level of income (Y) when $\pi = 0.08$ (or 8%), i.e. what level of income ensures that the money market is in balance.

Completion:

Money market equilibrium in the Islamic LM model:

$$\frac{M}{P} = L(Y, \pi)$$

$$600 = 0.3Y - 40(0.08)$$

$$600 = 0.3Y - 3.2$$

$$0.3Y = 603.2$$

$$\frac{603.2}{0.3} = 2010.67$$

If the expected rate of return π is 8%, then to achieve equilibrium in the money market, national income YYY must amount to 2010.67 units of output.

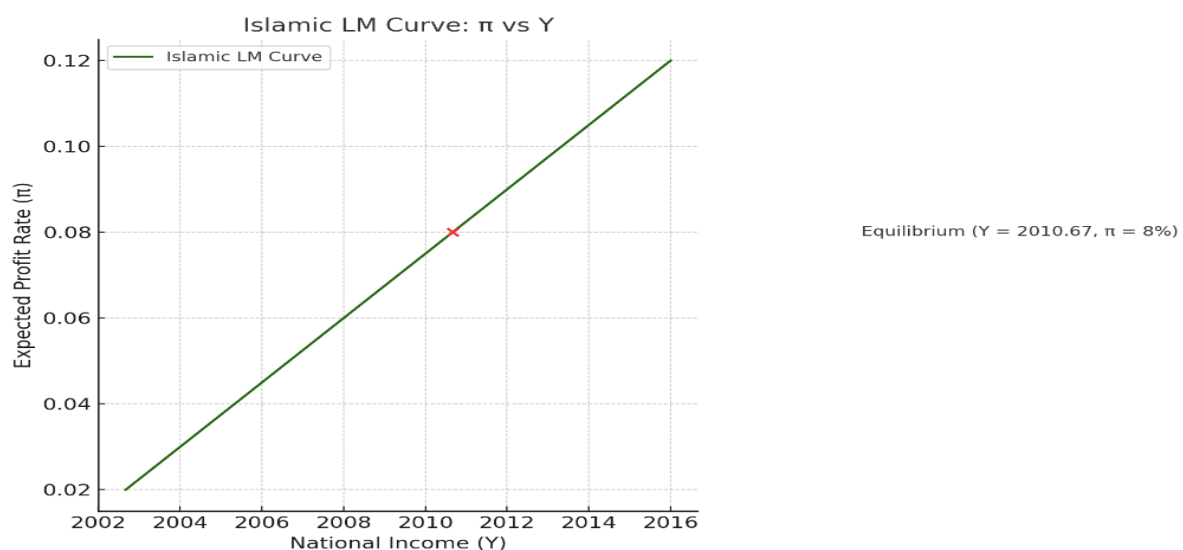


Figure 2. Here is the Islamic LM Curve visualized as a relationship between the expected profit rate (π) and national income (Y).

This curve illustrates how in Islamic macroeconomics, the equilibrium in the money market is determined by the interplay between income (Y) and π (expected profit rate) rather than interest rates. At an expected profit rate of 8% ($\pi = 0.08$), the economy reaches monetary equilibrium when national income equals approximately 2010.67. This reflects a shift from interest-based incentives to real-sector, profit-sharing incentives-aligning economic policy with Islamic financial ethics.

The LM curve in this framework still reflects the positive relationship between income and the expected profit level π .⁵⁸ The function of LM in Islamic economics is not only to balance the money market, but also to reflect Islamic ethical values and maqasid al-shariah (the main objectives of sharia).⁵⁹ Ethically, Islam rejects speculation (*gharār*), financial gambling (*maysīr*), and interest practices (*ribā*), as they create uncertainty, inequality, and exploitation in economic activities.⁶⁰ In the context of money demand, this ethical principle

⁵⁸Zaman, *Crisis in Islamic Economics: Diagnosis and Prescriptions*.

⁵⁹Chapra, "The Islamic Vision of Development in the Light of Maqāsīd Al-Sharī 'Ah."

⁶⁰Kamali, *Maqasid Al-Shariah Made Simple*.

encourages money to be used as a medium of exchange and a legitimate store of value in real transactions, rather than as a speculative commodity to generate passive profits.⁶¹

Meanwhile, *maqāsid al-sharī'ah* aims to protect five fundamental things: religion (*al-dīn*), soul (*al-nafs*), intellect (*al-ʿaql*), offspring (*al-nasl*), and property (*al-māl*).⁶² In the context of monetary policy, the functioning of the Islamic LM should be designed in such a way as to support the achievement of these objectives. For example, fair inflation control, job creation through productive financing, as well as strengthening inclusive finance through *qard hasan* and zakah, are practical manifestations of *maqāsid* in the Islamic monetary system.⁶³

This implies that the Islamic LM curve should serve as an economic stabilization tool that is not only technically efficient, but also morally and socially just.⁶⁴ Therefore, the management of money demand and supply in an Islamic economy should not be separated from the spiritual values and social goals of the people, making it unique compared to the conventional model.⁶⁵

Reformulation of the Interest-free IS-LM model

The IS-LM model is a classical framework within Keynesian economics utilised to analyse short-term equilibrium between the real sector (goods market) and the monetary sector (money market) in an economy.⁶⁶ In its conventional formulation, equilibrium in the goods market (IS curve) is determined by the interaction of consumption, investment, and government spending, with investment (I) negatively influenced by the interest rate (r).⁶⁷ The LM curve, which represents equilibrium in the money market, indicates that the demand for money increases with rising income and decreases as interest rates increase due to the elevated opportunity cost associated with holding cash.⁶⁸

However, the fundamental assumptions of the model are inherently contradictory to the principles of Islamic economics, particularly due to its reliance on interest (usury) as the primary variable in determining macroeconomic equilibrium.⁶⁹ Usury is expressly prohibited in the Qur'an, as affirmed in QS. Al-Baqarah [2]:275-279, which not only forbids the practice of usury but also threatens "war from Allah and His Messenger" against those who engage in it.⁷⁰ Imam Abu Hanifah articulated that usury constitutes an unjust form of economic exploitation, as it permits profits without the assumption of risk or loss.⁷¹ Imam Malik highlighted that usury disrupts the fairness of transactions (*mu'āmalah*) and engenders inequality in the distribution of wealth.⁷² Imam Shafi'i posited that usury contravenes *maqāsid*

⁶¹Siddiqi, "Islamic Banking and Finance in Theory and Practice: A Survey of State of the Art."

⁶²Siddiqi.

⁶³Siddiqi.

⁶⁴ Haneef, "Islamic Finance Education: Is There a Misallocation of Resources Between Curriculum and Academic Talent?"

⁶⁵Chapra, "The Islamic Vision of Development in the Light of Maqāsid Al-Sharī 'Ah."

⁶⁶Mankiw, "Intermediate Macroeconomics."

⁶⁷Blanchard, *Macroeconomics; Seventh Edition*.

⁶⁸P Krugman and R Wells, *Economics* (New York: Worth Publishers, 2006), <https://studyroombd.wordpress.com/wp-content/uploads/2014/08/macroeconomics-krugman-wells.pdf>.

⁶⁹Mirakhor and Iqbal, *An Introduction to Islamic Finance*.

⁷⁰Abdul Ghofur, "Konsep Riba Dalam Al-Qur'an," *Economica: Jurnal Ekonomi Islam* 7, no. 1 (2016): 1-26, <https://doi.org/10.21580/economica.2016.7.1.1030>.

⁷¹ Pejman Abedifar, "Lending, the Poor, and Islamic Scripture," *Journal of the American Academy of Religion* 87, no. 2 (April 27, 2019): 460-82, <https://www.jstor.org/stable/48556570>.

⁷²Basma Mustafa Khalil Al-Kateb and Ass Prof Dr Salim Hamed Al, "Al-Asbejabī's Choices in His Explanation of Al-Tahawī's Mukhtasar, The Book of Worship, A Comparative Fiqhi Study, The Issue of The

al-sharī'ah as it impedes the equitable circulation of wealth within society. Imam Ahmad bin Hanbal categorised usury as a form of injustice that violates the principle of tawhid in socio-economic interactions.⁷³

Consequently, the Islamic macroeconomic model cannot employ interest rates as a principal instrument. Instead, it utilises the expected profit rate on real economic activity (π), which reflects the rate of return on halal productive investments.⁷⁴ The investment function in the Islamic framework is thus redefined from $I = f(r)$ to $I = f(\pi)$, where π denotes the expected profit rate of businesses operating through profit-sharing mechanisms such as *muḍārabah* and *mushārahah*.⁷⁵ This adjustment underscores that investment in the Islamic economy is motivated by the intrinsic value of economic activity rather than by interest-based financial incentives.⁷⁶

Furthermore, the money demand function (LM) is also reformulated. In the conventional system, the demand for money is expressed as $MD = f(Y, r)$, but in the Islamic model, interest holds no relevance. Consequently, the function is redefined as $MD = f(Y, \pi)$, where π serves as a proxy for the incentive to hold money or invest in the real sector.⁷⁷ Money is not perceived as a commodity to be traded for interest, but rather as a medium of exchange and a store of value that facilitates productive transactions.⁷⁸

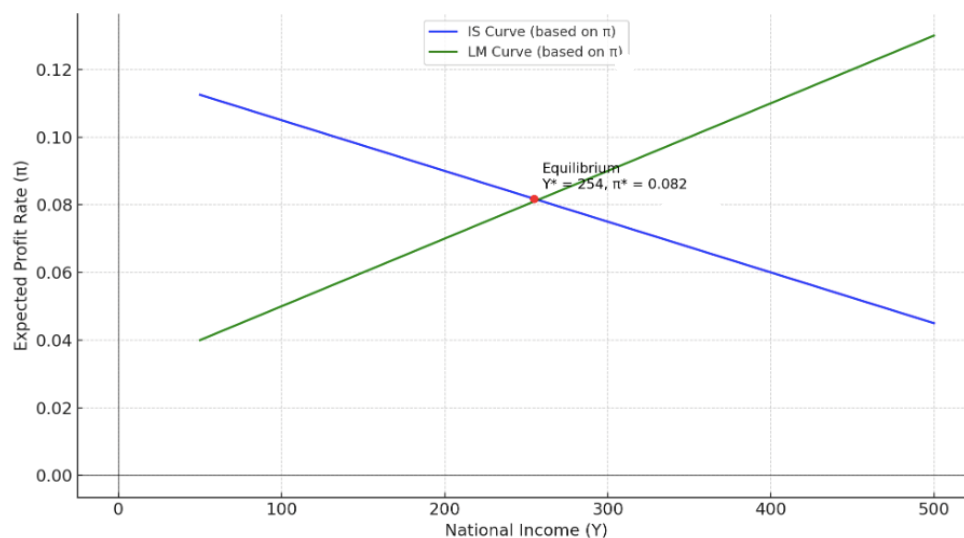


Figure 3. IS- π /LM Model

Takbeer Al-Ihram Formula as A Model," *Anbar University Journal for Islamic Sciences* 13, no. 3 (2022): 1337–70, <https://doi.org/10.34278/aujis.2022.175005>.

⁷³Rosli Mokhtar, Mohamad Sabri Haron, and Dalila Hafidah Talib, "Metodologi Ta'lil Ahkam Daripada Ibnu Qudamah: Analisis Kitab Al-Mughni: The Methodology of Ta'lil Ahkam by Ibnu Qudamah: Analysis on Al-Mughni," *Journal of Muwafaqat* 1, no. 2 (2018): 118–34, <https://www.muwafaqat.uis.edu.my.kuisjournal.com/index.php/journal/article/view/60>.

⁷⁴Chapra, *Towards a Just Monetary System*.

⁷⁵Khan, *What Is Wrong with Islamic Economics?: Analysing the Present State and Future Agenda*.

⁷⁶Siddiqi, "Islamic Banking and Finance in Theory and Practice: A Survey of State of the Art."

⁷⁷Chapra, "The Islamic Vision of Development in the Light of Maqāsid Al-Sharī 'Ah."

⁷⁸Abbas Mirakhor and Nouredine Krichene, *Introductory Mathematics and Statistics for Islamic Finance* (John Wiley & Sons, 2014), <https://content.e-bookshelf.de/media/reading/L-2627361-fb509a4c40.pdf>.

The following is a visualization of the IS- π and LM curves that have been reformulated according to Islamic economic principles:

- IS curve (blue): Decreasing, indicating that as national income (Y) increases, the expected rate of profit (π) decreases.
- LM curve (green): Rising, indicating that money demand increases as income rises, requiring a higher level of π .
- Red dot: The equilibrium point (Y, π) in Islamic economics, replacing the role of interest with the profit rate (π).

This IS- π /LM model, by replacing r with π , results in a macroeconomic system that is value-based, fair, and directly connected to the real sector, and in line with *maqāṣid al-sharī'ah* such as distributional justice, inclusive growth, and economic stability.⁷⁹ This is an important contribution in the development of an alternative macroeconomic framework that is compatible with Islamic principles.

IS-LM balance in Islamic economics

In the conventional economic framework, macroeconomic equilibrium is attained when the IS curve (representing equilibrium in the goods market) and the LM curve (representing equilibrium in the money market) intersect at a specific level of income (Y) and interest rate (r).⁸⁰ This intersection indicates a scenario where aggregate demand equals aggregate supply, and the demand for money corresponds to its supply.⁸¹ However, in Islamic economics, this paradigm requires adaptation, as the interest rate as an equilibrium-determining variable is not recognised within the Islamic system.

In this alternative framework, the IS-LM model in Islamic economics substitutes the variable r (interest rate) with π (expected profit rate), which denotes the anticipated rate of return from profit-sharing-based real investments.⁸² This substitution aligns with Shariah principles that underscore the significance of engaging in business risk, transparency, and fairness in economic transactions.⁸³

Graphically, the Islamic IS curve is derived from the positive correlation between π and investment: an increase in the expected profit corresponds to a heightened level of investment, thereby leading to an increase in national income (Y).⁸⁴ Concurrently, the Islamic LM curve is established based on the equilibrium between the demand and supply of money, where the demand for money diminishes as π rises, as economic agents are more inclined to invest their funds in the real sector.⁸⁵

The intersection of the IS (π) and LM (π) curves represents the Islamic macroeconomic equilibrium, occurring when both the goods market and money market achieve equilibrium at a specified level of income Y and expected profit π .⁸⁶ Within this system, fluctuations in π

⁷⁹Abbas Mirakhor, Nouredine Krichene, and Mughees Shaukat, "Unsustainability of the Regime of Interest-Based Debt Financing," *ISRA International Journal of Islamic Finance* 4, no. 2 (2012): 25–52, <https://doi.org/10.55188/ijif.v4i2.145>.

⁸⁰Blanchard, *Macroeconomics; Seventh Edition*.

⁸¹Mankiw, "Intermediate Macroeconomics."

⁸²Khan, "Islamic Interest-Free Banking: A Theoretical Analysis."

⁸³Chapra, *Towards a Just Monetary System*.

⁸⁴Mirakhor, Krichene, and Shaukat, "Unsustainability of the Regime of Interest-Based Debt Financing."

⁸⁵Siddiqi, "Islamic Banking and Finance in Theory and Practice: A Survey of State of the Art."

⁸⁶Haneef, "Islamization of Knowledge after Thirty: Going Back to the Basics."

are not driven by interest rate-based monetary policy; rather, they are influenced by market stability, perceptions of business risk, and the efficiency of the yield distribution system.⁸⁷

This model holds normative and ethical advantages, as it mitigates distortions caused by interest and directs funds towards the productive sector through equitable economic cooperation mechanisms, such as *muḍārabah* and *mushārah*. Furthermore, since the system is predicated on real economic activities, it exhibits greater resilience to asset bubbles and speculative crises that characterise interest-based financial systems.⁸⁸

Mathematically, the IS-LM equilibrium in Islamic economics can be determined through the simultaneous solution of the following two equations:

IS function:

$$Y = \frac{c_0 + I(\pi) + G + NX}{1 - c}$$

LM function:

$$M = L(Y, \pi)$$

The solution of this system provides equilibrium values of Y^* and π^* , which can be used to formulate sharia-based fiscal and monetary policies, without involving usury practices.

Implications of IS-LM balance for Islamic macroeconomic policy

The IS-LM equilibrium from an Islamic economic perspective possesses significant implications for the formulation and implementation of macroeconomic policies in accordance with Sharia principles. Firstly, this model substitutes the role of interest rates with the expected rate of return (π), thereby precluding the monetary authority from employing conventional instruments such as interest-bearing bond-based open market operations. Instead, alternative policy instruments, such as state sukuk, *muḍārabah* certificates, or Central Bank sukuk, may be utilised to regulate the money supply and stimulate productive investment.

Secondly, given that investment in this model is predominantly contingent upon expected returns from the real sector, the stability of the financial system is intricately linked to the business environment, political stability, and the efficacy of Islamic contracts such as *mushārah* and trading (*ijārah*). This implies that monetary policy in an Islamic economy transcends mere technicality; it must also bolster institutions that promote fairness, transparency, and robust law enforcement.

Thirdly, fiscal policy within Islamic economics—which is reflected in the G component of the IS function—should prioritise wealth distribution, social justice, and the eradication of poverty, consistent with the *maqāṣid al-sharī'ah*. Government expenditure serves not only as a catalyst for aggregate demand but also as a mechanism for achieving justice, exemplified through investments in education, health, zakah, and need-based subsidies.

Fourthly, the π -based IS-LM model incentivises economic authorities to concentrate on the development of the real sector and participation-based enterprises, rather than on generating money through debt. In essence, Islamic macroeconomic policies advocate for a synergy between economic stability and the attainment of spiritual values and social welfare.

Finally, the system exhibits greater resilience to global financial crises, as it eschews interest-based speculation, excessive lending, or derivative instruments devoid of real assets. In this context, the Islamic IS-LM equilibrium stands not only as an analytical model but also as a foundation for the design of a sustainable, equitable, and stable economic policy framework.

⁸⁷Askari, Iqbal, and Mirakhor, "New Issues in Islamic Finance and Economics: Progress and Challenges."

⁸⁸Zaman, *Crisis in Islamic Economics: Diagnosis and Prescriptions*.

Conclusion

This paper examines the integration of the IS-LM model within the Islamic economic framework by substituting the primary variable in the conventional model, the interest rate, with the expected profit rate, in accordance with Shariah principles. It has been determined that this approach is not only normatively compatible with the prohibition of usury in Islam but also functionally capable of illustrating real sector-based macroeconomic dynamics and equitable financial distribution. The Islamic IS curve indicates that investment is influenced by real profit expectations rather than interest incentives, while the Islamic LM curve demonstrates that money demand diminishes as real sector profitability increases. The IS-LM equilibrium point within this framework reflects a more sustainable monetary and real stability, employing an approach that ensures fairness, stability, and alignment with *maqāsid al-sharī'ah*. Consequently, this model offers a rational and normative alternative for macroeconomic policy reforms in Muslim countries, particularly those aspiring to establish a stable, fair, and inclusive non-*ribā* monetary system.

Based on the findings of this study, it is recommended that Islamic monetary authorities develop interest-substituting instruments such as sukuk, *muḍārabah* certificates, and asset-backed securities-based instruments that are aligned with Islamic values and capable of effectively influencing π . Islamic fiscal policy should focus on strengthening the real sector and income distribution through need-based spending and social justice, which includes the integration of zakah, waqf, and productive subsidies. The stability of the Islamic financial system must be underpinned by a legal framework that guarantees the validity and certainty of Shariah-based contracts such as *mushārah* and *ijarah*, while encouraging Islamic financial institutions to prioritise financing productive sectors. Additionally, Islamic economic education and literacy must be enhanced to ensure that all stakeholders comprehend the principles of Islamic economics, which are oriented towards balance, ethics, and sustainability, serving as a foundation for policy formulation.

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